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GLOBAL CLIMATE GOVERNANCE: SHIFTING BALANCES AND LEADERSHIP IN TRANSATLANTIC RELATIONS

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INTRODUCTION

Beginning from the second half of the 20th Century some of the greatest international issues have concerned American and European solidarity and, most certainly, both the United States and the European Union have held a dominant role in the evolution of global climate governance, nurturing the shape and form of the current normative framework.

The modern ecology movement had its roots on American soil; spreading across the other side of the Atlantic, where it championed higher environmental standards and climate policies. However, in the last two decades the world has drastically changed. Transatlantic relations are presently antagonized by a series of geopolitical challenges including the rapid rise of emerging economies, slow post-recession growth, destabilizing factors in the MENA region, and the mounting migration crisis and terrorist menace, while all along the dramatic increase of toxic greenhouse gases concentrations keeps pushing atmospheric temperatures to extreme historical levels.

Against this backdrop, ascertaining a secure and well-built Transatlantic Partnership offers greater confidence in responding to the challenges of the more heterogeneous distribution of global power, thereby helping strengthen environmental governance and climate policy in a coordinated fashion. History reveals how the Western Community has thoroughly demonstrated a capacity for leadership in defining and advancing normative and soft mechanisms for international governance. Though when it comes to climate change mitigation, while the United States and Europe may have shared some degree of international commitment, these two powers have predominantly exercised substantial differences in their strategic choices, hindering a mutual progression along straight lines.

Assessing to what extent the US and the EU, and its Member States themselves, conditioned by shifts in internal and external balances, have exercised a leading position in the evolution of global climate governance, is at the heart of this dissertation. The main purpose is to ultimately analyze how the US and EU have altered their approaches over time and whether these attitudes convergence on the topic of global warming or, alternatively, whether there is more evidence of a divergence in Transatlantic relations, threatening the expansion of a structural rift among the two partners in the battle against climate change.

The dissertation is structured into three core chapters investigating the evolution of the US and EU attitudes in three specific domains of climate governance, namely the context of international climate negotiations, the energy sector and its implications on ecological security, and lastly the extent of compliance with international environmental law. Every chapter is

subdivided into three separate sections, each assessing the composite elements of the domain in question. All sections are further divided into two segments, offering a review of the extent to which each individual Transatlantic partner has been influenced by internal and external dynamics and how, in turn, these have determined an evolutionary and distinct role exerted in the global framework of climate governance.

The first chapter examines the negotiation dynamics behind three landmark agreements, the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement, all mirroring the North-South fault line at the backbone of the climate debate. The second chapter focuses on the need to reconcile energy security issues with climate mitigation measures, demanding more severe regulation of energy consumption, adoption of market-based mechanisms, such as emission trading, and, most importantly, the pursuit of the production of renewable energies. The third chapter scrutinizes to what extent international environmental law has been fulfilled, considering the normative legacy of the Rio Declaration (1992), the expanding belief in technological supremacy, and the troubled outlook for future implementation.

The last chapter of this dissertation, by way of conclusion, will appraise the converging and diverging patterns underlying the Transatlantic Partnership in the field of environmental protection. Divided into three distinct sections, the first analyzes how fundamental shifts in USA and EU attitudes have affected relations with each other; the second section assesses the effects of individual internal and external balances on the race towards a global leadership stance. Finally, the last section zeroes in on the state of contemporary Transatlantic environmental relations and the standing positions of the USA and Europe, offering a modest projection for the imminent future of global climate governance.

Truly, the impending environmental crisis has set the world on a tight deadline for altering the present course of action towards reducing anthropogenic emissions. Determining the inherent rationale behind one of the most compelling problems of our era, therefore, has never felt more imperative. Yet current political challenges, posed by global unemployment and worldwide inequality, xenophobic and protectionist upsurges following the Arab Spring and Migration crisis, and the additional shockwave provoked by US Presidential elections and outcome of the Brexit Referendum, have enthused a newly accepted wisdom that America and Europe are abandoning their traditional collective force. Such veracity would be detrimental to both the Transatlantic Partnership and to the international community as a whole because, after decades of deadlocked negotiations and policy disparities in the field of climate governance, a fierce discrepancy among these two historical allies would inevitably revert any current hopes for an environmentally safe future.

CHAPTER I

APPROACHING THE NORTH-SOUTH DIVIDE

When the abstract theoretical awareness of global warming moved from the scientific arena to the international normative framework, the unavoidable North-South fault line immediately unveiled: the former was "shorthand for rich industrialized societies," the latter "for poor developing countries."[1] A traditional rich-poor inequity where the "historic fossil carbon emissions from industrialized countries are eleven times as high as those from developing countries,"[2] who lack the effective means to defend themselves[3] from negative externalities.

The initial stages in global environmental negotiations attempted to resolve this quintessential division by linking climate change with the pursuit of economic development, answering *who* obtained *what*, *when*, and *how*.[4] Though despite best efforts, this approach was little more than a "principle of fairness"[5] leading to years of impasse in global discussions. In the struggle to rise from "the ashes of colonial life,"[6] unsustainable emissions in China, India, and other developing countries increased to the point that the post-colonial world order, at first subject to US supremacy, has advanced into a new geopolitical system. Rich-poor inequities remain, but the membership to these two groups has considerably evolved as the "nouveau riche"[7] stand alongside the old powers.

Coupled with Global Recession, the new South generated considerable anxieties in wealth, welfare, and willingness to lead of the old North[8] causing global climate governance to become afflicted by a prisoner's dilemma: "countries want emission reductions but prefer that someone else take on the burden."[9] Only more recently have efforts moved to find a more convincing global framework, compromising on anthropocentric per capita emissions that replace the historical North-South issues at the center of the debate. The outcome has been a more flexible, inclusive, and impartial system, albeit more constrained in standards, capable of transcending the scars of the colonial days.

A consistent feature in the politics of climate change in USA and Europe, is the extent to which domestic conditions underlie their leadership position. One party's role was gradually made hollow by internal and disabling conditions, ultimately relieving it from its original stance

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[1] Joyeeta Gupta, *The History of Global Climate Governance* (Cambridge: Cambridge University Press, 2014), 20.
[2] *ibid*.
[3] Kevin Watkins, *Fighting climate change: Human solidarity in a divided world*, Human Development Report 2007-2008, United Nations Development Program (New York: Palgrave Macmillan, 2007), 27.
[4] Gupta, *The History of Global Climate Governance,* 4.
[5] *ibid,* 20.
[6] *ibid,* 19.
[7] *ibid,* 171.
[8] *ibid*.
[9] David Koranyi, "Towards a Transatlantic Energy Alliance: Prospects for EU-U.S. Cooperation in Fighting Climate Change and Promoting Energy Security and New Technologies," in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), xi.

as a leader of this particular domain. The other party, while initially thrust into a policy area which was beyond its own control, without any delineated competences, gradually developed responsible and appropriate responses, progressing into a leading force. These shifting balances across both sides of the Atlantic helped define the types of leadership paradigms that underlie climate negotiations. Assessing these dynamics is therefore essential for understanding the future challenges awaiting international climate governance, in light of its ongoing evolution. Although it remains too early to discern what role is reserved for a Transatlantic Partnership in the politics of climate change, the future prospects are not encouraging.

The United Nations Framework Convention on Climate Change

In the preparations for the UN Conference on Human Environment held in Stockholm in 1972 the main concern that arose was perhaps driven by the fear of developing countries that "an international effort to protect the environment would come at the expense of their own development."[10] Two decades later, the same argument entered the agenda of the UN Conference on Environment and Development (UNCED) in Rio, igniting Northern hopes for "the beginning of a new ecological globalism."[11]

In this phase of negotiations "the industrial emissions of developed countries were significantly higher than those of developing countries in both gross and per capita terms, cumulatively and annually."[12] Any presumption for optimistic expectations implied that "developing countries should, and be convinced that they could," avoid unsustainable patterns that had led the more industrialized countries to a "deplorable state of environmental degradation."[13] However, the countries of the global South revived their complaints against such an alleged "green imperialism"[14] by industrialized countries, sustaining that it would not accommodate developing countries' socioeconomic needs.

To respond to the challenges of liability, leadership, and compensation underlying global climate change, the United Nations Framework Convention on Climate Change (UNFCCC), adopted in May 1992, decided to divide the world into Annex I and non-Annex I countries. Listed under the former was the USA, Japan, Australia, and the members of the European Community.[15] Generally branded as 'the North,' this heading sustained the concept of *Common but Differentiated Responsibilities and Respective Capabilities of Countries,*[16] enshrined in Principle 1 of the UNFCCC and in Principle 7 of the Rio Declaration on Environment and Development. Upon entering international legal parlance, this concept clarified how the world should cope with the particular colonial legacy:

(1) The South was not required to reduce emissions, since responsibility for "the largest share of historical and current global emissions of [GHGs] originated in developed countries"[17]

[10] Edith Brown Weiss, "The Evolution of International Environmental Law," (paper, Georgetown University Law Center, Environmental Law Commons, 2011), 4.
[11] Francesco Francioni, "From Rio to Paris: What is Left of the 1992 Declaration on Environment and Development?," *Intercultural Human Rights Law Review,* 11 (2016): 16.
[12] Gupta, *The History of Global Climate Governance,* 69.
[13] Francioni, "From Rio to Paris," 16.
[14] *ibid,* 17.
[15] United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 4 June 1992, *United Nations Framework Convention on Climate Change,* 21 March 1994, Annex 1 [hereinafter *UNFCCC*].
[16] *ibid,* Article 3.1.
[17] *ibid*, Preamble (4).

from "more than 150 years of industrial activity."[18] Instead, "*developed country Parties* should take the lead in combating climate change;"[19] implementing "policies and measures [demonstrating how they] are taking the lead."[20] Vaguely worded, the UNFCCC established the implicit narrative for a global Northern leadership in the climate regime.

(2) Concerning the *Respective Capabilities of Countries,* given Northern higher income per capita and Southern fears that "climate change policy might translate into a cap on growth,"[21] the leading route entailed that developed-countries provide "financial resources, including for the transfer of technology, needed by developing country Parties to meet the agreed full incremental costs of implementing measures."[22] Moreover, whether developing countries "effectively implement their commitments"[23] was directly dependent on the North's scientific, technological, and financial assistance.

(3) As an ultimate objective, the UNFCCC sought to "stabilize GHG concentrations in the atmosphere within a level and time frame [consistent for diverse] ecosystems to adapt, protect food security, and promote sustainable economic development."[24] As developing countries could not "adopt the highest standards because of their economic situation,"[25] the Convention noted that their emissions needed to "grow to meet their social and development needs."[26]

Overwhelmed by post-Cold War euphoria, countries ratified the UNFCCC with remarkable speed, becoming a universal convention upon its entrance into force in March 1994. This centralized approach, that the climate regime would be headed by Annex I countries, initially generated consensus but it soon proved difficult to substantiate in practical terms. Framing commitments in neutral "scientific, sectoral, technological, and environmental terms,"[27] caused confusion as to whether *per capita emissions* were more important than *total emissions*,[28] resulting "subjective" and "non-scientific."[29] It thus provided the groundwork for future American reluctance towards ratifying legally-binding GHG reduction commitments.

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[18] Francesco Francioni and Christine Bakker, "The evolution of the Global Environmental System: Trends and Prospects in the EU and the US" in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 21.
[19] *UNFCCC*, Article 3.1.
[20] *UNFCCC*, Article 4.1.
[21] Gupta, *The History of Global Climate Governance,* 74.
[22] *UNFCCC*, Article 4.3.
[23] *ibid*, Article 4.7.
[24] Gupta, *The History of Global Climate Governance,* 62.
[25] *ibid,* 65.
[26] *UNFCCC*, Preamble (4).
[27] Gupta, *The History of Global Climate Governance,* 69.
[28] *ibid,* 66.
[29] *ibid,* 68.

When global climate governance first began to develop, the US exercised the typical leadership stance as accorded to it during the Cold War era. Already in the 1980s USA had been a leader in environmental initiatives, discussing the "seriousness of the problem and the need for sound science." Recognizing the "*special problems* of developing countries," it endorsed also "the aspirations of the developing world for economic development."[30] Not surprisingly, negotiations in 1992 reveal a classic unipolar order where the USA shaped the UNFCCC to its liking and engineered the "textual editing of articles on targets and principles."[31]

Though while most industrialized countries had voiced their will to adopt targets for generating consensus and a North-South compact,[32] USA notoriously opposed this approach. George H.W. Bush affirmed his refusal "to compromise on American lifestyles," stirring the first doubts in the international community over US willingness to reduce its "environmental footprint to make space for the economic growth of the South."[33]

Still, despite the presence of a Republican President in the White House, the UNFCCC was transmitted to the Democratically-controlled US Senate, and its approval "was agreed without controversy in less than a month."[34] The Convention overcame the US constitutional prerequisite for treaty ratification,[35] conventionally construed by an adversarial relationship between the executive and legislative branches. The UNFCCC entered into force and even though Bush's delegation had helped "create confusion in the wording of the targets," subsequent elections suggested "that climate change would likely be prioritized"[36] by the new Democratic Clinton-Gore government.

[30] Gupta, *The History of Global Climate Governance,* 51.
[31] Denny Ellerman, "The Shifting Locus of Global Climate Policy Leadership" in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 42.
[32] Gupta, *The History of Global Climate Governance,* 61.
[33] *ibid*.
[34] Ellerman, "The Shifting Locus," 42.
[35] *ibid*.
[36] Gupta, *The History of Global Climate Governance,* 77.

Europe's attitude towards environmental protection, during the 1960s and 1970s, has been generally described as "incidental," "responsive," and "unarticulated."[37] Though while it is "premature to think of a coherent set of EU environmental rules"[38] prior to the Stockholm Declaration, various legal scholars agree that the year 1972 laid the groundwork for an implied EU competence in the environmental domain, starting to evolve into a more consistent agenda during the 1980s.[39]

Explicit legal basis on environmental matters would be first included in the Single European Act (SEA) in 1986. Article 130(*r-t*) empowered the European Council and European Parliament with specific competences in EU environmental policy.[40] Subsequently, both the Treaty of Maastricht and the Treaty of Amsterdam further contributed to enhancing the environmental foundations of EU law.[41]

Amongst those Member countries that felt the need "to table the issue of climate change and secure the commitment of other countries,"[42] Germany and The Netherlands were the most proactive. Indeed, in 1989 The Netherlands had already adopted a national target to reduce 5% of emissions and, along with Germany, it helped collect "existing and new policy measures as a first step towards"[43] a supra-national stabilization strategy. By 1990 the then European Community (EC) of 12 nations accepted and adopted joint stabilization targets for GHG emissions,[44] indicating that it had every intention to uphold a leadership role in the worldwide environmental arena.

Leading up to UNFCCC deliberations, the EC had a relatively "strong negotiating position with its common targets and policy documents."[45] It had mobilized the support of aspiring EC member countries to endorse the setting up of "targets and timetables"[46] for developed countries, in blatant contrast to the United States preference. However, the EC suffered from internal divergences; member governments clashed in their opinions on major policy ideas and on what they were willing to commit to. Already, the "early efforts to adopt a common

[37] Laurens Jan Brinkhorst, "The Road to Maastricht," *Ecology Law Quarterly,* vol.20, iss.1, art. 2 (paper, Berkeley Law Scholarship Repository, 1993), 9.
[38] Emanuela Orlando, "The Evolution of EU Policy and Law in the Environmental Field: Achievements and Current Challenges," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 62.
[39] *ibid,* 62-63.
[40] European Community, Luxembourg, Belgium, 17-28 Feb. 1986, *Single European Act Amending Treaty Establishing the European Economic Community*, 1 July 1987, Article 130(*r-t*).
[41] Ellerman, "The Shifting Locus," 47.
[42] Gupta, *The History of Global Climate Governance,* 51.
[43] *ibid*.
[44] *ibid*.
[45] *ibid,* 95.
[46] *ibid,* 60.

carbon tax at EU level failed as countries were afraid to hand over authority over fiscal issues to the Commission."[47] This weakened the overall European position at the UN conference, disarming it from capably supporting its own agenda.

[47] Gupta, *The History of Global Climate Governance,* 158.

The Kyoto Protocol

In a preamble, 28 articles, and two annexes the Kyoto Protocol required "legally binding emissions on Annex I Parties,"[48] exempting those not listed. This rigid differentiation bound advanced countries to "develop cost-effective" programs for improving "the quality of local emission factors"[49] and implement various climate mitigation measures for relevant sectors.

The Kyoto Protocol also introduced three market-based mechanisms: the Clean Development Mechanism (CDM), Emission Trading (ET), and Joint Implementation. ET allowed countries with emission units in excess capacity to be sold to countries overusing their targets.[50] The CDM motivated industrialized countries to launch projects and investments in the South, incentivizing the transfer of clean technologies, know-how practices for reducing pollution, and increase transboundary scientific cooperation and capacity building,[51] without adversely impacting developing countries. Out of consideration for the EU's common market, Joint Implementation permitted the achievement of joint targets if a developed country chose to invest in "any other Annex B country" where it "may be cheaper"[52] than to domestically cut emissions.

The international context surrounding Kyoto discussions was not the most cooperative: the obligation that "developed countries must take on binding commitments, while developing countries may engage in voluntary action,"[53] was an incredible source of contention. Neo-liberal theories were studying the effects of unilateral and multilateral measures on market competitiveness, raising concerns that "measures in the North would be rendered useless by increasing emissions in the developing world."[54] There was increasing skepticism over delinking GHG emissions from industrial growth and competitiveness,[55] causing economic priorities to surpass concerns for climate variability.[56]

Suddenly, the "issue of who was free-riding"[57] became a topic of heated debate. The "excessive focus on GHG emission reduction [could] come at a cost for other sustainability issues" allowing industrialized countries to profit "from existing subsidies on resources in the

[48] Susan Biniaz, "I Beg to Differ: Taking Account of National Circumstances under the Paris Agreement, the ICAO Market-Based Measure, and the Montreal Protocol's HFC Amendment" (paper, Columbia Law School, Sabin Center for Climate Change Law, Jan. 2017), 1-2.
[49] Third Session of the Conference of the Parties to the UNFCCC*,* Kyoto, Japan, 11 Dec. 1997, *1997 Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC),* 16 February 2005, Article 10(a-b) [hereinafter *Kyoto Protocol*].
[50] Francioni and Bakker, "The evolution of the Global Environmental System," 21.
[51] *ibid*.
[52] *ibid*.
[53] Biniaz, "I Beg to Differ," 2.
[54] Gupta, *The History of Global Climate Governance,* 93.
[55] *ibid,* 94.
[56] *ibid,* 93.
[57] *ibid,* 94.

developing countries."[58] Contemporarily, Northern efforts to reduce emissions were perceived to cause a "large-scale leakage"[59] of industrial competitiveness to the free-riding developing world.

By the end of negotiations, with economic interests highly at stake, climate change was not considered much more than a "pseudo-agenda item"[60] linked to other historical issues of a North-South dimension where "developed countries were not showing expected leadership."[61] The Umbrella Group that had united Annex I countries since the UNFCCC was deteriorating into a game theory prisoner's dilemma. Irritated by the "lopsided approach"[62] introduced by the *Common but Differentiated Responsibilities and Respective Capabilities of Countries,* the United States and Australia were unwilling to ratify the Protocol unless developing countries also committed to reducing emissions.[63] In turn this initially provoked the EU to also denounce the ratification process, unless "USA and Japan did not do so."[64]

By 2000 only 33 countries had ratified Kyoto, "with Romania being the only developed country."[65] However, against all odds, the leadership void left behind by the most prominent representative of the unwilling North in global climate policy would eventually be filled; ratification peaked in 2004 and the Kyoto Protocol became operational by 2005.

[58] Gupta, *The History of Global Climate Governance,* 88.
[59] *ibid,* 94.
[60] *ibid,* 73.
[61] *ibid,* 97.
[62] Biniaz, "I Beg to Differ," 12.
[63] Gupta, *The History of Global Climate Governance,* 120.
[64] *ibid,* 94.
[65] *ibid,* 34.

The USA had a "very proactive environmentalist in Vice-President Al Gore,"[66] but its Senate was not as supportive. The 1997 Byrd-Hagel Resolution asserted how "the disparity of treatment between Annex I Parties and Developing Countries and the level of required emission reductions, could result in serious harm to the [US] economy, including significant job loss, trade disadvantages, increased energy and consumer costs, or any combination thereof."[67] The resolution, passed by a unanimous vote of 95-0, "with 45 Democrats sitting in the 100-member Senate."[68] It inaugurated a full *cost-benefit approach* in UD environmental policy: if "USA faced high GHG emission reduction costs" then it would not accept "binding quantitative targets unless key developing countries also participated meaningfully."[69] This was a strong signal that any future US commitment in reducing pollution would be conditional on commitment targets of developing countries.[70]

Despite provocative domestic difficulties, the Clinton administration did not walk out from the Kyoto conference. In 1997 Gore moved forward and ensured that the protocol reflected the "President's principles," by suggesting binding quantitative targets for all developed countries, and "the core elements of the American proposal,"[71] namely the inclusion of market-based mechanisms. USA also secured that the fate of the protocol "was not made captive to one or two large reluctant countries."[72] Its entrance into force required the ratification by "55 Parties to the Convention" accounting "for at least 55% of the total carbon dioxide emissions."[73] This implicitly ensured that even without US participation (responsible for 36.1% of the total world emissions), the Kyoto Protocol could survive if the EU (24%), Russia (17.4%), Japan (8.5%), and other smaller nations ratified it.[74] The US government then signed the agreement, but strategically decided to not submit it to the Senate's approval: "it was more politically convenient for both the Democratic administration and the environmental movement to suggest that the problem was the Republican-controlled Senate."[75] Circumventing the constitutional prerequisite,

[66] Gupta, *The History of Global Climate Governance,* 95.
[67] U.S. Congress, Senate, *Byrd–Hagel,* S.Res.98, 105th Cong., 1st sess., Congressional Record 105, no. 54, July 25 1997.
[68] Ellerman, "The Shifting Locus," 43.
[69] *ibid*, 79.
[70] Christine Bakker and Francesco Francioni, "Past, Present and Future of Transatlantic Cooperation for Climate Governance," in *The West and the Global Power Shift - Transatlantic Relations and Global Governance*, ed. Riccardo Alcaro, John Peterson, and Ettore Greco (London: Palgrave Macmillan 2016), 254.
[71] Gupta, *The History of Global Climate Governance,* 95.
[72] *ibid,* 85.
[73] *Kyoto Protocol*, Article 25.1.
[74] Gupta, *The History of Global Climate Governance,* 84.
[75] Ellerman, "The Shifting Locus," 45.

President Clinton preferred to "domestically implement" the treaty "as far as possible,"[76] thus exhibiting an implicit US leadership in climate policy.

At subsequent elections "the son of the President who had exercised the customary US role at the beginning of the 1990s"[77] came to power. George W. Bush's perspective on global warming was "infused with negationist arguments"[78] resulting in formal withdrawal from the Protocol in 2001. Perceiving these as scientific "uncertainties,"[79] Bush's tactic for advancing "environmental progress" relied on pursuing "alternative"[80] multilateral agreements which advanced investments in technological innovations chasing "economic growth."[81] The result was a "flurry of agreements on hydrogen, methane, renewable energy, carbon capture, biofuels, and clean development,"[82] including the International Partnership on the Hydrogen Economy, the Global Methane Initiative, the Renewable Energy and Energy Efficiency Partnership.

Although Bush claimed a 'side-effect' support for climate governance, experts have condemned these 'substitute' economic initiatives as "*competing with* and *distracting from* the UNFCCC."[83] Ultimately, the already weakened US leadership in the climate domain dwindled further to the point of effective abdication: throughout the Bush era, climate change policy shifted to the State-level governance: about 35 cities became members of the International Coalition of Local Environmental Initiatives[84] and the States of New York, Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Brunswick, and California pursued their own localized climate agenda.

[76] Gupta, *The History of Global Climate Governance,* 95.
[77] Ellerman, "The Shifting Locus," 42.
[78] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 254.
[79] George W. Bush, "President Announces Clear Skies & Global Climate Change Initiatives," (speech, Silver Spring, 14th Feb. 2002), The White House, <https://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html>.
[80] Gupta, *The History of Global Climate Governance,* 114.
[81] Bush, "Clear Skies & Global Climate Change Initiatives."
[82] Gupta, *The History of Global Climate Governance,* 122.
[83] *ibid,* 154.
[84] *ibid,* 171.

A tug of war ensued between the EU calling for a -15% emissions and the USA refusing to go beyond stabilizations. The eventual Kyoto compromise, -8% and -7% respectively, appeared to indicate a tie in the influence of its treaty provisions. The final draft, however, tilted in US favor with the inclusion of: sources and removals by sinks, hot air trading (which had been deemed by EU as a hindrance of any additional emission reductions), three additional greenhouse gases, the degree of supplementary (the EU proposed 50% while USA wanted no limits), and also the CDM framework. [85] Supported by the Umbrella Group and Russia, the United States prevailed in its own climate agenda and helped structure a treaty from which it eventually withdrew from four years later. Overwhelmed, European climate policy seemed "no different than foreign affairs and defense where a common position was seen to be impossible and the US had demonstrably been the indispensable actor in the EU's own backyard."[86]

The resulting global vacancy in climate governance, however, sparked a newfound opportunity for Europe to redeem itself from the failed carbon tax and demonstrate its ability to act unanimously. This implied, however, that Europe would have to adopt the very US-pioneered market mechanisms that it had objected to during deliberations. In 1998 the European Commission put forward the first Green Paper to discuss "the role that emissions trading could play in the EU's implementation of the Kyoto Protocol."[87] The EU Emissions Trading Scheme (EU ETS) would then be proposed in 2001, adopted unanimously in 2003, and become fully operative in 2005.[88] This would not have been possible without the support of "a number of important member states."[89] Germany, a frontrunner in mitigation, was one of the few members "to meet the UNFCCC 2000-stabilization target," and "achieve short-term emission reductions greater than any of its industrial partners."[90] Moreover, the Schroeder government pressed for harmonized energy taxes at EU level and pressured the Umbrella Group to compensate the "loopholes"[91] of Kyoto. Moreover, in October 2006, the Stern Review published in the UK argued that climate change was "the greatest and widest-ranging market failure ever seen,"[92] having "serious impacts on world output, on human life and on the environment."[93] With a new

[85] Ellerman, "The Shifting Locus," 95.
[86] *ibid,* 47.
[87] *ibid,* 46.
[88] *ibid*.
[89] *ibid.*
[90] Loren R. Cass, "Measuring the Domestic Salience of International Environmental Norms: Climate Change Norms in American, German, and British Climate Policy Debates," in *The Social Construction of Climate Change - Power, Knowledge*, *Norms, Discourses*, ed. Mary E. Pettenger (Aldershot: Ashgate Publishing Limited, 2007), 37-38.
[91] *ibid,* 40.
[92] Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2006), i.
[93] *ibid*, vii.

impulse for action, the British and Dutch prime ministers joined forces to make climate change "the top of the EU's agenda."[94] In anticipation that "early action can considerably outweigh the costs,"[95] the EU Council was requested to act immediately.

In its attempt to "keep up" with its Transatlantic counterpart, the EU began to "constantly work on improving and updating the ETS"[96] while becoming "institutionally stronger."[97] In growing from 15 to 25 members in 2004, 27 in 2007, and 28 in 2013, the EU's also grew confident in its abilities to act in a unified manner. The Union promoted strong targets for Kyoto's implementation, without which the treaty "would never have emerged."[98] By exercising strong pressure for its ratification on both Japan and Russia, the Protocol finally entered into force in 2005. Instead, the US regressed into a "passive observer"[99] and after Australia's accession to Kyoto in 2007, it became fully isolated in its reluctant position. Contemporarily, the European Union formalized its objectives to "promote measures at international level to deal with regional or worldwide environmental problems and, in particular, combating climate change."[100] The Treaty of Lisbon, adopted in 2007 and operative in 2009, had the effect of 'constitutionalizing' power in global climate governance in the hands of the European Union, thereby overtaking the traditional American stance in this domain and the EU ETS become "a prototype to be followed."[101]

[94] Mary E. Pettenger, "The Netherlands' Climate Change Policy: Constructing Themselves/Constructing Climate Change," in *The Social Construction of Climate Change*, ed. Mary E. Pettenger (Aldershot: Ashgate Publishing Limited, 2007), 65.
[95] Stern, *The Stern Review*, ii.
[96] Simone Borghesi and Massimiliano Montini, "The European Emission Trading System: Flashing Lights, Dark Shadows, and Future Prospects for Global ETS Cooperation," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 116.
[97] Gupta, *The History of Global Climate Governance,* 120.
[98] *ibid,* 85.
[99] Ellerman, "The Shifting Locus," 47.
[100] European Union, *Consolidated version of the Treaty on European Union*, 13 December 2007, 2008/C 115/01, Article 191(1) [hereinafter *TEU*].
[101] Borghesi and Montini, "The European Emission Trading System," 117.

The Paris Agreement

Leading up to 2008, a financial crisis in USA spilled over to the European continent, leading to a collapse in banks, a fall in national growth rates, and the start of the Global Recession.[102] Recovery slowed down in developed countries, but large developing countries appeared to be booming. "China, South Africa, Brazil and India were becoming richer,"[103] overtaking the pollution patterns of the industrialized North. Thus, after two decades of intransigent emphasis on the principle of *Common but Differentiated Responsibilities*, the distinction between industrialized and developing countries had become practically obsolete. The failure of the Copenhagen Conference in 2009 accentuated the need to break the impasse in the international debate and move "beyond a Kyoto-style, bifurcated regime by providing a broadly acceptable alternative[104]."

Bearing in mind the changes of the world's emission patterns, negotiations at the Paris Climate Conference in December 2015 observed substantial discussions over "a long-term framework for addressing both mitigation of climate change and adaptation to climate impacts."[105] First, the traditional concept of differentiation was updated:[106] the formulation of the principle of "Common but Differentiated Responsibilities," was framed "in light of different national circumstances."[107] This supplementation denoted a "fundamental change in the legal nature" [108] of the new climate accord. Instead of legally-binding commitments, the new formula would be founded on States' *voluntary commitments* and their design of Intended Nationally Determined Commitments (INDCs) to reduce emissions.[109] Despite representing a danger for the enforcement and efficiency of the resulting treaty, the new formula attracted a wider range of countries, enlarging the number of parties from the initial 37 industrialized States that adhered to Kyoto. Though most importantly, the USA and the main economies in transition, particularly China, upturned their conventional persistent reluctance and "agreed to play their part in Paris."[110] Currently ratified by 146 of 197 parties to the UNFCCC, and in force since November 2016, the Paris Agreement has the potential to ensure a long-lasting international commitment in safeguarding environmental protection.

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[102] Gupta, *The History of Global Climate Governance,* 123.
[103] *ibid*.
[104] Biniaz, "I Beg to Differ," 13.
[105] *ibid,* 12.
[106] *ibid,* 12.
[107] Twenty-First Session of the Conference of the Parties to the UNFCCC, Paris, France, 30 Nov. -12 Dec. 2015, *Paris Agreement under the United Nations Framework Convention on Climate Change,* 4 November 2016, Article 2.2 [hereinafter *Paris Agreement]*.
[108] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 260.
[109] *ibid,* 258.
[110] *ibid*.

Overcoming the classic North-South connotation was "an extremely important step forward"[111] towards achieving a landmark agreement for keeping the "global temperature rise below +2°Celsius above pre-industrial times and possibly limiting it further to +1.5°Celsius."[112] Nations appeared more encouraged to commit to a climate agreement, recognizing the need to act collectively in "finance, technology, development and transfer, and capacity building."[113] However, the new agreement provides no concrete consequences in the likelihood that States defect on commitments. Although the treaty envisages transparent arrangements for monitoring domestic action, [114] INDCs are not included within the text itself. These are noted in "a separate non-legally binding document"[115] based on each government's official announcements to the UNFCCC secretariat. Thus, if influential countries defer it would be an immense danger to the success of the agreement, irreversibly affecting environmental protection.

The relentless struggle against climate change is now dependent "on the willingness of the *larger group of participating States* to adopt progressively ambitious targets through their INDCs" and on their motivation "to comply with their own voluntary commitments."[116] These concerns have taken center stage after the election of Donald Trump and his announcement to withdraw from the Paris Agreement. Most certainly, the upcoming Conferences of the Parties and future multilateral negotiations are expected to face unforeseen obstacles.

[111] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 262.
[112] *Paris Agreement*, Article 2.1.a.
[113] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 260.
[114] *ibid,* 259.
[115] *ibid*.
[116] *ibid,* 262.

The outlook for a renewed US leadership was more optimistic under President Obama: "a sigh of relief could be heard in Europe. An era of new rapprochement was optimistically expected, where the US would soon align itself with the EU and commit to the UN climate negotiations."[117] At the Copenhagen Summit in 2009, Obama had pledged that USA "would reduce its carbon emissions 17% below 2005 levels by 2020."[118] Though while emissions may have gradually declined, the US Senate still rejected Obama's federal climate proposal in 2010. It was not until his second mandate that the former President began to reach out to the main economies in transition, aware of having been overtaken in GHG per capita emissions.

In November 2014, USA and China released a joint declaration affirming their bilateral commitment to climate change and also announced unilateral mitigation targets for 2025 and 2030, respectively.[119] By 2015 more joint agreements were issued with other States, including Mexico, Brazil, and India.[120] However, due to persistent divergences in environmental debates, USA hadn't issued any bilateral statement with the EU (forecasting so future discussions over the binding clauses of the Paris Agreement).[121]

Nevertheless, the US was showing remarkable initiative in climate policy, igniting hopes worldwide. Sino-American efforts to curb emissions culminated with the adoption of the Paris accord: the largest emerging country and the largest advanced country, who combined account for 38% of world emissions,[122] now cooperated "in light of different national circumstances."[123]

Bound by a universal accord it helped forge, a resumption of American leadership in global climate policy felt natural; however, USA is presently navigating in troubled waters. Obama's executive order for reducing coal power plant pollution met severe domestic resentment: first stalled by the Supreme Court and then by Donald Trump's "all-out assault,"[124] to review the Clean Power Plan. The new President further launched an extensive array of executive orders which have repealed Obama's signature climate policies.

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[117] Mark Olsthoorn, "Climate Change and the Future of Clean Energy: Toward Transatlantic Convergence," in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), 28.

[118] *ibid,* 28.

[119] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 258.

[120] *ibid*.

[121] *ibid*.

[122] Tom Phillips, Fiona Harvet, and Alan Yuhas, "Breakthrough as US and China agree to ratify Paris climate deal," *The Guardian*, 3 Sept. 2016, accessed 4 Dec. 2016, <https://www.theguardian.com/profile/tomphillips>.

[123] *Paris Agreement*, Article 2.2.

[124] David Smith, "Trump moves to dismantle Obama's climate legacy with executive order," *The Guardian*, 28 March 2017, accessed 4 April 2017,
<https://www.theguardian.com/us-news/2017/mar/28/trump-clean-power-plan-executive-order-coal-industry>.

In his scaling up of protectionism, Trump at first began to retreat from various multilateral trade agreements in efforts to squeeze "economic concessions from China on trade and alleged currency manipulations."[125] Already infamous for his very controversial take on global warming, Donald Trump would go so far as to claim that "Global warming is an expensive hoax!"[126] Together with Congress, his cabinet then openly "threatened to block any appropriations for the US Paris commitment to contribute to the financing of climate action in developing countries."[127] Trump's retaliatory efforts culminated on 1st June 2017 when he announced US withdrawal from the Paris climate accord, claiming he would only be willing to reenter global discussions if "terms" deemed to be "fair to the United States, its' businesses, its' workers, its' people, its' taxpayers"[128] would be accommodated.

After overcoming prolonged diplomatic negotiations and slow progress, the US is yet again failing to honor another international climate treaty, with repercussions undercutting "diplomatic priorities across the globe."[129] Trump is not only jeopardizing a two-decade long-standing hurdle to involve the developing world in global climate commitments, particularly China and India, but he is posing significant threats for humanity's environmental safety.

[125] Stefan Fröhlich, "Germany Cannot Replace the US, But Europe Can Live with Trump" (paper, Johns Hopkins School of Advanced International Studies, Center for Transatlantic Relations, 2017), 5.

[126] Smith, "Trump moves to dismantle Obama's climate legacy with executive order."

[127] Paul Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition," *Elcano Royal Institute*, 17 Feb. 2017, accessed 15 March 2017, <http://www.realinstitutoelcano.org/wps/portal/rielcano_en/contenido?WCM_GLOBAL_CONTEXT=/elcano>.

[128] Donald J. Trump, "Announcement that the US will quit Paris climate agreement," (speech, Washington D.C., 1st June 2017) The Guardian, <https://www.theguardian.com/environment/live/2017/jun/01/donald-trump-paris-climate-agreement-live-news>.

[129] George P. Shultz and Ted Halstead, "The Business Case for the Paris Climate Accord," *The New York Times*, 9 may 2017, accessed 9 may 2017, <https://www.nytimes.com/2017/05/09/opinion/the-business-case-for-the-paris-climate-accord.html>.

At the start of the Paris negotiations, the transatlantic partners notably diverged over the "exact legal nature of the new climate agreement."[130] At the Durban Conference of the Parties in 2011, the EU encouraged the adoption of a worldwide legally-binding agreement, equally for all Parties, to guarantee mitigation measures and "continued GHG emission reductions after the second period of the Kyoto Protocol."[131] In March 2015, the European Commission reemphasized the need for *binding national commitments,* arguing that it would provide more certainty to governments, markets, private sector, investors, NGOs, and to the people who suffered from the externalities of climate change.[132] In stark contrast the USA, aware that political division in Congress would hamper the approval of a new climate treaty, supported a "more nimble" international framework avoiding the customary "consensus-based"[133] amendment process, which had repeatedly delayed progress in past negotiations.

The final compromise on a 'hybrid approach,' which included legally binding and non-binding elements, was deemed as the best solution for the new climate treaty to result agreeable to all.[134] The remaining legally binding obligations faithful to the EU's top-down design include:

1) Article 2.1.a: the long-term temperature goal to keep the "increase in global average temperature to well below 2°C above pre-industrial levels and [pursue] efforts to limit the temperature increase to 1.5°C above pre-industrial levels."[135]
2) Article 4.1: the aim to reach "global peaking of [GHG] emissions as soon as possible […] and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of [GHGs] in the second half of this century…"[136]
3) Article 4.5: "support shall be provided to developing country Parties'" through financial support (enshrined in Article 9), the transfer of technologies (Article 10), and the capacity building (Article 11). [137]
4) Article 4.9: to evaluate progress and set progressively ambitious targets, "every party shall communicate a nationally determined contribution every five years […] and be informed by the outcomes of the global stocktake [Article 14.1]."[138]

[130] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 260.
[131] *ibid*.
[132] *ibid*.
[133] *ibid*, 260-261.
[134] *ibid*, 261.
[135] *Paris Agreement*, Article 2.1.a.
[136] *ibid*, Article 4.1.
[137] *ibid*, Article 4.5.
[138] *ibid*, Article 4.9.

5) Article 13: to establish a "transparency framework for action and support" by reporting on the progress in achieving in "effective implementation" of the national targets.[139]

These commitments, however, are general in nature with "little possibility of legal enforcement;"[140] whereas the decision of "scale and pace of national emissions reductions,"[141] is of a voluntary non-binding legal nature. The compromise on the final draft of the treaty once again tilts in US favor and prevailing bottom-up design allowing each Party to determine its own emission targets.[142] Behind this rationale was the aim to circumvent US Congress, as in 1997, and instead rely on domestic authorities for implementation (i.e. Obama and the Clean Power Plan). However, it is a déjà-vu for Europe who finds itself endorsing an international agreement reflecting the US agenda more than its own domestic interests: it surrendered an accord that could have been legally binding in *all* aspects for the sake of broadening the number of participants.

Following EU ratification in November 2016, the threshold of 55 members producing at least 55% of total greenhouse gas emissions was reached and treaty became operational.[143] Although not a textual reassurance, ratification by USA and China, as well as other emerging economies, still sent the clear signal for a global commitment to fight climate change; at least until Donald Trump was voted into office. His hostility towards the spirit of the agreement can profoundly influence the international stage. Although it would take four years, withdrawal by one of the prime architects of the treaty could trigger a domino effect across the globe, incentivizing "emissions free-riding by other parties to the accord"[144] and potentially deadlocking the system as each country once again follows suit in conditioning its own actions on the those of others. In the past, the EU was vital in filling out the breaches by setting ambitious targets, by convincing states to ratify Kyoto, and by concluding bilateral agreements. However, the negative effects of the Eurozone crisis, epitomized by the Brexit Referendum, beg the question of whether the EU is now obsolete in its role as a world leader of the climate regime.

[139] *Paris Agreement*, Article 13.
[140] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 262.
[141] *ibid,* 261.
[142] *ibid*.
[143] *Paris Agreement*, Article 21.
[144] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."

CHAPTER II

RECONCILING CLIMATE WITH ENERGY SECURITY

The energy sector is unquestionably one of the most important dynamics behind international political and economic relations. The pursuit for socio-economic development unfolds with the exploitation of fossil fuels for energy (electricity, transport, industrial production), resulting in high greenhouse gases emissions fouling our air and water, and altering our resource availability and atmospheric conditions. It follows that worldwide energy consumption is the leading driver of global warming. Oil, natural gas, and coal are difficult-to-substitute goods in the world energy mix: fossil fuels "satisfy 81% of global energy demand,"[145] and ample scientific evidence unveils their responsibility for "69% of global anthropogenic greenhouse gases emissions."[146]

Energy consumption, however, is repeatedly disturbed by the international price distortions of fossil fuels, affecting demand patterns across the world: "oil price levels and oil price volatility have been a constant source of concern."[147] Naturally, the debt crises that shook the US and Eurozone not only led "to a flat" in demand "by around 7%,"[148] but also paralleled a decline in GHG emissions. Limiting an increase of two degrees centigrade in average temperatures compared to preindustrial levels requires emissions "to peak around 2020"[149]—yet, energy consumption is still likely to rise 40% further between 2015 and 2035. Most disturbingly, if emission trends continue unabated with a "1.7% average growth per annum,"[150] the world will exceed a five degrees centigrade compared to pre-industrial times by the end of this century.[151]

The key to a more sustainable energy future inherently lies with the demand side of the energy market, which is linked to major fears around the future structure of the same market and unknown levels in energy security. It is therefore considerably self-evident that concerted multi-level political efforts are essential for reducing the amount of atmospheric pollution. Indeed, decoupling energy consumption from economic growth, entails addressing core national concerns over the availability and affordability of fossil fuels, where only *real economic benefits* can alter "consumption patterns and prevailing attitudes towards energy production and usage."[152].

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[145] Mihaela Carstei, "Innovation in the Energy Economy: An Imperative for Transatlantic Cooperation," in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), 85.

[146] *ibid*.

[147] Kristen Westphal, "Energy in an Era of Unprecedented Uncertainty: International Energy Governance in the Face of Macroeconomic, Geopolitical, and Systematic Challenges" in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), 3.

[148] Antony Froggatt, Estelle Rouhaud, and Tereza Svačinová, "The Importance of Coherent and Integrated Agriculture Policies in Meeting EU Climate Change Objectives," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 99.

[149] Westphal, "Energy in an Era of Unprecedented Uncertainty," 3.

[150] *ibid,* 18.

[151] Dan Dorner et al., *Redrawing the Energy-Climate Map*, World Energy Outlook Special Report, ed. Robert Priddle (Paris: International Energy Agency, 2013), 9.

[152] Koranyi, "Towards a Transatlantic Energy Alliance," xii.

Against the backdrop of this complex interplay, the United States and the European Union have undoubtedly been affected by global energy trends and, most certainly, the two transatlantic partners have also contributed their share of influence. Surprisingly, despite sharing similar concerns in energy security, differences in lifestyle traditions, industry and resource endowments, as well as varying beliefs on the role of the market and government[153] have prompted contradictory attitudes in the priority order of climate policies. Assessing the rationale behind domestic regulations, implementation of market based mechanisms, and investments in renewable energy sources, will reveal two "completely different paradigms"[154] between the two sides of the Atlantic. Having rarely overlapped in the environmental agenda, the distinct approach of each Transatlantic Partner reveals the extent of its role as a leader in climate governance.

[153] Olsthoorn, "Climate Change and the Future of Clean Energy," 30.
[154] *ibid,* 37.

Confronting Energy Consumption Patterns

In a world of volatile fossil fuel prices where the "use of energy as a political tool" stirs a "grim set of factors affecting any energy importing country,"[155] economically viable supplies becomes a top political and economic priority. Although both the United States and Europe are "big energy markets that produce energy on their own territories,"[156] these two regions greatly depend on primary energy imports, thereby becoming "more vulnerable to various pressures from energy exporters."[157]

Therefore, in attempt to compensate this fallacy, the two Transatlantic Partners have significantly diverged in their environmental concerns and policy priorities. Tailored to each country's prerequisites, the level of implementation of domestic regulatory measures and reduction-targets fulfillment has varied considerably between the USA and the EU, not always reconciling strict energy concerns with the needs of the international climate regime.

[155] Reinis Aboltins, "The Future of Renewable Energy," in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), 127.
[156] *ibid*.
[157] *ibid*, 125.

Since the 1960s and 1970s, US energy consumption widely surpassed its domestic productive capacities, becoming "a major concern"[158] after the oil embargo in 1973. Forty years later, oil remains the "Achilles heel"[159] of the US economy, with imports from foreign suppliers accounting for "50% of total"[160] domestic consumption.

The federal strategy has been extremely fractured on energy security for decades, much to the frustration of American leaders supporting "economy-wide plans to reduce greenhouse gases."[161] The Clinton administration was plagued by an overt Congressional reluctance to ratify any "prospective international legal instruments on climate change,"[162] without imposing binding targets also on "newly industrialized and highly polluting states."[163] The subsequent Bush Government devoted most of its efforts to "increasing domestic production of fossil fuels,"[164] typically disregarding cleaner alternatives. It was only when oil prices skyrocketed in 2008, at 147$ per barrel, that USA had a greater "impetus to search for other sources of energy,"[165] and pursued greater "demand-side measures."[166]

The first mandate of the Obama administration mostly dealt with plans on reviving the domestic economy, mildly hinting at a US climate agenda by "tightening fuel efficiency standards for new cars, supporting the development of wind and solar power through grants, tax incentives and loan guarantees."[167] It was during his second mandate that Obama began to take more explicit action to limit pollution, promising "to respond to the threat of climate change knowing that the failure to do so would betray our children and future generations."[168] Energy security concerns were alleviated by the "discovery of large quantities of shale gas"[169] assuring a domestic "physical access to energy."[170] A "*cleaner burning* of natural gas as a fuel,"[171] gradually

[158] Helena Schulzová, "Adjustments of US Energy Policy to Climate Change: Trends at the Federal and State Level," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 182.
[159] Olsthoorn, "Climate Change and the Future of Clean Energy," 30.
[160] Schulzová, "Adjustments of US Energy Policy," 181.
[161] Bernice Lee and Diarmuid Torney, "New Drivers of US Climate Action? The Politics of Extreme Weather and Adaptation," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 163.
[162] *ibid*.
[163] Francioni and Bakker, "The evolution of the Global Environmental System," 22.
[164] Schulzová, "Adjustments of US Energy Policy," 184.
[165] Gupta, *The History of Global Climate Governance,* 124.
[166] Lee and Torney, "New Drivers of US Climate Action," 174.
[167] *ibid,* 163.
[168] Barack H. Obama, "Inaugural Address by President Barack Obama" (speech, Washington DC, 21st January 2013), The White House, <https://obamawhitehouse.archives.gov/the-press-office/2013/01/21/inaugural-address-president-barack-obama>.
[169] Gupta, *The History of Global Climate Governance,* 156.
[170] Lee and Torney, "New Drivers of US Climate Action," 163.
[171] Nigel Purvis, Cecilia Springer, and Samuel Grausz, "The New US Domestic Climate and Clean Energy Agenda," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 201.

took over: total GHG emissions had "increased by 8.6%"[172] between 1990 and 2011, but then "decreased by 6.8% with respect to 2005 levels," expecting the US to reach Obama's pledge for "a 17.5% reduction by 2020."[173]

Additionally, in 2013 Obama announced a clear line of executive action under the Clean Air Act (1990).[174] Finalized in 2015, the Clean Power Plan was "the first ever nationwide standards to end the limitless dumping of carbon pollution from power plants."[175] To circumvent the lack of legislative support in Congress, the plan broadened the Environmental Protection Agency (EPA) regulation on already existing laws for coal-burning power plants, in order to lower pollution by 32% by the year 2030.[176] This required more investments in power-generating facilities as well as a compulsory State-level planning for reduction standards to be reached within 15 years, relative to a State's "different energy mix."[177]

In a historic turn of events the US government had finally taken real action on climate change: there had "never been federal limits on the amount of carbon that power plants can dump in the air."[178] By 2016 the EPA had worked with more than thirty States, among fifteen of which "had completed State adaptation plans, and another four were in the process of formulating plans."[179] These included several of the major utilities in the Midwest and Southern heartlands, such as the American Electric Power in Ohio, Xcel in Minnesota, and DTE in Michigan.[180]

Nonetheless the coal industry and most coal-producing States forcefully campaigned against unemployment externalities and demanded a longer implementation period.[181] In February 2016, the Supreme Court's 5-4 ruling to halt the curbing of power plant emissions infused further uncertainty in US climate leadership.[182] Initially dismissed as a "bump in the road,"[183] the EPA continued to work with willing States. Yet upon entering into office, Trump condemned Obama's "flagship policy to curb carbon emissions," as "a crushing attack on American industry."[184] With a sweeping executive order in April 2017, the new president initiated a review of the Clean Power Plan, deeming to remove "job killing restrictions" in order

[172] Francioni and Bakker, "The evolution of the Global Environmental System," 23.
[173] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[174] Ellerman, "The Shifting Locus," 51.
[175] Barack H. Obama, "Remarks by the President in Announcing the Clean Power Plan" (speech, Washington DC, 3rd August 2015), The White House, <https://obamawhitehouse.archives.gov/the-press-office/2015/08/remarks-president-announcing-clean-power-plan>.
[176] *ibid.*
[177] *ibid.*
[178] *ibid.*
[179] Lee and Torney, "New Drivers of US Climate Action," 167.
[180] Suzanne Goldenberg, "Supreme court to block Obama's sweeping climate change plan," *The Guardian*, 9 Feb. 2016, accessed 10 Dec. 2016, <https://www.theguardian.com/environment/2016/feb/09/climate-change-supreme-court-barack-obama-plan>.
[181] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 257.
[182] Goldenberg, "Supreme court to block Obama's sweeping climate change plan."
[183] *ibid.*
[184] Smith, "Trump moves to dismantle Obama's climate legacy with executive order."

to make "America wealthy again."[185] This supply-side approach further repealed the Climate Action Plan and former restrictions on the Keystone XL and Dakota Access pipelines.[186] Trump's energy and foreign policies, jointly aspiring "to carry the same 'America First' banner,"[187] emphasize a noticeable fossil-fuel favoritism. Easing "regulatory and access conditions for fossil fuels"[188] and imposing a border adjustment tax on oil imports (trade protectionism), could significantly shift US trajectory away from enforcing the Paris Agreement.

When it becomes blatantly clear that federal-level commitments are dim, State-level authorities tend to embrace their decentralized powers, taking initiative to incorporate climate threats into their planning processes. Since the late 1990s, the State of New York aimed to reduce its "GHG emissions by 5% in 2010 and 10% in 2020/1990 levels."[189] In 2001, the States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, and New Brunswick, adopted a climate change plan to reduce emissions "by 10% by 2020/1990 levels."[190]

Today, in lifting suspensions on the sale of coalmining leases on federal land, Trump's rollback of Obama's climate legacy returns power on energy production to the individual State-level. To date, the governors of California, Colorado, and New York have asserted their intention to uphold their climate action plans,[191] but great concerns lie with coal-fired and natural gas-fired plants in Wyoming, West Virginia, Kentucky, Pennsylvania, and many others who are more interested in pursuing their own economic agenda at the great expense for the environment.

[185] Smith, "Trump moves to dismantle Obama's climate legacy with executive order."
[186] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[187] *ibid.*
[188] *ibid.*
[189] Gupta, *The History of Global Climate Governance,* 171.
[190] *ibid*.
[191] Goldenberg, "Supreme court to block Obama's sweeping climate change plan."

As the most dependent region in the world, with 64% of its total consumption reliant on Norway, Russia, Algeria, and Qatar,[192] energy security has been high on the EU political agenda since the founding treaty of the European Coal and Steel Community (1951). Responsible for "11% of global GHG emissions,"[193] a significant reform of the EU energy sector (60% of its domestic pollution) is necessary for matching the aims enshrined in the Lisbon Treaty and create "more stable economic growth and more jobs—with the exploration of cost-effective options for reducing greenhouse gas emissions."[194]

In this context, the *Climate and Energy Package* is a milestone towards an EU "energy-efficient and low-carbon economy."[195] In 2009 it compelled a "20% GHG reduction target "[196] by the year 2020, leaving room for an additional increase to 30% "if similar efforts are made by other major countries of the world."[197] Based on the "relative wealth in terms of GDP per capita" of each Member State, the EU established *effort-sharing* commitments to a "10% reduction overall compared with 2005 levels" [198] for agriculture, waste, and transportation.

As the Union progressed towards its 2020-target, in January 2014 the European Commission ambitiously published *A Policy Framework for Climate and Energy in the Period from 2020 to 2030*, based on the Low Carbon Roadmap of 2011, which suggested a "virtual de-carbonization of the power sector"[199] via "interim targets"[200] amounting to an 80% domestic reduction, below 1990 levels, by the year 2050. The new binding framework for 2030 proposes a future reduction "of 40% below 1990 levels, a *EU-wide binding target* for renewable energy of at least 27%, and a renewed emphasis on energy efficiency."[201] Certainly, both the 2020 and 2030 EU targets for climate and energy are closely linked to Europe's global efforts to cut greenhouse gas emissions, thereby respecting a "2-degree guardrail"[202] even before the beginning of deliberations for the Paris Agreement.

Nonetheless this announcement stirs conflict for effort-sharing norms between the rich

[192] Nicolò Sartori, "Energy Security," (lecture, Security Studies, Rome, LUISS Guido Carli, 18 Nov. 2016).
[193] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 95.
[194] Pál Belényesi, "The European Carbon Trading System after 2012 – Implications to the US," in *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States,* ed. David Koranyi (Washington, DC: Center for Transatlantic Relations, 2011), 58.
[195] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[196] Nils Meyer-Ohlendorf et al., *The Next EU Climate and Energy Package – EU Climate Policies after 2020* (study, Ecologic Institute, Berlin, Ecologic, 2014), 4.
[197] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 95.
[198] Meyer-Ohlendorf et al., "The Next EU Climate and Energy Package," 50.
[199] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 5.
[200] Meyer-Ohlendorf et al., "The Next EU Climate and Energy Package," 21.
[201] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 74.
[202] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."

and the relatively poor Member States.[203] While the 2020 framework barely required the former Eastern bloc to restrain emissions –wealthier partners deepened their cuts leaving others "room to grow"[204] –the 2030 criteria pioneers a *unilateral* EU target. Though Poland and Czech Republic, whose initial aspiration to join the EU had pressed them to accept stabilization targets in 1992 and 1997,[205] are now disrupting EU climate policy because coal is an important source for electricity.[206] Due to low carbon and coal prices, the EU's "60% coal capacity (124 GW)" is not in compliance with the Industrial Emissions Directive (IED); curtailing the use of coal for reducing emissions after 2020 requires "expensive retrofitting."[207] Thus, the 2050 ambitions imply heavy restraints, otherwise European coal plants would have to "be limited to no more than 17,500 hours between 1 January 2016 and December 2023."[208] Concerned with economic costs (90% of energy sources derive from coal), [209] Warsaw and Prague are rejecting "the 8-9% target consistent with its GDP per capita."[210]

It would appear that the "original solidarity is beginning to crack under the burden of the financial crisis,"[211] but an alignment between EU energy security and domestic climate policy is still clearly discernable among the Green Growth Group (including Germany, The Netherlands, France, Spain, Belgium, Portugal, United Kingdom, Sweden, Finland, Denmark, Italy, Luxembourg and Slovenia). Germany, the most "heavily industrialized" European country, where coal is also an abundant source of energy, is implementing "effective and bold policies," to transition its "manufacturing economy" towards a "new, clean energy technology sector."[212] As the foremost advocate for decentralizing coal-dependent energy, it has introduced an "environment tax on electricity, mineral oil, and natural gas consumption"[213] and works towards "a path for reduction of GHG by 80% until 2050."[214] This is a clear demonstration to those Members' "whose wealth is rooted in coal, heavy industries, and low power prices" that they "can gain a competitive edge from climate protection and clean energy development."[215]

Other notable members of the Green Growth Group pushing for "a stable investment

[203] Joshua P. Meltzer and Tim Boersma, "Challenges to the European Union's Post-2020 Climate and Energy Framework," *Brookings*, 16 June 2014, accessed 17 Dec. 2016, <https://www.brookings.edu/blog/planetpolicy/2014/06/16/challenges-to-the-european-unions-post-2020-climate-and-energy-framework/>.
[204] Megan Darby, "Effort sharing: EU climate negotiations set to strain unity," *Climate Home*, 6. July 2016, accessed 17 Dec. 2016, <http://www.climatechangenews.com/2016/06/07/effort-sharing-eu-climate-negotiations-set-to-strain-unity/>.
[205] Gupta, *The History of Global Climate Governance,* 159.
[206] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 101.
[207] *ibid.*
[208] *ibid.*
[209] Meltzer and Boersma, "Challenges to the European Union's Post-2020 Climate and Energy Framework."
[210] Darby, "Effort sharing: EU climate negotiations set to strain unity."
[211] Gupta, *The History of Global Climate Governance,* 20.
[212] Olsthoorn, "Climate Change and the Future of Clean Energy," 31.
[213] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 256.
[214] *ibid,* 255.
[215] Olsthoorn, "Climate Change and the Future of Clean Energy," 31.

climate [to] move the continent toward a low-carbon economy,"[216] are The Netherlands and the United Kingdom. The former has encouraged "sub-national authorities to promote climate measures,"[217] resulting in more than half of its cities developing their own strategies. While the latter, under EU persuasion, took a unique step with the Climate Change Act in 2008, committing future governments to four consecutive five-yearly carbon budgets for reducing emissions to 80% by 2050.[218] The fifth carbon budget, covering the period 2028-2032, was legislated by UK Parliament in July 2016 and by the new May-Government following the Brexit vote.[219] Committed "to a 57% reduction in emissions from 1990 to 2030,"[220] the targets are part of UK's "contribution to global efforts to tackle climate change, including the Paris Agreement" [221] and it must endorse its obligations even after leaving the European Union.

[216] Meltzer and Boersma, "Challenges to the European Union's Post-2020 Climate and Energy Framework."
[217] Gupta, *The History of Global Climate Governance,* 171.
[218] Owen Bellamy et al., *Meeting Carbon Budgets – Implications of Brexit for UK Climate Policy*, (briefing note presented at the annual meeting for the Committee on Climate Change, London, 2016), 6.
[219] *ibid,* 5-6.
[220] *ibid,* 2.
[221] *ibid.*

Adopting Emission Trading Schemes

Following the Rio Conference, worldwide climate negotiations began to focus on ways for strengthening existing and future environmental agreements. Anxieties followed an economic rationale: "less efficiency and higher GHG emissions cost money."[222] Ultimately, to strengthen the enforcement of multilateral agreements, without aggravating economic costs, a compromise was found by suggesting the implementation of market mechanisms.

The cap-and-trade scheme, the most prominent market-based solution, respects legitimate "aspirations for growth"[223] by incentivizing nations to engage in a "trading scheme of fixed total quotas."[224] The resulting emission trading system (ETS) was introduced by the Kyoto Protocol in 1997 for "the purposes of fulfilling [State] commitments under Article 3,"[225] namely to reduce "overall emissions of [GHG] by at least 5% below 1990 levels in the commitment period 2008 to 2012."[226] The ETS distributes emission quotas among stakeholders, who can buy or sell within the limited value of an "ex ante fixed"[227] total quantity of GHG emissions.

A deep-seated difference in Transatlantic relations further concerns the approach towards implementing emissions trading schemes, disclosed by the US reluctance to ratify the Kyoto Protocol and its more recent failure to endorse a nation-wide market-based mechanism. In blatant contrast, the EU's domestic emission trading system (EU ETS) has extended its GHG reduction targets, overarching also with the EU's objectives in bilateral and multilateral relations.

[222] Aboltins, "The Future of Renewable Energy," 126.
[223] Stern, *The Stern Review*, vii.
[224] Belényesi, "The European Carbon Trading System after 2012," 57.
[225] *Kyoto Protocol*, Article 17.
[226] *ibid,* Article 3.
[227] Belényesi, "The European Carbon Trading System after 2012," 57.

Emission trading was first introduced in USA following the 1970 amendment of the Clear Air Act.[228] It ensured that a specific quantity, or 'cap,' of pollution led to the most expense-efficient 'trade' on established pollution regulations.[229] At first other countries were quite skeptical about the use of the ETS as an incentive for fulfilling environmental obligations "with less cost and greater efficiency."[230] However, the success of emissions reductions among several American States subsequently encouraged others with a more traditional liberal approach to adopt similar market-based instruments. This became especially apparent following the ratification of the Kyoto Protocol, which had been strongly backed by the US delegation during negotiations. Surprisingly, while Anglo-American countries such as Australia and the UK,[231] as well as the European Union as a whole, moved towards reducing their domestic emissions under Kyoto's regime, the USA never even ratified the Protocol that it had helped frame.

During the Bush Presidency the debate on global warming focused instead on the "best" type of approach that could confront the "uncertainties"[232] of climate science and the more certain concerns over US energy security. As a result, the belligerent lobbying of a "cocktail of free-market ideology mixed with a refined and well-funded 'doubt-machine' of think tanks and media outlets," eventually persuaded the consideration that "man-made climate change" and the inherent need for clean energy was both an "unproven theory" and an "ineffective pet policy of a socialist government and a waste of hard-earned tax dollars."[233] Only two energy reform bills were adopted, the Energy Policy Act in 2005 and Energy Independence and Security Act in 2007. Although both bills reaffirmed a federal "sense of bipartisanship on energy," by enjoying wide spread support from both legislative chambers, "neither gave a clear direction" nor proposed any "groundbreaking changes"[234] to the US energy sector.

The Obama administration somewhat tried to change this approach, introducing the American Clean Energy and Security Act in 2009. The reform envisaged "17% emissions reductions by 2020 and 83% by 2050 compared to 2005," together with a "nationwide emissions trading system."[235] To ensure its passing in Congress, the Democratic Party decided "to concede as little as possible to obtain the 50%+1 vote."[236] However, by relying on a *partisan* majority, the

[228] Borghesi and Montini, "The European Emission Trading System," 116.
[229] Belényesi, "The European Carbon Trading System after 2012," 57.
[230] Borghesi and Montini, "The European Emission Trading System," 116.
[231] *ibid*.
[232] Bush, "Clear Skies & Global Climate Change Initiatives."
[233] Olsthoorn, "Climate Change and the Future of Clean Energy," 28.
[234] Schulzová, "Adjustments of US Energy Policy," 184.
[235] Olsthoorn, "Climate Change and the Future of Clean Energy," 28.
[236] Ellerman, "The Shifting Locus," 51.

Democratic proposal for a federal ETS narrowly passed in the House of Representatives (219-212) and was essentially defeated before reaching the Senate's floor.[237] Government had overlooked the traditional antagonism between liberal coastal regions and the "industrial and coal-dependent Midwest," the latter being "represented in both the Senate and the House by a considerable number of Democrats."[238] To pass successfully, the bill required support from *both* political parties and not from "a simply majority consisting of Democrats alone."[239] in fact, past climate bills, such as the Clean Air Act amendments of 1990, had enjoyed a largescale sense of bipartisan majorities. Instead, sponsored by two 'coast' Democrats, the Act was unsurprisingly rejected by 44 Democrats representing industrial and coal-mining districts.[240]

When Congress returned to Republican control in 2010, "the odds for new climate legislation being drafted became practically nil."[241] Federal incentives for a "cap-and-trade scheme became much politicized with almost no Republican support,"[242] leaving once again State-level authorities to pursue their own "regional partnerships for cap-and trade systems."[243] Presently, power plants in ten States of the Northeast regions are trading "emissions allowances" and "collectively working to reduce emissions by 10% by 2018."[244] Most notably, California has "long been a pioneer and trendsetter among States,"[245] its local government being much less partisan when it comes to the environment: in 2006, under Republican Governor Schwarzenegger, the Global Warming Solution Act (AB 32) prepared "the basis for a cap-and-trade scheme" to lower "emissions to 1990 levels by 2020;"[246] and in 2011, under Democrat Jerry Brown, AB 32 was implemented.[247] Although challenged by "fierce opposition from vested fossil fuel interests," the California Air Resources Board still decided to adopt the cap-and-trade for 85% of GHGs bringing California "back to 1990-level emissions by 2020."[248]

Other plans for a regional emission trading apparatus include the Midwestern Greenhouse Gas Accord, which has been dormant for several years, and the Regional Greenhouse Gas Initiative (RGGI), which applies to power-generating facilities only. The latter's revenue from sold emissions is either "reinvested into improving energy efficiency" or directly added to "state

[237] Ellerman, "The Shifting Locus," 51.
[238] *ibid,* 50.
[239] *ibid*.
[240] *ibid,* 50-51.
[241] Olsthoorn, "Climate Change and the Future of Clean Energy," 28.
[242] Schulzová, "Adjustments of US Energy Policy," 185.
[243] Olsthoorn, "Climate Change and the Future of Clean Energy," 38.
[244] *ibid*.
[245] Schulzová, "Adjustments of US Energy Policy," 189.
[246] *ibid*.
[247] *ibid*.
[248] Olsthoorn, "Climate Change and the Future of Clean Energy," 38.

clean energy funds."[249] The participating States are mostly from US North-Eastern region and New England, cooperating also with some areas of Canada. The State of New Jersey, however, decided to withdraw from RGGI after its newly-elected governor condemned it as "not effective enough."[250] Thereby attesting how, despite being the most extensive emissions trading schemes in America, since their effectiveness could encourage other local State authorities to subscribe to similar schemes, California's system and RGGI remain plagued by volatility and by a high susceptibility to political change.[251]

[249] Schulzová, "Adjustments of US Energy Policy," 190.
[250] *ibid*.
[251] *ibid,* 191.

The European Commission initially proposed a "command and control regulation,"[252] for a EU-wide carbon tax in 1991. After failing to gain support, "mainly due to the negative reaction of the European industrial sector," the EU began to move towards a "more balanced approach encompassing the use of market instruments."[253]

Following the EU's ratification of the Kyoto Protocol in 2002, the subsequent Directive 2003/87/EC established a normative framework for complying with the treaty's obligations to regulate internal emitters. The EU ETS was then officially launched in January 2005.[254]

The realization of EU ETS would not have been possible without the support of "a number of important member states:"[255] The Netherlands, the UK, Denmark, and Sweden repeatedly "advocated reliance on emissions trading."[256] Although skeptical at first, by 2005 The Netherlands were one of the first EU members to set up "two emission trading systems"[257] for two different GHGs, while also proudly embracing the CDM and internal trading markets.[258] Although less extensively in comparison, The UK and Denmark also adopted a domestic carbon trading scheme. Business sectors who had opposed the carbon tax, notably the British Oil company, now openly promoted emissions trading.[259] Climate policy became a central component of UK's Labor Party electoral campaign in 1997.[260] Thus, the then 15 Member States decided to undertake quota commitments as defined under the National Allocation Plans "to collectively reduce their GHG emissions by 8% below 1990 levels by 2012."[261]

Hereafter, the EU and its members unilaterally decided to develop "more ambitious reduction targets and appropriate instruments,"[262] transcending Kyoto obligations. By strengthening the EU ETS, Europe advanced towards the "tip of the iceberg vis-à-vis the existing cap-and-trade regimes within the climate change sector."[263] Currently, it operates among 31 countries of the European market (28 members plus Iceland, Liechtenstein, and Norway). By offering European companies incentives for reducing emissions, coverage has extended from 40% to "around 45% […] for more than 11,000 energy intensive installations in power

[252] Borghesi and Montini, "The European Emission Trading System," 116.
[253] *ibid*.
[254] Belényesi, "The European Carbon Trading System after 2012," 62-64.
[255] Ellerman, "The Shifting Locus," 46.
[256] *ibid*.
[257] Pettenger, "The Netherlands' Climate Change Policy," 64-65.
[258] *ibid,* 66-67.
[259] Ellerman, "The Shifting Locus," 46.
[260] Cass, "Measuring the Domestic Salience of International Environmental Norms," 45.
[261] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 96.
[262] *ibid,* 97.
[263] Borghesi and Montini, "The European Emission Trading System," 115.

generations and manufacturing industry,"[264] including the "heavy duty coal cars, oil refineries, coke ovens, metallurgic and steel plants, cement and lime-kilns, glass and building material factories and paper-mills."[265] Furthermore, the system links to other ET schemes: at sub-national level with the State of California; at transnational level, in 2012 the EU and Australia agreed on establishing the "first full international linking of emissions trading systems"[266] by 2018.

With emission trading becoming "part of the implementation armor"[267] of EU multilateral environmental agreements, Europe is ascertaining its leadership in climate governance. However, despite a broad consensus for its potential cost-effectiveness, the economic aspects of this instrument are contentious. Throughout the first trading periods, from 2005 to 2012, the EU ETS was strained by high price volatility, scarce transparency, limited monitoring capacity, and the related high risk of fraud."[268] Actual related costs are unclear because "the price of the quotas (and the opportunity cost of the quotas)"[269] would vary on a wide market price interval. Further plagued by the difficult access to "the actual performance of the single installations" and "trading activities,"[270] the monitoring system became particularly ineffectual: "the volume of permits being traded in the Paris stock exchange fell dramatically once the so-called VAT fraud had been discovered."[271] Technological innovation also did not deliver a "clear-cut result."[272] As revealed by the Community Innovation Survey (CIS) on Italian firms subject to the ETS, "the implementation of the EU ETS had a limited impact on eco-innovation in Italy during the first phase […] a 'wait and see' policy has prevailed."[273]

With the third EU trading period, since January 2013, emission units that had initially been "allocated free of charge to the companies,"[274] were now replaced by the generalized use of auctioning. Moreover, in 2012 "operators flying to and from the EU became subject to the [ETS] rules, including international airlines."[275] The decision to include aviation stirred considerable debate with USA and China, both "unwilling to buy carbon allowances."[276] As a matter of fact, Obama signed a law for the exclusion of US airlines from the EU's civil aviation trading scheme, much to the reproach of the EU Climate Commissioner criticizing Obama's "inability to deliver

[264] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[265] Belényesi, "The European Carbon Trading System after 2012," 65.
[266] Francioni and Bakker, "The evolution of the Global Environmental System," 23.
[267] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 70.
[268] Borghesi and Montini, "The European Emission Trading System," 123.
[269] Belényesi, "The European Carbon Trading System after 2012," 56.
[270] Borghesi and Montini, "The European Emission Trading System," 117.
[271] *ibid,* 118.
[272] *ibid,* 123.
[273] *ibid,* 119.
[274] Belényesi, "The European Carbon Trading System after 2012," 66.
[275] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[276] *ibid*.

the promised change in US environmental policies."[277] Despite past intentions to make clean energy "a key component of [US] economic policy,"[278] Obama's actions further added to the Transatlantic Divergence on emission trading. The EU suspended the law, but in return the International Civil Aviation Organization (ICAO) developed a "global market-based measure for international aviation."[279] In 2016, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) was presented to offset emissions "above 2020 levels by buying credits from outside the aviation sector."[280]

Although pollution has considerably declined, the extent to which this is ascribed to the capacity of the EU ETS for reducing GHG emissions is also debatable. Prima facie, Europe appears to have largely exceeded its targets: "the overall EU27 GHG emissions were estimated to be 7.7% below the 1990 levels in 2006, 11.3% in 2008, and 17.5% in 2011."[281] However, if mindful of the fact that emissions are closely linked to economic growth, these numbers translate in terms of economic collapse in Eastern Europe during 1990s-2000s, the closure of old factories and German economic restructuring after Reunification; removal of coal subsidies in UK's coalmining industry due to a neo-liberal rationale, and the decline in industrial production following recession in 2008.[282] Arguably, had it not been for worldwide economic crisis, "the EU would most probably have experienced serious difficulties in achieving the Kyoto Protocol target."[283] Consequently, while the EU ETS can surely be considered a porotype,[284] Europe's leading armor is not without its chinks.

[277] Eugenio Cusumano, "Handing over Leadership: The Drivers and Future of Transatlantic Environmental Governance," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 254.
[278] Olsthoorn, "Climate Change and the Future of Clean Energy," 28.
[279] Biniaz, "I Beg to Differ," 1.
[280] *ibid*.
[281] Borghesi and Montini, "The European Emission Trading System," 118.
[282] *ibid*.
[283] *ibid*.
[284] *ibid*.

Pursuing Renewable Energy

In a world of volatile energy prices, transforming current industries towards a large-scale reliance on renewables would not be free of geopolitics.[285] Producer' subsidies on fossil fuels interfere with energy markets, distorting fair competition between sources, generating, in turn, a cost spiral for renewable energy alternatives.

Nonetheless, fully implementing renewable energy production could be part of the solution for decreasing a high dependence on foreign fossil fuel imports. Naturally, this perspective has enthused the desire to pursue renewable energies in both the US and the EU. Though while the latter is progressively focused on transitioning towards a low-carbon economy, the former is primarily afflicted by a federal and regional politicization of the topic.

[285] Westphal, "Energy in an Era of Unprecedented Uncertainty," 21.

The energy sector became a major field of government intervention when Global Recession hit in 2008. Massive public investment, under the American Recovery and Investment Act (2009), went into "infrastructure and electric power transmission," "renewable energy resources," and "energy efficiency programs;" including "substantial direct spending" on "tax credits and deduction and loans, as well as loan guarantees."[286] Yet constrained by time, "many of the programs funded by the fiscal stimulus were destined to expire within a few years,"[287] causing federal market incentives towards renewables to not elicit "any major change in US energy production."[288]

After the failure of Obama's cap-and-trade legislature, which had included "a renewable electricity standard requiring utilities to meet 20% of their demand through renewable energy sources,"[289] a more modest proposal reached the Senate's floor in March 2012. The Clean Energy Standard Act tackled the "41% of total US emissions" originating from electricity. It required "all large energy producers to add to their portfolio a specific percentage of renewable or clean energy"[290] that would annually increase until achieving full effectiveness by 2035. In compelling companies to partially source their electrical power from clean energy generators, Obama pursued his ambition "to make the USA a leader in renewable energy."[291]

Subnational support for renewables varies according to a State's "geography, industries, and electorate."[292] Currently, 29 *Blue* States, "constituting the bulk of the country in energy, economic and population terms,"[293] have adopted renewable portfolio standards with different mandates "for specific energy types reflecting their resource base"[294] with "some kind of policy incentives […] which have already begun to reorient markets."[295] Led by California and New York, many States implemented strategies to increase green resilience: in respecting the State Adaptation Plan's for a "20% reduction in per capita water use," California has adopted "building standards which mandate energy and water efficiency savings."[296] Maryland has established the Building Resilience to Climate Change for "facility siting and design," and "resource planning

[286] Schulzová, "Adjustments of US Energy Policy," 184.
[287] *ibid*.
[288] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 255.
[289] Olsthoorn, "Climate Change and the Future of Clean Energy," 28.
[290] Schulzová, "Adjustments of US Energy Policy," 185.
[291] Gupta, *The History of Global Climate Governance,* 156
[292] Schulzová, "Adjustments of US Energy Policy," 188.
[293] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[294] Olsthoorn, "Climate Change and the Future of Clean Energy," 37-38.
[295] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[296] Lee and Torney, "New Drivers of US Climate Action," 167.

and advocacy."[297] Maine and Rhode Island require "new land-use applications" to evaluate the "sea-level rise."[298] Unexpectedly, even the *Red* heartland region has expanded on renewables: Texas is the "largest wind producer"[299] and Ohio includes climate resilience objectives into its urban planning.[300]

On the subject of renewables Trump is "unusually mute," but his executive orders halt "four Obama rules designed to enhance energy efficiency."[301] These could further subdue green investments if Congress were to pass renewable energy tax credits for 2020-21. Undoubtedly, the partisan politics towards clean energy are driven by many factors including the influence of business interests, different lifestyles, and economic structures. Large US corporations play a controversial role: lobbies of business groups are accused of blocking green incentives by debunking "evidence of the causal link between the burning of fossil fuels and climate change."[302] Indeed "the science of climate change"[303] compromises those industrial models operating with "cement, chemicals, petrochemicals and metals."[304] Additionally, the "average American"[305] is particularly susceptible to changes due to an energy-intensive lifestyle: "in 2010 over 86%" of American citizens "used a car to travel to work, of which three-quarters drove alone."[306] Ensuring a consistent supply of cheap energy "to keep the economy going and keep prices down"[307] has thereby always been a top priority in the American energy agenda.

In spite of the increasing polarization on the topic of global warming, a Gallup Poll in March 2016 revealed that 73% of the American public preferred renewables to fossil fuels (including 51% of Republicans) and a Pew Poll in October 2016 indicated an overwhelming 89% favoring more solar installations and 83% more wind installations.[308] This growing preferentialism is explained by the "more labor-intensive" opportunities of the renewable sector: offering "three times more jobs on average"[309] than fossil fuels, for about 4.5 million new jobs in the US with many in solar energy. Accordingly, public support for solar power is expected "to radiate from the West Coast and the South-west States across the American heartland."[310] Thus,

[297] Lee and Torney, "New Drivers of US Climate Action," 167.
[298] *ibid*.
[299] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[300] Cathleen Kelly et al., *Resilient Midwestern Cities Improving Equity in a Changing Climate*, (case study report for the Center for American Progress, 2016), 8-11.
[301] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[302] Francioni and Bakker, "The Evolution of the Global Environmental System," 19.
[303] Lee and Torney, "New Drivers of US Climate Action," 174.
[304] *ibid.*
[305] Olsthoorn, "Climate Change and the Future of Clean Energy," 30.
[306] Schulzová, "Adjustments of US Energy Policy," 183.
[307] Olsthoorn, "Climate Change and the Future of Clean Energy," 30.
[308] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[309] *ibid.*
[310] *ibid.*

with some Trump-supportive regions encouraging renewables and with energy standards "implemented closer to the ground in the States and cities," high hopes are raised for neutralizing the President's "fossil-promoting energy policies."[311]

Truly, States and cities can be the leaders against Trump's regulatory rollback: 16 cities now pursue "100% *clean energy*"[312] and many others use "clean energy funds," as "an effective tool of State investment in renewable energy."[313] However, the "less populous *Red* states" continue resisting these trends for "ideological reasons."[314] The oil sector still offers the most employment opportunities, troubling those regions relying "on revenues from coal, oil and gas industries or that have built their competitive advantage around cheap base-load power."[315] Tormented by the "daily worries of Americans who see their mining, manufacturing and agricultural jobs disappear," climate-friendly incentives face extreme resistance by "energy-consuming States, with little fossil energy resources, high population density and an economy based on services."[316] This is a reminder of how economic dynamics are a determining internal factor for US federal climate action.

[311] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[312] *ibid.*
[313] Schulzová, "Adjustments of US Energy Policy," 188.
[314] *ibid*.
[315] Olsthoorn, "Climate Change and the Future of Clean Energy," 31.
[316] *ibid*.

To reinforce the EU's position as a world leader of climate action, the Treaty of Lisbon strengthens commitments in environmental protection. Article 194(1)(c) of the Treaty on the Functioning of the European Union (TFEU) obliges the "Union policy on energy" to reconcile "the need to preserve and improve the environment" by promoting "energy efficiency and energy saving and the development of new and renewable forms of energy."[317] Given the prominence of energy concerns, the integration of renewables among the four key policies in the Energy title undoubtedly advances European redirection towards the "most efficient policies, programs and regulations."[318]

The growing momentum for renewables began to stir after Kyoto,[319] culminating with the application of a binding target under the cornerstone 20-20-20 formula in the Climate and Energy Package. Bound to "increase the share of renewable energy in final energy consumption to 20%"[320] by 2020, European investments in renewable power surpassed those for conventional fossil fuels in 2011 and accounted for about "23% of electricity"[321] by 2013. The European Wind Energy Association (EWEA) analyzed that "more than 166 gigawatts of wind and solar power were added to the EU power grid between 2000 and 2012."[322] Between 2012 and 2014, in six Member States (Belgium, Czech Republic, France, Germany, Italy and Spain) the solar power "increased from 14 terawatt hours (TWh) in 2009, to 2012 to 66 TWh," and wind power grew "from 91 TWh to 115 TWh over the same period."[323] Renewables in the agricultural sector amounted to "11.8 megatons of oil equivalent"[324] by 2008, helping farmers diversify their revenues. Thus, the recent projections observing the "fastest deployment of renewables" predict EU emissions to be "21% below the 1990 level" by 2020, thereby keeping it "on track to meet and exceed"[325] its current binding target.

More ambitiously, for the 2030 framework the European Commission proposed a unilateral "target for renewable energies of at least 27%"[326] binding "the EU as a whole."[327] However, the implementations of renewable sources is not uniform: many Members were falling short from achieving regulatory targets in 2011, except Denmark, Ireland, Lithuania, Poland,

[317] European Union, *Consolidated version of the Treaty on the Functioning of the European Union*, 13 December 2007, 2008/C 115/01, Article 194(1)(c) [hereinafter *TFEU*].
[318] Carstei, "Innovation in the Energy Economy," 90.
[319] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 99.
[320] Meyer-Ohlendorf et al., "The Next EU Climate and Energy Package," 1.
[321] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 253.
[322] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 99.
[323] *ibid,* 100.
[324] *ibid*.
[325] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 252-253.
[326] Meyer-Ohlendorf et al., "The Next EU Climate and Energy Package," 2.
[327] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 102.

Portugal and Germany.[328] In particular, Germany's strategy "to democratize and decentralize energy" has set the country towards becoming one of the greenest economies ever: it obtains over "30% of its energy" from renewables, 50% of which is owned by citizens, who have "the right to sell renewable energy to the grid through a feed-in tariff system that guarantees the price for 20 years."[329] In contrast to this success story, UK's renewable power is more reserved to agriculture, where "40% of farmers use renewable energy in 2013 compared to 5% in 2010."[330] Consequently, given the "significant land-use and resource-use implications"[331] which renewable production entails, a number of EU members have dramatically cut their support schemes arguing for "more flexibility to use other low-carbon energy sources" and to remove "any sector-specific targets."[332] However, failing to agree on a common target would risk fracturing the coherence of EU energy and climate agenda, as only some members would be able to advance their commitments for curbing pollution.

Nonetheless, achieving a low-carbon agenda remains a central European concern: the extreme EU vulnerability to "price volatility in global markets for both oil and gas" and the likelihood that fossil fuel imports reach 65% by 2030,[333] nurtures the growing support for renewables as a means to increase EU energy independence. Thus, despite internal conflicts, renewable production is expected to "at least double" for crop production in rural communities, to reach "10% of power" in the transport sector, and to "increase fivefold"[334] in electricity generation between 2008 and 2020. Essential for "potential hedges against price fluctuations for imported fossil fuels,"[335] renewable sources unquestionably "stay high"[336] on the European Union's energy agenda.

[328] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 102.
[329] Gupta, *The History of Global Climate Governance,* 159.
[330] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 100.
[331] *ibid,* 109.
[332] *ibid,* 102.
[333] *ibid*.
[334] *ibid,* 100.
[335] *ibid*.
[336] Aboltins, "The Future of Renewable Energy," 136.

CHAPTER III

RESPECTING INTERNATIONAL ENVIRONMENTAL LAW

The year 1972 was historic: the United Nations Conference on the Human Environment in Stockholm marked the first global intergovernmental conference discussing environmental problems. The Stockholm Declaration introduced "an innovative, even revolutionary approach"[337] linking human rights with ecological protection. Considering Man as "both the creator and molder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social, and spiritual growth,"[338] attention shifted from *nature conservation* as "an end in itself"[339] towards a more instrumental conception of the *environment* at the service of our "well-being and to the enjoyment of basic human rights the right to life itself."[340] By asserting Man's "fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and [bearing] a solemn responsibility to protect and improve the environment for present and future generations,"[341] Principle 1 provided the basis for *inter-generational responsibility* to shelter our natural environment; recognizing that "the preservation of an environmental quality" is inseparable from safeguarding "human dignity and human welfare."[342]

Largely considered as "the act of birth of modern international law on the environment,"[343] the Stockholm Declaration set the stage for the gradual expansion of environmental law and of a normative practice, spurring an array of new international treaties, customary law, soft law, and general principles. Though while today it is generally recognized that environmental protection is a "common concern of humankind,"[344] for almost half a century humanity has generally been distracted from preserving nature as a *global public good.* No international agreement has been reached on "the recognition to a *right* to a healthy, safe, or satisfactory environment and on its exact content,"[345] thereby deeply weighing on the strategic implications that surround the current Paris framework. Indeed, the worldview appears to be that of "an idea of life beyond nature and of man as absolute master of nature,"[346] largely pursuing a human development process by relaying on science, technology, and economic-financial tools, which inherently conflict with the security for environment preservation.

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[337] Francesco Francioni, "International Human Rights in an Environmental Horizon," *The European Journal of International Law*, vol.21.1 (2010): 44.
[338] United Nations Conference on the Human Environment, Stockholm, Sweden, 5-16 June 1972, *Declaration of the United Nations Conference on the Human Environment*, 16 June 1972, Proclamation 1 [hereinafter *Stockholm Declaration*].
[339] Francioni and Bakker, "The evolution of the Global Environmental System," 10.
[340] *Stockholm Declaration,* Proclamation 1.
[341] *ibid,* Principle 1.
[342] Francioni, "International Human Rights in an Environmental Horizon," 44.
[343] Francioni and Bakker, "The evolution of the Global Environmental System," 10.
[344] *Paris Agreement*, Preamble.
[345] Francioni and Bakker, "The evolution of the Global Environmental System," 13.
[346] Francioni, "From Rio to Paris," 32.

Conflicting perspectives over economic growth and environmental priorities continue to afflict the post-Kyoto context, having profound implications for the fight against climate change. Undeniably, the implementation of international environmental law is directly linked to the role exerted by domestic concerns over energy security, also mirroring the contemporary geopolitical dynamics underlying the development of international discussions in climate negotiations. As a result, once again Transatlantic relations have become increasingly distanced in their interpretation of the international normative framework, developing different paths for what concerns the respect of the principle of sustainable development, the regard for precautionary measures behind the uncertain damage provoked by technological advancement, and the application of the traditional sovereignty principle in shaping individual State attitudes towards assuring environmental cooperation in external relations. All in all, presently distressing the future outlook of the Paris Agreement.

The deep ideological divide that plagued the international debate in 1990s influenced the final draft of the Rio Declaration to depart from the spirit of the 1970s, distancing the connection between human rights and environmental protection. Compromise was found by avoiding human rights language, confining Man *"*at the center of concerns for *sustainable development."*[347] Despite omitting an explicit reference to human rights*,* the words "*entitled* to a *healthy* and *productive life* in *harmony with nature*"[348] in Principle 1 carry the idea that the right to life is inseparable from the preservation of a decent environment. However, it tremendously narrows the outset of the previous 1972 declaration by not referring to a *right* per se but to an *entitlement.* Thus, Rio assembles a different path from the preceding ground-breaking "eco-centrism" of the Stockholm Declaration, which had judged Man of being responsible for preserving the environment. Instead, Rio's "anthropocentric" language mirrors more an "utilitarian approach to nature,"[349] where nature serves human economic growth and development.

Ambitions for growth are thereby better incorporated into the broader normative interpretation of human rights; further reinforced by Principle 4, "environmental protection shall constitute an integral part of the development process," because achieving sustainability "cannot be considered in isolation from it."[350] Moreover, the omission of *inter-generational equity,* as referenced in Stockholm's Principle 1, is "the result of a deliberate choice" to frame the notion of sustainable development within a "horizontal dimension of re-distributive justice."[351] Rio's Principle 5 thus places the commitment to sustainability in the context of "eradicating poverty" across the globe, requiring everyone to "cooperate" for decreasing "the disparities in standards of living and better meet the needs of the majority of the people of the world."[352] Furthermore, Principle 8 asserts that sustainable development entails the progressive reduction of "unsustainable patterns of production and consumption," while promoting "appropriate demographic policies."[353] Undeniably, this principle is a most neglected tenant: the world has most obviously experienced a "wild expansion of the unsustainable patterns" and a "relentless demographic growth,"[354] especially within powerful developing economies.

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[347] United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992, *1992 Rio Declaration on Environment and Development,* 14 June 1992, Principle 1 [hereinafter *Rio Declaration*].
[348] *ibid.*
[349] Francioni, "From Rio to Paris," 18.
[350] *Rio Declaration,* Principle 4.
[351] Francioni, "From Rio to Paris," 17.
[352] *Rio Declaration,* Principle 5.
[353] *ibid,* Principle 8.
[354] Francioni, "From Rio to Paris," 19.

Although questionably too concise, the wording of Principle 1 still conveys the basic dimensions of sustainable development: firstly, "the fulfillment of the basic economic, social, and cultural rights necessary to a life in dignity;" secondly, "the duty to pursue the satisfaction of those rights in *harmony with nature*."[355] The Rio Declaration has thus provided the basis for advancing environmental principles and obligations under international legal parlance, including the precautionary approach, the polluter-pays principle, and most importantly, expanding the notion of sustainable development.[356] In this respect, the United States and the European Union share similar normative interpretations but have considerably varied in their approach and implementation of what is generally recognized as the primary legacy of the Rio Declaration.

[355] Francioni, "From Rio to Paris," 31.
[356] Brown Weiss, "The Evolution of International Environmental Law," 22.

At the Earth Summit in 1992, the USA strongly supported the principle of sustainable development. Eager to elaborate a *National Strategy for Sustainability,* the US significantly influenced the modeling of Rio's Principle 1 according to its own experience with internal conservation and preservation movements, which expanded throughout 1960s-70s, and also various US laws that were enacted in response.[357] Ultimately, many foundational principles of global sustainability for reconciling economic growth and protection of natural resources, have their roots in US conservation and environmental law.[358]

The declaration of a human quality of life and well-being in Principle 1 is very similar to American assertions under the National Environmental Policy Act of 1969 (NEPA), the first major environmental law enacted at the federal-level "to create and maintain conditions under which man and nature can exist in productive harmony."[359] Similarly, the intention of Principle 3 "to equitably meet developmental and environmental needs of present and future generations,"[360] mirrors NEPA's aim to "fulfill the social, economic, and other requirements of *present and future generations* of Americans;" [361] reaffirming also "the continuing responsibility of the Federal Government" to "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."[362] Additionally, the Clean Air Act (1963) conceived "the adoption of standards based on the possibility of harm rather than complete certainty,"[363] mirroring Rio's precautionary measures against a "lack of full scientific certainty."[364] Essentially, by its very nature almost all US legislation related to the environment recognizes the importance of achieving sustainability by balancing "the conservation of resources while protecting humans from the uncertainties of nature."[365] Nevertheless, since the 1990s, the US approach to sustainable development has departed from its original benchmark.

Initially wanting to step ahead, the Clinton administration established the President's Council on Sustainable Development (PCSD) in 1993.[366] Before the end of its mandate in 1999, PCSD issued a series of reports and recommendations: in 1996, the report *Sustainable America:*

[357] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency; National Research Council. *Sustainability and the U.S. EPA,* (report published by the National Research Council of the National Academies, Washington, D.C., The National Academies Press, 2011), 15.
[358] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 16.
[359] U.S. Congress, *The National Environmental Policy Act of 1969*, 46th Cong., 4321-4347, 1 January 1970, §4331(a) [hereinafter *NEPA 1969*].
[360] *Rio Declaration,* Principle 3.
[361] *NEPA 1969*, §4331(a).
[362] *ibid*, §4331(b)(1).
[363] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 21.
[364] *Rio Declaration,* Principle 15.
[365] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 21.
[366] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 251.

A New Consensus for Prosperity, Opportunity, and a Healthy Environment for the Future remarked how a "sustainable United States" could result in "a growing economy" with "equitable opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations."[367] Yet failing to constitute any "continuing effort on behalf of sustainability at the national level,"[368] most publications never achieved Congressional or even public endorsement. Under Bush, the PCSD was not renewed and government's consideration for sustainable development increasingly faded until "official recognition" of the principle became "difficult to find."[369] With Obama's election, sustainability was somewhat renewed as an objective for trade and domestic development policies. Urged to develop a *National Strategy for a Sustainable America,* many federal guidelines were published. In 2010, a Director of Sustainable Development in the Department of Agriculture began advancing such a strategy by pursuing various partnerships, outreaching for collaboration. Also, US participation at the *Ten-Year Framework on Sustainable Production and Consumption* spurred the expansion of a network in North America which helped support federal incentives.

When universal commitment to Principle 1 was renewed at the Rio+20 UN Conference on Sustainable Development in 2012, "the US delegation prominently contributed to the debate."[370] Yet the problems of "American individualist culture and wariness of federal regulation, as well as Congress' focus on short term policy achievements" still continue to obscure sustainability as both "a rhetorical tool and an actual policy objective."[371] Unsurprisingly, in a report put together by UN's Sustainable Development Solutions Network USA is shown to be miserably failing in comparison to many countries.[372] Barely documented in national media, any public discussion on sustainable development has been restricted to few university campuses, cities, and companies, resulting in "the wealthiest country in the world" being "ranked 25th out of 83 on sustainability and social goals, falling behind Hungary, Slovenia, Belarus, Canada, and the U.K."[373] Essentially, ever since the abolition of the President's Council, no governmental organization nor federal institution has been tasked to formulate and coordinate a sustainability framework in the United States.

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[367] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 26.
[368] *ibid.*
[369] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 251.
[370] *ibid*.
[371] *ibid*.
[372] Nika Knight, "US Failing Dismally on Sustainable Development, Despite Vast Wealth," *Common Dreams Breaking News & Views for the Progressive Community*, 22 July 2016, accessed 17 Feb. 2017, <https://www.commondreams.org/news/2016/07/22/us-failing-dismally-sustainable-development-despite-vast-wealth>.
[373] *ibid.*

Following the adoption of the Rio Declaration, Europe began to systematically promote Principle 1. By 1998, European leaders adopted *the Cardiff Process,* requesting the Council of Ministers "to integrate sustainable development objectives criteria into its decisions."[374] Launching the EU's first *Strategy for Sustainable Development* at the Gothenburg Council in 2001, which was renewed in 2006 and later constitutionalized as an objective in the Treaty of Lisbon in 2009.[375]

The aim was to minimize the trade-offs while developing "the mutually reinforcing elements of economic, social and environment policy."[376] The EU considered it as an opportunity for "a positive long-term vision of a society that is more prosperous and more just, and which promises a cleaner, safer, healthier environment—a society which delivers a better quality of life for us, for our children, and for our grandchildren."[377] Since 2006, this strategy was supplemented by a Resource Efficiency Roadmap, adding to the "principle of integrating environmental concerns into any policy that impacts on the environment."[378] Developing clean energy and conserving natural resources also translated into priority areas under the Lisbon Strategy of Economic and Social Development.

In framing the global dimension of the EU's environmental policy, the Treaty of Lisbon withholds particular regard for the principle of sustainable development. The Treaty on European Union (TEU) highlights the objectives for European participation in international governance, including the requirements under Article 21.1(d) and (f) to respectively nurture "the sustainable economic, social and environmental development of developing countries;" and "develop international measures to preserve and improve the quality of the environment and the sustainable management of global natural resources, in order to ensure sustainable development."[379] Expecting the EU to "contribute to the sustainable development of the Earth," the TEU bestows some form of constitutional relevance to Europe's promotion of sustainability "in its relations with the wide world."[380] Ultimately in 2013, the Seventh Environmental Action Program, entitled *Living well, within the Limits of Our Planet,* identified sustainable growth among the cornerstones of its policy

[374] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 254.
[375] *ibid*.
[376] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 23.
[377] *ibid*.
[378] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 254.
[379] *TEU*, Article 21.1(d-f).
[380] *ibid*, Article 3.5.

Although true that in the aftermath of the Eurozone crisis the Commission admitted to the persistence of some "unsustainable trends" in the Union, acknowledging the need "to intensify [EU] efforts."[381] Despite "ill-defined objectives and implementation gaps"[382] Europe has still managed to show a growing attachment to sustainable development since 1992. As a matter of fact, the European Union releases biennial monitoring reports on its sustainability progress and, compared to its transatlantic partner, it has thoroughly improved "the cost-efficiency of policy decisions."[383] Today, the EU further progresses towards "a low-carbon and resource-efficient economy,"[384] considered key to the economic recovery of the Eurozone. Also important is the fact that throughout the international promotion of eco-sustainability at the Rio+20 Conference, the "size and activism of European delegations" demonstrated a "much greater assertiveness"[385] in discussions, even dwarfing the US.

[381] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 24.
[382] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 254.
[383] Committee on Incorporating Sustainability in the U.S. Enviornmental Protection Agency, *Sustainability and the U.S. EPA*, 24.
[384] *ibid*.
[385] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 254.

Relentless Faith in Technological Power

Scientific uncertainty concerning human interactions with the natural system is intrinsic to international environmental law: research helps uncover the compound effects of mankind's exploitation of the planet's resources over the natural order of ecosystems,[386] nurturing legal recognition in numerous international treaties, especially in the context of the precautionary approach. However, the mechanics behind rising atmospheric temperatures, although abundantly recorded by scientific evidence, have not automatically translated into quality standards of climate governance. Particularly, "an emerging movement" is inherently defying the concept of sustainable development, asserting instead that "ecological collapse" can only be avoided if societies abandon the model that "a *healthy and productive life* must (and can) be pursued *in harmony with nature.*"[387]

Encouraged by an "unshakable faith in science and technology,"[388] this perspective proposes the intensification of human economic and technological powers for a greater exploitation of nature. Achieving human progress with these means is expected to provide "energy, food, and other resources necessary to lift multitudes in the less developed world from poverty," thereby ending a "disruptive dependence"[389] on the local environment for sustenance. The narrative appears to be "*more exploitation of nature in order to save nature*."[390] As ironic as it may sound, given the socio-economic conditions underlying environmental deterioration, such as the effect of material deprivation "on deforestation, desertification, mass migration and consequent abandonment of productive land,"[391] this approach arguably has its merits. Recognizing how poverty is both a cause and effect of climate change, deepening the use of natural resources may improve environmental quality by raising the "standards of life for the millions of people now living in poverty," and reaching "a peak in demographic growth that will eventually ease the pressure on global ecosystems."[392]

A prominent example in this relentless technological endeavor is the pioneering of *hydraulic fracturing* of subsoil, requiring a more severe mineral extraction by pumping "large quantities of water, sand and chemicals at the very high pressures into a well, in order to fracture the shale and allow the release of the natural gas contained therein."[393] However, exploiting shale

[386] Brown Weiss, "The Evolution of International Environmental Law," 9.
[387] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 250.
[388] *ibid*.
[389] *ibid.*
[390] *ibid.*
[391] *ibid.*
[392] *ibid*, 251.
[393] Francioni and Bakker, "The evolution of the Global Environmental System," 24.

gas reserves as an alternative source of energy consumption may involve environmental risks: (1) ground water contamination: by drilling and pumping to transverse ground water (shale gas deposits are found below water levels) fracturing fluids could leak toxic chemicals; and (2) release of methane gas: the main component of extracted LNG, unburned methane, can further increase anthropogenic interferences due to its superior heat-trapping capacities.[394]

Ultimately, integrating scientific evidence into national policy as "the only correct method with which […] to assess the adverse impacts produced therein by human activities,"[395] has stirred different means of environmental risk regulation among the two transatlantic partners. Hydraulic fracturing is best described as "a wild card par excellence"[396] and in this context "science cannot be a substitute for policy choices and responsible decision-making."[397] It becomes noteworthy to recall Principle 15 of the Rio Declaration, requiring that protecting the environment "where there are threats of serious or irreversible damage, *lack of full scientific certainty* shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."[398] Therefore, in the wake of the challenging dilemma facing mankind between human advancement and environmental security, the US and EU have translated the lack of scientific certainty into their different precautionary attitudes reflecting their overall awareness of risks and distinctive priorities.

[394] Francioni and Bakker, "The evolution of the Global Environmental System," 25.
[395] *ibid*, 20.
[396] Westphal, "Energy in an Era of Unprecedented Uncertainty," 16.
[397] Francioni and Bakker, "The evolution of the Global Environmental System," 20.
[398] *Rio Declaration*, Principle 15.

Most advocates of "the promise of technology as a tool for reducing present socio-economic inequalities"[399] are scholars from the United States and the developing world, where this postulate has already exerted a considerable influence in determining climate policies. Proof of natural gas being "better than biomass in terms of effectiveness and environmental impact,"[400] coupled with the new variable of hydraulic fracturing, has amplified US political dialogue on pioneering technological development for ensuring its own energy security. Following in this line of thought, so long as the reliability of scientific data investigating negative externalities remains controversial, "the benefit of the doubt" over fracking processes are left to the energy sector and its "established best practices for risks that are well understood in light of the vast experience in the oil and gas industries."[401]

Already "investing heavily in [fracking] technology,"[402] there is no doubt that the American public debate has been conditioned by the "widespread faith […] in the objectivity and neutrality of science."[403] The ensuing confidence in technological effectiveness, as the only correct response against global warming, echoes in the words of former President Obama at the *Seeds & Chips - Global Food Innovation Summit* held in May 2017. After acknowledging food production as the second leading cause of global GHG emissions, Obama remarks that combating climate change:

> "Will require unleashing the creative power of our best scientists, engineers and entrepreneurs, backed by public investment and private investment to deploy new innovations and climate smart agriculture. Better seeds, better storage, crops that grow with less water, crops that grow in harsher climates, mobile technologies that poor more agricultural data, including satellite imagery, weather forecasts and market prices […] If we cease the future, there is nothing we cannot do. […] We can unleash the change that reduces hunger and malnutrition, we can spark the growth that will release nations from poverty, and we can reverse the tides of climate change and usher in a smarter and more sustainable world."[404]

Here, Obama reveals a distinguishing characteristic imbedded in American ideology. Since the 1990s the USA has conserved its ideological preference for investments to be subject to

[399] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 251.
[400] Aboltins, "The Future of Renewable Energy," 136.
[401] Francioni and Bakker, "The evolution of the Global Environmental System," 25.
[402] *ibid*.
[403] *ibid*, 19.
[404] Barack H. Obama, "Remarks by President Barack Obama" (speech at the *Seeds & Chips - Global Food Innovation Summit*, Milan, 9th May 2013), La Stampa, <http://www.lastampa.it/2017/05/09/multimedia/cultura/seeds-chips-la-diretta-streaming-della-conferenza-di-obama-a-milano-2RIRW4kxhiTYFPwizuQUHM/pagina.html>.

market forces: "it make sense from an economic point of view. There should be no company on Earth that wants to waste energy because energy costs money; and if they can find ways to be more energy efficient, that will reflect itself in their profits."[405] Thus, in the USA environmental risk assessment becomes subject to a cost-benefit analysis*:* a systematic approach estimating the best way to achieve economic and social *benefits* –when the "exploration and production of unconventional oil and gas offer hope"[406] –while *preserving savings*, or in other words "take some basic smart steps that don't require us to reduce our standard of living."[407] As a matter of fact, this largescale top-down support for advancing hydraulic fracturing derives from its potential of "creating millions of jobs" and of greatly "enhancing energy independence."[408] Subject only to an exceptional set of rules which should "create [industrial] incentives for high levels of precaution and due diligence,"[409] the former President predicts how "human innovation will deliver what we need."[410]

Although probably true that eliminating poverty "is a pre-condition for inducing human societies to pay more respect for the environment," this relentless faith in technology overall exhibits a "reductionist utilitarian" approach neglecting "the way in which human societies and communities relate to their natural environment."[411] The main weaknesses are the "undemonstrated spill-over effects of benefits that are deemed to arise from a more intense technological exploitation of nature for climate stabilization,"[412] which could further distress anthropogenic emissions in the atmosphere. It disregards "specific human skills, traditional knowledge and ingenious methods of utilization of natural resources"[413] that should satisfy Principle 1 of the Rio Declaration, namely that socioeconomic needs must be achieved *in harmony with nature*.

[405] Barack H. Obama, "Remarks by President Barack Obama."
[406] Olsthoorn, "Climate Change and the Future of Clean Energy," 31.
[407] Obama, "Remarks by President Barack Obama."
[408] Francioni and Bakker, "The evolution of the Global Environmental System," 25.
[409] *ibid*.
[410] Obama, "Remarks by President Barack Obama."
[411] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 251.
[412] *ibid*.
[413] Francioni, "From Rio to Paris," 28.

Since 2013, the impact of hydraulic fracturing has varied across Members States. Chancellor Osbourne declared his support for the UK "to tap into new sources of low-cost energy like shale gas,"[414] putting in place "generous tax breaks for fracking companies and promises to hand financial incentives for local communities."[415] Already in Poland, "46 wells have been drilled, with more than 100 licenses awarded."[416] Conversely, former President Holland declared: "as long as I am president, there will be no exploration for shale gas in France."[417] In Germany, Merkel's government has preferred "not to put forward legislation creating the conditions for the development,"[418] whereas the Advisory Council on the Environment, has instead recommended a "step-by-step approach to clarify outstanding issues, during which time only piloting would be permitted.[419]

In effort to respond to its energy security needs, the EU assessed the environmental feasibility of fracking technologies; but only directives have been passed at the EU level. In 2011 Directive (EU 1985/2011) demanded full disclosure of information on the possibility of climate change effects, such as "estimated water contamination, gas leaks relevant to shale gas emissions, emissions related to carbon capture and storage operations."[420] In 2014, the European Commission published a Recommendation "inviting member states to follow minimum principle on the use of fracking for hydrocarbons production."[421] Thus, even though some members have shown considerable interest, "there seems to be no formal endorsement of this approach in Europe."[422]

In general, every State is responsible for not allowing "environmentally hazardous activities within its jurisdiction until an environmental impact assessment has been made;"[423] but the EU has reinforced its commitment in the field climate change and environmental protection under the Treaty of Lisbon. Article 191(2) of the TFEU takes the spirit of Principle 15 of the Rio Declaration a step further. It transcends the cautious use of the term *approach* and formulates a *principle:* "The Union's policy on the environment […] shall be based on the precautionary

[414] George Osbourne, "Budget 2013: Chancellor's Statement" (oral statement to parliament, 20 March 2013), GOV.UK, <https://www.gov.uk/government/speeches/budget-2013-chancellors-statement>.
[415] Damian Carrington, "Budget 2013: George Osborne commits to UK shale gas boom" *The Guardian*, 20 March 2013, accessed 10 Feb. 2017, <https://www.theguardian.com/environment/2013/mar/20/budget-2013-george-osborne-shale-gas-boom>.
[416] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 101.
[417] "Shale Gas Ban in France to Remain, Says Hollande." *BBC News*, 15 July 2013, accessed 10 Feb. 2017, <http://www.bbc.com/news/business-23311963>.
[418] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 101.
[419] *ibid,* 101.
[420] *ibid,* 25.
[421] *ibid,* 101.
[422] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 252.
[423] Francioni and Bakker, "The evolution of the Global Environmental System," 15.

principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source."[424] This more "radical version" obliges members under EU law "to abstain from performing […] activities that present serious environmental risks with possible irreversible consequences."[425] As of consequence, given the large surface areas, waste pools, and pumping facilities, among other things, that fracking operations require, with its densely populated land and deeply stratified landscape Europe would face much greater risks to its environment then the United States.[426] Therefore, instead of trying to devise, with the help of the US, "an appropriate regulatory framework to handle related risks,"[427] the EU remains more faithful to the principle of sustainable development.

Europe seems neither afflicted by ideological nor by "religious prejudice" in accepting "scientific evidence that climate change is man-made."[428] Hence, reconciling EU economic growth with environmental protection entails "participation and dialogue among the various actors and the different levels of governance rather than by vertical imposition of uniform standards and harmonized framework."[429] The TFEU so launches "the increased recourse to more flexible methods and a greater decentralization in environmental regulation"[430] translating EU environmental-integration into a form of *proceduralization* of responsibilities, as well as "a greater use of framework directives and horizontal measures."[431] This signifies that EU subsidiarity becomes both *vertical* "in the definition of the appropriate level of intervention," as well as *horizontal "*in determining the scope of EU intervention and encouraging the participation of an increasing number of actors and stakeholders."[432]

In the aftermath of the Eurozone crisis, however, there are growing interests in "the economic competitiveness of European industries," whereby environmental policy-makers should consider "economic and social concerns into the formulation of environmental policies."[433] However, internal debate has grown since 2011, reducing the level of ambition of "sustainability objectives" thereby signaling "one of the most important aspects of the changing dynamics in climate governance."[434] Indeed, the EU must be wary of the influence that "persistent, slow economic growth"[435] exerts on the priorities of some Member States, potentially inspiring a

[424] *TFEU*, Article 194(2).
[425] Francioni, "From Rio to Paris," 20.
[426] Francioni and Bakker, "The evolution of the Global Environmental System," 25-26.
[427] *ibid*, 25.
[428] *ibid*, 19.
[429] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 67.
[430] *ibid*.
[431] *ibid*.
[432] *ibid*.
[433] *ibid*, 75.
[434] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 252.
[435] *ibid*, 252.

"reverse integration"[436] process in EU environmental harmonization. Certainly, "the perceived optimal means" for intensifying nature exploitation "to avoid ecologic collapse and address climate change"[437] has its appeal, but for the moment the EU appears still faithful to its "legally entrenched"[438] ecological integrity, fundamental for developing more harmoniously with nature.

[436] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 75.
[437] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 252.
[438] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 75.

The prevailing rule in international law originally foresaw "national sovereignty over natural resources within a country's territory."[439] However, the spanning timeframe between 1972 and 1992 witnessed considerable transformations as new treaty obligations became more intrusive. Regulation of "transboundary pollution" and "trade across borders" expanded control on "activities within national borders"[440] which threatened the environment. The global ecology movement elicited a "less exclusive" role for the primary subjects of international law, described as a "functionalization of sovereignty."[441] The exercise of State sovereignty thus became "conditioned by the general interest of the international community to respect and protect elements of the environment that are vital to sustain our life on the planet,"[442] considered the *common concerns of humankind*. Within this implied appreciation for environmental resources as global public goods, a call for "responsible sovereignty"[443] should prompt governments to align themselves with global climate policies.

National courts can transform into "powerful instruments for the advancement of environmental governance,"[444] but incorporating international obligations "into national law and judicial monitoring by national courts,"[445] has its deficits. The lack of compulsory implementation and of a specialized dispute settlement mechanism naturally obstructs enforcement, and fragments the monitoring of environmental standards.[446] Legal remedies on environmental issues are "brought before judicial bodies established in the context of other fields of international law,"[447] such as trade, investment or human rights law. However, these 'substitute' adjudication mechanisms risk to remain "impervious to claims of environmental sustainability and mechanically apply rules even in the face of legitimate environmental concerns."[448] This further fragments environmental case-law, hindering the expansion of a "coherent jurisprudential development" and more generally of a "systemic character of international environmental law."[449] This institutional gap causes further subordination for the global environmental framework, becoming highly dependent on the enforcement of borrowed

[439] Brown Weiss, "The Evolution of International Environmental Law," 2.
[440] *ibid*, 8.
[441] Francioni and Bakker, "The evolution of the Global Environmental System," 35.
[442] *ibid*, 34.
[443] *ibid*, 35.
[444] *ibid*, 34.
[445] *ibid*, 28.
[446] Francesco Francioni, "Realism, Utopia and the Future of International Environmental Law," (working paper, European University Institute, Department of Law, 2012), 5.
[447] Francioni and Bakker, "The evolution of the Global Environmental System," 28.
[448] Francioni, "Realism, Utopia and the Future of International Environmental Law," 7.
[449] *ibid*, 11.

means from other areas of international law, in order to secure compliance with climate agreements.

Even though multilateral conventions might attempt to monitor fulfillment, there is no uniform approach or any form of "exogenous power of constitutional norms"[450] that can force unilateral State actions. The ultimate result is that many States continue to uphold the traditional interpretation of national sovereignty, having "little incentive to accept binding limits to GHG emissions"[451] in the face of their own state interests. As of consequence, international environmental law appears to be condemned as "a weak and under-developed" jurisprudence.[452] Accordingly, the United States and Europe also contrast in their methods for overseeing compliance with international norms in the environmental field: the European Union generally adopts a multilevel and multilateral oversight, whereas the United States strongly favors retaining national oversight by deploying market incentives.

[450] Gupta, *The History of Global Climate Governance*, 28-29
[451] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 248.
[452] Francioni, "Realism, Utopia and the Future of International Environmental Law," 1.

From the 1990s onwards, the US doctrine towards global warming shaped around three cognitive frames: scientific skepticism, economic opportunity, and energy security threats. More concerned with accusing emerging powers of profiting "at the expense of the US,"[453] Congress refrained from ratifying international climate commitments since 1997. Counteracting impending ecological threats came second to ensuring that developing countries not be "exempted from bearing a share of the burden of environmental collective action."[454] Against this backdrop, the adoption of the Paris Agreement ignited a newfound optimism, but it appears short-lived: negationists have taken toll and USA "is getting out"[455] from the global climate accord.

While the new President asserted his executive retaliation against federal environmental policies, "a newly invigorated pro-Paris campaign by many of America's top C.E.O.s"[456] was taking a stand against the government's withdrawal from the treaty. Numerous private companies and important American corporations, including Apple, Google, Microsoft, Walmart, BP, PG&E, and Shell, repeatedly expressed their "support for continued participation by the United States in the Paris climate change agreement."[457] Truly, the breadth of this alliance is "as close as big business gets to a consensus position,"[458] voicing their awareness of the economic risks and opportunities that climate change poses. Industries ranging "from oil and gas to retail, mining, utilities, agriculture, chemicals, information and automotive"[459] all share the belief that the Paris Agreements provides the "stable and practical framework facilitating an effective and balanced global response" that could best serve "US business interests."[460]

Already prior to the more climate-friendly Obama Presidency, past governments had generally tended to privilege the adoption of market mechanisms hoping to encourage private investments towards technological breakthroughs and innovations. But in the past eight years, the US private sector became more determined to strengthen its climate resilience and increased investments in "renewables, efficiency, nuclear, biofuels, carbon capture, sequestration, and other innovative technologies that can help achieve a clean energy transition."[461] Now locked into the American economy, industries work against Trump's attempt at reversing "some very aggressive

[453] Francioni and Bakker, "The evolution of the Global Environmental System," 24.
[454] *ibid*, 24.
[455] Trump, "Announcement that the US will quit Paris climate agreement."
[456] Shultz and Halstead, "The Business Case for the Paris Climate Accord."
[457] Apple et al., *Letter to Donald J. Trump*, 26 April 2017, in support for continued US participation in the Paris climate change Agreement, accessed 9 May 2017, <https://www.c2es.org/docUploads/business-letter-white-house-paris-agreement-final-04-26-2017.pdf>.
[458] Shultz and Halstead, "The Business Case for the Paris Climate Accord."
[459] *ibid.*
[460] Apple et al., *Letter to Donald J. Trump*.
[461] *ibid*.

standards for fuel efficiency."[462] Certain market mechanisms are less susceptible to changes in the White House, as Obama exemplifies: "California makes it's own fuel emission standards, and California is the largest market for cars in the [US]. So even if the rules change in Washington, there is no US auto-maker that can afford to produce a car that is not fuel efficient enough to be sold in California."[463]

In an onslaught of public letters addressed to the White House, American companies demonstrate their understanding of the economic benefits of the Paris Agreement. By "requiring action by all parties"[464] the universal treaty strengthens US competitiveness, reduces risks of imbalances, and ensures access to global markets. In setting clear "long-term objectives and by improving transparency" it can spur "sound investment," especially towards clean technologies, thereby "generating jobs and economic growth."[465] Not only would environmental objectives be fulfilled at the "lowest possible cost," but "market-based implementation" would help achieve innovation and reduce future business risks associated with "climate damages."[466]

Trump's negative verdict on Paris instead galvanizes major implications for "America's place in the geo-economic order."[467] For a country that has conventionally appealed to the window of economic opportunity, Trump is surely deviating from the traditional cost-benefit analysis, now when the US stands to gain the most. Departing from a predictable environmental framework which binds the global community to climate change mitigation, does not serve America's best interests because "U.S. companies are well positioned to lead, and lack of US participation [puts] their access to these growing markets at risk."[468] Indeed, leaving Paris could provoke "retaliatory trade measures, enabling other countries to leapfrog American industry."[469] On the contrary, implementing "more cost-effective, market-based and business-friendly climate policies"[470] would not be tying the current Presidency to Obama-era regulations, but rather to the American custom of retaining national oversight in climate policy.

[462] Obama, "Remarks by President Barack Obama."
[463] *ibid*.
[464] Apple et al., *Letter to Donald J. Trump*.
[465] *ibid*.
[466] *ibid*.
[467] Smith, "Trump moves to dismantle Obama's climate legacy with executive order."
[468] Apple et al., *Letter to Donald J. Trump*.
[469] Smith, "Trump moves to dismantle Obama's climate legacy with executive order.".
[470] *ibid.*

Europe's environmental acquis has gradually evolved "from a scattered and uncoordinated group of measures, incidental to the overriding objectives of market integration," into a more "detailed system of environmental regulation and multilevel governance."[471] This is most astonishing, considering how the European Economic Community (1957) at first lacked explicit competences and relied on the implied powers doctrine of the European Court of Justice (ECJ).[472] Since the 1970s, the latter developed a complex case-law defining the balance between environmental security and market integration, "recognizing the importance of environmental protection in the process of interpreting and applying provisions on the functioning of the common market."[473] In 1983, it legitimized EU internal and external action in the environmental field declaring that "the principle of freedom of trade is not to be viewed in absolute terms, but is subject to certain limits justified by the objectives of the general interest pursued by the Community."[474] Once environmental competences were firmly institutionalized, the ECJ moved to clarify the role of ecological protection vis-à-vis other EU policy objectives, drawing "links between protection of human rights and protection of the environment."[475]

In redefining its internal legislation, in light of evolving international negotiations, the EU gradually transformed into a leader of the climate regime, committing to global action.[476] From a legal perspective, the major contribution of the Treaty of Lisbon in "defining the objectives for EU external relations and embedding them as binding obligations in EU primary law"[477] was enshrining the will "to engage in protecting the global environment both under MEAs and through its internal legislation."[478] The TEU reaffirms multilateral commitment to environmental governance, stipulating the aim "to develop relations and build partnerships with third countries, and international, regional or global organizations" whom share "respect for the principles of the United Nations Charter and international law."[479] Thus, while the EU seeks to play an active role in global environmental governance, its special nature as an international actor has important implications for its external environmental policies. In particular, Article 21(1) specifies that the EU "shall promote multilateral solutions to common problems, in particular in the framework of

[471] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 61.
[472] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 251.
[473] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 64.
[474] *ibid*, 64.
[475] Brown Weiss, "The Evolution of International Environmental Law," 16.
[476] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[477] Kati Kulovesi and Marise Cremona, "The Evolution of EU Competences in the Field of External Relations and its Impact on Environmental Governance Policies," in *The EU, the US and Global Climate Governance,* ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014) 83.
[478] *ibid*, 91.
[479] *TEU*, Article 21(1).

the United Nations."[480] In 2011 an ECJ deliberation additionally pointed out that EU legislation "must be interpreted, and its scope delimited, in the light of the relevant rules of the international law of the sea and international law of the air."[481]

Given its unique nature, identifying the appropriate legal basis for EU participation in international treaties is imperative for global environmental cooperation. In practical terms, the EU can take external action via "the internal division of powers between the EU and its Member States in a particular field."[482] In view of both the EU and its members being internationally active in climate policy, the issue of shared competences is crucial from a jurisdictional perspective. Under most multilateral environmental agreements (MEAs), which are mixed agreements to which the whole EU and its individual members participate jointly, "the duty of loyal cooperation and the unity of the Union's international representation have important implications, limiting the scope of [Member States'] independent international action."[483] However, under trade-related MEAs the situation becomes more complex if the EU sets internal environmental standards with the "external impact of regulating access to the large and influential EU market."[484] Given that the EU shares environmental policy powers, but holds exclusive competence on trade issues, the ECJ exerts its role to determine whether these clauses "fall (also) under the common commercial policy" or "whether the environmental provisions are the appropriate legal basis for the Union's competence."[485] Thus, by further developing internal legislation, the ECJ helped consolidate EU participation in global climate governance.

Most certainly, the external dimension of EU environmental policy has increasingly gained prominence to the point of currently forming an integral aspect of "EU action both internally and on the international level."[486] In fact, despite the issue that decision-making processes on the "future greening of the policy areas" only enter the EU institutional balance according to "the effective legal strength of the environmental integration principle and the political will to implement it and make it fully operational,"[487] an alignment between energy security and climate change is clearly discernable in EU collaboration on the international scene. In overcoming domestic challenges, "the EU has increasingly included climate change mitigating measures in its external relation tools,"[488] cooperating bilaterally and multilaterally. In fact,

[480] *TEU*, Article 21(1).
[481] Christine Bakker and Francesco Francioni, introduction to *The EU, the US and Global Climate Governance*, ed. Christine Bakker and Francesco Francioni (Farnham: Ashgate Publishing Limited, 2014), 3.
[482] Kulovesi and Cremona, "The Evolution of EU Competences," 91.
[483] *ibid*.
[484] *ibid*, 83.
[485] *ibid*, 90.
[486] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 61.
[487] *ibid,* 73.
[488] Francioni and Bakker, "The evolution of the Global Environmental System," 23.

curbing anthropogenic interference "has become the number one priority for EU external funding"[489] with emerging economies.

Europe has strengthened dialogue with key regions by promoting clean coal projects with India and China, as well as "strategic partnerships:"[490] the EU-China Partnership on Climate Change, the EU-India Initiative on Clean Development and Climate Change, the Africa-EU Energy Partnership or the Joint Africa-EU 2011-2013 strategy action plan. Party to over 40 MEAs, Europe is actively supporting environmental standards regardless of the lower commitments of third parties. Moreover, under the Common Foreign and Security Policy, global warming and energy security stand alongside terrorism and nuclear proliferation as key security issues of the European Security Strategy (2003).[491] Ultimately, the EU's 'constitutionalized' obligation to "respect international law in the exercise of its powers,"[492] erases any legal doubts over European enforcement of the Paris Agreement. Compliance with climate change mitigation undoubtedly constitutes a key feature for multilateral and international EU relations, forming "a source of its normative or soft power."[493]

[489] Francioni and Bakker, "The evolution of the Global Environmental System," 23.
[490] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 95-96.
[491] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 252-253.
[492] Kulovesi and Cremona, "The Evolution of EU Competences," 84.
[493] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 95.

CONCLUSION:

EVALUATING PATTERNS OF CONVERGENCE AND DIVERGENCE IN TRANSATLANTIC ENVIRONMENTAL RELATIONS

A consistent feature in transatlantic environmental relations is the extent to which domestic factors condition US and EU leadership positions in the framework of global climate governance. At the dawn of international environmental law, there is no denying of a transatlantic solidarity in the environmental field or the pivotal "existence of a synergy."[494] US environmentalist movements raised European awareness, urging their greater involvement in climate discussions, and helped shape the progression of EU climate agenda since the 1970s. As a matter of fact, the US had "developed and championed"[495] emission trading schemes long before the rise of the EU ETS. In the early 2000s, the first Green Paper of the European Commission had integrated "the advice of the Center for Clean Air Policy (CCAP) in Washington,"[496] to develop its knowledge base for cap-and-trade. But the leading position that the US initially enjoyed formally ended with its withdrawal from Kyoto. Contemporarily, internal developments empowered Europe to assume a leading stance, "trailblazing emission reduction targets" and emerging as "a model in GHG reduction negotiations."[497] Indeed when US federal actions began to lose momentum, it was Europe's turn to influence "the latest US environmental protection efforts at the State level."[498] California and Massachusetts thus developed their ETS schemes "by drawing on the example of the EU"[499] thereby emphasizing Europe's position as a leader in climate governance. However, this growing wedge across both sides of the Atlantic is beginning to weigh increasingly more for the future stabilization of atmospheric temperatures.

Transatlantic divergences in the fight against climate change began to emerge with the start of the new millennium. The US began to insist on "a model of unfettered sovereignty, maintaining a preference for market mechanisms encouraging GHG emissions reductions"[500] and resisting the implementation of internationally-binding reductions. This exogenous shift in US environmental posture mirrors the changes in geopolitical imperatives and American threat perceptions molding strategic choices. As long as federal policies were the most environmentally advanced, the US consistently supported "international agreements that would have little costs for the US industry or even decrease its competitive disadvantage."[501] Yet when it "started to lag

[494] Eugenio Cusumano, "Handing Over Leadership: Transatlantic Environmental Governance as a Functional Relationship," *Transworld – The Transatlantic Relationship and the Future Global Governance* 36 (2014): 10-11.
[495] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 262.
[496] *ibid*.
[497] Cusumano, "A Functional Relationship," 9.
[498] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 248.
[499] *ibid*, 259.
[500] *ibid,* 255.
[501] Cusumano, "A Functional Relationship," 14.

behind,"[502] US compliance with international binding restrictions turned into a cost for relative economic gains and a loss for "the competitiveness of its industry vis-à-vis emerging economies."[503] At the great expense for the environment, the US became more concerned with compelling rigid reductions on developing countries, as enshrined by the Byrd-Hagel Resolution. Even the implementation of protectionist trade policies has provoked adverse effects: the US has billions in production subsidies and consumer tax credits for alternative energy sources, but imposes tariffs on solar panels imported from China, making these more expensive and reducing their installation.[504] Furthermore, Transatlantic relations have not been free of tension: more recently the EU has clashed with American authorities, and its business interests, over the inclusion of US airlines into the EU ETS.[505] Tragically, US concerns for economic growth have clearly had a disastrous impact on the preservation of natural ecosystems.

Similarly, the principle of sustainable development, while firmly entrenched in EU-law and European policy framework, fundamentally disappeared from US discussions for a decade. It was only re-introduced after Obama's renewed commitment to environmental leadership. However, despites efforts to increase the efficiency of federal agencies, by providing tax incentives, basic regulations, and some policies for directing energy sources, Obama's ambition to "make the USA a leader in renewable energy"[506] sadly did not produce a lasting change. Any reduction in pollution is more the result of exploiting shale gas resources in pursuit of energy independence, than the result of federal initiatives towards sustainability or renewable energy. Substituting cheap natural gas for coal is a means for a *cleaner* energy[507] with total emissions increasing "by 8.6%"[508] between 1990 and 2011 but decreasing "by 6.8% with respect to 2005 levels," urging some studies predict that the US will come very close to Obama's target of a 17.5% reduction by 2020."[509] With minimal oil import levels since 2012, cheap energy at home is increasingly portrayed as the "game changing factor;" with the potential to "propel the US back to the forefront of global manufacturing"[510] by transforming into "a fossil fuel exporter by 2030."[511] This promise of "energy independence,"[512] could result in a fossil fuel-dependent cycle, especially if Trump continues to enhance unconventional energy, incentivizing "new

[502] Cusumano, "A Functional Relationship," 14.
[503] Bakker and Francioni, introduction, 5.
[504] Douglas A. Irwin, "The Case for Free Trade: Old Theories, New Evidence," in *Free Trade Under Fire*, 4th ed. (New Jersey: Princeton University Press, 2015), 67.
[505] Cusumano, "The Drivers and Future of Transatlantic Environmental Governance," 254.
[506] Gupta, *The History of Global Climate Governance,* 156
[507] Purvis, Springer, and Grausz, "The New US Domestic Climate and Clean Energy Agenda," 201.
[508] Francioni and Bakker, "The evolution of the Global Environmental System," 23.
[509] Froggatt, Rouhaud, and Svačinová, "Coherent and Integrated Agriculture Policies," 97.
[510] Lee and Torney, "New Drivers of US Climate Action," 174.
[511] Gupta, *The History of Global Climate Governance,* 156.
[512] *ibid,* 124.

technologies of oil and gas extraction"[513] to overlook the risks of groundwater contamination and methane leakage and by legislatively discouraging scientific research in renewables.

As various domestic constituencies and political factors increased their resistance against multilateral cooperation, the topic of global warming became increasingly polarized, "losing the bipartisan support they had previously enjoyed and becoming increasingly identified with the Democratic Party."[514] This growing rift has prevented Obama's Administration to "reach the broad political consensus that would be needed for initiating federal legislation,"[515] attested by Congressional deadlock on enacting a national cap-and-trade scheme. Although Obama resuscitated a more prominent US stance in global climate policy when negotiating the Paris Agreement, the current radicalization of the US Republican Party in the figure of Donald Trump stirs great uncertainty even for those business sectors that would have benefited from the accord. Although meaningful State-level alliances are taking climate-friendly initiatives, such as low-carbon restraints, ET systems, and renewable portfolio standards, these are incapable of revolutionizing climate policy without a strong federal framework in place.

Regardless of both transatlantic partners baring similar geopolitical challenges, such as the BRICS economies embarking on fast pace of development, particularly "China's insatiable appetite for resources"[516] stirring worldwide competition over energy resources, the EU has "stronger incentives for renewable energy."[517] Indeed, the requirements for unilateral emission reductions and trading commitments owe it to the EU's dramatic overreliance on fossil fuels "imported from Russia or the Middle East and North Africa."[518] Additionally, its geographical proximity to these "insecure sources" and "unstable regions" renders the EU extra vulnerable to "some of the threats arising from environmental degradation, such as mass immigration and conflict along its Southern borders."[519] It is no wonder that both energy security and climate change have been framed as security issues in the Union's agenda. Moreover, although the shale gas boom in North America offers major opportunities for the EU to "develop access to a diverse range of energy sources,"[520] the "security and resilience"[521] under the *EU LNG Strategy* is subject to many contrasting environmental, geological, and regulatory differences with the USA. Europe

[513] Bakker and Francioni, introduction, 5.
[514] Cusumano, "A Functional Relationship," 14.
[515] *ibid*.
[516] Koranyi, "Towards a Transatlantic Energy Alliance," xiv.
[517] Cusumano, "A Functional Relationship," 10.
[518] *ibid,* 12.
[519] *ibid*.
[520] European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic And Social Committee and the Committee of the Regions on an EU Strategy for Liquefied Natural Gas and Gas Storage*, COM (2016) 49 Final, Brussels, 16 Feb. 2016, 2 [hereinafter *EU LNG Strategy*].
[521] *ibid*.

thus continues its "long-term contracts with traditional suppliers,"[522] but without abandoning the domestic incentives for a greener economy.

Unlike its Transatlantic partner, Europe has strongly favored a greater oversight for monitoring compliance with international environmental norms. It "has tried to demonstrate a leadership role since the beginning" by promoting a unilateral acceptance for the "stabilization target for GHG emissions in 2000/1990," for a "-8% target for the period 2008-2012," and applying the "20-20-20 strategy focusing on a 20% reduction of GHG emissions in 2020/ 1990, making renewable energy 20% of total energy, and a 20% increase in energy efficiency."[523] Despite current internal de-stabilizing factors, Europe tries to preserve its role as an environmental leader, extending "a multilevel model of environmental governance based on the delegation of powers to supranational bodies."[524] In international negotiations, it has notably advanced a more equitable North–South policy through the construction of multilateral environmental agreements: Europe managed to somewhat balance its "act in both promoting trust building with the South, while avoiding the full weight of the white man's burden."[525] Though despite best efforts, these initiatives have further strained the mismatch in environmental protection and climate regulation standards with the other side of the Atlantic.

Accordingly, the prospects for addressing climate policy disagreements via existing bilateral channels for transatlantic cooperation are increasingly dim. The Vienna Summit 2006 which started the *EU-US High Level Dialogue on Climate Change*, *Clean Energy and Sustainable Development* has not met since 2009. Negotiations for the *Transatlantic Trade and Investment Partnership*, facilitated by the Transatlantic Economic Council in finding "sufficient common ground to eliminate trade barriers related to environmental issues,"[526] are now expected to be scrapped by the Trump administration. The EU-U.S. Energy Council, established in 2009 to "address energy security of supply and policies to promote low carbon energy sources" and to strengthen "the ongoing scientific collaboration on sustainable and clean energy technologies," has expressed "little urgency"[527] for deepening the energy dialogue. Other transnational efforts for addressing ongoing world crises, such as the very recent G7 meeting in Taormina in May 2017, once again witnesses a weakened Transatlantic bond compromising the ability to tackle common environmental concerns.[528]

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[522] Olsthoorn, "Climate Change and the Future of Clean Energy," 33.
[523] Gupta, *The History of Global Climate Governance,* 156.
[524] Cusumano, "A Functional Relationship," 10.
[525] Gupta, *The History of Global Climate Governance,* 158.
[526] Bakker and Francioni, introduction, 5.
[527] Olsthoorn, "Climate Change and the Future of Clean Energy," 37.
[528] *ibid,* 32.

There is no denying how the unexpected election of Donald Trump has deeply unsettled the future relationship of the US with its historic Transatlantic allies. The greatest challenge for the contemporary EU phase is the growing populism and Eurosceptic movements –inspired by Trump's election and his notorious attitude towards Europe and the rest of the world. Already the gravity of the Eurozone crisis had begun to steer members' attention away from environmental issues, but the credibility of the Union became increasingly subject to protest voting and the rise of radical right-wing Eurosceptic movements. In 2014, European Parliament elections witnessed a "considerable bloc of Eurosceptics"[529] enter the room, and in 2016 the United Kingdom voted to 'leave' the EU. Nonetheless, the recent outcome of a similar referendum in The Netherlands and Macron's election over Le Pen in France offer hope for a greater unity. Moreover, European elites do not seem to view "environmental protection and economic recovery as irreconcilable goals."[530] Even those members that are severely affected by recession, namely Greece and Italy, "are among the most supportive of increased environmental efforts, and even see green investments as an opportunity for economic growth."[531] Also, following the first application of *Article 50*, British environmental standards are still expected to translate former EU law into new UK law,[532] thereby still respecting international commitments.

EU enforcement of international law is institutionally sound, as required by the Treaty of Lisbon in 2009. If anything, this is proof of how environmental issues enjoy a "greater bipartisanship in the EU than in the US."[533] So long as climate change is "expected to have little clout in Washington"[534] an uncertain Europe will quietly soldier on in its unilateral pursuit of shaping a global climate-trading system based on its own example. Given this hostile transatlantic context, it has become exceptionally vital that both the European Commission and individual Member States engage in more technical discussions with the leading emerging economies, currently fostering unsustainable energy consumption. Europe must continue its discussions with China on the development of the pilot carbon budget trading system, as well as consultations with the growing economy of South Korea.[535] Thus, despite US wariness risking to hold back the world from moving towards more ambitious voluntary commitments, "Canada, France, Germany, Italy, Japan, and the United Kingdom and the Presidents of the European

[529] Cusumano, "A Functional Relationship," 15.
[530] *ibid*.
[531] *ibid*.
[532] Bellamy et al., "Meeting Carbon Budgets," 6.
[533] Cusumano, "A Functional Relationship," 14.
[534] Olsthoorn, "Climate Change and the Future of Clean Energy," 37.
[535] Ellerman, "The Shifting Locus," 54.

Council and of the European Commission" have very recently reaffirmed their "strong commitment to swiftly implement the Paris Agreement."[536]

[536] Forty-Third G7 Summit, Taormina, Italy, 26–27 May 2017, *G7 Taormina Leaders' Communiqué*, 28 May 2017, Climate and Energy (32).

Trading Leadership

The evolution of climate governance reveals the extent to which the American and European approaches have developed both elements of convergence and divergence, underlying shifting balances in domestic and foreign transformations. The exercise in global leadership has varied according to enabling or disabling conditions, causing the two partners to trade places as the forefront runner of the climate regime. The US, from being the "staunchest supporter of multilateral environmental cooperation,"[537] transformed into a laggard of climate action; whereas the EU, from lacking explicit environmental competences, proved to be vital in securing Kyoto's entry into force, endorsing international agreements ever since. However, the extent to which this is the result of the EU's own assertion, rather than USA's default, is debatable. Some scholars have argued that "had the reality of non-ratification of the Kyoto Protocol by the US been widely recognized […] say in 1998 instead of 2001, it is at least conceivable that Europe would not have been able to assume leadership."[538] Indeed, it is during this timeframe that the EU forcefully began to champion an environmental policy enabling "the volte-face on emissions trading, the subsequent salvaging of Kyoto Protocol, and more importantly, taking the domestic actions that give substance and meaning to global leadership."[539]

Remarkably, the US did not express any feelings of "rancor"[540] for losing its pedestal. In 2001 Bush openly declared he would "not interfere with the plans of any nation that choose to ratify"[541] the Protocol. True to his word, there was no transatlantic race for leadership, "no reports that the US attempted to dissuade other Kyoto signatories."[542] The United States had simply vacated the climate arena without contesting its aftermath. Incidentally, some have argued that the "US seems almost relieved that it does not have to take a leadership role in this domain."[543] Nonetheless, the world was at an impasse throughout the first decade of the new millennium: the EU unilaterally committed "to a -20% target and a conditional -30% target,"[544] while the USA lagged behind. Against this backdrop, the ratification of the Paris Agreement was, albeit a modest step for global emission standards, a milestone for international negotiations. However, in the present international arena, even if Europe were to enhance the sense of global justice and increase international pressure against US withdrawal, the effects of the Eurozone crisis and

[537] Cusumano, "AFunctional Relationship," 2.
[538] Ellerman, "The Shifting Locus," 55.
[539] *ibid*.
[540] *ibid*, 41.
[541] Bush, "Clear Skies & Global Climate Change Initiatives."
[542] Ellerman, "The Shifting Locus," 47.
[543] *ibid*, 55.
[544] Gupta, *The History of Global Climate Governance,* 140.

growing Euroscepticism, question whether the Union can still play a leadership role for promoting a more efficient climate change regime.

Differently from Kyoto, an unforeseen advancement, which would have been unconceivable twenty years ago, unfolds across the landscape of global climate negotiations. Perceiving an opportunity to nurture new engines for growth, conducive to its interest to play a "bigger role in global climate governance,"[545] China has assured at the Davos Conference in January 2017 that it would "fill any resulting leadership gap in the global fight against climate change."[546] Presently, Europe is in a position of supporting China's intention of "picking up some of the slack generated by American withdrawal,"[547] while its domestic power is subject to a cracking solidarity. As affirmed by various scholars, any future prospect for Europe to continue to head the global climate system seems to depend on its support for China's ambition to lead the Paris Agreement to fulfillment, thereby envisioning the "faint outlines of an eventually linked European and an East Asian trading complex consisting of Australia, China, and South Korea."[548] Nevertheless, a silver lining discloses for Europe: despite domestic conflicts and increased internal opposition over the announcement of the 2030 Climate and Energy Framework, the EU has "consistently pushed for targets despite the economic crises in the Eurozone."[549] In upholding a "swift ratification, effective compliance and enforcement of all international agreements relating to the environment to which it is a party,"[550] the European Union will undeniably continue to contribute to global climate governance by remedying the failures of international negotiations and by endorsing commitments where these are successful.

[545] "China's Legislature Ratifies Paris Agreement on Climate Change." *Xinhua | English.news.cn*., 3 Sept. 2016, accessed 26 Jan. 2017, <http://news.xinhuanet.com/english/2016-09/03/c_135656703.htm>.
[546] Isbell, "Trump's Supply-Side Energy Policy and the Low-Carbon Transition."
[547] *ibid*.
[548] Ellerman, "The Shifting Locus," 54.
[549] Gupta, *The History of Global Climate Governance,* 142.
[550] Orlando, "The Evolution of EU Policy and Law in the Environmental Field," 70.

A Problematic Future

A troubling feature of international climate negotiations is the sidelining of the ethical dimensions of the North-South divide: "the negative impact of rising temperatures is felt much more in poor areas of the world and more dramatically in the low lying coastal states that have no effective means to defend themselves from the rising level of the oceans."[551] There is no evidence of economic development to be reducing "unsustainable patterns of production and consumption" or advancing "appropriate demographic policies" deemed of being "in harmony with nature."[552] Still, environmental security is an inalienable from human rights, demanding both "*horizontal* justice for living generations" and "*vertical* justice in terms of the obligations that states owe to their people beyond the biological existence of the living generations."[553]

Although interpretable as an "eminently secular," this "admonition" has actually been embraced by one of the "most prophetic voices of our time."[554] In his encyclical letter *Laudato si'* of June 2015, Pope Francis places humanity "at the center of the preservation of ecological integrity."[555] Certainly, major religious traditions are not estranged from environmental concerns: "in the Judeo-Christian tradition, for example, God gave the earth to his people and their offspring as an everlasting possession to be passed down to each generation."[556] Therefore, firmly embedded in ancient rituals, the Pope's moral injunction to protect our *own home* is "entirely consistent" with the 'secular' principle of intergenerational equity, requiring socioeconomic development to equitably meet the "environmental needs of the present and future generations."[557] In reminding the world of its forgotten duty, it comes to no surprise that the letter was presented as a gift to Donald Trump upon his first visit to the Vatican See in May 2017.

Certainly, the US and the EU could jointly contribute to the advancement of a responsible sovereignty in "the present institutional system for environmental governance in the field of climate change by internalizing the basic principles and values of environmental protection in their respective domestic legal orders."[558] Being both constitutionally and culturally "based on democracy, accountability, the rule of law and human rights,"[559] could help capture the imminent *moral obligation* for ecological protection, rather than appeal to State strategic interests, which inherently underlies the Western community as a whole. However, in light of most recent global

[551] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 248.
[552] Francioni, "From Rio to Paris," 19.
[553] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 248-249.
[554] Francioni, "From Rio to Paris," 32.
[555] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 249.
[556] Brown Weiss, "The Evolution of International Environmental Law," 2.
[557] Bakker and Francioni, "Transatlantic Cooperation for Climate Governance," 249.
[558] Francioni and Bakker, "The evolution of the Global Environmental System," 34.
[559] *ibid*.

developments, any hope for a coalesced Transatlantic environmental partnership amounts to zero. What seems to be fundamentally lacking is the translation of the generic political pledge for inter-generational equity into a *legally-binding* obligation nurturing a "sense of shared identity and common adherence"[560] that could unite both sides of the Atlantic Ocean.

Conversely, social-constructivists have pinpointed the "existence of a connection between wealth, the spread of post-materialist values, and attention for environmental issues."[561] This dimension has been captured by the environmental Kuznets curve, predicting that after an initial increase, pollution starts "to decline proportionally" with the use of cleaner technologies under "higher levels of income."[562] In turn, this economic theory has triggered the distorted perspective that a greater exploitation of nature may lead to technological breakthroughs that could ultimately save nature. Despite improving socioeconomic conditions, however, US economic development has not translated "into greater attention for environmental themes." Instead, already during the Clinton Presidency, soaring income levels "were matched by an increasing wariness of environmental protection measures."[563] The American identity, rooted in "individual liberties and free economic enterprise,"[564] markedly contrasts with internationally agreed norms, defying universal declarations and conventions that require human beings to play a greater role in securing environmental protection. When it comes to the "low-energy-cost" of manufacturing industries, the traditional "energy-intensive" lifestyles, and the "huge economic weight" of the fossil fuel industry, the ultimate "cost-benefit trade off"[565] for the US to transition towards a cleaner system results extremely arduous. The unintended mistake of nurturing a relentless faith in technological innovation is that of deliberating emissions reduction pathways more in terms of "what is deemed politically and economically feasible,"[566] instead of what is fundamentally *necessary* in order to curb global anthropogenic emissions, and save the environment.

The Paris Agreement would have offered a means to reconcile US "individual and economic liberties"[567] with the overall cost-benefit trade-off for broader American interests, appealing to the country's strategic interest, ensuring greater certainty for its compliance than if phrased as a primary moral imperative. Now, however, even though many US businesses advocate the economic benefits of Paris, Trump's cabinet is conserving even deeper ideological resentments, evident from the dismaying announcement on June 1st. Ultimately, the only support

[560] Cusumano, "A Functional Relationship," 13.
[561] *ibid*.
[562] *ibid*.
[563] *ibid*.
[564] *ibid*.
[565] Olsthoorn, "Climate Change and the Future of Clean Energy," 30.
[566] *ibid*, 35.
[567] Cusumano, "A Functional Relationship," 13.

for a global normative framework lies at the civil society level, where the linkages "between advocacy networks and epistemic communities have played an important role in the transfer of ideas and regulatory models between the two sides of the Atlantic."[568] As a matter of fact, past experience demonstrates that the deep integration between American and European NGOs, advocacy groups, environmentalist coalitions, and scientific experts played a key role in influencing bilateral cooperation by "fostering policy convergence and isomorphism."[569] However, despite being undeniably important, these bottom-up initiatives alone cannot not suffice to upturn Trump's outright indifference towards the looming threat for the survival of the planet, already distancing European policymakers and the wider public alike.

Mutual trust is progressively undermining, a value gap is enlarging, and transatlantic environmental collaboration is dwindling. Closing this structural rift will be "long, costly and involve deep and initially unpopular changes in lifestyle in the Western world."[570] Though such a prolonged and unpredictable process induces the second problem: the fight against global warming cannot wait. We have to channel immediate action into overcoming even the deepest of differences otherwise the wedge will continue to grow with the risk of compromising a historical alliance, vital for securing the future preservation of our planet, our home.

[568] Cusumano, "A Functional Relationship," 13.
[569] *ibid,* 10.
[570] Koranyi, "Towards a Transatlantic Energy Alliance," xii.

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Summary

GLOBAL CLIMATE GOVERNANCE:
SHIFTING BALANCES AND LEADERSHIP IN TRANSATLANTIC RELATIONS

Introduction

The global battle against the disastrous increase of toxic concentrations, pushing the process of the greenhouse gas effect to extreme historical levels, most instinctively calls upon the United States and European Union to play a greater role against these rising anthropogenic emissions. Some of the greatest international issues of the 20th and 21st centuries have concerned American and European solidarity and, most certainly, in being two of the greatest economic and commercial blocs, the Transatlantic partners have undeniably exerted their own influence over the evolution of global climate governance and the development of the underlying international normative framework.

Assessing to what extent the US and the EU, conditioned by shifts in internal and external balances, have exercised a leading position in the evolution of global climate governance, against the backdrop of an evolving distribution of global power, is at the heart of this dissertation. Current political challenges, triggered by growing global unemployment and worldwide inequality, xenophobic and protectionist upsurges following the Arab Spring and Migration crisis, and the additional shockwave provoked by US Presidential elections and outcome of the Brexit Referendum, have enthused a newly accepted wisdom that America and Europe are abandoning their traditional collective force. Consequently, the central aim is to ultimately analyze how the US and EU have altered their approaches over time and answer whether these individual attitudes have converged on the topic of global warming or, alternatively, whether there has been, or continues to be, greater evidence of a divergence in Transatlantic relations, threatening a structural rift in the battle against global warming.

The dissertation is structured into three core chapters investigating the evolution of the US and EU attitude in three specific domains of climate governance, namely the context of international climate negotiations, the energy sector and its implications on ecological security, and lastly the extent of compliance with international environmental law. Every chapter is subdivided into three separate sections, each assessing the composite elements of the domain in question. All sections are further divided into two segments, offering a review of the extent to which each individual transatlantic partner has been influenced by internal and external dynamics and how, in turn, these have determined its distinct role in the global framework of climate

governance. The concluding chapter offers an assessment of the effects of individual internal and external balances on the race towards a global leadership stance in climate governance, unveiling the extent of converging and diverging patterns in US and EU environmental relations, presently straining future expectations for a transatlantic collective force against global climate change.

Chapter I: Approaching the North-South Divide

The first chapter examines the quintessential rich-poor fault-line that has characterized the climate debate since the dawn of international environmental law; namely, that fossil fuel emissions originating from industrialized countries are both historically and accordingly much higher than those of developing countries. Simply put, the rich have produced and consumed more than the latter, and are better able to cope with the negative environmental impacts, whereas the poor are more vulnerable and lack the effective means to defend themselves.

Increasingly fearing that a new form of 'green imperialism' would threaten their socioeconomic needs to nurture growth, developing countries reverberated their right to pursue their own development process throughout international discussions. Thus, to respond to the challenges of liability, leadership, and compensation underlying global climate change, initial stages in environmental negotiations attempted to clarify how the world should cope with this distinct colonial legacy. The principle *Common but Differentiated Responsibilities and Respective Capabilities of Countries* entered international legal parlance, resounding in landmark climate agreements for decades to come.

The context of discussions surrounding the United Nations Framework Convention on Climate Change (UNFCCC) in the early 1990s, was that of a hopeful solution towards the beginning of a newfound ecological globalism. 'Northern' countries listed in Annex I were expected to lead the battle against global warming, not only by providing scientific, financial, and technological assistance to non-Annex I nations, but also by reducing their domestic emissions to make space for those of the global South. Against this backdrop, the United States exerted its supremacy by influencing the textual editing of what was soon to be a universal convention by 1994, wording the articles to its liking; whereas Europe's environmental attitude remained subsidiary and subject to internal Member-State divergences, overall weakening its initial international stance in climate policy.

Three years later during Kyoto negotiations, once again, the United States were leading international discussions, negotiating, among other things, the inclusion of market-based

mechanisms to incentivize the reduction of industrial pollution. However, an aura of change swept across the climate domain. Faced with increased congressional resistance, epitomized by the passing of the Byrd-Hagel Resolution in July 1997, the Clinton-Gore government was largely inhibited from presenting the final draft of the Kyoto Protocol to legislative approval. US leadership began to increasingly suffer from internal setbacks, culminating with an outright forfeit from international climate policy in 2001: George W. Bush officially withdrew the United States from the treaty, triggering a deadlock in international ratification. It was not until 2003, following the unanimous adoption of the EU domestic Emission Trading Scheme (EU ETS), that the leadership void, left behind by the US, gradually began to be filled. By growing institutionally stronger, by enlarging its membership, and by increasing its confidence for harmonized action, the EU began to exert a greater role in pressuring developed countries to participate. Finally in 2005 the Protocol entered into force, but European incentives went a step further: the EU unilaterally decided to exceed the goals framed under the Kyoto Protocol, setting high environmental standards for other countries to aspire to.

In the aftermath of Global Recession, it became abundantly clear that geopolitical emission patterns had shifted: large developing economies were booming, and countries such as China, South Africa, Brazil and India had overtaken the pollution patterns of the old North. International discussions on the climate agenda were once again at an impasse: after two decades of intransigent emphasis on the principle of *Common but Differentiated Responsibilities*, the distinction between industrialized and developing countries was practically obsolete. Overcoming this traditional distinction proved vital for framing a more flexible, inclusive, and efficient response against the looming environmental crisis. In fact, the new climate accord adopted in Paris in December 2015, and in force since November 2016, no longer constrains binding commitments exclusively to developed countries. Instead, given the Common but Differentiated Responsibilities*, in light of different national circumstances* the new formula requires *all* parties', developed and developing alike, to implement Intended Nationally Determined Commitments (INDCs) to reduce domestic greenhouse gas emissions. The more climate-friendly Obama Presidency ignited a new era of rapprochement in global climate governance. By reaching out to the main economies in transition, China especially, new hopes ignited as the world's two greatest polluters collaborated together. Once again, the United States delegation prevailed over European negotiators, ensuring that the legal nature of the treaty envisioned its proposal for a more bottom-up design which allowed signatories to unilaterally and freely determine their own reduction targets, enclosed on a separate non-binding document announced to the UNFCCC secretariat.

Presently, it is once again a déjà-vu for Europe: it is endorsing a global agreement reflecting the US agenda more than its own domestic interests, but the latter has announced its withdrawal from the same international framework it helped shape and forge. The US has officially undertaken a dangerous isolationist path, walking away from a universal accord which could have established the necessary and gradual process for curbing worldwide anthropogenic emissions. Though while in the past the leadership vacancy was overtaken by Europe, this time the negative effects of the Eurozone crisis, having awakened economic insecurities in the more skeptical Member States, as epitomized by the Brexit Referendum, stir considerable uncertainties whether the EU is capable to continue to lead the way in global climate governance.

Chapter II: Reconciling Climate with Energy Security

Considering the implications behind worldwide energy consumption and how the exploitation of unconventional fossil fuels is the leading cause of rising anthropogenic emissions underlying global warming, the second chapter focuses on the need to reconcile the dynamics of the energy sector with climate mitigation measures. For an import-dependent country, such as the United States or the European Union, energy security is frequently disturbed by price distortions of oil, gas, and coal. Thus, a more sustainable energy future would require greater regulation of energy consumption patterns, the possible adoption of market-based mechanisms, such as emission trading, and, most importantly, the pursuit of the production of renewable energies. In attempt to address these key issues, the Transatlantic Partners have often indulged in different paradigms, prompting contradictory priorities in climate and energy policy. Indeed, despite sharing similar anxieties, the US and the EU more often than not conflict over their lifestyle traditions, industry and resource endowments, and on the interpretation on the role of the market and government in defining domestic energy security.

Tailored to each country's prerequisites, the level of implementation of domestic regulatory measures and target fulfillment has varied considerably. It was not until Obama's second mandate that the United States began to respond more constructively to the threat of climate change. The discovery of vast amount of shale gas reserves stimulated the substitution of natural gas as a cleaner alternative to coal; furthermore, in 2015, the Obama administrated introduced the federal framework for restraining coal power plant emissions under the Clean Power Plan. Numerous States endorsed the new climate agenda and the US witnessed its first emission reductions in years. However, these efforts have proven short lived in light of the new negationist government. Condemning Obama's climate legacy to be butchering the American

economy, Trump issued an all-out executive rollback in ultimate pursuit of a protectionist supply-side approach, enthused with fossil-fuel favoritism.

The European Union, by stark contrast, pursued greater effort-sharing commitments towards achieving an energy-efficient and low-carbon economy, setting targets for the year 2020, under the Climate and Energy Package, and extending its ambitions for the year 2030. In this regards, it must be noted that despite the distinctive achievements of some Members, especially among the Green Growth Group (particularly Germany), the new energy framework has stirred considerable doubt in other States. In the wake of the gravity of the Eurozone crisis, coal-dependent countries such as Poland or Czechoslovakia have voiced their concerns, steering other members' attention away from environmental issues; ultimately, hindering a unified and unilateral progression towards higher environmental standards. Moreover, the credibility of the EU has become increasingly subject to protest voting and to the rise of radical right-wing Eurosceptic movements –as noted in 2014, when a number of Eurosceptics won elections in the European Parliament, and in 2016 when Great Britain's national referendum favored to 'leave' the Union. Though interestingly enough, the United Kingdom is still expected to continue to uphold its environmental and climate commitments, translating EU domestic policy into its own national law. Also, it must be noted that the recent referendum in The Netherlands and Macron's election over Le Pen in France offer hope for a greater unity, as well as the fact that both Greece and Italy, two of the members most severely hit by recession, continue to be extremely supportive of green investments and of EU environmental standards.

Arguably, US federal-level environmental standards were doomed to inadequacy long before the Trump Presidency. Indeed, a strong politicization in the climate and energy debate had already unfolded under Obama, epitomized by the failure of the cap-and-trade legislative proposal in 2009. Wrongly relying on partisan majorities in Congress, while disregarding the inherent regional nature of the issue, Obama only succeeded in strengthening economic concerns over climate change mitigation, deemed as an expensive hoax by those fossil-fuel dependent and soon to be Trump-supporting Midwestern and Heartland regions. Thus, climate change is notoriously subject to a stark polarization in American politics: a Democratic vs. Republican dichotomy. However, more success has been witnessed at the State-levels with the establishment of California's emission trading system and the Regional Greenhouse Gas Initiative (RGGI). Although these could encourage other US States to subscribe to similar market-based schemes, an unavoidable constraint resounds: so far as a federal framework is not in place, any State-level initiative will remain plagued by volatility and by a high susceptibility to political change. Conversely, the European Union has advanced its emission trading system, offering European

companies economic incentives to reduce pollution, extending to other 11,000 energy intensive industries, across the 28 Member States plus Iceland, Liechtenstein, and Norway. Ascertaining the EU ETS as a global example to be followed, however, does not come free of chinks in the chain. In fact, despite obvious achievements, the system remains subject to controversy, frequently being strained by high price volatility, scarce transparency, limited monitoring capacity, and risk of fraud, casting further doubts on its environmental efficiency.

The desire to decrease dependency on fossil fuel imports has certainly urged both the United States and the European Union to pursue renewable energies, although with varying intensity. When it comes to renewables, the United States witnesses a greater decentralization of power, passing on policy incentives to the decentralized State-level. Indeed, many 'blue' coastal regions as well as 'red' heartlands have increased their renewables energies, fostering greater employment opportunities and lower production costs in certain industries. However, Trump's supply-side energy policy, coupled with the hard fact that the conventional fossil fuel sector still nurtures the greatest market incentives in the US economy, risks undermining the great local legislative progress enacted this far, reminding how a cost-benefit analysis remains a determining internal factor for US federal climate action. In Europe, instead, increasing renewable energies is not only a pivotal goal for the energy agenda, but is also among the informal 'constitutional' objective of the Union, codified under Article 194 of the Treaty on the Functioning of the European Union (TFEU). Indeed, despite the various domestic constraints provoked by some members, the EU expects to increase renewables production in various sectors, among which agriculture, transport, and electricity. Certainly, in being the most import-dependent region of the world, the European Union is greatly urged to pursue renewable energy, which will undoubtedly remain a high priority of its energy and climate policy.

Chapter III: Respecting International Environmental Law

The direct link between the implementation of international environmental law and a country's domestic priorities concerning its own energy security, inherently shaping the evolution of international climate discussions, is ultimately undeniable. The third chapter of this dissertation thus scrutinizes how the United States and Europe have developed diverse, and quite opposing, attitudes towards the enforcement of international environmental law. The chapter assesses how contradictory perspectives over the relationship between economic growth and environmental priorities, influenced by the shifting balances in internal and external factors, have determined to what extent international environmental law has been fulfilled by each

Transatlantic Partner. The analysis examines the impact of the normative legacy of the Rio Declaration 1992, the expanding belief in technological supremacy contrasting with the conceptualization of the Precautionary Principle, and the obstinate application of the traditional formulation of Sovereignty Principle, tormenting the imminent outlook in securing international cooperation in the battle against climate change.

Beginning from the Stockholm Declaration in 1972, the path was set towards the gradual expansion of the normative practice in the environmental field, inspiring an array of new international treaties, customary law, soft law, and general principles characterizing the evolution of global climate governance. Though while today it is generally recognized that environmental protection is a 'common concern of humankind,' as stated in the Paris Agreement, for almost half a century humanity has pursued a development process which highly contrasts from preserving nature as a global public good. As a matter of fact, the exact content of an explicit *right* to a healthy, safe, or satisfactory environment has still not been agreed upon. Instead, the world appears to have pursued a human development process by exclusively relaying on science, technology, and economic-financial tools, which deeply weigh on ecological integrity and environmental preservation. Once again, both sides of the Atlantic appear to have become increasingly distanced in their interpretation of the international normative framework, developing different approaches for what concerns the respect of the principle of sustainable development, the regard for precautionary measures behind the uncertain environmental harms provoked by technological innovation, and the assurance for climate change mitigation in cooperative external relations with regards to the traditional interpretation of the sovereignty principle, thereby ultimately troubling future compliance with the Paris Agreement.

Particularly, the United States and the European Union, though sharing some similar interpretations, have considerably varied in their approach and implementation of the framework of the 1992 Rio Declaration. The declaration has left behind a normative legacy defining the concept of Sustainable Development, yet this notion has fundamentally disappeared from US discussions for over decade. Originally, the principle was modeled on the interpretation and application of US domestic conservation and environmental law, at first considered highly avant-garde for stirring the rise of the modern ecology movement. The wordings of the inter-generational equity principle, precautionary approach, and human socioeconomic development needs, enclosed in the Rio Declaration, mirror the lines of US legislative acts of the National Environmental Policy Act of 1969 and the Clean Air Act of 1963. Moreover, before the beginning of the new millennium, Sustainable Development pertained to federal climate discussions: Clinton had created the President's Council on Sustainable Development (PCSD)

tasked to formulate a sustainability framework at the US federal-level. However, the first decade of the new millennium witnessed a dramatic silencing on the topic and the principle of sustainability was only re-introduced after Obama's renewed commitment to environmental leadership. Though rather tragically, the US currently remains the wealthiest country in the world which is lagging behind sustainable development achievements. In contrast, in the European Union this principle has been firmly entrenched in the 2009 reform treaties, EU law, and European Court of Justice case-law. Indeed, essential to its ultimate objectives and nature, Article 21 of the Treaty on European Union (TEU) expects the Union *to contribute to the sustainable development of the Earth*. Thus, the persistent determination of the EU to lead global climate governance once again resounds.

Scientific discovery is intrinsic to the evolution of international environmental law, especially in the climate domain. Scientific evidence uncovers the compound effects of human socioeconomic development and how the exploitation of Earth's resources strains the natural functioning of all ecosystems. Evidently defying another normative framework established by the Rio Declaration, namely the pursuit of *a healthy and productive life in harmony with nature*. Indeed, the past two decades have witnessed how the progression of economic theory has triggered a distorted perspective that advancing technological power, requiring a relatively short-term increase in the exploitation of nature, may eventually lead to a long-term technological breakthrough that will ultimately help save the environment. This conceptualization has been incarnated by new emerging movements, who in the battle against the negative effects of climate change, as both a cause and effect of global inequality and widespread poverty, encourage a relentless faith in science and technology as the only solution. The most prominent practical example of this ideology, is certainly epitomized by the American pioneering of hydraulic fracturing technology, for the exploitation of underground shale gas reserves.

While the United States has proven its effectiveness in reducing emissions by substituting natural gas for coal, the exploitation of subsoil, from which the unconventional fuel is obtained, still presents considerable environmental risks. Sacrificing the latter for the sake of the bigger picture, meaning the prospective that the United States not only would be reducing its domestic pollution but also ensuring its energy independence from foreign suppliers, the US adopts a typical *cost-benefit analysis* at the expense of ecological preservation. Already during the Obama Administration greater market incentives were geared towards expanding technological research and innovation in fracking, entrenched in US business interests, in the American high-energy lifestyle tradition, and US cultural identity. By being firmly grounded on individual freedom and economic enterprise, the US pursuit of a cleaner system directly depends on the overall trade-off

for the US economy. Yet, this approach blatantly contradicts with the ecological integrity that international environmental law should inspire. It disregards the spill-over effects that a more intense technological exploitation of nature would cause to climate stabilization, rejecting the need to sustain a more harmonious development with nature. Pioneered and rapidly increasing in USA, it is uncertain whether hydraulic fracturing will extend to the European Union. Indeed, despite some increased support for fracking technologies in some Member States, Europe's unconventional reserves offer very little hope for a long-term domestic supply. Accordingly, the European Union has preferred the adoption of the Precautionary Principle, when it comes to scientific uncertainty, in pursuit of its own energy security needs. Having recognized that preventive environmental damage should be the priority, rectified at source of domestic action (Article 191.2 of TFEU), there consequently seems to be no formal endorsement of neither hydraulic fracturing, nor of a cost-benefit approach in Europe. Instead, the EU has decided to extend its environmental-integration process into global climate governance.

The expansion of international environmental law has also prompted the exercise of the traditional interpretation of State sovereignty to become subject to the general interests expressed by the international community, particularly the desire to respect and protect our surrounding environment, vital for sustaining human life on the planet. However, in the face of their own domestic interests, many nations demonstrate little incentive to accept legally-binding emission reductions, disregarding how environmental protection is, truly, a common concern of human kind. More often than not international environmental law remains a weak and under-developed jurisprudence, subordinate to the enforcement of 'substitute' adjudication mechanisms from other areas of international law, such as human rights, or trade and investment law. Once again, the United States and the European Union have diverged in their methods for overseeing national and external compliance with international norms in the environmental field.

The application of the traditional principle of State sovereignty has profound implications on the future outlook of the Paris Agreement. Indeed, when it comes to securing international cooperation in the climate field, the United States has notoriously favored retaining national oversight by deploying market incentives. The Obama Administration set forth to tighten fuel efficiency standards for new cars, support the development of renewable production, especially in wind and solar power, through grants, tax incentives and loan guarantees. As a result, in an onslaught of public letters addressed to the current Trump Administration, large and important US companies highlight their increased investments directed towards renewables energies, efficiency, nuclear, biofuels, carbon capture, sequestration, and other forms of climate resilience measures. US businesses have developed a greater understanding of the economic benefits for

having a universal framework for climate governance, as envisioned by the Paris Agreement. It would not only benefit American interests in accessing the global market, but could even place US industry in a position of global market leadership. However, Trump's decision to withdraw the United States from the Paris climate accord galvanizes major implications for the future of the normative framework. His 'America First' banner, deeply grounded on a protectionist and isolationist philosophy, risks to influence other countries' willingness to adopt progressively ambitious targets that reduce domestic pollution. The world risks to become locked into a new conditional leadership paradigm, as throughout the post-Kyoto era. It could ignite a typical game theory prisoner's dilemma where countries prefer someone else take on the burden to reduce anthropogenic interferences, irreversibly affecting environmental protection. Indeed, Trump's idea of retaining national oversight in climate policy remains tied to the economic opportunities that conventional fossil fuel industries have offered in the past.

In redefining its internal legislation in light of evolving international negotiations and agreements, the Europe Union has, quite oppositely, generally adopted a multilevel and multilateral oversight. Indeed, ECJ case law has helped define the balance between environmental security and market integration when the EU lacked explicit environmental competences, and once these were firmly established from 1986 onwards by the Single European Act, the ECJ moved to increasingly draw links between the protection of human rights and environmental security. Additionally, the Treaty on European Union (TEU) reaffirms EU multilateral commitment to environmental governance, ordering under Article 21.1 the implementation of United Nations Charter, of international law, and of their principles. Therefore, the unofficial constitution of the European Union, together with the development of internal legislation via ECJ jurisprudence, has helped the EU consolidate its special nature as an international actor in global climate governance. In fact, as a source of its normative power, the EU repeatedly endorses environmental standards when signing numerous multilateral environmental treaties with third parties, especially with key emerging regions such as China or India. Overall, an alignment between EU energy security and climate change becomes clearly discernable in EU security strategy, listing global warming alongside terrorism and nuclear proliferation as key issues in the Common Foreign and Security Policy.

Essentially, there is no doubt that the European Union will ensure its compliance with the Paris accord. The EU has currently embarked on strengthening its bilateral relations with China and other key emerging economies, seeing how its Transatlantic partner once again defaults on an international climate agreement.

Conclusion: Evaluating Patterns of Convergence and Divergence in Transatlantic Environmental Relations

In view of the preceding analysis, the concluding chapter of this dissertation assesses the converging and diverging patterns underlying Transatlantic relations in the environmental sphere. Changing shifts in internal and external balances, within and between the USA and EU, have undeniably conditioned the evolution of the international normative framework in environmental policy. The exercise in global leadership has varied according to enabling and disabling conditions, causing the two partners to trade places throughout the progression of international climate governance. Indeed, the modern ecology movement has its roots on American soil, where environmental and conservation law was championed in the 1960s-70s, but the advancement of the normative environmental framework has a forefront runner on the other side of the Atlantic, especially beginning from the turn of the new millennium. Additionally, EU enforcement of international law, particularly in the environmental domain, is institutionally sound, as required by the Treaty of Lisbon in 2009. The Unites States, instead, seems to have been perfectly content of giving up its position on the environmental pedestal during the Bush administration, which was slightly recouped under Obama's Presidency, but only to be subject to a policy of climate skepticism and protectionism presently advocated by Donald Trump.

There is certainly no denying of how this unexpected US Presidential election has deeply unsettled the historic relationship of America with its European allies. Together, the EU and US are constitutionally equipped, being both legally and culturally based on democracy, the rule of law, human rights, and accountability, to foster the participation of experts, civil society, and public and private actors, towards a greater environmental participation. Yet the prospects of addressing climate policy in Transatlantic cooperation are extremely dim, Europe is increasingly left standing alone on its side of the Atlantic. Already, Transnational efforts at the recent G7 meeting in Taormina witnessed a considerable disagreement over the need to tackle global climate change. After overcoming decades of vigorous disparities and deadlocked international negotiations to be able to reach a universally acclaimed climate agreement with the participation of developing countries, US withdrawal threatens to revert current hopes to a state of lagging disappointment. The future of Transatlantic environmental relations thus appears to be strained by the lack of a moral obligation which places human beings at the center of environmental and ecological protection. Contrariwise, this injunction has been embraced by the encyclical letter *Laudato si'* by Pope Francis, requiring human socioeconomic development to equitably meet the 'secular' principle of intergenerational equity, in order for us as human beings to be able to protect *our own home*.

Moved by one of the greatest prophetic voices of our era, even if Europe were to enhance this sense of global justice and increase international pressure, the main challenge in the contemporary phase of the climate regime is to continue to secure the allegiance of key economies to the Paris Agreement. Notably, China has already asserted its enthusiasm to assume a leading role in global climate governance, leaving Europe to voice its support on the international plane, while having to take a step back from its more traditional leadership stance.