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**CLIMATE CHANGE
REGULATION: COMPARING THE
EU AND THE US LEGAL
APPROACHES**

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TABLE OF CONTENTS

Introduction 5

Chapter 1. Climate Change Regulation 9

1.1 Climate Change Science and Regulation 9

1.2 Climate Change Regulation from a Law and Economics
Perspective 14

1.2.1 Global Public Good, Global Common Good, Externalities and
Market Failure 14

1.3 Climate Change Legal Doctrines 21

Chapter 2. Climate Change Regulators: Comparing the EU and the US Systems 28

2.1 Introduction 28

2.2 The European Union 33

2.2.1 European Union Competences in Climate Change Law: A
Historical Background 33

2.2.1.1 From the '50s to the '70s 34

2.2.1.2 From the '80s to the '90s 36

2.2.2 The Main Legal Principles in the EU Climate Change
Legislation – Article 191 TFEU 44

2.2.3 The EU Climate Change Regulatory State 50

2.2.3.1 Rule Making 51

2.2.3.2 Rule Implementation 58

2.2.3.3 Rule Monitoring and Enforcing 61

2.2.4 Expertise in EU Climate Change Risk Regulation 63

2.3 The United States of America 66

2.3.1 United States Competences in Climate Change Law: A
Historical Background 66

2.3.1.1 From the '50s to the '70s 66

2.3.1.2 From the '80s to the '90s 68

2.3.2 The Main Legal Principles in US Climate Change Legislation 75

2.3.3 The US Climate Change Regulatory State 78

2.3.3.1	Rule Making	80
2.3.3.2	Rule Implementation	84
2.3.3.3	Rule Monitoring and Enforcing.....	89
2.3.4	Expertise in US Climate Change Risk Regulation	90
Chapter 3.	Models of Climate Change Regulation.....	105
3.1	Introduction	105
3.2	The EU ETS and the US Clean Power Plan	108
3.2.1	EU ETS	108
3.2.2	US Clean Power Plan.....	113
3.2.3	Key Similarities and Differences between the EU ETS and the US Clean Power Plan.....	117
3.2.3.1	Centrally Determined Targets.....	118
3.2.3.2	Phases of the Programs	125
3.2.3.3	Cooperative Federalism.....	128
3.2.3.4	National Allocation Plans and State Implementation Plans .	130
3.2.3.5	Central Cohesive Laws?	132
3.2.3.6	Tools available in the EU ETS and in the US Clean Power Plan	134
3.2.3.7	Type of Installations Covered	135
Chapter 4.	Legal Challenges to Climate Change Regulation: The EU ETS and the Clean Power Plan Litigations	140
4.1	Introduction	140
4.2	The EU ETS and the US CPP Litigations.....	142
4.2.1	EU ETS: Introduction.....	142
4.2.1.1	EU Member States challenge the Commission.....	145
4.2.2	US Clean Power Plan: Introduction.....	149
4.2.2.1	The US States Challenge the Environmental Protection Agency	153
4.2.3	Substantial and Procedural Legal Issues in the Analyzed litigations	155
Chapter 5.	Global Regulation of Climate Change	170

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5.1	Introduction: Climate Change and Global Administrative Law	170
5.2	The UNFCCC: Climate Change Global Regulator.....	175
5.3	The Paris Agreement	177
5.3.1	Transparency as a Legal Standard of Global Administrative Law in the Paris Agreement.....	180
Conclusions		185
Bibliography		188

INTRODUCTION

Climate change is undoubtedly one of the biggest challenges of our century since it threatens both the natural and the human environment. It has been scientifically proven that anthropogenic emissions of greenhouse gases (GHGs) are changing the earth's climate disastrously. Since the Industrial Revolution began around 1750, human activities have contributed substantially to climate change by adding carbon dioxide (CO₂) and other heat-trapping gases to the atmosphere. Today, we still rely on carbon fuels for 85% of all the energy our world burns every year. It has been calculated that the accumulated amount of warming pollution up in the atmosphere now traps as much extra heat energy as would be released by 400.000 Hiroshima atomic bombs exploding every day 365 days per year. The most important consequences of greenhouse gas concentrations, however, are already happening and the most evident ones are changes in patterns of precipitation and runoff, the melting of glaciers and sea ice, increases in sea level, and changes in storm frequency and intensity, the change in biodiversity, just to mention a few.

The World Economic Forum, held in Davos in January 2016, calculated the cost of climate change for the global economy and its last report stated that the climate crisis is now the number one risk for the global economy. The risk with the greatest potential impact in 2016 was found to be the failure of climate change mitigation and adaptation. This is the first time since the report was first published in 2006 that an environmental risk has topped the ranking. This year, it was found to have greater potential damage than weapons of mass destruction (2nd), water crises (3rd), large-scale involuntary migration (4th) and severe energy price shock (5th). Thus, climate change needs regulation.

However, aside from being a scientific phenomenon, climate change also represents a legal phenomenon. We are surrounded by climate change legislation, ranging from national to global legislation.

The climate change legislator has been intervening through regulation to tackle climate change, considering that climate change represents a market failure.

Thus, legal scholars have the duty to study this phenomenon and bring it to the attention of the legal community.

This thesis, aims at studying the climate change regulation of two nations in particular: the European Union (EU) and the United States (US or USA)¹.

The choice of comparing these two specific 'countries' is due to various reasons.

First, the EU and the US continue to occupy a symbolic and substantive role: they are key players in climate change law and regulation and they are also two of the biggest global polluters.

Second, despite the rise of new developing nations such as China, for example, which just surpassed the US as a pollution emitter, the EU and the US are still key players and maintain the power to coerce the global community down a specific pathway. In this regard, the actions as well as the omissions of these two countries, influence not only the parameters of global climate negotiations but also the material ability of the global community to reduce net greenhouse gas emissions through regulation.

Third, this comparison is manageable considering that both the EU Member States and the US states receive directives and

¹ I had the opportunity to attend an LLM in Environmental and Energy Law at the New York University School of Law. During my LLM I studied in depth, among the others, administrative law, environmental and energy law of the US, having the possibility of interacting with some of the most important administrative law scholars and environmental law scholars in the US.

regulations (EU) or acts and rules (US) regarding environmental legislation, from central governments - although differences appear between the US as a federation and the structure of the EU, not being a federation but a 'collaboration' of 28 states.

This thesis is divided into five chapters.

The first chapter aims at understanding the importance of regulation as the most effective tool in tackling climate change from a scientific, economic and legal viewpoint.

Chapter two aims first at reconstructing the historical background in the EU and US, which permits us to understand how and when the need for policy and legislation on climate change started. The chapter continues with the identification of the regulators in the EU and US, clarifying the EU's and US's nature as regulatory states characterized by a strong executive power placed respectively in the EU Commission and the Environmental Protection Agency (EPA) both as key executive bodies. This chapter offers in-depth study and analysis of the administrative procedure of rule-making, rule-implementing and rule-enforcing of these two regulatory states.

Chapter three gives the reader two core examples of climate change regulation: the EU Emission Trading Scheme and the US Clean Power Plan. This comparison represents a window into the process by which European and American regulation takes shape.

Chapter four deals with the climate change litigations which occurred in the EU and US because of the climate change regulation analyzed in the previous chapter. In particular, this chapter aims at underlining the importance of litigation in shaping climate change regulation. This chapter also compares the litigations which developed in the EU and US revealing some key similarities and differences.

Finally, chapter five analyzes the global dimension of the climate change issue. Global climate change regulation is a matter for

the global regulatory state. Thus, this chapter studies the new Paris Agreement as the result of the work of the UNFCCC as the global regulator, through the instruments given by global administrative law.

This thesis should be placed among the first legal works on the study of the legal regimes and instruments - from an administrative and environmental law viewpoint - which directly regulate or can be used to regulate greenhouse gas emissions and climate change in the EU and US.

In addition, this thesis should be ranked with the scholarship that seeks to contribute to the emerging field of comparative environmental law.

Climate change regulation represents a relatively new field in which academics and practitioners are still working to define the boundaries, principles, and norms of the discipline. So, the aim of this thesis is twofold: on the one hand it can serve as a desk reference on administrative and environmental legal issues related to climate change, which lawyers or policymakers in the environmental field might find useful and informative; on the other hand, it hopes to participate in the realization of a new legal field of scholarship setting a small brick in the construction of this vast and complex pathway.

Chapter 1.

CLIMATE CHANGE REGULATION

TABLE OF CONTENTS: 1.1 Climate Change Science and Regulation. - 1.2 Climate Change Regulation from a Law and Economics Perspective. - 1.2.1 Global Public Good, Global Common Good, Externalities and Market Failure. - 1.3 Climate Change Legal Doctrines.

This chapter aims at understanding the importance of regulating climate change. In particular, this chapter demonstrates (i) why law, through regulation, represents the perfect instrument at the service of science's limits; (ii) why regulation is the most economic and efficient instrument to tackle climate change; and (iii) why a climate change law doctrine might be necessary.

1.1 Climate Change Science and Regulation

It has been scientifically proven that anthropogenic emissions of greenhouse gases (GHGs) are changing the earth's climate disastrously². Since the Industrial Revolution began around 1750, human activities have contributed substantially to climate change by adding carbon dioxide (CO₂) and other heat-trapping gases to the

² The National Academies of Sciences, Engineering, and Medicine available at: <http://nas-sites.org/americasclimatechoices/sample-page/panel-reports/87-2/>. See also: COOK J., et al, *Consensus on consensus: a synthesis of consensus estimates on human-caused global warming*, in 11(4) *Environmental Research Letters*, 13 April 2016. ANDEREGG W. R. L., *Expert Credibility in Climate Change*, in 107(27) *Proceedings of the National Academy of Sciences*, 12107-12109, 2010. DORAN P. T., ZIMMERMAN M.K., *Examining the Scientific Consensus on Climate Change*, in 90(3) *Eos Transactions American Geophysical Union* 22, 2009. ORESKES N., *Beyond the Ivory Tower: The Scientific Consensus on Climate Change*, in 306(5702) *Science* 1686, 2004. IPCC Assessment Report 2014 and the NASA website at <http://climate.nasa.gov/>

atmosphere³. Nowadays, we still rely on carbon fuels for 85% of all the energy that our world burns every year.⁴ According to the latest report of the International Energy Agency, «around 18,000 people die each day as a result of air pollution. In fact, the number of deaths attributed to air pollution each year – 6.5 million deaths – is, according to the World Health Organization (WHO), much greater than the number from HIV/AIDS, tuberculosis and road injuries combined. Air pollution also brings major costs to the economy and damage to the environment». ⁵. Carbon dioxide is the primary greenhouse gas emitted through human activities⁶. Thus, climate

³ TRENBERTH K.E., *Observations: Surface and Atmospheric Climate Change*, in Le TREUT H. et al., *Historical Overview of Climate Change*, Intergovernmental Panel On Climate Change, Climate Change 2007 - The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the IPCC 115-16 (2007), 237.

⁴ GORE A. for TED.com available at <https://www.youtube.com/watch?v=gVfgkFaswn4>.

⁵ World Energy Outlook Introduction at <http://www.iea.org/publications/freepublications/publication/WorldEnergyOutlookSpecialReport2016EnergyandAirPollution.pdf>

⁶ See generally ROSENZWEIG C., et al., *Assessment of Observed Changes and Responses in Natural and Managed Systems*, in Intergovernmental Panel On Climate Change, Climate Change 2007 - Impacts, Adaptation And Vulnerability: Contribution Of Working Group Ii To The Fourth Assessment Report Of The IPCC (2007). U.S. Global Change Research Program, *Global Climate Change Impacts In The United States* 9 (2009), available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impactsreport.pdf>

(“Observations show that warming of the climate is unequivocal. The global warming observed over the past 50 years is due primarily to human-induced emissions of heat-trapping gases.”). RAMANATHAN V. and FENG Y., *On Avoiding Dangerous Anthropogenic Interference with the Climate System: Formidable Challenges Ahead*, in 105 *Proc. Nat’l Acad. Sci.* 14,245, 14,245, 2008 (estimating a committed warming of 2.4oC even if greenhouse-gas concentrations are held to 2005 levels). SOLOMON S., PLATTNER GK., KNUTTI R. and FRIEDLINGSTEIN P., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, in 106 *Proc. Nat’l Acad. Sci.* 1704, 1704 (2009) (estimating a one-thousand-year committed warming effect). For summaries of the legal and policy issues likely to come with climate change, including reviews and syntheses of scientific and legal literature on the topic, see generally CAMACHO A. E., *Adapting Governance to Climate Change: Managing Uncertainty Through a Learning Infrastructure*, in 59 *Emory L.J.* 1, 2009. CRAIG R.K., *Stationarity Is Dead—Long Live Transformation: Five Principles for Climate Change Adaptation Law*, in 34 *Harv. Envtl. L. Rev.* 9, 2010. DOREMUS H., *Adapting to Climate Change with Law That Bends Without Breaking*, in 2 *San Diego J. Climate & Energy L.* 45, 2010. GLICKSMAN R.L., *Ecosystem Resilience to*

change is undoubtedly one of the biggest challenges of our century that threatens the natural environment as well as the human environment. In particular, two of the most important components of the atmosphere, carbon dioxide and water vapor, create a coverage of the planet, which provides greenhouse warming. However, this does not have an exclusively negative effect; in fact, without those two components, the planet would be far too cold to be livable⁷. Nevertheless, a balance between too much and too little greenhouse effect has to be maintained. «Massive quantities of CO₂ are produced from the combustion of fossil fuels — coal, petroleum, and natural gas — and deforestation. Meanwhile, the direct warming effects of CO₂ and other greenhouse gases — methane, nitrous oxide, and halocarbons — are indirectly amplified because the warming increases evaporation of water, in turn increasing atmospheric water vapor concentrations»⁸. Average global surface temperatures have risen by about 1.25 degrees Fahrenheit over the past 100 years, and the rate of change has been almost twice that fast in the past fifty years.⁹

The accumulated amount of warming pollution that is up in the atmosphere now traps as much extra heat energy as would be released by 400.000 Hiroshima atomic bombs exploding every day 365 days per year¹⁰. This temperature rise could cause devastating

Disruptions Linked to Global Climate Change: An Adaptive Approach to Federal Land Management, in 87 *Neb. L. Rev.* 833, 2009. RUHL J.B., *Climate Change Adaptation and the Structural Transformation of Environmental Law*, in 40 *Envtl. L.* 363, 365–71, 2010.

⁷ LE TREUT H. et al., *Historical Overview of Climate Change*, in Intergovernmental Panel On Climate Change, *Climate Change 2007 - The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the IPCC* 115-16 (2007)

⁸ STAVINS R.N., *A Meaningful U.S. Cap-and-Trade System To Address Climate Change*, in 32 *Harv. Envtl. L. Rev.* 294, 2008

⁹ TRENBERTH K.E., *Observations: Surface and Atmospheric Climate Change*, in *The Physical Science Basis*, supra note 1, at 237.

¹⁰ GORE A. for TED.com available at <https://www.youtube.com/watch?v=gVfgkFaswn4>

consequences on Earth. The most important consequences of greenhouse gas concentrations, however, are already happening and the most evident ones are changes in patterns of precipitation and runoff, the melting of glaciers and sea ice, increases in sea level, and changes in storm frequency and intensity, the change of biodiversity, just to mention a few of them.¹¹ Further, the World Economic Forum held in Davos in January, 2016, has assessed the real cost of carbon. The World Economic Forum said that the climate crisis is now the number one risk to the global economy. The risk with the greatest potential impact in 2016 was found to be a failure of climate change mitigation and adaptation. This is the first time since the report was published in 2006 that an environmental risk has topped the ranking. This year, it was considered to have greater potential damage than weapons of mass destruction (2nd), water crises (3rd), large-scale involuntary migration (4th) and severe energy price shock (5th)¹².

Finally, the greenhouse effect is a global phenomenon, not one that occurs in some parts of the world and not others. GHGs affect the entire planet, thus emissions in one country affect the climate in every other country creating a global issue. Atmospheric concentrations of greenhouse gases are uniform throughout the atmosphere; they do not differ over distinct parts of the globe. A molecule of carbon dioxide added by a source in New Zealand accordingly has the same effect on CO₂ concentrations as a molecule added by a source in Kansas, Brazil, or Sweden¹³. The massive importance of climate change is

¹¹See generally ROSENZWEIG C., et al., *Assessment of Observed Changes and Responses in Natural and Managed Systems*, in Intergovernmental Panel On Climate Change, *Climate Change 2007 - Impacts, Adaptation And Vulnerability: Contribution Of Working Group Ii To The Fourth Assessment Report Of The IPCC* (2007).

¹² The World Economic Forum, *The Global Risks Report 2016 11th Edition*, page 6

¹³ ELLERMAN D., *Tradable Permits for Greenhouse Gas Emissions: A Primer with Particular Reference to Europe*, in 69 *MitJo Int Program On Sci. & Pol'y Global Change* 2 (2000), available at <http://web.mit.edu/globalchange/www/>

undeniable, even though there is still little awareness in some countries and some politicians continue to deny its paramount importance¹⁴. Containing the causes of climate change requires much more than mere awareness, however; it demands the modification of primary economic, social, and legal structures, while mitigating and adapting to the consequences of climate change requires global cooperation to a degree never before witnessed in environmental law¹⁵. Human activities are a significant contributing cause of that change, and the associated public health and welfare impacts are sufficiently serious to warrant climate change regulation. The extent of mitigation and adaptation efforts needed to maintain adequate standards of living is still being debated and the complexities of this debate are still developing. Law represents the perfect instrument at the service of science, since it is able to overcome science's limits¹⁶ through responsibility and proceduralisation¹⁷.

MITJPSGCRpt69.pdf ("A ton of CO₂ emitted or abated in Bombay will have the same effect on climate as a ton emitted or abated in Buenos Aires, Chicago, Kiev, or Stockholm."). See also FOLGER P., *The Carbon Cycle: Implications For Climate Change And Congress* in Congressional Research Service Report, Mar. 13, 2008, available at <http://www.usembassy.at/en/download/pdf/carbon-cycle.pdf> ("[WI]here fossil fuels are burned makes relatively little difference to the concentration of CO₂ in the atmosphere; emissions in any one region affect the concentration of CO₂ everywhere else in the atmosphere.")

¹⁴ RUBIO M. and TRUMP D. at <https://www.theguardian.com/us-news/2016/feb/01/republicans-ted-cruz-marco-rubio-climate-change-scientists>. Smith L., *Overheated rhetoric on climate change doesn't make for good policies*, Washington Post, May 19, 2013

¹⁵ CARLARNE C.P., *Climate Change Law and Policy: EU and US Perspectives*, Oxford, 2010, 4

¹⁶ MORGAN D., *Beyond Epistemological Pluralism: Toward an Integrated Vision of the Future*, in *Futures* May 19, 2011

¹⁷ FRACCHIA F., *Cambiamento climatico e sviluppo sostenibile: lo stato dell'arte*, in CARTEI G.F., in *Cambiamento climatico e sviluppo sostenibile*, Torino Giappichelli, 2013, 22 et sub.

1.2 Climate Change Regulation from a Law and Economics Perspective

1.2.1 Global Public Good, Global Common Good, Externalities and Market Failure

Why is legal regulation the efficient instrument from a law and economics viewpoint to tackle climate change? I have identified three main reasons: (i) a stable climate is a global public good; (ii) a stable climate is also a global common good; (iii) greenhouse gases are a negative externality; and (iv) climate change is a market failure itself.

A stable climate can be defined as a global public good. Pure public goods have two defining features¹⁸. One is 'non rivalry,' meaning that one person's enjoyment of a good does not diminish the ability of other people to enjoy the same good. The other is 'non excludability,' meaning that people cannot be prevented from enjoying the good. Another feature also characterizes global public goods, which is that they are available worldwide¹⁹. Air quality is an important global environmental public good²⁰. Under most circumstances, one person's breathing of fresh air does not reduce air quality for others to enjoy, and people cannot be prevented from breathing the air. Thus, the benefits of such global public goods are

¹⁸ CORNES, R. and SANDLER, T., *The Theory of Externalities, Public Goods and Club Goods*, Cambridge: Cambridge University Press, 1996. MANCUR O., *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press, 1971

¹⁹ SAMUELSON P., *The Pure Theory of Public Expenditure*, 36 Rev Economics and Statistics 387, 1954. OLSON M., *The Logic of Collective Action: Public Goods and the Theory of Groups*, 1965. In the legal literature see also NAPOLITANO G., ABRESCIA M., *Analisi Economica del Diritto Pubblico*, Bologna Il Mulino, 2009, 67. CLARICH M., *La Law and Economics e la frontiera del diritto pubblico*, in 3 *Rivista Trimestrale Di Diritto Pubblico*, 2009.

²⁰ KOTCHEN M., *Public Goods*, in Whitehead J and Haab T., *Environmental and Natural Resource Economics: An Encyclopedia*, CA: ABC CLIO, 2014. RANCI P., *Fermare il cambiamento del clima: quanto costa? Possiamo permettercelo? Chi paga?* In MIGLIAVACCA M., RIGAMONTI L., *Cambiamenti Climatici. Un Approccio Interdisciplinare per Capire un Pianeta in Trasformazione*, Bologna, Il Mulino, 2010, 101 et sub.

accessible unevenly in different locations because climate benefits the earth as a whole and, therefore, all countries, without (at least in the short and medium term) 'consumption' by some preventing or reducing consumption by others, and without consumption by any country being excludable²¹. From an economics perspective, public goods are of interest because they are a source of market failure²². The problem is 'free riding': individuals have little incentive to voluntarily provide public goods when they can simply enjoy the benefits of non rival and non excludable public goods provided by others²³. The same public goods rationale applies to global environmental protection. Because individuals and firms face free riding incentives when it comes to protecting the environment, policies are often put in place to limit pollution, restrict resource exploitation, or create the right incentives to promote or protect environmental quality. In fact, the solution to the free riding market failure is public regulation. Yet the efficient provision of global public goods policies creates a great set of challenges. The main challenge, considering its complexity, is public regulation itself, which, as mentioned above, represents the solution requested in order to solve the free riders issue²⁴. However, from this main challenge others develop: one challenge is that free riding incentives are even stronger when the number of people involved is larger. While individuals are typically reluctant to incur private costs for public benefits, they are likely to be more reluctant

²¹ DENEULIN S. and TOWNSEND N., *Public Goods, Global Public Goods and the Common Good*, in ESRC - Economic and Social Research Council Working Paper 18, 2006

²² COWEN, T. *Public Goods and Market Failures*, New Brunswick: Transaction Publishers, 1992. FINNIS, J., *Public Good: The Specifically Political Common Good in Aquinas*, in GEORGE, R. P. *Natural Law and Moral Enquiry* Washington: Georgetown University Press, 1988, 174-209.

²³ KOTCHEN M., *Public Goods*, in J.WHITEHEAD and T. HAAB, *Environmental and Natural Resource Economics: An Encyclopedia*, CA: ABC CLIO, 2014

²⁴ CLARICH M., *Manuale di Diritto Amministrativo*, Bologna, Il Mulino, 2013, 411-412

when their contributions feel like a tiny drop in an even larger bucket. Another important challenge for providing global public goods is that coordination is difficult among sovereign nations²⁵. While policies for environmental protection can be passed at a national level, international coordination requires agreements and enforcement among nations, many of which have different interests and rules of law.

Further, a stable climate has been defined as a natural global common good²⁶, in fact, climate change results in part from the build up of greenhouse gases in the atmosphere, a classic commons. «Like the herders of Hardin's pasture, the stable climate is used by a great many nations, which each contribute some measure of greenhouse gases as a byproduct of natural and anthropocentric activities, such as the burning of fossil fuels and deforestation»²⁷. This use leads inexorably to the degradation of the stable climate as the build up of greenhouse gases traps the earth's outgoing infrared radiation, contributing to climatic changes around the globe, such as warmer temperatures, more frequent and more violent storms, drought, and

²⁵ KOTCHEN M., *Public Goods*, in J.WHITEHEAD and T. HAAB, *Environmental and Natural Resource Economics: An Encyclopedia*, CA: ABC CLIO, 2014

²⁶ See, e.g. THOMPSON B. H. JR., *Tragically Difficult: The Obstacles to Governing the Commons*, in 30 *ENVTL. L.* 241, 253 (2000). STEWART R.B., *Environmental Regulation and International Competitiveness*, in 102 *YALE L. J.* 2039, 2099 (1993). KAUL, I., GRUNBERG, I. AND STERN, M. A., *Global Public Goods: International Cooperation in the 21st Century*, Oxford: Oxford University Press, 1999. DUPRE, L., *The Common Good and the Open Society*, in DOUGLAS, R. B. and HOLLENBACH, D. *Catholicism and Liberalism* Cambridge: Cambridge University Press, 1994, 172-195. MARITAIN, J., *The Person and the Common Good*, Notre Dame: University of Notre Dame Press, 1946. CAHILL, L. S., *Globalisation and the Common Good*, in COLEMAN, J. A. AND RYAN, W. F. *Globalization and Catholic Social Thought: Present Crisis, Future Hope* Ottawa: St Paul University, 2005, 42-54. HOLLENBACH, D., *The Common Good and Christian Ethics*, Cambridge: Cambridge University Press, 2002 81.

²⁷ ENGEL K.H., SALESKA S.R., *Subglobal Regulation of the Global Commons: The Case of Climate Change*, in 32 *Ecology Law Quarterly* 190 , 2005 quoting Intergovernmental Panel On Climate Change, *Climate Change 2001: The Scientific Basis*, at 4.1

disruption of ecosystems and habitats giving rise to 'the tragedy of the commons'²⁸. As with Hardin's herders²⁹, no single nation has an incentive to reduce its emissions because such reductions will only decrease their own benefits from the commons without successfully preventing the commons' degradation, at least to any appreciable extent. Because of that, some scholars³⁰ have argued that the only way of tackling climate change is an international agreement. However, despite a comprehensive international treaty which would represent the best solution to address climate change mitigation globally, national climate change regulation is not irrational or economically inefficient. According to the game-theoretic nature of country-country interactions (see Table 1 below), to have a sufficient incentive to take action, «the government must be able to reap at least some of the benefits of its emissions reductions in the local impact of global warming»³¹. Furthermore, when some countries (like the United States and the EU) are sufficiently large, their policies will inevitably have an effect on the degree of climate change that occurs worldwide, regardless of what other countries do. Thus, the world's largest emitters, such as the United States and the European Union, should be

²⁸ HARDIN G., *The Tragedy of the Commons*, in 162 *Science*, 1243, 1968

²⁹ Id

³⁰ In the legal literature, see STAVINS R., *Policy Instruments for Climate Change: How can National Governments Address a Global Problem?*, in *U. CHL LEGAL F.* 293, 1997. ESTY D.C., *Toward Optimal Environmental Governance*, in 74 *N.Y.U. L. REV.* 1495, 1555, 1999 (“[flailing back to national-scale intervention... invites free riding, holdouts, and inefficient spending of limited resources—and thus structural regulatory failure.... At least from a theoretical viewpoint, inherently global problems demand concerted worldwide action”). FOX S.T., *Responding to Climate Change: The Case for Unilateral Trade Measures to Protect the Global Atmosphere*, in 84 *GEO. L. J.* 2499, 2503, 2507-08, 1996 (using the “tragedy of the commons” analogy to criticize unilateral country measures to reduce climate change, but suggesting the need for unilateral trade measures to facilitate the development of multilateral environmental agreements)

³¹ NORDHAUS W.D., YANG Z., *A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies*, in 86 *AMER. ECON. REV.* 754, 1996. ENGEL K.H., SALESKA S.R., *Subglobal Regulation of the Global Commons: The Case of Climate Change*, in 32 *Ecology Law Quarterly* 210, 2005.

engaging in the largest unilateral greenhouse-gas reduction efforts. In addition, a central theme of climate law literature is that climate change will have different effects in different places, because of climatic variation, topography, and the underlying resilience and adaptive capacity of affected ecosystems, communities industries, and individuals³². Thus, national legal strategies may address specific market failures and create economic incentives for adaptation³³.

Finally, as an alternative vision, we should imagine the gradual construction of a climate change system similar «to a Roman aqueduct, with multiple arches joining together to span a great distance...[the aqueduct] relies on the integrity of each arch to hold up the larger system; ultimately, it must piece together as a whole system. In the climate context, each arch represents a domestic or regional climate change program, tailored according to domestic energy, environmental, economic, and social politics»³⁴. Thus, a national climate change regulation is economically rational and should be perceived.

The exploitation of a stable climate, as a global common good, leads to a global tragedy of the commons. The standard economic solution to the 'tragedy of the commons' is to either privatize the commons or to subject the management of the commons to a centralized governing authority. Although not all scholars agree that,

³² SMITH B., PILIFOSOVA O., BURTON I., CHALLENGER B., HUQ S., KLEIN R.J.T., YOHE G., *Adaptation to climate change in the context of sustainable development and equity*, in: IPCC, *Climate Change 2001: Impacts, Adaptation and Vulnerability, IPCC WG II*. Cambridge, UK: Cambridge University Press; 2001, 877–912. Yohe G, Tol R. *Indicators for social and economic coping capacity: moving toward a working definition of adaptive capacity*, in 12 *Glob Environ Change* 25–40, 2002. ADGER WN, AGRAWALA S, MIRZA MMQ, CONDE C, O'BRIEN K, PULHIN J, PULWARTY R, SMIT B, TAKAHASHI K, *Assessment of adaptation practices, options, constraints and capacity*, in: IPCC 2007b, pp 717–743.

³³ FONDERICO G., *Regolazione economica, diritto della*, in M. CLARICH E G. FONDERICO *Dizionario di diritto amministrativo*, Milano, Il Sole 24 ore, 2007

³⁴ CARLARNE C.P., *Delinking International Environmental Law & Climate Change*, in 4:1 *Michigan Journal of Environmental & Administrative Law* 38, 2014

this presents the full spectrum of solutions privatization and collective governance still dominate the debate. Policy proposals in the case of climate change have included both ends of this spectrum: privatizing the atmospheric disposal of carbon dioxide emissions via tradeable permits and globally allocated emission limits enforced by regulatory oversight. The actual European Emission Trading Scheme³⁵ framework is a mixture of approaches, with binding limits on Member States that can be met through trades of emission allowances with the other Member States under the aegis of the EU Commission's authority.

		<i>Country Y</i>	
		Pollute	Abate
<i>Country X</i>	Pollute	- 4; - 4	5; - 2
	Abate	- 2; 5	3; 3

Table 1

Assumptions:

- 1 Two Countries: Country X and Country Y
- 2 Countries must choose whether or not to abate pollution.
- 3 Abatement cost: \$7
- 4 Benefits: \$5 (to both countries)
- 5 Doing nothing exposes both countries to serious pollution damage. Cost: \$4

If country Y observes that country X has chosen to pollute, then country Y is best response is to abate (since $- 4 < - 2$) If country Y

³⁵ EU Directive 2003/83/EC

observes that country X has chosen to abate then country Y is best response is to pollute (since $3 < 5$) And vice versa.

The other core market failure related to climate change is the so-called 'greenhouse-gas externality'. Greenhouse gas emissions are a side-effect of economically valuable activities.

Most of the impacts of emissions do not fall on those conducting the activities – instead they fall on future generations or people living in developing countries, for example – so those responsible for the emissions do not pay the cost. Economists concerned about this market failure argue for policy intervention to increase the price of activities that emit greenhouse gases, thereby providing a clear signal to guide economic decision-making at the same time as stimulating innovation of low-carbon technologies. Property rights and regulation are again the best solution provided for by the economists and provided for within the Kyoto Protocol and the EU Emission Trading Scheme Directive³⁶.

Finally, climate change itself has been defined as «the greatest market failure the world has ever seen»³⁷.

On 19 July 2005, the Chancellor of the Exchequer, Gordon Brown, announced that he had asked Sir Nicholas Stern to lead a major review of the economics of climate change, to understand more comprehensively the nature of the economic challenges and how they can be met, in the UK and globally. The so called 'Stern Review' was released in 2006 and stated that «if we don't act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to

³⁶ COASE R., *The Problem of Social Cost*, in *J. Law and Econ.* 1-44, 1960

³⁷ HM Treasury, *The Stern Review on the Economics of Climate Change*, UK Treasury 2006. See also STERN N., *Un piano per salvare il Pianeta*, Feltrinelli, 2009

20% of GDP or more. By contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year»³⁸. Thus, the evidence gathered by the Review led to a simple conclusion: «the benefits of strong, early action considerably outweigh the costs». Stern and the other economists also argued that «action on climate change will also create significant business opportunities, as new markets are created in low-carbon energy technologies and other low-carbon goods and services. These markets could grow to be worth hundreds of billions of dollars each year, and employment in these sectors will expand accordingly. The world does not need to choose between averting climate change and promoting growth and development. Changes in energy technologies and in the structure of economies have created opportunities to decouple growth from greenhouse gas emissions. Indeed, ignoring climate change will eventually damage economic growth. Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries». Regulation is, according to the Review, the answer to climate change as a market failure³⁹.

1.3 Climate Change Legal Doctrines

In order to tackle climate change, climate legislation has recently been developing. This climate change legislation is legislation dealing with the laws and regulations of greenhouse gas emissions. From the scholarly perspective, climate law is still in its infancy and a lot has to be done in order to charter the doctrinal

³⁸ Id

³⁹ FONDERICO G., *La tutela della concorrenza e la regolazione del mercato*, in GIULIO VESPERINI, *Diritto amministrativo speciale*, Milano, Giuffrè, 2005, 317-341

territory of this emergent legal discipline⁴⁰. In particular, we should ask ourselves how the legal system as a whole will organize around climate change mitigation and adaptation and, above all, whether a new distinct field of climate change mitigation and adaptation law and policy may emerge.

In order to support the thesis that a distinct field of climate change law is emerging – and needed - we should consider first its relationship to environmental law, traditionally a branch of administrative law⁴¹, and afterward to international law.

According to some scholars, environmental law has become ‘all about’ climate law: because environmental law is increasingly dominated by climate law, the argument is that the latter has tended to crowd out the other numerous concerns of environmental law, whether that be chemicals, water pollution, habitat destruction or many additional examples that one might cite.⁴² In addition, it seems that the main concerns of the environmental law listed above are now concerns related to climate change and therefore part of it.

Furthermore, other scholars have noticed that action on climate change relates exclusively to GHGs and not to other pollutants, thus a proper regulation of the latter seems coherent.⁴³

In addition to the above explained theories, there is another one called ‘the super wicked problem’. While there are a number of areas of environmental law which involve what have been described as

⁴⁰ HOLLO E.J., KULOVESI K., MEHLING M., *Climate Change and The Law*, New York : Springer, 2013

⁴¹ Ferrara R., *Il “posto” del diritto amministrativo: fra tradizione e globalizzazione*, in *Dir. e Società* 2, 2004, 139

⁴² World Bank, *Crowding Out or Crowding In? Climate Change and the Broader Environmental Agenda* available at http://siteresources.worldbank.org/ENVIRONMENT/Resources/244380-1250028593656/6382907-1252510780845/6428643-1256655379723/6510806-1258739266750/Rebalancing_the_environment_agenda_draft_CN.pdf accessed 26 July 2013.

⁴³ Id

'wicked' problems defying easy resolution, it is only climate law that has been characterized as a 'super wicked' problem.⁴⁴ Wicked (as opposed to 'tame') problems were described by Rittel and Webber⁴⁵ in terms of a range of features, including: the fact that one cannot describe a wicked problem without having an idea of how it should be solved (i.e. problem understanding and problem resolution are closely interrelated)⁴⁶. Wicked problems have no stopping rule (there is no end-point at which one can say the problem is solved); and every solution chosen will have significant effects and cannot be immediately corrected. The super wicked problem, instead, also includes, in addition to the wicked problem features: (1) the fact that time is not costless, with the longer the time taken to tackle the problem resulting in its becoming progressively more difficult and costly to do so; (2) the fact that those in the best place to address the problem are not only the ones who have caused it (in the context of climate change, rich northern nations such as the USA), they are also those with the least immediate incentive to act within a shorter time frame (because the impact of climate change will affect them comparatively less); (3) the lack of an appropriate global system of

⁴⁴ LEVIN K. et al, *Playing it Forward: Path Dependency, Progressive Incrementalism, and the "Super Wicked" Problem of Global Climate Change* unpublished manuscript, available at 5 http://environment.research.yale.edu/documents/downloads/0-9/2010_super_wicked_levin_cashore_bernstein_auld.pdf accessed 26 July 2013. LAZARUS R., *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, in 94 *Cornell L Rev* 1153, 2009.

⁴⁵ RITTEL H., WEBBER M., *Dilemmas in a General Theory of Planning*, in 4 *Policy Sci* 155 1973

⁴⁶ Id at pag. 161: "For any given tame problem, an exhaustive formulation can be stated containing all the information the problem solver needs for understanding and solving the problem. This is not possible with wicked problems. The information needed to understand the problem depends on one's idea of for solving it. That is to say in order to describe a wicked problem in sufficient detail, one has to develop an exhaustive inventory of all conceivable solutions ahead of time.....the formulation of a wicked problem is the problem."

government which can institutionally match the global scale and reach of the problem.⁴⁷

Ruhl and Salzman, analyzing the possibility of adopting a proper climate change law doctrine consider the case of environmental law. Regarded as one of the most complex and specialized fields of practice, environmental law has its own distinct problems, doctrines, tools, institutions, and methods.⁴⁸ The need for a law of the environment – argue Ruhl and Salzman - may seem self-evident today, but its emergence, as a distinct field is relatively recent. The very term ‘environmental law’ did not even exist before 1969.⁴⁹ In the 1970s, policymakers, lawyers, activists, and legal scholars explicitly conceived of the law of the environment as something more than just a bunch of unrelated legal challenges that happened to intersect on the common factual ground of the human impact on nature. Recognized today as a significant and separate area of theory and practice, the origin of environmental law as a distinct legal field – within administrative law - was intentional⁵⁰.

Another branch of law from which we should delink climate change law is international law. The main legal scholarship on the subject, in fact, has been related to international law. This means that climate change has been seen almost exclusively as a branch of international law. However, climate change, despite a problem with a

⁴⁷ LAZARUS R., *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, in 94 *Cornell L Rev* 1160-61, 2009

⁴⁸ TODD S. AAGAARD, *Environmental Law as a Legal Field: An Inquiry in Legal Taxonomy*, in 95 *Cornell L. Rev.* 221, 251–82, 2010 (arguing that, despite doctrinal variation and even incoherence, identifiable core patterns frame environmental law as a discrete legal field).

⁴⁹ Art 2, European Parliament and Council Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy [2000] OJ L327/1.

⁵⁰ RUHL J.B., AND SALZMAN J., *Climate Change Meets the Law of the Horse*, in 62: 5 *Duke Law Journal* 983, 2013. Ruhl J.B., *Climate Change Adaptation and the Structural Transformation of Environmental Law*, in 40 *ENVTL. L.* 363, 365–71, 2010

global dimension, requires first local action (as demonstrated above through law and economics). Thus, even if climate law appears to have a tendency to cross legal and geographical boundaries, because of its transboundary nature, it first needs local attention.

Every time that we are dealing with complex systems whose characteristics are the result of interaction between entities (such as equity, technology, economy and climate) positioned on heterogeneous scales of time and space, the control system (the institutional structure) has to adopt a multiscale approach⁵¹.

Then too, in many jurisdictions the regulation of climate change has first affected vertical interaction between the national and sub-national levels. At the European level, for example, questions have emerged concerning the relationship between EU climate law and its Member States' national legal systems, and also concerning the relationship between EU climate law and local regulatory initiatives.⁵² Could, for example, some EU Member States implement stricter climate protection measures than those required by EU law and introduce carbon dioxide performance standards to companies included in the EU ETS? ⁵³Could the Mayor of Rome prohibit the use in Rome of passenger cars, which exceed the average EU emissions benchmark of 130 g of carbon dioxide per kilometer?⁵⁴ In federal nations, like the US, questions have surfaced concerning the compatibility of regional climate change agreements with US

⁵¹ Ashby W. R. *An Introduction to Cybernetic*, London Chapman And Hall, 1956 at <https://archive.org/details/introductiontocy00ashb>. See also CAFAGNO M., *Cambiamenti climatici tra strumenti di mercato e potere pubblico*, in CARTEI G.F., *Cambiamento Climatico e Sviluppo Sostenibile*, Torino Giappichelli, 2013, 112 et sub.

⁵² SCOTT J., *The multilevel governance of climate change*, in CRAIG P. AND DE BURCA G., *The Evolution of EU Law*, Oxford University Press, 2008, 805. Ruhl J.B., *The Political Economy of Climate Change Winners*, in 97 *MINN. L. REV.* 206, 217-41, 2012

⁵³ Id at 26-27

⁵⁴ Id at 43

federalism, and also concerning the relationship between federalism and state-based climate change policies.⁵⁵ While the US federal government has lagged behind in the development of climate change law, a few individual states like California have taken progressive legislative steps to regulate greenhouse gas emissions.

The point of climate change law is to change the way we do things, broadly and deeply. Climate change law represents a new field of law which imposes itself forcefully, considering that it presents novel subject matter, socioeconomic conditions, and technological, ethical and governance challenges for law.

In any case, it may be that climate law does not develop to replace any particular field but, rather, emerges to manage how those fields interact on scales relevant to climate decision making.⁵⁶ Decisions in these contexts will demand difficult policy trade-offs and trigger different sets of questions depending on which way policy moves. The decision making challenges of climate change span many fields of law and will frequently address questions that no existing field of law is capable of managing. It follows, therefore, that a climate change law might be needed.

«As we can see questions like these are not merely exercises in existentialism; they have practical implications. There will be developments in law—claims won or lost in litigation, regulations adopted or repealed, institutions formed or changed—that would not have occurred but for the goals of mitigating and adapting to climate change. If we could scoop together all such events, that mass of legal content would be the corpus of climate change law; it is what one

⁵⁵ HOLLO E.J., KULOVESI K., MEHLING M., *Climate Change and The Law*, New York : Springer, 2013, 45 quoting CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010, 67 et sub.

⁵⁶ RUHL J.B., AND SALZMAN J., *Climate Change Meets the Law of the Horse*, in 62: 5 *Duke Law Journal* 1015, 2013

would study and evaluate to assess the legally disruptive effects of climate change. In conclusion, it is as important for lawyers to study of the effects of climate change on the legal system as it is for ecologists to study the effects of climate change on ecosystems. It is important to find where climate change is putting pressure on the legal system and where the cracks are forming. It is important to examine whether climate change law is filling those cracks or making them more fragile. It is important to study the effects of this new legal 'species' on other parts of the legal system as well as other realms of social policy»⁵⁷.

⁵⁷ RUHL J.B., *What is Climate Change Law?*, in Oxford University Press OUP Blog available at <http://blog.oup.com/2015/08/what-is-climate-change-law/>

Chapter 2.

CLIMATE CHANGE REGULATORS: COMPARING THE EU AND THE US SYSTEMS

TABLE OF CONTENTS: 2.1 Introduction. - 2.2 The European Union. - 2.2.1 European Union Competences in Climate Change Law: A Historical Background. 2.2.1.1 From the '50s to the '70s. - 2.2.1.2 From the '80s to the '90s: the intensification of international legislation and the Kyoto Protocol. - 2.2.2 The Main Principles in the EU Climate Change Legislation – Article 191 TFEU. - 2.2.3 The EU Climate Change Regulatory State. - 2.2.3.1 Rule Making. - 2.2.3.2 Rule Implementation. - 2.2.3.3 Rule Monitoring and Enforcing. - 2.2.4 Expertise in EU Climate Change Risk Regulation. - 2.3 The United States of America. - 2.3.1 United States Competences in Climate Change Law: A Historical Background. - 2.3.1.1 From the '50s to the '70s. - 2.3.1.2. From the '80s to the '90s: the intensification of international legislation and the Kyoto Protocol. -2.3.2 The Main Principles in US Climate Change Legislation. - 2.3.3 The US Climate Change Regulatory State. - 2.3.3.1 Rule Making. - 2.3.3.2 Rule Implementation. - 2.3.3.3 Rule Monitoring and Enforcing. - 2.3.4 Expertise in US Climate Change Risk Regulation.

2.1 Introduction

In the first chapter, I analyzed the legal and economic reasons why it is of paramount importance to regulate climate change. It is now necessary to understand who the regulators in the EU and the US are.

As explained in the introduction of this thesis, I compare the EU and the US because of their role as key players in climate change law and regulation as well as global polluters. In this regard, the actions,

as well as the omissions of these two countries «influence not only the parameters of global climate negotiations but also the material ability of the global community to reduce net greenhouse gas emissions»¹. Furthermore, there is a significant similarity between EU and US climate change regulation: climate change regulation, in fact, very much lies in the EU's and US' nature as regulatory states². The presence of the regulatory state, in both the two countries here analyzed, and the related strong executive (i.e. administrative) power is particularly evident in the regulation³ of climate change. In this regard, a core role has been played respectively by the EU Commission and the Environmental Protection Agency (EPA) both as key executive bodies⁴.

In both the EU and US, the regulatory state is linked strongly to supra-national (or supra-state) institutions and it is difficult not to end up assigning a strategic role to the Commission and the Environmental

¹ Carlarne C.P., *Climate Change Law and Politics*, Oxford University Press, 2010, 347

² Goldthau A., Anderson S. S., and Sitter N., *The EU Regulatory State, Commission Leadership and External Energy Governance* in Jakub M. Godzimirski, *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses* Palgrave Macmillan, 2015, 130

³ See BRAITHWAITE V., "Ten Things You Need to Know about Regulation and Never Wanted to Ask," RegNet Occasional Paper No. 10 (2006), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>. Black J., *Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World* in 54(1) *Current Legal Prob.* 103, 142, 2001. Parker C., Braithwaite V., "Regulation" in Peter Cane and Mark Tushnet, *The Oxford Handbook of Legal Studies* Oxford University Press, 2003, 119. Schutze R., *From Rome to Lisbon: Executive Federalism in the (New) European Union*, 47 in *Common Market Law Review*, 1385, 2010. Clarich M., Mattarella B.G., *Un nuovo sistema regolatorio per lo sviluppo economico*, in 2 *Analisi Giuridica Dell'economia*, 363-382, Il Mulino 2013. Vogel D., Toffel M., Post D. and Uludere N., *Environmental Federalism in the European Union and the United States*, at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1573698. Napolitano, G., *Sul futuro delle scienze del diritto pubblico: variazioni su una lezione tedesca in terra americana*, in 1 *Riv. trim. dir. pubbl.*, 1 sub., 2010

⁴ GOLDTHAU A., ANDERSON S. S., AND SITTER N., *The EU Regulatory State, Commission Leadership and External Energy Governance* in Jakub M. Godzimirski, *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses* Palgrave Macmillan, 2015, 3

Protection Agency as strong executive powers «innovators in breaking deadlocks»⁵. As we will see this is particularly true in climate change regulation.

America 'invented' the 'regulatory state' concept. In American literature, the term 'regulatory state' refers to the expansion in the use of rule-making, rule-monitoring and rule-enforcement techniques by specialized agencies⁶.

Within the European Union, the notion of the European Union as a regulatory state has been imported from American legal and political culture but has developed its own meaning⁷. According to some scholars, three major functions are ascribed to the modern state: «redistribution; stabilization (for example, in the form associated with Keynesianism) and regulation (meaning promoting efficiency by remedying market failure). The rise of the regulatory state consists of the rise of this third function at the expense of the other two»⁸. To this

⁵ MORAN M., *Understanding the Regulatory State*, in 22 *British Journal of Political Science*, 400, 2002. STEWART R. *Environmental Law in the United States and the European Community: Spillovers, Cooperation, Rivalry, Institutions*, in *The University of Chicago Legal Forum*, Issue 1 article 4, 1992. See also NAPOLITANO G., *Towards a European Legal Order for Services of Economic General Interest*, in *European Public Law*, 2005, p. 565 ss

⁶ Among the others, BREYER S. G., STEWART R. B., SUNSTEIN C. R., VERMEULE A., HERZ M.E., *Administrative Law and Regulatory Policy*, Wolters Kluwer, 2011. BALDWIN R. AND CAVE M. AND LODGE M., *Understanding Regulation: Theory, Strategy and Practice*, Oxford University Press 2011. OLIVER D., PROSSER T., RAWLINGS R., *The Regulatory State Constitutional Implications*, Oxford University Press 2010. RUHL J.B. AND SALZMAN J., *Climate Change, Dead Zones and Massive Problems in the Administrative State: A guide for Whittling Away*, in 98 *California Law Review*, 59, 2010

⁷ MAJONE G., *The rise of the regulatory state in Europe*, *West European Politics* Vol. 17, Iss. 3, 1994. See also MAJONE G., *Regulating Europe*, Rutledge, London, 1996. MAJONE G., *From the Positive to the Regulatory State: Causes and Consequences of Changes in the Mode of Governance*, in 17(2) *Journal of Public Policy*, 139-67, 1997. MAJONE G., LA SPINA A., *Lo Stato Regolatore*, Il Mulino, 2000. MAJONE G., *The regulatory state and its legitimacy problems*, in 22(1) *West European Politics*, 1-24, 1999. WALDO D., *The Administrative State*, The Ronald Press Company, New York, 1948. LODGE M., *Regulation, The Regulatory State and European Politics*, in 31 *West European Politics* 280, 2008

⁸ M. MORAN, quoting Giandomenico Majone's most important papers are collected in *Regulating Europe* (London: Routledge, 1996), which also assembles a range of

definition, we need to add that the rise of regulation is also due to the weakness of means of command. In particular, considering that the EU has «neither the budget-raising capacity nor the bureaucratic muscle to impose policies on either national members or private interests»⁹, rule making gives powers to the Brussels' authorities avoiding tight budgetary constraints imposed by Member States.

Despite a difference in the specific meaning of 'regulatory state' in the two analyzed countries, a comparison is manageable. Nowadays, the regulatory state concept does not need to be relegated within specific institutional features of a certain era, nation, region or legal and political arena but needs a theoretical definition that «identifies the regulatory state with widespread applications of rule-making, [rule implementing] rule-monitoring and rule-enforcement»¹⁰

case studies by other scholars. ANDERSON, J.E., *The Emergence of the Regulatory State*, Public Affairs Press, Washington, 1962. BARDACH E, KAGAN R.A. *Going by the Book: The Problem of Regulatory Unreasonableness*. Temple University Press, Philadelphia 1982. Begg I. et al. 2001. *Social Exclusion and Social Protection. The Future Role of the EU*, EXSPRO Policy report, Southbank University, European Institute, London. BORRÁS, S. and RADAELLI C.M., *The politics of governance architectures: creation, change and effects of the EU Lisbon Strategy*, in 18(4) *Journal of European Public Policy*, 463-484, 1982. BRAITHWAITE, J. COGLIANESE C. and LEVI-FAUR, D. *Can Regulation and Governance make a Difference*, in 1(1) *Regulation and Governance*, 1-7, 2007. BRIGGS A., *The Welfare State in Historical Perspective*, in 2 *European Journal of Sociology*, 221-258, 1961. CHRISTENSEN T. and LAEGREID P., (Eds), *Autonomy and Regulation. Coping with Agencies in the Modern State*. Cheltenham: Edward Elgar, 1961.

⁹ MORAN M., *The British Regulatory State: High Modernism and Hyper-Innovation*, Oxford University Press, 2003.

¹⁰ LEVI-FAUR D., *The odyssey of the regulatory state*, Jerusalem Papers in Regulation & Governance Working paper n. 39, 2011, 27 "The regulatory state is not British nor American; it is also not the one at the EU level, nor does it exhibit solely the administrative architecture of the United States or any federal polity. It is all these and more. Similarly, it is not summarized by the existence or the prevalence of independent agencies, or commissions. These all reflect only the particularities of architecture, time and place. The notion of the regulatory state, it was asserted, can apply to any state which relies on rule-making, rule-monitoring and rule-enforcement. This definition can travel in time because it is thinner than its competitors. It does not require agencies, democratic or economic liberalism, nor does it have any particular affinity to Anglo-Saxon or Western cultures. The lighter weight allows us, I believe, not only to travel further (both to the past and to the

by subject matter experts. Furthermore, a regulator is the entity that achieves its goals by constraining the behavior of others in society, and this is exactly what the American and European regulatory state has been doing.

The feature of the 'regulatory state' is easily identifiable in the climate change field in both the EU and the US as the entity that has been mitigating climate change risks through the drafting, monitoring and enforcing of regulation by subject matter experts.

Scholars¹¹, both in the US and the EU, have long been discussing the rise and fall of the regulatory state. If we can talk about a new rise of the regulatory state, I believe this rise is now concentrated mainly in a few areas¹², among which surely climate change. Why? As mentioned also in the previous chapter, climate change regulation (i) represents a problematic area characterized by market failures; (ii) it is part of a risk evaluation process that needs expertise and (iii) it is strictly related to the increase of scientific and technological advances which made it physiological to have more regulation than less in the climate change field.

future) but to understand the regulatory aspects of the present social, political and economic order better”.

¹¹ 2015 Aspen Forum - Fall and Rise of the Regulatory State <https://www.youtube.com/watch?v=Tt0hy4IMMZI>. See also LOFSTEDT R. E. and VOGEL D., *The changing Character of Regulation: A comparison of Europe and the United States*, in 21(3) *Risk Analysis*, 400, 2001. FERARA R., *Introduzione al Diritto Amministrativo*, Laterza, 2014, 206. NAPOLITANO G., *The Role of the State in (and after) the Financial Crisis: New Challenges for Administrative Law*, in P. LINDSETH E S. ROSE-ACKERMAN, *Comparative, Administrative Law*, Cheltenham, Edward Elgar, 2010, 569. WALLACH P., *The administrative state's legitimacy crisis*, Center for Effective Mublic Management at Booking available at https://www.brookings.edu/wp-content/uploads/2016/07/Administrative-state-legitimacy-crisis_FINAL.pdf. See also, NAPOLITANO G., *Espansione o riduzione dello Stato? I poteri pubblici di fronte alla crisi* in G. NAPOLITANO, *Uscire dalla crisi. Politiche pubbliche e trasformazioni istituzionali*, Bologna, il Mulino, 2012, p. 471 ss.

¹² 2015 Aspen Forum - Fall and Rise of the Regulatory State <https://www.youtube.com/watch?v=Tt0hy4IMMZI> “Aside from climate change: financial regulation and health care”.

Because of all the above listed issues, there is the need for a 'regulatory state' which, even taking different forms and utilizing its own institutions, is able to carry out rule-making, rule implementation, rule- monitoring and rule-enforcement in monitoring climate change.

2.2 The European Union

2.2.1 European Union Competences in Climate Change Law: A Historical Background

The EU's domestic climate change policy and law are intertwined with the development of the international climate change regime. Actually, they co-evolved¹³. International climate change policy (and consequently climate change law) shaped EU-level climate change policy and vice versa. Thus, before analyzing the EU regulatory state - composed by its own institutions - it is first necessary to understand how climate change policy started and evolved from historical point of view. The study of the development of EU climate change policy is also very significant because it demonstrates the EU's nature as a regulatory state. This statement is supported by three considerations: (i) the rise of the EU international leadership in climate change, characterized by the clear goal of fostering legally binding arrangements in the climate realm, reveal a preference for rule based/legal approach to address a global externality problem, which is in line with the EU's nature as a regulatory state. (ii) EU institutions have become the key actors in the efforts to tackle climate change¹⁴. (iii) Among the three main EU institutions, the Commission has been defined as «an EU-level policy entrepreneur

¹³ OBERTHUR S., *The European Union's Performance in the International Climate Change Regime*, 33 *Journal of European Integration*, 2011, 667

¹⁴ According to GOLDTHAU A. AND SITTE N. this reflects "the fact that key member states kept on 'uploading' 'green' domestic preferences in relation to climate policies onto the European level, thus empowering EU agencies".

[which] seized the opportunity to expand its field of operation and influence». ¹⁵

2.2.1.1 *From the '50s to the '70s*

Concern about global climate change dates back to the '50s, but until the 1970s it was mainly regarded as a scientific issue with no policy or legal relevance. In fact, the 1972 Stockholm Conference agreed to intensify scientific research, a task later taken up by the newly created United Nations Environment Program (UNEP). Then, in 1979, UNEP and the World Meteorological Organization (WMO) organized the First World Climate Conference, however, the latter, conspicuously failed to attract any policy makers.

Thus, prior to the 80's, the EU's political (and consequently legal) involvement in climate change was very limited indeed, and discussions were mainly of a scientific nature¹⁶. In October 1985 the UNEP, the WMO and the International Council for Science (ICSU) co-hosted a scientific meeting in Villach Austria. This resulted in the Villach Resolution¹⁷, which helped place the climate issue on the EU agenda. In this regard, one should note that until the Single European Act of 1986 there was no explicit legal basis for environmental policy (thus climate change as well)¹⁸. Nevertheless, environmental action dates back to a 1972 Paris Summit of leaders of the then nine EEC member states. The Paris Summit initiated the practice of developing

¹⁵ BARNES P, *The Role of the Commission of the European Union: creating external coherence from internal diversity* in RÜDIGER K.W, WURZEL AND JAMES CONNELLY *The European Union as a Leader in Climate Change Politics*, Rutledge 41-57

¹⁶ LERUM BOASSON E. and WETTESTAD J., *EU Climate Policy*, Ashgate 2013, 34. See also JAGER J. and O'RIORDAN T., *The history of climate change science and politics*, in *Politics of climate change*, Routledge, London, 1-32.

¹⁷ See EU Commission, *The Greenhouse Effect and The Community*, Communication 1986, 56

¹⁸ SELIN H. and VANDEVEER S., *EU Environmental Policy Making and Implementation: Changing Process and Mixed Outcomes*, Paper presented at the 14th Biennial Conference of the European Union Studies Association, Boston, March 2015

Environmental Action Programs (EAPs) where EU bodies and member states set environmental agendas and identified areas for targeted action¹⁹. The most important reason for the introduction of an environmental policy was the fear that at that time «trade barriers and competitive distortions in the common market could emerge due to the difference of environmental standards»²⁰.

After the Villach Resolution, it was the European Parliament that adopted the first official EU document on climate change in the form of a resolution in 1986, «setting in motion the interplay between developments at the global stage and EU developments»²¹. The Villach Resolution acknowledged and recognized the complexity of the issue and requested the EU institutions to prepare policy measures designed to combat climate change²².

¹⁹ FERRARA R., *La tutela ambientale tra diritto comunitario e diritto interno*, in 2 *Diritto e gestione dell'ambiente*, 9, 2001.

²⁰ JORDAN A. and ADELLE C., *Environmental Policy in the EU, Actors, Institutions and Process*, Routledge, London, 2013, 14. See also JOHNSON S.P. and COERCELLE G., *The environmental policy of the European Communities*, Graham & Trotman, London 1989. CARLARNE C.P., *Climate Change Law and Policy: EU and US Perspectives*, Oxford, 2010, 154. Despite the absence of a legal background in the Rome Treaty, an original interpretation of two provisions of the Treaty given by the European Council were used as a legal basis for the introduction of environmental initiatives. The two provisions were art. 94 95 and 235 of the TEU. Articles 94 and 235 enabled the Council to harmonize laws and administrative processes and to take appropriate measures that would enable the EU to fulfil the broader Treaty objectives, while article 95 was at times used to confer exclusive rather than shared environmental competence. First, the general functioning of the Community in support of integration and related aspirations to improve peoples' living and working conditions, and second the (initially more frequently used) mandate to reduce barriers to trade and economic exchange toward the ultimate objective of creating a single market. The Single European Act of 1986 (SEA) established the legal foundation for formal environmental governance in Europe. It gave the formal legal recognition for the Community to preserve, protect and improve the quality of the environment, to contribute towards protecting human health, and to ensure a prudent and rational utilization of natural resources - environmental policy was not mentioned in the Treaty of Rome. For the first time a new title 'environment' was added to the Treaty and provided the Commission with valuable legal instruments and competences to propose and implement policy in this sector.

²² «the Fitzsimmons Report, which not only examined the scientific case for policy change, but also surveyed and assessed some of the available policy options,

2.2.1.2 *From the '80s to the '90s*

Despite the Villach Resolution, climate change did not immediately become one of the EU's overriding environmental policy concerns: for instance, it was not mentioned as a priority issue in the EU's Fourth Environmental Action Program (1987-1992). What eventually spurred the necessary EU action was the intensification of international policy discussion on the matter.

In 1987, the US government issued a proposal to create an Intergovernmental Panel on Climate Change (IPCC)²³. Established in 1988, the IPCC represented an attempt to institutionalize the developing debate on climate change by moving it out of the scientific realm and into the international political and legal system.²⁴ The IPCC met for its first time in Toronto, in what has been known as the Toronto Conference in order to debate the scientific and, most importantly, the policy implications of climate change²⁵. The Toronto Conference has been described as the «first major international gathering to have global warming as its principal foci»²⁶ and for the first time a global emissions reduction target was suggested for embodiment at a new international convention. Within the Toronto Conference, policy-makers adopted what became known as the

including improving energy efficiency and reducing deforestation. According to Jachtenfuchs, the report helped to turn climate change into a political problem in the EU which required action. JORDAN A. and RAYNER T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* in JORDAN A., HUITEMA D., VAN ASSELT H., RAYNER T. AND BERKHOUT F. *Climate Change Policy In The European Union Confronting the Dilemmas of Mitigation and Adaptation?* Cambridge 2010

²³ AGRAWALA S., *Context and Early Origins of the International Panel on Climate Change*, in 39 *Climate Change* 605, 1998. IPCC, *Climate Change 2013: The Physical Science Basis*, 2013

²⁴ Id supra note JORDAN A. and RAYNER T, *The Evolution of Climate Change Policy in the European Union: An Historical Overview*. See also, PALLEMAERTS M., WILLIAMS R., *Climate change*, in PEETERS M. and DEKETELAERE K., *EU Climate Change Policy*, Cheltenham: Edward Elgar, 2006, 22.

²⁵ June 30, 1988

²⁶ ROWLANDS I., *The Politics of Global Atmospheric Change*, Manchester: Manchester 1995, 75 University Press.

Toronto Target: a 20% reduction in CO2 emissions by the year 2005. The Toronto Conference of June 1988 stands as a landmark for heightened international attention to climate change.

Thanks to this Conference, the EU Commission issued its first communication²⁷ calling for urgent action to reinforce and expand efforts in the fields of energy savings, energy efficiency improvement, development of new energy sources, use of safe nuclear technology²⁸. Although the Commission communication did not contain any specific policy recommendation and maintained that emission reductions were not a «realistic objective»²⁹, it was nevertheless notable in at least two important respects. First, it marked the commencement of formal climate policy making in the EU³⁰ putting it finally on the EU's institutional agenda. Second, it demonstrated the Commission's eagerness to be fully involved in policy making both within the EU and in the emerging negotiations with other countries. The Toronto Convention and the above mentioned Commission communication initiated a more determined policy initiation, dominated by the Member States of the EU and the Commission. With reference to the Member States, within the Council, the appetite for common emission reduction policies grew in particular among the 'greener', front-runner states such as Denmark, the Netherlands and Germany³¹. With

²⁷ (COM (88) 656)

²⁸ NAPOLITANO G., *L'energia elettrica e il gas*, in Trattato di diritto amministrativo, a cura di S. CASSESE, Diritto amministrativo speciale, III, II ed., Giuffrè, Milano, 2003, p. 1635 ss. (I ed. 2000)

²⁹ Quoted in SKJÆRSETH J. B., *The climate policy of the EC* in 32(1), Journal of Common Market Studies, 26, 1994

³⁰ COM (88) 656: para. 50

³¹ "the Dutch government hosted the first high-level intergovernmental meeting in Nordwijk Sweden in 1988 was soon followed by others, including the Netherlands (1989) and the UK (1990). As one of the two largest emitters in the EU and a long-time sceptic of EU involvement in environmental affairs, the UK's pledge (made in May 1990) to stabilize its CO2 emissions at 1990 levels by 2005 was particularly important. Denmark and Italy set similar targets the same month". Id supra note

reference to the Commission, a new communication issued in October 1991, «clearly expressed the EU ambition to act as a global leader at the June 1992 United Nation Conference on Environment and Development in Rio de Janeiro»³². This summit also known as the Earth Summit, produced The United Nations Framework Convention on Climate Change (UNFCCC or FCCC). In order to strengthen its strategic role at the EU level as well, the Commission was also linking various climate policy proposals such as: (i) a framework Directive to conserve energy and improve energy efficiency (SAVE program). (ii) A Decision to support the development of renewable energies (ALTENER). (iii) A Decision concerning a monitoring mechanism for CO₂ emissions. (iv) A Directive to introduce a combined tax on the carbon/energy content of fuels. The first three were relatively uncontroversial, but the fourth – namely a common carbon/energy tax – ultimately proved far too radical for the majority of Member States to stomach³³. Because all four were based on Article 130 of the Single European Act, they had to be adopted on the basis of a unanimous vote. The Commission's efforts on the tax proposal «overshadowed»³⁴ a number of other more conservative, but potentially more achievable, climate policy options. For example, a burden sharing agreement according to which certain countries with higher development needs were to be accorded greater flexibility than others. Hence, although

JORDAN A. and RAYNER T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* at 55

³² Id supra note LERUM BOASSON E. and WETTESTAD J., *EU Climate Policy*, Ashgate 2013, at 4. OBERTHUR S., *The European Union Performance in the International Climate Change Regime*, in 33 *Journal of European Integration* 667, 2001

³³ The Commission proposed a package of measures among which the introduction of a carbon tax. Nevertheless, the Council did not manage to adopt any of the proposal prior to the Rio conference. This was mainly due to the carbon tax proposal which was too controversial for member states to accept. Industry was also fiercely opposed.

³⁴ Id supra note Jordan A. and Rayner T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* at 9

the EU played a significant role in securing the adoption of the FCCC, its own policy in 1992 was still «largely symbolic»³⁵. Despite the absence of a specific policy plan prior to the Rio meeting, the EU pushed for binding commitments for industrialized nations in the international negotiations, trying to get their commitment to stabilized CO2 emissions at 1990 levels by the year 2000. Although this did not meet with much enthusiasm from other OECD countries, the UNFCCC was still adopted.

The following period, until 1997, was characterized by some particular political³⁶ and economic³⁷ issues which determined the final abandonment of the Commission's carbon tax proposal. Meanwhile, the other two less controversial elements of its climate package – ALTENER and SAVE – fared a little better. Both the ALTENER and the SAVE were adopted in 1993. Under the ALTENER Decision, precise – but still indicative – targets were eventually established, which Member States were encouraged to take into account when framing their national policies. These included increasing the share of energy supply from renewables from 4% to 8% (1991–2005) and securing a 5% share of the road fuel market for biofuels.

«Hopes that the USA might seek to emulate (or even better) the EU's stabilization target grew slightly in January 1993 when a

³⁵ Id

³⁶ the Danish electorate voted down the Maastricht Treaty. While Europhilic politicians seized on the (then relatively unknown) informal norm of subsidiarity to allay fears that the EU was becoming too large and too involved in 'national' affairs, several Member States drew up 'hit lists' of legislation for repeal or possible repatriation to the national level (Jordan 2000). Very quickly environmental policy – and with it the fledgling policies on climate change – became the lamb which the then Commission President, Jacques Delors, seemed quite prepared to sacrifice to save the wider integration process. Given these circumstances, it was not entirely surprising that the EU's internal climate change policies became bogged down after Rio. (JORDAN A. AND RAYNER T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* in JORDAN A., HUITEMA D., VAN ASSELT H., RAYNER T. AND BERKHOUT F. *Climate Change Policy In The European Union Confronting the Dilemmas of Mitigation and Adaptation?* Cambridge 2010

³⁷ The economic recession

Democratic President, Bill Clinton, assumed control of the White House. However, when the Republicans regained control of Congress in late 1994 it virtually bur[ied] any hope of support for stringent climate policy in the US legislative branch»³⁸. In July 1997, the Senate passed the Byrd-Hagel resolution, which made the USA's ratification of any new climate agreement dependent on developing country participation. The European Union knew that it was now up to itself to create a specific legal framework for climate change. During the Conference of the Parties (COP 1) of the UNFCCC in Berlin in March 1995 UK and Germany announced their readiness to cut their emissions in the period up to 2010. Germany, in particular, as the host of the meeting, exploited its Presidency of the Council to work bilaterally with the developing states and environmental NGOs to put pressure on the USA and OPEC to sign what became known as the Berlin Mandate. The Berlin Mandate aimed to extend the lifetime of the FCCC beyond 2000 by calling for a protocol to be adopted at the December 1997 COP 3 in Kyoto³⁹.

«At COP 2, the Clinton administration announced that it was ready in principle to enter into quantified and legally binding emission reduction targets», however, this was subject to a massive request: they wanted as much 'flexibility' – *inter alia* through the inclusion of carbon sinks⁴⁰ and joint implementation⁴¹ – as possible. The request

³⁸ Id supra note JORDAN A. AND RAYNER T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* quoting SCHREURS M., (2004). *The climate change divide: the EU, the USA and the future of the Kyoto Protocol* in VIG N. AND FAURE M. *Green Giants*, Cambridge, MA: MIT 2004, 213 and quoting OBERTHÜR S., OTT H., *The Kyoto Protocol*, Berlin: Springer-Verlag, 1999, 44.

³⁹ Id

⁴⁰ Carbon sinks are considered: forest, ocean, or other natural environment that can be viewed in terms of their ability to absorb carbon dioxide from the atmosphere

⁴¹ The mechanism known as joint implementation allows a country with an emission reduction or limitation commitment to earn emission reduction units from an emission-reduction or emission removal project in another country.

represented a huge risk because too much flexibility could have allowed large emitters to evade *de facto* their responsibilities.

In order to arrive prepared at the Kyoto COP 3, the EU finally agreed to an internal burden sharing agreement in March 1997 at the Environment Council meeting⁴². In December of the same year, COP 3 took place in Kyoto. The negotiations were particularly hard for the EU which, had to commit to achieving an 8% reduction whereas the USA and Japan accepted cuts of 7% and 6%, respectively. And the EU was also forced to make some other compromises. These included: accepting the targets mentioned above⁴³; agreeing to a larger basket of gases⁴⁴; accepting flexible mechanisms;⁴⁵ adopting different baselines;⁴⁶ and «accepting multi-year averaging with compliance based on performance over a five year period (2008–2012)»⁴⁷. However, because of the Byrd-Hagel resolution, it was now unfeasible that the US Congress might ratify the Kyoto Protocol,

⁴² RINGIUS, L., *Differentiation, leaders, and fairness. International Negotiation*, 4, 133–66, 1999.

⁴³ Annex I Parties include the industrialized countries that were members of the OECD in 1992, plus economies in transition, including the Russian Federation, the Baltic States and several Central and Eastern European States.

⁴⁴ The EU was by no means united on this point. Some Member States (e.g. the Netherlands and the UK) favored extending the basket (OBERTHÜR, S. AND H. OTT, eds. *The Kyoto Protocol*, Berlin: Springer-Verlag, 1999, 126) while others did not.

⁴⁵ The flexible mechanisms recognized by the Protocol include emissions trading, the Clean Development Mechanism and Joint Implementation. In response to concerns that such mechanisms could be used to evade domestic action, their use is meant to be 'supplementary' to emissions reductions achieved domestically. With reference to the CDM see *Global Administrative Law and European Administrative Law. Relationships, Legal Issues and Comparison*, edited by CHITI E. and MATTARELLA B.G., Berlin/Heidelberg/New York, Springer, 2011, pp. 1-409

⁴⁶ 1990 for the main three gases and 1995 for the rest. In this regard see also: OBERTHÜR, S. and OTT H., *The Kyoto Protocol*, Berlin: Springer-Verlag 1999. PACHAURI, R. K. and REISINGER A., *Climate Change 2007: Synthesis Report*. Geneva: Intergovernmental Panel on Climate Change, 2007

⁴⁷ Id supra note JORDAN A. and RAYNER T., *The Evolution of Climate Change Policy in the European Union: An Historical Overview* at 65

regardless of its final form⁴⁸. Nevertheless, international negotiations continued, led by an aggressive EU delegation. «While the US bickered and stalled, the EU took advantage of the growing gap in leadership to craft a reputation as the global leader on climate change policy and to push ahead with Protocol negotiations»⁴⁹.

The key role of the EU was also evident when, despite the departure of the US the EU convinced Russia to participate in the negotiations and finally to ratify the Protocol. The legal obligations that the Kyoto Protocol creates and the implementation measures that it embodies represented an unprecedented international commitment to protecting the global commons. The Kyoto Protocol is unlike any existing multilateral environmental agreement in the scale of commitment that it requires from member states. The Kyoto Protocol represents the first time that developed nations have jointly agreed on legally binding targets to reduce emissions from such a wide range of gases and across such a cross-section of the economy, and the first time that a multilateral environmental agreement has created the framework for an elaborate global market in emissions trading.

Overall, the EU has successfully contributed to the international success of the establishment of a multilateral legally binding climate change governance regime, namely the Kyoto Protocol. The EU's approach to the global climate change regime characterized by the clear goal of fostering legally binding arrangements in the climate realm, reveals a preference for a rule-based/legal approach to address global externality problems, which is in line with the EU's nature as a regulatory state. Then too, internationally speaking, the 2009 Lisbon Treaty established the legal basis for the EU Commission to move

⁴⁸ JOYNER C.C., *Burning International Bidges, fueling global discontent: The United States and rejection of the Kyoto Protocol*, in 33, 1 *Victoria U. Wellington L. Rev.* 27, 2007.

⁴⁹ *Id*

further into the role of the bloc's external representation in the climate realm, formally still an area of shared competences.

On the internal EU level, the EU implemented in 2000 the European Climate Change Program (ECCP) a «multi-stakeholder process set up by the Commission aimed at facilitating the inclusion of relevant actors in industry and society, EU agencies and member states». The ECCP defined the EU strategy for complying with the Kyoto Protocol's provisions, which led to the establishment in 2003 of the EU ETS Directive (Emission Trading Scheme) 2003/87/EC⁵⁰. The EU ETS was widely acclaimed as the world's first scheme of its kind and led to the advancement of climate change as one of the EU's primary policy areas in terms of priority. These results were achieved thank to the efforts of the three main EU institutions which have become the key actors in the efforts to tackle climate change. As we will see later below, among the three main institutions, the EU Commission has built up an influential role in shaping climate change policy and regulation. In fact, as the holder of executive power, it now retains a particularly important role thanks to its expertise and institutional head-start in the shape of the DG Climate which gives the EU Commission a competitive edge over the other EU institutions.

⁵⁰ ELLERMAN A.D. and Joskow P.L. and HARRISON D.L., *Emission Trading: Experience Lessons and Consideration for Greenhouse Gases*, Washington DC, Pew Center on Climate Change, 2003. ELLERMAN A.D. and BUCHNER B.K., *The European Union Emission Trading Scheme: Origins, allocation and early results*, in 1(1), *Review of Environmental Economics*, 66-87, 2007. ELLERMAN A.D. and Convery F. J. and Perthuis C.D., *Pricing Carbon – The European Union Emission Trading Scheme*, Cambridge University Press, 2010. SKJAERSETH J.B. AND WETTESTAD J, *EU Emission Trading: Initiation Decision-Making and Implementation*, Aldershot Ashgate, 2008.

2.2.2 *The Main Legal Principles in the EU Climate Change Legislation – Article 191 TFEU*

Article 191 is part of title XX of the Treaty of Functioning of the European Union (TFEU), the title dedicated to the Environment⁵¹.

Paragraph 1 of art. 191 provides for the environmental policy objectives and principles that have to guide environmental policy-making. In particular, the EU environmental policy is to contribute to the pursuit of a number of objectives:

«— preserving, protecting and improving the quality of the environment,
— protecting human health,
— prudent and rational utilization of natural resources,
— promoting measures at international level to deal with regional or worldwide environmental problems, and in particular *combating climate change*».
(emphasis added)

The explicit reference to climate change was added by the Lisbon Treaty and represents the only amendment made to the environment title. Before this explicit insertion, climate change was covered implicitly by the other objectives of the title. However, considering that the EU has been presenting itself as a leader on climate change⁵², it was about time to recognize the challenge of climate change as an explicit official part of EU environmental policy objectives.

Paragraph 2 of art. 191 affirms the importance of a number of environmental principles. Those principles codified within the treaty are legally binding for the EU decision-making process. In particular, paragraph 2 provides that:

⁵¹ Title XX is composed by three articles: 191, 192 and 193.

⁵² OBERTHUR S., *The European Union's Performance in the International Climate Change Regime*, in 33(6) *Journal of European Integration*, 667-682, 2011

«Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay. In this context, harmonization measures answering environmental protection requirements shall include, where appropriate, a safeguard clause allowing Member States to take provisional measures, for non-economic environmental reasons, subject to a procedure of inspection by the Union».

Despite the fact that a «high level of protection» it is not a principle, it is nevertheless important to note that it provides a potentially important counterpoint to the centrality of the economic objectives in the EU (provided for also under art. 191(3)). Furthermore, defining a high level of protection is part of the political task of determining an acceptable level of risk leaving a consistent level of discretion to the decision makers.

The principles that are codified within art. 191(2) are: the precautionary principle; the preventive principle; the source principle and the polluter pays principle.

The precautionary principle has been highly influential in legal systems all over the world. In the EU, the precautionary principle is mainly a flexible risk management tool⁵³ - as opposed to the risk

⁵³ As Stone (STONE, C. D., *Is There a Precautionary Principle?* In 31 Environmental Law Reporter 10790, 2001.) and Wiener (WIENER J. B., *Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems*, in 13 *Duke Journal of Comparative and International Law*, 207, 2003), as well as others have noted, the precautionary principle has been defined in many different and inconsistent ways, some of which are not useful in guiding decision making, and some of which would stymie rational decision making if adopted. The European Commission issued a communication (European Commission 2000) that interprets the precautionary principle to require risk management procedures in decision making and effectively extends the scope of the precautionary principle to all risk regulation, but the communication does not define the principle and thus provides

assessment technique - that may be invoked when there is scientific uncertainty about a suspected risk to human health or to the environment emanating from a certain action or policy.

One of the most influential American legal scholar of our days, Cass Sunstein, in one of his article,⁵⁴ criticized the precautionary principle affirming that taken in its strongest form;⁵⁵ the precautionary principle should be rejected, «not because it leads in bad directions, but because it leads in no direction at all». Basically, he does not insist that «the precautionary principle leads in the wrong directions, but that if it is taken for all that it is worth, it leads in no direction at all. The reason is that risks of one kind or another are found on all sides of regulatory choices, and it is therefore impossible, in most real-world cases, to avoid running afoul of the principle». Cass Sunstein uses, *inter alia*, the example of the Kyoto Protocol to endorse his theory, stating that: «fifty-nine percent [of Americans] supported the Kyoto Treaty on global warming, with only twenty-one percent opposed. But at the same time, fifty-two percent of Americans said they would refuse to support the Kyoto Treaty if it would cost an extra \$50 a month for an average American household. In fact, only eleven

little or no useful substantive guidance as to the required level of precaution. See also FERRARA R., *I principi comunitari della tutela dell'ambiente*, in 3 *Dir. amm.* 509, 2005.

⁵⁴ SUNSTEIN C. R., *Beyond the Precautionary Principle*, in 151 *University of Pennsylvania Law Review* 1003 – 1054, 2003. For discussion on the precautionary principle at EU level, see COERCELLE G., *La perspective communautaire du principe de précaution*, in 450 *Revue du Marché commun*, 447, 2001. SCOTT J., VOS E., JOERGES C., and DEHOUSSE M., *Good governance in Europe's integrated market*, Oxford University Press, 2002. ALEMANNI A., *Le principe de précaution en droit communautaire. Stratégie de gestion ou risque d'atteinte au marché intérieur*, in *Revue du droit de l'Union Européenne*, 917. WIENER J.B., ROGERS M.D., *Comparing precaution in the United States and Europe*, in 5(4) *Journal of Risk Research* 320-321, 2002. VOGEL D., *The politics of risk regulation in Europe and united States*, in 3 *Yearbook of European Environmental Law* 31-42, 2003.

⁵⁵ The principle imposes a burden of proof on those who create potential risks, and it requires regulation of activities even if it cannot be shown that those activities are likely to produce significant harms.

percent of Americans would support the Kyoto Treaty if the monthly expense were \$100 or more».

We should ask if this reasoning is still valid especially with reference to climate change policy in the EU. The answer seems to be negative for three reasons. First, what can be said with certainty is that the consequences of climate change which cost disruption to life are already far greater than the cost of taking preventive action now; second, EU courts interpreted the precautionary principle as one requesting some level of scientific plausibility and prohibiting disproportionate measures (i.e. the principle of proportionality)⁵⁶. Third, the court in *Pfizer*⁵⁷ has interpreted the precautionary principle as requiring the prioritization of public objectives over economic considerations, something that US courts have done as well in specific circumstances (see *Lead Indus. Ass'n Inc. v. EPA infra* page 81 of this thesis).

The second binding principle in art. 191 is the principle of prevention, which signals that it is better to avoid a damage than to restore it afterwards. The main difference between the prevention and the precautionary principle lies in the available level of certainty about the link between the action and the damages. When the level of certainty is less than full, precaution is applicable. When there is also total certainty about the causal link between the action and the damage, then the prevention principle applies. In the case of climate change the link between anthropogenic emissions of GHGs and the

⁵⁶ Case T-13/99 *Pfizer Animal Health SA v. Council* ECR II-3305; C-343/99 *Afton Chemical Ltd v. Secretary of State for Transport* ECR I-7027[54]. See also STOKES E., *The EC Courts' Contribution to Refining the Parameters of Precaution*, *Journal of risk research* 491, 2008. See also HEYVAERT V., *Facing the Consequences of the Precautionary Principle in European Community Law*, in *31 European Law Review* 185, 2006

⁵⁷ *Id*

damage we are causing has been determined to be «very likely»⁵⁸. Thus, some scholars argue that in the case of regulation of climate change it is unnecessary to recall the precautionary principle to demand strong emission reductions and that the latter has to be used in order to define «which level of mitigation to pursue, how fast and with which means»⁵⁹.

The source principle is closely related to the other principles and like the preventive principle rests on the recognition that it should be more effective and efficient to deal with the problems early (at the source). The source principle also aims to ensure that communities bear only their environmental costs.

The last principle cited by art. 191(2) is the polluter pays principle which aims to prevent or otherwise remedy environmental damage. Its main function is to internalize the social costs borne by the public authorities for pollution prevention and control. Accordingly, the principle serves as an economic rule according to which a portion of the profits accruing to polluters as the result of their activities must be returned to the public authorities responsible for inspecting, monitoring and controlling the pollution these activities produce⁶⁰. Dominated by an economic approach, this principle is often called «in aid of economic instruments to regulation»⁶¹. With reference to climate change it can be said that this principle was first put into practice through the Kyoto Protocol and afterwards through the Emission Trading Scheme (to which I will give in depth analysis

⁵⁸ Very likely in the parlance of the IPCC a probability of occurrence higher than 90%

⁵⁹ DE CENDRA DE LAGARRÀN J., *Distributional Choices in EU Climate Change Law and Policy*, Wolters Kluwer Law and Business, 140, 2011

⁶⁰ DE SADELEER N., *The Polluter-Pays Principle in EU Law - Bold Case Law and Poor Harmonisation*, in Pro Natura. Festschrift til H.-C. Bugge, Oslo, Universitetsforlaget, 405-419, 2012

⁶¹ LEE M., *EU Environmental Law, Governance and Decision-Making*, Hart Publishing 2014

later). The Kyoto Protocol is an example of application of the polluter pays principle: parties that have obligations to reduce their GHG emissions must bear the costs of reducing such polluting emissions. In the ETS, the allocation of emission allowances by means of auction determines that the polluter pays principle is implemented⁶², thus trading is a variant of the polluter pays principle.

Finally, paragraph 3 of art. 191 states that:

«[i]n preparing its policy on the environment, the Union shall take account of:
— available scientific and technical data,
— environmental conditions in the various regions of the Union,
— the potential benefits and costs of action or lack of action,
— the economic and social development of the Union as a whole and the balanced development of its regions»

This paragraph points on the one hand, towards the possible need for different approaches to environmental problems in the different parts of the Union, thus granting flexibility in providing for environmental policy and law making. Nevertheless, at the same time, paragraph 3 balances this flexibility approach with a less flexible approach: the «available scientific and technical data» and «the potential benefits and costs of action or lack of action». The wording of this paragraph seems to establish only a procedural requirement to perform some form of cost–benefit analysis in environmental decisions. «Any actual decision criteria, however, are only implicit, and undefined, so it seems to provide no real guidance as to level of precaution»⁶³.

⁶² CHLISTALLA M., *Bidding For The Better EU Emissions Trading Scheme Moves To Auctioning*, Deutsche Bank Research 2010

⁶³ BERGKAMP L., SMITH T.T. JR, *Legal and Administrative System*, in JAMES H., MICHAEL R., PETER S., *The Reality of Precaution: Comparing Risk Regulation in the United States and Europe*, Washington, D.C. RFF Press, 2011, 446

2.2.3 The EU Climate Change Regulatory State

I will now analyze the EU climate change regulatory state which relies, as above described, on its rule-making, rule-implementing, rule-monitoring and rule-enforcement.

Before proceeding in this direction, it is first necessary to describe the European legal background in which the climate change regulatory state developed.

The EU operates a unique governance system that shapes EU climate change law and policy⁶⁴. It is composed of four primary decision-making institutions, including the Council of the European Union (the Council), the European Commission (the Commission), the European Parliament (the EP), and the Court of Justice of the European Union (the Court).

The EU and its institutions were created through international treaties ratified by all EU Member States which agreed to share sovereignty in certain areas. Amended and updated over time, the most recent is the Treaty of Lisbon, which entered into force on December 1, 2009. Through the treaties, EU institutions are authorized to adopt European legislation under the principle of 'conferral'⁶⁵. The principle of conferral permits the EU to legislate in certain policy areas explicitly set out in the treaty. In particular, in some areas, such as competition, customs, and international trade,

⁶⁴ For examples of new governance scholarship, see DE BURCA G. AND SCOTT J., *Law and Governance in the EU and US* Hart Publishing, London, 2006. KARKKAINEN B. C., 'New Governance' in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping* in 89 *Minn. L. Rev.* 471, 2004. LOBEL O., *Setting the Agenda for New Governance Research* in 89 *Minn. L. Rev.* 498; 2004. LOBEL O., *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought* in 89 *Minn. L. Rev.* 342, 2004. RUHL J.B. AND SALZMAN J., *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide For Whittling Away* in 98 *Cal. L. Rev.* 59, 2010. SELIN H. and VANDEVEER S., *European Union and Environmental Governance*, Rutledge 2015

⁶⁵ WEILER J.H.H., *The Transformation of Europe*, in 100 *Yale Journal*, 2403, 1991

only the EU can take action; thus the Member States relinquished all right to legislate. In other areas such as the environment, energy, and climate change, Member States agreed to share their authority with the EU. This means that the Member States retain their individual power to legislate but only to the extent that the EU has not already done so. «Conferral of legislative power to the EU institutions triggers two other fundamental principles that regulate the use of this power -- the principles of 'subsidiarity' and 'proportionality'. These principles establish that decisions should be made at the most local level possible, that is, nationally or regionally, and that EU action should be limited to the minimum necessary to achieve an objective». ⁶⁶ (we will see how these principles work in practice in Chapter 3)

2.2.3.1 Rule Making

The first step in the decision making process of EU legislation (equivalent to an Act of the US Congress) illustrates a critical aspect of the European Union regulatory framework: the primacy of the European Commission in shaping regulation⁶⁷. In fact, according to article 17 of the Treaty on European Union (TEU) only the Commission can introduce an EU legislative proposal. When we talk about the Commission we refer to two different concepts. First, it refers to the College of Commissioners, a body whose twenty-eight members (one for each Member State), or 'Commissioners', are appointed by the president of the European Commission and approved by a majority of the European Parliament; this is the body that defines

⁶⁶ MARTELLA R. and FRANCKE G., *Federalism in Environmental Decision Making* in 27 (1) *Natural Resources & Environment*, ABA, 2012.

⁶⁷ GOLDTHAU A. and SITTER N., *A liberal Actor in a Realist World. The European Union Regulatory State and the Global Political Economy of Energy*, Oxford University Press, 2015, 6 and 31. GENSCHER P. and JACHTENFUCHS M., *Beyond The Regulatory Polity? The European Integration of Core State Powers*, Oxford University Press, 2014, 168. MATTHEWS F., *Governance and State Capacity*, in LEVI-FAUR D., *The Oxford Handbook of Governance*, Oxford University Press, 2012.

the agenda and formally approves draft legislative proposals. However, the word 'Commission' also refers to some 40,000 civil servants staffing more than forty different divisions, called Directorates-General (DG). The DGs are in general the branch of an administration dedicated to a specific field of expertise and they prepare and implement the Commission's action.⁶⁸ These DGs are «loosely akin to the US federal regulatory agencies»⁶⁹.

In 2010, the President of the Commission, Barroso, set up the Directorate General for Climate Action (DG Clima) which leads the European Commission's efforts to fight climate change at EU and international level by formulating and implementing cost effective climate change policy and legislation. In particular, the mission of the DG Clima is to: «(i) formulate and implement climate policies and strategies; (ii) take a leading role in international negotiations on climate; (iii) implement the EU's Emissions Trading System (EU ETS); (iv) monitor national emissions by EU member countries and (v) promote low-carbon technologies & adaptation measures»⁷⁰. Thus, DG Clima participates in all classic stages of the policy process. On a

⁶⁸ Each DG is headed by a Director General who represents the Commission administration and the related Commissioner. Each DG is divided into directorates and each directorate is divided into units. Units are headed by a Head of Unit and constitutes the elementary organizational entity within the Commission administration.

⁶⁹ See MARTELLA R. and FRANCKE G., *Federalism in Environmental Decision Making* in 27 (1) *Natural Resources & Environment*, ABA, 2012.. Further, according to Shultze, "the best way to understand DG is to consider them as the Union equivalent of national ministries". See R. SHULTZE, *European Union Law*, Cambridge 2015, 190. According to M. P. CHITI "L'evoluzione del numero delle direzioni generali e la loro diversa articolazione ricordano la dinamica delle amministrazioni centrali degli Stati e divenire forme di Stato e di governo..." in CHITI M.P. and GRECO G., *Trattato di Diritto Amministrativo Europeo*, Giuffrè, 2007. S. Cassese, *Diritto ambientale comunitario* Milano, Giuffrè, 1995, I-IX; 1-204. CHITI M.P., *Diritto amministrativo europeo*, IV ed., Milano, Giuffrè, 2011

⁷⁰ See http://ec.europa.eu/clima/about-us/mission/index_en.htm. See also KEESSEN A., *In search of a European legislative approach to adaptation to climate change*, in PEETERS M. AND UYLENBURH R., *EU Environmental legislation legal Perspective on Regulatory Strategies*, Edward Elgar 2014, 193

merely internal level, this includes agenda setting, legislative proposals and policy implementation. On an external level, the DG Clima leads the Commission task forces in international negotiations on climate change and ozone-depleting substances, and coordinates bi-lateral and multi-lateral partnerships on climate change with non-EU countries⁷¹.

The creation of DG Clima completed the long path of moving climate policy decisions 'upward' in the hierarchy of the Commission. In particular, the creation of DG Clima raised the profile of climate change in domestic and international arenas by creating a new administrative structure to show EU priority as well as testifying to the need for cross-cutting climate policy mainstreaming; and it also enables the Commission's climate change team to attract more administrative resources⁷².

The climate change legislative proposal begins in the DG Clima that will manage the matter going forward⁷³. Under Article 249 of the Treaty on the Functioning of the EU (the primary EU law), the Commission adopts its own rules of procedure.

For the most part, these are very general and do not dictate the preparatory work a DG must undertake. The process starts with the setting up of a 'roadmap' and it will generally involve a process

⁷¹ Id. See also Pop, V. (2008). Barroso to create new energy directorate. EUobserver, Retrieved 04/22, 2013, from www.lexisnexis.com/uk/nexis. ENDS Europe. (2009b). New energy DG plan outlined. ENDS Europe REPORT, Retrieved 04/22, 2013, from www.lexisnexis.com/uk/nexis

⁷² <http://www.politico.eu/article/dedicated-to-tackling-climate-change-i/>

⁷³ MARTELLA R. and FRANCKE G., *Federalism in Environmental Decision Making in 27 (1) Natural Resources & Environment*, ABA, 2012. STRAUSS P., SMITH T.T. JR. and BERGKAMP L., *EU Rulemaking*, in *Administrative Law of the European Union*, American Bar Association, 2008. See also MATTARELLA B.G., *Procedimenti a atti amministrativi*, in MARIO P. CHITI, *Diritto amministrativo europeo*, Milano, Giuffrè, 2013, 327-377.

termed 'public consultation' (Better Regulation)⁷⁴. The consultation is launched on the Commission's own initiative prior to the adoption of a proposal. The Commission conducts 'consultation' through online web-forms. Through open public consultations groups and individuals can express their views on aspects of impact assessments, before the Commission finalizes its proposals. Explanatory memoranda accompanying legislative proposals by the Commission (if and when the plan or program concerned is to be adopted by the Council and/or the European Parliament) will include the results of these consultations and an explanation as to how they were conducted and how the results were taken into account in the proposal.⁷⁵. As an example, DG Climate Action's policy unit 'C.1' is responsible for the

⁷⁴ Access to information, public participation in decision-making and access to justice in environmental matters is governed at international level by the so-called Aarhus Convention, signed in Aarhus (Denmark) in 1998. This Convention binds Community institutions and bodies and has been implemented by means of Regulation (EC) No 1367/2006, which is also known as 'the Aarhus Regulation'. The Aarhus Regulation has itself been implemented by means of two Commission Decisions 2008/50/EC and 2008/401/EC. See also the Better Regulation Strategy available at: http://ec.europa.eu/info/strategy/better-regulation-why-and-how_en. See also FERRARA R., *Qualità della regolazione e problemi della multilevel governance*, in 6 Foro amm. Tar, 2251, 2005.

⁷⁵ REGULATION (EC) No 1367/2006; Commission Decisions 2008/50/EC and 2008/401/EC and see also the EU web page: <http://ec.europa.eu/environment/aarhus/pdf/guide/AR%20Practical%20Guide%20EN.pdf> See also Commission Communication, Towards a reinforce culture of consultation and dialogue – General principles and minimum standards for consultation of interested parties, Brussels 11/12/2002 COM 2002 704 final see in particular pag. 10. With reference to the consultation process of the Commission see also: COEN D., RICHARDSON J., Lobbying the European Union: Institutions, Actors, and Issues, *Oxford University Press 2009*, 28 and sub. QUITTKAT C., The European Commission's Online Consultations: A Success Story? in 49(3) *Journal of Common Market Studies*, 653–674, 2010. Bignami F., Three Generations of Participation Rights in European Administrative Proceedings, *Jean Monnet Working Paper 11/03 New York: New York University School of Law*, 2003. BOZZINI E., The Role of Civil Society Organisations in Written Consultation Processes: From the European Monitoring Centre to the European Fundamental Rights Agency, in DELLA SALA V., RUZZA C., Governance and Civil Society in the European Union, Volume 2, Manchester: Manchester University Press, 2007. KOHLER-KOCH B., FINKE B., The Institutional Shaping of EU–Society Relations: A Contribution to Democracy via Participation? in 3(3) *Journal of Civil Society*, 205–21, 2007.

development of strategic options for the EU's international and domestic climate action, underpinned by in-depth economic and technical analysis. For example, unit C.1 opened an online public consultation in July 2016 «[O]n the effort of Member States to reduce their greenhouse gas emissions to meet the European Union's greenhouse gas emission reduction commitment in a 2030 perspective»⁷⁶. In order to fulfill the consultation's objective to gather additional information on the form of a possible Commission proposal, the consultation asks questions that require a set response, such as 'yes', 'no', or 'partially agree'. «Those answers may be substantiated with a maximum of 1,000 characters. As a result, European public consultations have been criticized as more of a 'tick-the-box' exercise in good governance than a tool for meaningful public participation»⁷⁷. Further, despite EU regulation (EC) No 1367/2006 and the related Commission Decision 2008/401/EC which implemented the Aarhus Convention and were supposed to grant a more transparent public participation, former Commission Communication COM\2002\704 still remains valid. According to the latter Communication «the Commission remains convinced that a legally-binding approach to consultation is to be avoided for two reasons: first, a clear dividing line must be drawn between consultations launched on the Commission's own initiative prior to the adoption of a proposal, and the subsequent formalized and compulsory decision making process according to the Treaties. Second, a situation must be avoided in which a Commission proposal could be challenged in the Court on the grounds of alleged lack of consultation with interested parties. Such an over-legalistic approach

⁷⁶ The consultation was held from 26 March to 18 June 2015 and is available on the EU Survey website http://ec.europa.eu/clima/consultations/articles/0025_en.htm

⁷⁷ MARTELLA R. and FRANCKE G., *Federalism in Environmental Decision Making* in 27 (1) *Natural Resources & Environment*, ABA, 2012.

would be incompatible with the need for timely delivery of policy, and with the expectations of the citizens that the European Institutions should deliver on substance rather than concentrating on procedures»⁷⁸. As we will see later; the EU public consultation is very different from the US one as provided for under the Administrative Procedure Act (APA)⁷⁹.

Following completion of the public consultation, the relevant DG conducts an impact assessment, a process meant to prepare evidence for political decision makers⁸⁰. For example, with reference to the consultation mentioned above of July 2016 ([O]n the effort of Member States to reduce their greenhouse gas emissions to meet the European Union's greenhouse gas emission reduction commitment in a 2030 perspective), document COM(2016) 482 final 2016/0231(COD) provided for the related impact assessment, which «formed the analytical basis to set the at least 40% GHG emission reduction objective by 2030 compared to 1990»⁸¹.

⁷⁸ COM 2002 704, page 10

⁷⁹ SEERDEN R., *Administrative Law of the European Union, Its Member States and the United States: A comparative Analysis*, Cambridge 2012

⁸⁰ For example until August 2016, the DG Clima proposed two impact assessment dated 20/07/2016 (COM(2016)482/F1 and COM(2016)479/F1): one was a Proposal for a Regulation on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 for a resilient Energy Union and to meet commitments under the Paris Agreement. As well as the request of amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change. The other one was a Proposal for a Regulation on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework. As well as the request of amending Regulation No 525/2013 on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change.

⁸¹ SWD(2016) 247 and SWD(2016) 248. The Regulatory Scrutiny Board issued a positive opinion of the draft impact assessment report, see SEC(2016) 339. The impact assessment revisits the methodology to set targets based on GDP per capita which ensures fairness and updates this based on 2013 data. It assesses to which extent targets could be adjusted within the group of Member States that have an above average GDP per capita and for which Member States the cost efficient achievement of the targets may be a particular concern.

There are no binding procedural rules dictating if and when and through which methodology an impact assessment should be conducted. The Aarhus Convention provides for early publication of the relevant preparatory documents «when all options are open and effective public participation can take place». However, it seems that the Commission's practice regularly deviates from this requirement. The impact assessment is published, in English, together with the final proposal as adopted by the Commission. There is thus no possibility for the public to give an opinion on the different options open, though the Aarhus Convention explicitly mentions that participation shall take place when all options are open. «Once complete, the impact assessment report and proposal are launched into Inter-Service Consultation,⁸² an internal process taking roughly six weeks during which concerned DGs can comment on the proposal and raise objections. If the DGs do not reach agreement, the issue is elevated to the Commissioners' cabinets (individual support staff) »⁸³. The cabinets prepare an agreement for subsequent adoption by the College of Commissioners thus, the Commissioners themselves debate only controversial proposals. Once adopted, a draft proposal is published in the Official Journal of the European Communities, and an EU legislative proposal is born⁸⁴. The legislative proposal also contains the scope of the Commission's executive powers (e.g., its own mandate, the duration, and possible termination of such a mandate,

⁸² The lead DG seeks the formal opinion of all the DGs and services with a legitimate interest in the proposal - Consultation of certain departments is compulsory - All DGs have a coordinator for inter-service consultations

⁸³ MARTELLA R. and FRANCKE G., *Federalism in Environmental Decision Making in 27 (1) Natural Resources & Environment*, ABA, 2012

⁸⁴ It is important to understand that the Commission considers everything up to this point to be its internal confidential decision-making business, that is, private. However, case T-166/05, in which the lower court annulled a Commission decision refusing access to documents and sound recordings, provides compelling legal arguments and jurisprudence to the contrary. Stakeholders are entitled to the internal documents that support Commission decision making.

and whether and how the Council and Parliament may exercise a veto over its exercise of its mandate), this is another significant power within the Commission's decision making process.

Once a draft proposal leaves the Commission, the ordinary legislative procedure can start. This means that the European Parliament receives the proposal, which is then debated in the relevant committee⁸⁵, following which it is considered by the Parliament as a whole, which may approve, reject, or amend it. The final proposal is then submitted to the Council, which in turn approves or amends it. If amended, the proposal returns to the Parliament. This cycle continues until final agreement is reached or the proposal is rejected.

2.2.3.2 *Rule Implementation*

Under article 291 TFUE the implementation of EU law is a national responsibility; sometimes though, uniform conditions for implementing legally binding Union acts are needed. In those cases legislation confer implementing powers to the Commission⁸⁶. To be conferred an implementing act, the Commission submits a draft implementing act to the relevant committee composed by representatives of the Member States and chaired by a non-voting member of the Commission (this is what is still called comitology).⁸⁷

⁸⁵ On 1 September, the ENVI Committee will consider the draft report on the Paris Agreement adopted under the United Nations Framework Convention on Climate Change last December in Paris. The EP needs to give its consent for the ratification by the EU of this Agreement. The ENVI Committee vote of 8 September, ahead of the Council Decision, sends a strong signal about the urgency to complete the EU ratification process no later than the end of 2016.

⁸⁶ In general see CASSESE S. and DELLA CANANEA G., *L'esecuzione del Diritto Comunitario*, in Riv. It. Dir. Pubbl. Com., 1991, 901. Monnet J., *Memories*, Paris, 1976, 546.

⁸⁷ The 182/2011 Comitology Regulation establishes the detailed procedure for the adoption of implementing acts by the Commission. The committee can provide a positive or negative opinion on Commission's draft by qualified majority voting. If the committee rejects the draft, the Commission cannot adopt it but may submit it to an appeal committee. With reference to the old discipline on comitology see BLUMANN C. *Le Pouvoir exécutif de la Commission et le problème de la comitology*,

The committee can provide a positive or negative opinion on the Commission's draft by qualified majority voting⁸⁸.

The EU ETS Directive, represents a case in which uniform conditions of implementation were needed e.g. in determining the allocation of free allowances and monitoring, reporting and verification of emissions. Thus, these rules are implemented on an EU-level in order to ensure a harmonized approach between different Member States. In the EU ETS, the Commission consulted Member States prior to the implementation of measures through the Climate Change Committee in which all Member States were represented. Around 15 decisions and regulations relating to its implementation in areas such as free allocation, monitoring or reporting were examined by the Climate Change Committee. In this process of implementation a significant role is also played by the European Environmental Agency. The European Environmental Agency, though, does not have decision making powers but only gathers information in a reporting role. It produces reports on different issues and a 'state of the environment' report is issued every four years. Despite the absence of explicit powers in the decision making process, the agency's opinion⁸⁹ can be particularly influential and legally the Commission needs valid scientific reasons for disagreeing with the agency's opinion.

Some considerations are needed at this point with reference to the Commission's implementing acts in climate change legislation. First, it can be sustained that 'implementing acts' are always needed in

in Riv. It. Dir. Pubbl. Comp., 1993, 1053. Chiti M. P., *L'Organizzazione Amministrativa Comunitaria*, in *Trattato di Diritto Amministrativo Europeo*, T. 1, Giuffrè, 2007, 439.

⁸⁸ Id

⁸⁹ CHITI E., *Le agenzie Europee. Unità e decentramento nelle amministrazioni comunitarie*, Padova, Cedam, 2003. CHITI E., *European Agencies' Rulemaking: Powers, Procedures and Assessment*, in 19(1) *European Law Journal*, 93-110, 2012. DELLA CANANEA G., *L'organizzazione amministrativa della Comunità Europea*, in *Riv. It. Dir. Pubbl. Comp.* 1993, 1105

order to guarantee uniform conditions because of the specific transboundary nature of climate change, which is a matter for the central authority and not for the single Member States. Secondly, climate change legislation has lately been characterized by internal disagreements on climate change and energy policies between, generally, the northern and western members and the eastern members of the European Union⁹⁰. It is known that in the most contentious areas the committee is often unable to reach a qualified majority and deliver its own opinion. In these cases, notwithstanding increased emphasis on the collaboration scheme, which characterized the committee, decisions continue to be taken by the Commission alone. This, clearly, enhances the Commission's power.

Finally, according to the changes introduced by the Lisbon Treaty, legislators may delegate the Commission the power to adopt non legislative acts to supplement or amend certain non essential elements of the legislative act. These 'delegated acts' are to be set out in the EU legal act (akin to an Act of Congress) on a case-by-case basis in favor of the Commission. This means, as above mentioned, that the Commission sets out the tasks that should be delegated back to itself. These kinds of provisions (i.e. delegated acts) are very common in environmental directives characterized by a high level of technicalities. Despite the fact that several stakeholders, especially the Parliament, have praised this new system because it introduces the possibility to write greater control over the Commission into each new piece of legislation, it actually shifted even more power to the Commission. In fact, the Parliament and Council do not have the

⁹⁰ UNBEHAUN S., *A Façade Of Unity: The EU As A Global Climate Policy Leader*, Transatlantic Policy Symposium 2016 at Georgetown University

technical expertise or resources to monitor how the Commission delegates power back to itself in every legislative draft proposal⁹¹.

2.2.3.3 *Rule Monitoring and Enforcing*

The Treaties require the Commission to ensure the correct application of the Treaties through the monitoring of the correct implementation of the law within the Member States⁹². This is the Commission's role as watchdog of the Treaties⁹³. The monitoring power of the Commission is put in practice through the infringement procedure against the Member States, in accordance with Article 258 TFEU, which provides as follows:

«If the Commission considers that a Member State has failed to fulfill an obligation under the Treaties, it shall deliver a reasoned opinion on the matter after giving the State concerned the opportunity to submit its observations. If the State concerned does not comply with the opinion within the period laid down by the Commission, the latter may bring the matter before the Court of Justice of the European Union».

The importance of monitoring, reporting and verification is particularly essential in the EU ETS to create trust in emissions trading. Without it, compliance in the EU ETS would lack transparency and would be much more difficult to track, with enforcement compromised. The complete, consistent, transparent and accurate monitoring and reporting of greenhouse gas emissions are fundamental for the effective operation of the greenhouse gas

⁹¹ LEE M., *EU Environmental Law, Governance and Decision-Making*, Hart Publishing 2014

⁹² CLARICH M., SCLAFANI F. in collaboration with M. IMPINNA, *Liberalizzazione e regolazione del mercato italiano: l'Autorità*, in ALBERTO CLÒ STEFANO CLÒ FEDERICO BOFFA, *Riforme elettriche tra efficienza ed equità*, Il Mulino, 2015

⁹³ VON BOGDANDY A., SONNEVEND P., *Constitutional Crisis in the European Constitution Area*, Hart publishing 2015. NAPOLITANO G., *Discovering the Logic of Administrative Law—A Reply to Guy Seidman and Dolores Utrilla*, Int'l J. Const. L. Blog, Sept. 3, 2014, available at: <http://www.iconnectblog.com/2014/09/3307>.

emission allowance trading scheme established pursuant to Directive 2003/87/EC. Both carbon market participants and competent authorities want assurance that one ton CO₂ equivalent emitted is equivalent to one ton reported. Only in this way can it be ensured that operators meet their obligation to surrender sufficient allowances in line with their emissions⁹⁴. «During the second compliance cycle of the greenhouse gas emissions trading scheme, covering the years 2008 to 2012, industrial operators, aviation operators, verifiers and competent authorities have gained experience with monitoring and reporting pursuant to Commission Decision 2007/589/EC of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC»⁹⁵. Because of that, every year, operators of installations and aircraft operators need to hand in an annual emission report (AER) to a competent authority identified by each Member State. The AER is the key document that provides the amount of emitted greenhouse gases of the operator in a given year. The AER needs to be verified by an independent accredited verifier. The verification of emission reports and accreditation of verifiers must be in line with the EU Accreditation and Verification regulation (Commission Regulation (EU) No 600/2012)⁹⁶.

Finally, the Commission is responsible for ensuring that EU legislation is correctly implemented. Should a Member States fail to comply with EU law, the Commission may start infringement

⁹⁴ European Commission, EU ETS Handbook at http://ec.europa.eu/clima/publications/docs/ets_handbook_en.pdf. See also STEWART. R.B., *Economic Incentives for Environmental Protection: Opportunities and Obstacles*, in REVESZ R.L. and SANDS P and STEWART. R.B., *Environmental Law The Economy and Sustainable Development: The United States, The European Union and the International Community*, Cambridge University Press, 2000

⁹⁵ Commission Regulation (EU) No 601/2012 n. 1

⁹⁶ id

proceedings. The Commission can take action and impose sanctions, as set in legislation, against a Member State⁹⁷. Ultimately, the Commission may refer the case to the European Court of Justice, which is the legal authority responsible for ensuring that EU law is followed. In late 2006, the European Commission started infringement proceedings against Austria, Czech Republic, Denmark, Hungary, Italy and Spain, for failure to submit their proposed National Allocation Plans within the EU ETS on time⁹⁸.

2.2.4 Expertise in EU Climate Change Risk Regulation

A significant role in environmental administrative climate change decision-making – as well as in many other environmental issues – is heavily played by two techniques: namely risk assessment and cost benefit analysis. None of them is a mandatory form of expertise in the EU, however they are part of the impact assessment a process described by the Commission as able to provide evidence for political decision-makers on the advantages and disadvantages of possible policy options by assessing their potential impact. However, according to the EU Commission guidelines on impact assessment⁹⁹, regulations are not obliged to pass an impact assessment, which is just «an aid to political decision making not a substitute for it»¹⁰⁰.

⁹⁷ CLARICH M. (2007). *La responsabilità nel sistema comunitario*, in: M. P. Chiti and G. Greco, *Trattato di diritto amministrativo europeo*. vol. 2, p. 589-610, Milano, Giuffrè

⁹⁸<http://www.europarl.europa.eu/comparl/envi/pdf/implementation/is20061127.pdf>. Compliance is ensured through the penalty and enforcement structure. Significant fines are imposed if companies fail to comply by surrendering sufficient allowances in time, set at €100/tCO₂ and rising 17/138 with EU inflation from 2013 (Penalties for non-compliance). In addition, firms face an obligation to surrender the allowances owed. Thus, the cap (i.e. the environmental target) is maintained effectively.

⁹⁹ EU Commission, *Impact Assessment Guidelines* SEC 2009. HEINZERLING L., *Regulatory Costs of Mythic Proportions* in 107 *Yale Law Journal* 1998. ALEMANNO A. AND MEUWESE A., *Impact Assessment of EU non Legislative Rulemaking: The Missing Link in New Comitology* in 19 *European Law Journal* 76, 2013

¹⁰⁰ Id

Nevertheless, as known, environmental law is underpinned by risk, thus the control of those risks is a core part of the environmental rule making process¹⁰¹.

Risk assessment is the determination of quantitative or qualitative estimate of risk related to a well-defined situation and a recognized threat (also called hazard). Aside from risk assessment which is a technical process for experts, there is risk management which is a political process for political institutions. This division represents the division between the decision making responsibility of political institutions and the purely advisory role of expert advisors.

With reference to Cost Benefit Analysis (CBA), there are no legal requirements as well to pass a CBA establishing that the benefits justify the costs¹⁰². Despite the absence of such technical assessment, the Courts have considered risk assessment and CBA a mandatory starting point for administrative decisions. «Whilst the institutions are not categorically bound by experts, if the political institution does not follow the opinion of its expert advisor, it must provide 'specific reasons for its finding' and those reasons 'must be of a scientific level at least commensurate with that of the opinion in question'»¹⁰³. Similarly when EU institutions are required to assess complex technical or scientific issues, they may only adopt a regulatory measure without consulting the relevant EU level scientific committee¹⁰⁴ in exceptional circumstances and where there are otherwise adequate guarantees of scientific objectivity.

¹⁰¹ HEYVAERT V., *Governing Climate Change: Towards a New Paradigm of Risk Regulation*, 74 *Modern Law Review* 817, 2011

¹⁰² EU Commission Impact Assessment Guidelines SEC 2009

¹⁰³ LEE M., *EU Environmental Law, Governance and Decision-Making*, Hart Publishing 2014

¹⁰⁴ When preparing policy and proposals related to consumer safety, health and the environment, the Commission relies on independent Scientific Committees to provide it with sound scientific advice and draw its attention to new and emerging problems. (http://ec.europa.eu/health/scientific_committees/about/index_en.htm)

Nevertheless, CBA has its own limits. A clear example of one of these limits is discounting. «CBA usually tries to put all relevant costs and benefits on a common temporal footing using the time value of money calculations. This is often done by converting the future expected streams of costs and benefits into a present value amount using a discount rate»¹⁰⁵. However, the choice of discount rate is subjective. The significance of discounting can be seen in the Stern Review on the Economics of Climate Change¹⁰⁶. The Stern Review concluded that the economic benefits of taking action to mitigate climate change outweigh the costs. However, in order to reach this conclusion, Stern applied a low discount rate¹⁰⁷, while a more conventional discount rate would have led to a different conclusion¹⁰⁸. Nevertheless, in the case of climate change we should probably ask ourselves whether a CBA and risk assessment analysis are still needed, in fact as Helm argued «we should take urgent action not because of the Stern's CBA but because the damaged climate is irreplaceable and not capable of substitution by human capital»¹⁰⁹.

More generally, with reference to both the CBA and risk assessment, we always have to take into account that uncertainties are an inevitable part of decision-making and that there will always be a number of ethical questions that are not susceptible of numerical manipulation but exclusively of political assessment. This is the

¹⁰⁵ W. N. DUNN, *Public Policy Analysis: An Introduction*. New York: Longman, 2009. REVESZ R. L., *Environmental Regulation Cost Benefit Analysis and the Discounting of Human Live*, 99 Columbia Law Review 941, 1999. FISHER E., *Risk Regulation and Administrative Constitutionalism*, Hart Publishing, 2007

¹⁰⁶ HM Treasury, *The Stern Review on the Economics of Climate Change*, UK Treasury 2006

¹⁰⁷ to reflect the ethics of intergenerational distribution

¹⁰⁸ The discount rate applied in the Stern Review was 1.4%, the one that normally is applied by the Commission is 4%

¹⁰⁹ HELM D., *Climate Change Policy: Why Has So Little Been Achieved?*, in *Oxford Review of Economic Policy* 211, 2008 quoted by LEE M., *EU Environmental Law, Governance and Decision-Making*, Hart Publishing 2014

conclusion reached by the European Union which never provided for a legally binding obligations for technical assessment in the rule making process. The EU institutions, in fact, have recognized the political nature of the final regulation¹¹⁰.

2.3 The United States of America

2.3.1 *United States Competences in Climate Change Law: A Historical Background*

2.3.1.1 *From the '50s to the '70s*

The federal government's first explicit scientific report about the risks of climate change was issued in 1965, when President Lyndon Johnson's Science Advisory Committee issued a report on environmental threats that included a special section on carbon dioxide, «the invisible pollutant». The Committee sustained:

«Through his worldwide industrial civilization, Man is unwittingly conducting a vast geophysical experiment. Within a few generations he is burning the fossil fuels that slowly accumulated in the earth over the past 500 million years. By the year 2000, the increase in atmospheric CO₂ will be close to 25%. This may be sufficient to produce measurable and perhaps marked changes in the climate, and will almost certainly cause changes in the temperature»¹¹¹.

In 1970 two other events of extreme importance occurred with reference to climate change legislation. Actually, these two events changed the landscape of US environmental policy in general but have

¹¹⁰ Eg. Pfizef; Eg. Regulation 178/2002/EC; Commission Communication on the Precautionary Principle COM 2000.

¹¹¹ President's Sci. Advisory Comm., *Restoring the Quality of Our Environment (1965)*, available at <http://dgs.stanford.edu/labs/caldeiralab/Caldeira%20downloads/PSAC,%201965,%20Restoring%20the%20Quality%20of%20Our%20Environment.pdf>.

had an extremely significant impact on American climate change legislation in particular.

The first event was the passage in Congress of the Clean Air Act (CAA)¹¹². The second event corresponds to the signing by President Richard Nixon of the executive order creating the Environmental Protection Agency (EPA)¹¹³. «The path-breaking CAA invested the EPA administrator with substantial authority to set national air quality goals; determine legally binding, technology-forcing emission standards for industrial sources and vehicles; require and approve state air quality plans aimed at meeting the national goals; and perform several other functions»¹¹⁴. However, the first enacted CAA was covered only the 'criteria' pollutants—sulfur dioxide, carbon monoxide, nitrogen oxides, lead, particulate matter, and ground-level ozone—which have significant adverse effects on basic human health. The so called «hazardous air pollutants», including toxic metals and a variety of carcinogens. GHGs, including carbon dioxide and the five other gases identified in the Kyoto Protocol, were not, until recently, directly regulated under the CAA¹¹⁵.

A few years later, in 1978, «President Jimmy Carter signed into law the first U.S. statute directly addressing scientific research on

¹¹² 42 U.S.C. §§ 7401–7671

The US Clean Air Act, was first passed in 1963. It built on the 1955 Air Pollution Control Act and has been amended most significantly in the 1970 amendments that brought it into its modern formulation.

¹¹³ In doing so, he adopted the advice of the Ash Council on Executive Organization to establish an independent agency, outside the cabinet, to consolidate pollution control and related functions across the government.

¹¹⁴ FIORINO D.J., *Environmental Bureaucracies: The Environmental Protection Agency*, in KRAFT M. and SHELDON K. *The Oxford Handbook of U.S. Environmental Policy*, 2012, 330 et sub

¹¹⁵ DERNBACH J C., ALTENBURG R., *Evolution of U.S. Climate Policy Global Climate Change and the U.S.*, Law American Bar Association, Second Edition, 2014, 89

climate change, the National Climate Program Act¹¹⁶»¹¹⁷ This Act represents the rise of climate change as a key issue outside the scientific community. In the Act, Congress stated that «the ability to anticipate natural and man-induced changes in climate would contribute to the soundness of policy decisions in the public and private sectors».¹¹⁸ The Act also created a National Climate Program Office in the Department of Commerce and provided that the program dealt with, *inter alia*, assessments of the effects of climate change; research to «improve the understanding of climate processes, natural and man-induced»; and collection of both global and domestic climate data.¹¹⁹

2.3.1.2 From the '80s to the '90s

From an international point of view, in 1987, President Reagan signed, and the Senate ratified, the Montreal Protocol on reducing damage to the stratospheric ozone layer, with support from both the business community and environmental advocacy groups. The next year, the US government issued a proposal to create an Intergovernmental Panel on Climate Change (IPCC). As analyzed above, the IPCC was an attempt «to institutionalize the rapidly developing debate about climate change by moving it out of scientific realms and into the international political system». In addition, serious droughts in the USA occurred in the same year (1988) that seemed somehow to confirm – at least to non-scientists – that the climate was indeed changing.¹²⁰ It certainly was enough to convince policy makers to adopt what became known as the Toronto Target. The IPCC

¹¹⁶ National Climate Program Act of 1978, Pub. L. No. 95-367, 92 Stat. 601 (1978) (as amended at 15 U.S.C. §§ 2901–2908).

¹¹⁷ Id supra note 54

¹¹⁸ 15 U.S.C. § 2901(2)

¹¹⁹ Id § 2904(d)(2)

¹²⁰ ROWLANDS I., *The Politics of Global Atmospheric Change*, Manchester University Press, 1995

revealed that although similar in many ways to the problem of ozone depletion, climate change posed vastly more complex questions in terms of scientific understanding, economic implications and legal solutions. Two years later, in 1990, the Global Change Research Act (GCRA) was instituted¹²¹. The act defines «global change» as «changes in the global environment (including alterations in climate, land productivity, oceans or other water resources, atmospheric chemistry, and ecological systems) that may alter the capacity of the Earth to sustain life».¹²² The GCRA was based on a Congressional finding that a variety of human activities, as well as the growing human population, «are contributing to processes of global change that may significantly alter the Earth habitat within a few human generations».¹²³ The Act established the Global Change Research Program (GCRP)¹²⁴ to coordinate federal research, and to provide policy makers with «usable information on which to base policy decisions relating to climate change».¹²⁵ In support of this goal, the Act required the issuance of research plans (every three years) and a scientific assessment (every four year).

In the meantime, after the Toronto Conference, international action proceeded. However, international negotiations on climate change were starting to be divisive. Leading up to the negotiations for the UNFCCC, national perspectives ranged from small island calling for immediate and binding emissions reduction obligations, «to developing country against the imposition of any obligations that

¹²¹ 15 U.S.C. §§ 2931–2961.

¹²² *Id.* § 2921(3)

¹²³ *Id.* § 2931(a)(1)–(3)

¹²⁴ The GCRP was created in 1988 by President Reagan. Under George W. Bush, it was combined with his Climate Change Research Initiative to form the Climate Change Science Program. Under the Obama administration, it is primarily referred to as the GCRP.

¹²⁵ 15 U.S.C. § 2931(b)

would hinder economic growth, to the US and the EU wavering between the relative priorities of environmental protection and economic supremacy»¹²⁶. Despite contentious international relations, the global community adopted the UNFCCC in Rio de Janeiro in 1992. Both the US and the EU played key roles in the negotiations for the UNFCCC. However, «climate negotiations saw the US and the EU reversing roles from those they had adopted only a few years before during the ozone negotiations»¹²⁷. In fact, it was at the UNFCCC negotiations that the US showed its skepticism over the science and politics behind the treaty negotiations, while the EU emerged as an international leader in promoting aggressive action to address climate change. In particular, «the European Community advocated that the Convention should cap carbon dioxide emissions in 2000 at 1990 levels, on the contrary, the George H.W. Bush administration vigorously opposed this proposal, arguing instead that each country should be urged to develop and implement national plans to reduce GHG emissions».¹²⁸ As a result, in the final text of the Convention, developed countries agreed only to the 'aim' of reducing their GHG emissions to 1990 levels by 2000¹²⁹. The final text also required all parties to establish, implement, and periodically update national programs to mitigate climate change¹³⁰.

Although it is considered a milestone in the international history of climate change, the UNFCCC did not create a system of detailed

¹²⁶ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010

¹²⁷ Id

¹²⁸ DERNBACH J.C. and Altenburg R., *Evolution of U.S. Climate Policy*, in FREEMAN J. and GERRARD M. B., *Global Climate Change and US Law*, ABA Publishing, 2014 and also Exec. Rep. No. 102-55, 102d Cong., 1st Sess., at 10–11, 1992.

¹²⁹ U.N. Framework Convention on Climate Change, May 29, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107, available at <http://unfccc.int/resource/docs/convkp/conveng.pdf> [hereinafter Framework Convention].art. 4.2(a) & (b).

¹³⁰ Id art. 4.1(b).

and legally binding obligations for its member states and revealed a continuing inability to agree upon what its level would be or how to best achieve the requisite emissions reductions. The positions adopted by the US and EU during the UNFCCC, signaled their roles in global climate change politics and foreshadowed the difficulties to come in the negotiation of the Kyoto Protocol. Negotiation for a Protocol began in 1995 at the first meeting of the Conference of the Parties to the UNFCCC (COP 1). The outcome was, as seen above, the drafting of the Berlin Mandate, which aimed to extend the lifetime of the FCCC beyond 2000 by calling for a protocol to be adopted at the December 1997 COP 3 in Kyoto¹³¹. Towards the drafting of the Kyoto Protocol, the US had a skeptical but not an hostile attitude. In fact, President George H.W. Bush signed the UNFCCC on behalf of the US and the US was in fact one of the first countries to ratify the UNFCCC¹³². «In 1995, however, the tide took a dramatic turn towards open hostility when the Republicans assumed control of Congress. Although the executive branch was now controlled by a Democrat - President Bill Clinton - the general tide had turned against adopting new environmental obligations at either the domestic or the international level»¹³³. Tensions between the US executive and the legislative branches reached a peak during COP 2: at COP 2 in Geneva, the Clinton Administration supported legally binding obligations applicable only to industrialized countries, however this measure was not appreciated by Congress. In response, to the US executive branch's apparent disregard for Congressional priorities, on

¹³¹ Id

¹³² President Bush brought the UNFCCC to the US Senate for ratification on 8 September 1992. The Senate ratified the treaty less than one month later on 7 October 1992, with the requisite two thirds majority vote. President Bush then signed the instrument of ratification one week later on 13 October 1992.

¹³³ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010

25 July 1997, the US Senate passed the Byrd–Hagel Resolution by a margin of 95–0.¹³⁴ This Resolution prohibited the Senate from signing any measure that exempted developing countries from legally binding obligations. Thus, the passage of the Byrd–Hagel Resolution specifically precluded the possibility that the US might ratify the subsequently drafted Kyoto Protocol.

Which is exactly what happened: the US did not ratify the Kyoto Protocol and its behavior passed from one of skepticism to one of hostility. The US stalled in climate change regulation and no significant federal legislation and regulation has been passed by Congress until now. In 2006 a scandal even occurred in the George W. Bush administration: the Center for Biological Diversity and other environmental groups, claimed that the George W. Bush administration was suppressing the reports of GCRP «to hide the truth about global warming».¹³⁵ The GCRP, in fact, was missing its deadline in issuing the scientific assessment and research plan¹³⁶. It took a litigation to enforce this schedule: in fact, the outcome of the lawsuit in favor of the plaintiffs, granted the latter their motion for summary judgment and requested the GCRP to prepare and release these reports (the revised research plan and the scientific assessment).¹³⁷

¹³⁴ Eg VOGLER J. and BRETHERTON C., *The European Union as a Protagonist to the United States on Climate Change*, in 7[1] *Intl Studies Perspectives* 17, 2006, emphasizing that ‘the question of the future commitments of the developing economies remains at the heart of debates about the climate regime’

¹³⁵ Press Release, Ctr. for Biological Diversity, Sen. Kerry and Rep. Inslee Join Conservation Groups in Global Warming Lawsuit Against Bush Administration (Feb. 8, 2007), [http://www .biologicaldiversity.org/news/press_releases/national-assessment-02-08-2007.html](http://www.biologicaldiversity.org/news/press_releases/national-assessment-02-08-2007.html).

¹³⁶ DERNBACH J.C. and ALTENBURG R., *Evolution of U.S. Climate Policy*, in FREEMAN J and GERRARD M. B., *Global Climate Change and U.S. Law*, Second Edition, ABA 2014, 83 et sub

¹³⁷ Ctr. for Biological Diversity v. Brennan, 571 F. Supp. 2d 1105 (N.D. Cal., Aug. 21, 2007).

As required by the court order, the GCRP, in May 2008, published a revised research plan for the period from 2009 to 2010,¹³⁸ and in 2012 published The National Global Change Research Plan 2012–2021.¹³⁹ «The 2012 plan has four strategic goals: advance scientific knowledge of the earth's system; provide the scientific basis to inform and enable timely decisions on adaptation and mitigation; build sustained assessment capacity to enable the United States to understand, anticipate, and respond to global change impacts and vulnerabilities and to broaden public understanding of global change; and develop the scientific workforce of the future»¹⁴⁰.

Still in response to the court order the GCRP released a scientific assessment entitled *Global Climate Change Impacts in the United States*.¹⁴¹ The assessment made ten key findings:

- «1. Global warming is unequivocal and primarily human-induced.
2. Climate changes are underway in the United States and are projected to grow.
3. Widespread climate-related impacts are occurring now and are expected to increase.
4. Climate change will stress water resources.
5. Crop and livestock production will be increasingly challenged.

¹³⁸ Climate Change Sci. Program, The Revised Research Plan for the U.S. Climate Change Science Program (2008), <http://www.globalchange.gov/about/strategic-planning/strategic-planning-history/revised-research-plan>

¹³⁹ U.S. Global Change Research Program, The National Global Change Research Plan 2012–2021 (2012), <http://downloads.globalchange.gov/strategic-plan/2012/usgcrp-strategic-plan-2012.pdf>.

¹⁴⁰ DERNBACH J.C. and ALTENBURG R., Evolution of U.S. Climate Policy, in FREEMAN J and GERRARD M. B., *Global Climate Change and U.S. Law*, Second Edition, ABA 2014, 83 et sub

¹⁴¹ U.S. Global Change Research Program, *Global Climate Change Impacts in the United States* (2009), <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>.

6. Coastal areas are at increasing risk from sea-level rise and storm surge.

7. Risks to human health will increase.

8. Climate change will interact with many social and environmental stresses.

9. Thresholds will be crossed, leading to large changes in climate and ecosystems.

10. Future climate change and its impacts depend on choices made today». ¹⁴²

Despite this assessment and all the other activities carried on from the '70's until today, the US is characterized by a political gridlock regarding the US legislative branch. To react to this gridlock a significant role, even if sporadic, in the tackling of climate change has been played by the US Supreme Court. In its 2007 decision *Massachusetts v. EPA*, the Court held that GHGs are «air pollutants» under the CAA. ¹⁴³

The historic Court decision stated that the term «air pollutant» – provided for under Section 202(a)(1) of the CAA - included carbon dioxide and other GHGs. Thus, by deciding that GHGs are subject to regulation as air pollutants under the CAA, the Court made the statute available «as a mechanism for reducing greenhouse gas emissions, even in the absence of new federal climate change legislation»¹⁴⁴. As a result, the CAA is now the most effective and important legal tool

¹⁴² Id. at 12

¹⁴³ *Massachusetts v. EPA*, 549 U.S. 497 (2007). See also MARKELL D. and RUHL J.B., *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual* 64 *Fla. L. Rev.* 15, 20, 2012. FISHER E., *Obsession and Expertise*, in 35(3) *Law and Policy* 242, 2013. FREEMAN J. and VERMULE A., *Massachusetts v EPA: From Politics to Expertise* in 57 *Supreme Court Review* 2007.

¹⁴⁴ DERNBACH J.C. and ALTENBURG R., *Evolution of U.S. Climate Policy*, in FREEMAN J and GERRARD M. B., *Global Climate Change and U.S. Law*, Second Edition, ABA 2014, 83 et sub

available to the federal government to reduce greenhouse gas emissions¹⁴⁵.

Lately, still in the absence of any legislative action in tackling climate change, the other institution that has recently acted to reduce GHGs has been the President of the United States, Barack Obama. «President Obama believes that no challenge poses a greater threat to our children, our planet, and future generations than climate change — and that no other country on Earth is better equipped to lead the world towards a solution»¹⁴⁶.

Thus, in June 2013, President Obama directed EPA to establish the first-ever federal carbon pollution standards for power plants, the largest source of carbon pollution in US. This Rule will be discussed in details in chapter 3 of this thesis.

2.3.2 The Main Legal Principles in US Climate Change Legislation

Unlike the European Union, the US legal system has no legal requirements specifying environmental principles to be used in legislative and administrative regulation and, in addition, they do not own a modern constitution. This is mainly because, legal drafters in a common law jurisdiction, such as the United States, have habitually sought to avoid broad statements of principle, thus differing from a civil law jurisdiction. Nevertheless, US regulators have implemented the same EU environmental principles. Thus, we can retrieve from

¹⁴⁵ Thanks to this decision, EPA and the Department of Transportation (DOT) published, in 2009 a final regulation setting greenhouse gas limits for heavy motor vehicle (trucks and buses) and in 2010, a final regulation setting greenhouse gas limits for light-duty motor vehicles (cars, sport utility vehicles, minivans, and pickup trucks). The rule, which applies to model years 2014 to 2018, is expected to “reduce carbon dioxide emissions by approximately 270 million metric tons and save 530 million barrels of oil over the life of vehicles sold during the 2014 through 2018 model years.” Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles: Final Rule, 76 Fed. Reg. 57,105 (Sept. 15, 2011).

¹⁴⁶ From the white house web at <https://www.whitehouse.gov/the-record/climate>

both statutes and case law the use of the precautionary principle, the prevention principle, the source principle and the polluter pays principle.

With reference to the precautionary principle, while the European regulatory state is prone to take decisions in areas characterized by scientific uncertainties¹⁴⁷—such as climate change—the US approach is far more rigid and data oriented. The US regulatory state, in fact, tends to be much more demanding in respect to cost-benefit analysis and risk assessment as techniques on which regulatory decisions should be based, although quality criteria vary enormously from one area to another¹⁴⁸.

Despite the strong reliance on scientific and economic mechanism in providing regulation, and even though some legal scholars have been criticizing the precautionary principle¹⁴⁹, the latter has certainly been used in environmental law and in climate regulation as well. «The US Supreme Court as well as Federal courts were forerunners in applying a precautionary approach during the 1970s and 1980s in several cases challenging the validity of federal laws adopted under conditions of uncertainty».

Court judgments gave deference to the Environmental Protection Agency to take action to prevent harm even before

¹⁴⁷ FISHER E., *Precaution, Precaution Everywhere: Developing a Common Understanding of the Precautionary Principle in the European Community*, in 9(1) *Maastricht Journal of European and Comparative Law*, 7-28, 2002

¹⁴⁸ De Sadeleer N., *Environmental Principles: From Political Slogans to Legal Rules*, Oxford Scholarship Online, 2002, 141. Smith C., *The Precautionary Principle and the Environmental Policy. Science, Uncertainty and Sustainability*, in Vol. 6 no. 3 *Int. J. Occup. Environ. Health*, 2000

¹⁴⁹ SUNSTEIN C.R., *Beyond the Precautionary Principle*, in 151 *University of Pennsylvania Law Review* 1003 – 1054, 2003. MANSON N. A., *Formulating the Precautionary Principle*, in 24 (3) *Environmental Ethics* 263-274, 2002. CROSS F.B., *Paradoxical Perils of the Precautionary Principle*, in 53 *Wash. & Lee L. Rev.* 851 1996.

DICKINSON B., *The Precautionary Principle in CITES: A Critical Assessment in* 39 *Nat. Resources J.* 211 1999

evidence of cause and effect were demonstrated. The court held that certain environmental or health risks justify the regulation despite the absence of evidence of actual harm.

For example, the Court of Appeals for the District of Columbia Circuit ruled that «EPA may not consider the cost of implementing the NAQQS» because «the statute and its legislative history make clear that economic considerations play no part in the promulgation of ambient air quality standards under section 109». (*Lead Indus. Ass'n Inc. v. EPA*).

Subsequently, in 1999 the challengers in the famous case 'American Trucking'¹⁵⁰ argued that «no matter what the CAA says, EPA is simply incapable of ignoring cost when it sets air quality standards. They asked the Court to allow cost-benefit balancing to bring some sense to the otherwise unyielding mandates of the CAA. The Supreme Court rejected their argument emphatically and unanimously»¹⁵¹ and the Court dismissed the argument that the CAA permits considerations other than health.

With reference to the prevention and the source principles, in US law, the 1990 Pollution Prevention Act (PPA) declares: «It is the policy of the United States that pollution should be prevented at source». Under Section 6602(b) of the Pollution Prevention Act, Congress established a national policy according to which pollution should be prevented or reduced at the source whenever feasible; the PPA requires EPA to consider source reduction in all of its decision-making processes and to co-ordinate source reduction activities throughout the federal government. In climate change legislation the

¹⁵⁰ *Whitman v. American Trucking Ass'ns*, 531 U.S. 457 (2001). See MILLS E., *Whitman v. American Trucking Associations Inc.*, in 29(2) *Ecology Law Quarterly*, 159, 2002

¹⁵¹ GIOVINAZZO C. T., *Defending Overstatement: The Symbolic Clean Air Act and Carbon Dioxide*, in 30 *Harvard Environmental Law Review* 101, 2006

efforts of the Pollution Prevention Act has been bolstered by the enactment of the Clean Air Act, which Act was born because of preventive and source principles according to its legislative history¹⁵².

Finally, even if the polluter pays principle has not been codified as well as the other above mentioned principles, nevertheless it has influenced the development of US statutory law¹⁵³ and has been given deference through judicial decisions¹⁵⁴. The polluter pays principle is an economic and legal instrument through which the environmental harm caused by pollution producers – who externalize the cost of their activities – can be internalized. Accordingly, the purpose of many legal environmental regulations is to force polluters to bear the real costs of their pollution. The polluter pays principle underlies US laws requiring the cleanup of releases of hazardous substances. In the Clean Air Act for example, polluters have to meet certain standards at their own expense¹⁵⁵.

2.3.3 The US Climate Change Regulatory State

I will now analyze the US climate change regulatory state which, as described above, relies on its rule-making, rule-implementation, rule-monitoring and rule-enforcement. Before proceeding in this direction, it is first necessary to describe the American legal background in which the climate change regulatory state has developed.

¹⁵² NIXON R., *Executive Order 11507 Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities*. LARSON E.T., *Why Environmental Liability Regimes in the United States, the European Community, and Japan Have Grown Synonymous With the Polluter Pays Principle* in 38 *Vand. J. Transnat'l L.* 541, 2005

¹⁵³ RAMLOGAN R., *Sustainable Development: Towards a Judicial Interpretation*, Martinus Nijhoff Publishers, Boston 2011, 107

¹⁵⁴ D006647, Court of Appeal of California, Fourth Appellate District, Division One, 203 Cal. App. 3d 1132; 250 Cal. Rptr. 420; 1988 Cal. App.

¹⁵⁵ CAA, 42 USC 7401 – 7671q

Under the U.S. Constitution, Congress shares authority with the President and the Environmental Protection Agency (EPA) for federal rule making on the environment¹⁵⁶. When we talk about rule making, legal scholars refer to how bureaucratic agencies – and in this case the EPA - make rules. Administrative law and administrative agencies are the fundamental components of US environmental rule making (so called regulatory law).

In this regard, it is important to distinguish between congressional or statutory law and regulatory law.

Statutory law is the outcome of the typical lawmaking process within Congress, which includes «drafting of legislation, committee actions on it such as hearings and markup or adjustment in language, floor debate and amendment, and votes (by both Houses of Congress), and eventually, if successful, approval by the President¹⁵⁷»¹⁵⁸. The resulting statute or act helps set the direction for the policy actions that will follow. The environmental statutes on which this thesis mainly focuses is the Clean Air Act, which is an example of statutory law.

On the other hand, regulatory law consists of the rules undertaken by the executive agencies – EPA in this case - charged with implementing the Congressional statutes. It is important to underline that agency regulations have the same legal effect as a statutory law.

According to the above explanation of the meaning of regulatory law, we can now understand the concept of regulatory state as I described it at the beginning of this chapter. As noted, according to

¹⁵⁶ On the differences – or the absence of any differences – between independent and executive agencies see: REVESZ R., DATLA K., *Deconstructing Independent Agency (and executive Agencies)*, in 98(4) *Cornell Law Review* 770-842, 2013

¹⁵⁷ The veto power of the President can be overcome with the vote of two-thirds majority in each house

¹⁵⁸ KRAFT M. E., *Congress and Environmental Policy*, in KRAFT M. E., and Kamieniecki S., *The Oxford Handbook of U.S. Environmental Policy*, 2012, 281

American legal scholarship the regulatory state is the use of rule-making, rule implementing, monitoring and enforcement techniques by specialized agencies. «In this way, administrative agencies take on tasks inherent to all three branches of government, creating what many people refer to as the fourth branch of government in producing regulation¹⁵⁹. Despite legislative, executive, and judicial constraints, administrative agencies exercise a significant amount of power and influence over federal governance, especially in the context of environmental law—and potentially in the area of climate change law»¹⁶⁰.

2.3.3.1 Rule Making

Federal regulations are created through a process known as 'rule making', which is governed by the Administrative Procedure Act (APA). The APA provides for a rulemaking process with which agencies are required to comply¹⁶¹; it governs the internal procedures of the administrative agencies¹⁶².

Before the rulemaking process starts, though, agencies are required, in accordance with Executive Order 12866 (58 FR 51735) to publish a «Regulatory Plan» once a year in the fall and an «Agenda of Regulatory and Deregulatory Actions» in the spring and fall. The Regulatory Plan and the Regulatory Agenda are often referred to as

¹⁵⁹ According to a consolidate definition, regulation consist of: nontax, noncriminal, public law: legal directives that are issued by governmental bodies; that are enforced by governmental bodies, rather than by private litigants, that are principally enforced through sanctions or incentives other than criminal penalties; and that are not taxes.” M. Adler, *Regulatory Theory*, in PATTERSON D., *A Comparison To Philosophy Of Law And Legal Theory*, 2010, 590, 592

¹⁶⁰ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010

¹⁶¹ All rules flow from statutory authority to develop policies in those areas, this means that an agency must have the policy-making authority granted to them through a law passed by Congress. Once that authority is provided, agencies may have some discretion regarding the setting of priorities.

¹⁶² The APA is codified at 5 U.S.C. §§ 551-559

the «Unified Agenda». The Unified Agenda is how agencies announce future rulemaking activities, and update the public on pending and completed regulatory actions. EPA's Regulatory Plan and Agenda describes the most important regulations that the agency reasonably expect to issue in proposed or final form during the upcoming fiscal year and represent the regulatory actions that embody the core of our regulatory priorities.

An agency that is in the preliminary stages of rulemaking may publish an «Advance Notice of Proposed Rulemaking» in the Federal Register to get more information¹⁶³. The Advance Notice is a formal invitation to participate in shaping the proposed rule and starts the notice and comment process in motion. The APA does not mention the ANPRM as an official part of the rulemaking process. Nor is an agency required to issue an ANPRM unless a specific statute or the agency's own rules require it to do so.

The rule making process under the APA may be informal (also known as notice and comment rulemaking) or formal. The first one is the most used process¹⁶⁴.

Section 5 U.S.C. § 553 of the APA, establishes the minimum procedural requirements that agencies must observe in informal rulemaking. This law requires that an agency: (i) publish a notice of

¹⁶³ Before a proposed rule is published in the Federal Register for public comment, the President, as head of the Executive branch, may take the opportunity to review the rule. The President is assisted by the Office of Information & Regulatory Affairs (OIRA), which analyzes draft proposed rules when they are “significant” due to economic effects or because they raise important policy issues. For significant rules, the agency must estimate the costs and benefits of the rule and consider alternate solutions.

¹⁶⁴ STEWART B. R., BREYER S.G at all, *Administrative Law And Regulatory Policy: Problems, Text, And Cases*, Wolters Kluwer Law and Business, 201. BATTINI S., MATTARELLA B.G. AND SANDULLI A., *Il Procedimento*, in G. NAPOLITANO, *Diritto amministrativo comparato*, Milano, Giuffrè, 2007, 123 sub.

proposed rulemaking¹⁶⁵ in the Federal Register, to provide the public with essential information about the procedure, including where and when it will occur¹⁶⁶, the legal authority under which the agency proposes to act¹⁶⁷, and a description of the issues involved or the text of the proposed rule¹⁶⁸. (ii) Give the public an opportunity to comment on the proposal «through submission of written data, views, or arguments with or without the opportunity for oral presentation»¹⁶⁹. In general, agencies will specify a comment period ranging from 30 to 60 days but the time period can vary. For complex rulemakings, agencies may provide longer time periods, such as 180 days or more. Agencies may also use shorter comment periods when that can be justified. (iii) After considering public comments, publish the final rule in the Federal Register¹⁷⁰. The agency must consider all of the comments that are submitted in passing the final rule.

The APA also describes certain cases where the notice and comment rulemaking process is not required.¹⁷¹

Formal rulemaking proceedings often take place because the statute authorizing a new rule requires it. The Supreme Court has interpreted this requirement very narrowly, holding that a formal proceeding is only required when the statute expressly states that

¹⁶⁵ The Notice of Proposed Rulemaking, is the official document that announces and explains the agency's plan to address a problem or accomplish a goal.

¹⁶⁶ 5 U.S.C. § 553(b)(1)

¹⁶⁷ 5 U.S.C. § 553(b)(2)

¹⁶⁸ 5 U.S.C. § 553(b)(3);

¹⁶⁹ 5 U.S.C. § 553(c);

¹⁷⁰ 5 U.S.C. § 553(c)

¹⁷¹ This includes two general exceptions and two specific exceptions: General Exception 1: the Rule involves a military or foreign affairs function of the United States. General Exception 2: The Rules involves a matter relating to agency management or personally or to public property, loans, grants, benefits, or contracts. Specific Exception 1: Cases of interpretative rules, general statements of policy, or rules of agency organizations, procedure, or practice. Specific Exception 2: When the agency finds for good cause that the notice and comment process is impracticable, unnecessary, or contrary to the public interest.

rulemaking must take place «on the record»¹⁷². The formal rulemaking requires a courtroom-style hearing.

Finally, a key moment of rule making is represented by the OIRA review:

«Coordinated review of agency rulemaking is necessary to ensure that regulations are consistent with applicable law, the President's priorities, and the principles set forth in this Executive order, and that decisions made by one agency do not conflict with the policies or actions taken or planned by another agency. The Office of Management and Budget (OMB) shall carry out that review function. Within OMB, the Office of Information and Regulatory Affairs (OIRA) is the repository of expertise concerning regulatory issues, including methodologies and procedures that affect more than one agency, this Executive order, and the President's regulatory policies»¹⁷³.

Thus, the Office of Information and Regulatory Affairs (OIRA) reviews agency draft regulations as well as the drafts final rules before publication when they are deemed «significant»¹⁷⁴ due to economic effects or because they raise important policy issues. I will examine in depth the OIRA review *infra* on page 96.

Once the agency has published the final rule, the latter is effective no less than thirty days after publication in the Federal Register. If the agency wants to make the rule effective sooner, it must cite 'good cause' (persuasive reasons) as to why this is in the public interest. Significant rules (defined by Executive Order 12866) and major rules (defined by the Small Business Regulatory Enforcement Fairness Act) are required to have a sixty day delayed effective date.

¹⁷² *United States v. Florida East Coast Ry. Co.*, 410 U.S. 224 (1973).

¹⁷³ Executive Order 12866 Sec 2 (b)

¹⁷⁴ Executive Order 12866 Section 3 (f)

Rule making is the process agencies use to exercise the legislative authority¹⁷⁵ that Congress has delegated to them. This delegation mainly occurs because agencies have more expertise in their policy areas. Some say that Congress delegates in order to «shift the responsibility of decision making to the agencies¹⁷⁶» and yet still maintain the power to oversee the agency activities¹⁷⁷.

2.3.3.2 Rule Implementation

The meaning of “implementing” a rule is the same as the one we dealt with in EU decision making. It means the act of putting into effect, to fulfill, first the Congressional statute and subsequently the enacted rule. On both continents, the need for implementation of a legislative act is carried on by a specific body characterized by expertise (the EU Commission in the case of a Directive and the US competent agency in the case of a Statute). Thus, the legislative process does not stop once a bill becomes law. The law has to be put into effect, or implemented, by an agency of the executive branch. Congress, through delegation of its authority, makes an agency responsible for implementing the law. Afterwards, the agency can issue its administrative regulation.

In particular, the EPA’s right to implement a statute – as well as that of the other agencies – derives from what is referred to as

¹⁷⁵ FIORINO D.J. , *Environmental Bureaucracies: The Environmental Protection Agency*, in. KRAFT M.E. AND KAMIENIECKI S., *The Oxford Handbook of U.S. Environment*, 2012, 330

¹⁷⁶ FIORINA M., *Legislative Choice of Regulatory Forms: Legal Process or Administrative Process*, in 39(1) *Public Choice* 33–66, 1982.

¹⁷⁷ The supreme Court broader interpretation of delegation and has allowed Congress to provide significant policy-making power to executive agencies (see *Industrial Union Department, AFL-CIO v. American Petroleum Institute* (1980), *American Textile Manufacturers Institute v. Donovan* (1981), and *Whitman v. American Trucking Associations* (2001)).

delegation of authority or power¹⁷⁸, the so called delegation doctrine¹⁷⁹.

In the Federal Government of the United States, the *non-delegation doctrine*¹⁸⁰ is the principle that the Congress of the United

¹⁷⁸ The constitution is silent with regard to administrative agencies: it contains no explicit provision creating, defining or empowering them. However, Art. II § 2, provides for presidential appointment with Senate advice and consent of federal Officers and for the possibility of appointment made by the Heads of Departments

¹⁷⁹ ARANSON P. H., GELLHORN E., ROBINSON G. O., *Theory of Legislative Delegation*, in 1 *Cornell Law Review*, 21, 1982: "Conventional rationalizations for the delegation of legislative authority can be divided into two categories: managerial and political. The managerial explanation consists essentially of four arguments: (1) reducing congressional workloads; (2) eliminating the need for frequent statutory amendments as conditions change; (3) having specialists decide matters about which Congress is not knowledgeable; and (4) establishing relative permanence among the decisionmakers who control certain problems. Despite their widespread acceptance, none of these explanations withstand close scrutiny. political explanations involve normative questions of public policy. The foremost political explanation is that delegation helps to "depoliticize" the problem under review, because delegation removes the problem from a political (and putatively "irrational") forum and places it in a nonpolitical (and allegedly "rational") one". P. 25 "More administrative and less political decisionmaking, however, could occur only if the legislature delegated more authority to administrators. Wilson embraced just such a view, implicitly abandoning the separation-of-powers principle as applied to administration" See also WILSON W., *The Study of Administration*, in 2 *Pol. Sci. Q.* 197, 209-10, 1887, reprinted in W. WILSON, *The Papers Of Woodrow Wilson* 370 (A. Link ed. 1968). See also ACKERMAN B. and HASSLER W., *Clean Coal, Dirty Air*, Yale University Press, 1981, 116-28. DAVIS K., *Administrative Law Treatise* in 8(2) *Hofstra Law Review* 471 sub, 1978. Senate Comm. on Governmental Affairs, 95th Cong., Sess., Study on Federal Regulation 132-52 (Comm. Print 1977).

¹⁸⁰ US Const. art. I, § 1 ("All legislative Powers herein granted shall be vested in a Congress. . . ."); US Const. art. II, § 1 ("The executive Power shall be vested in a President"); US Const. art. III, § 1 ("The judicial Power of the United States, shall be vested in one supreme Court, and in such inferior Courts.."); US Const. art. I, § 8 ("The Congress shall have Power ... To make all Laws which shall be necessary and proper. ."). Madison J. *The Federalist No. 47*. BREYER S. and STEWART R, *Administrative Law and Regulatory Policy* 263, Aspen, 1979. S. BARBER, *The Constitution And The Delegation Of Congressional Power*, University of Chicago Press 1975. BICKEL A., *The Least Dangerous Branch*, Yale University Press, 160, 1962. DAVIS K., *Administrative Law Of The Seventies The Lawyers Cooperative Publishing Company*, Rochester, NYC, 1979. J. ELY, *Democracy and Distrust*, Harvard University Press 1980. JAFFE L.L., *An Essay on Delegation of Legislative Power* in 1, 47 *Colum. L. Rev.* 359, 1947. KOSLOW S., *Standardless, Administrative Adjudication*, in 22 *Ad. L. Rev.* 407, 1970. MCGOWAN C., *Congress, Courts and Control of Delegated Power*, 77 *Colum. L. Rev.* 1119, 1977. STEWART R., *The Reformation of American Administrative Law*, 88 *Harv. L. Rev.* 1667, 1975. ARANSON P. H., GELLHORN E. AND ROBINSON G.O., *Theory of Legislative Delegation*, in 86 *Cornell Law Review* 2, 1982. MASHAW J. L., *Predelegation: Why Administrators Should Make Political Decisions*, in 84 *Journal of Law, Economics*

States, being vested with «all legislative powers» by article 1, section 1 of the United States Constitution, cannot delegate that power to anyone else. However, the Supreme Court ruled in *In J. W. Hampton, Jr. & Co. v. United States* (1928)¹⁸¹ that congressional delegation of legislative authority is an implied power of Congress that is constitutional so long as Congress provides an 'intelligible principle' to guide the executive branch. So long as Congress «shall lay down by legislative act an intelligible principle to which the person or body authorized to [exercise the delegated authority] is directed to conform, such legislative action is not a forbidden delegation of legislative power».(delegation doctrine)¹⁸²

The Clean Air Act (CAA) is the federal law enacted to nationally control air pollution and emissions from stationary and mobile sources and the relative implementation powers has been delegated to EPA, which has significant discretion in implementing the relevant statutes and making environmental policy.

However, this discretion is limited by a number of tools and processes controlled by Congress and the President¹⁸³ and the Courts. The main tools are four: the Administrative Procedure Act (APA); «risk assessment and cost benefit analysis; political oversight»¹⁸⁴ and judicial oversight.

and Organization 82, 1985. SCHWARTZ B., *An Introduction to American Law*, University of Pennsylvania 2ed. 1962, 26.

¹⁸¹ *J. W. Hampton, Jr. & Co. v. United States*. *Justia US Supreme Court Center*. April 9, 1928. 276 U.S. 394 (1928).

¹⁸² *Mistretta v. United States* (1989), citing *J. W. Hampton, Jr. & Co. v. United States*, 276 U.S. 394, 406, 48 S.Ct. 348, 351(1928)

¹⁸³ This relationship between elected leaders and the bureaucratic agencies is described by the principal-agent model. Flanagan S., *The Administrative Powers of the President: Environmental Policy from Clinton to Obama*, at http://cspc.nonprofitsoapbox.com/storage/Fellows2011/Flanagan-_Final_Paper.pdf

¹⁸⁴ BRYNER G., *Bureaucratic Discretion: Law and Policy*, New York: Pergamon, 1987.

I With the APA enacted in 1946 political power is able to constrain bureaucratic discretion through two main instruments: (i) The administrative procedures of the agencies: rule making (and adjudication)¹⁸⁵. (ii) The granting of the right to seek judicial review to «any person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of the relevant statute»¹⁸⁶. These instruments affect the decision-making process within an agency.

II Economic analysis in the form of risk assessment and cost benefit analysis has been one of the most used tools to control agencies. These binding activities are codified within a presidential Executive Order. Executive Orders have the same lawful authority as a statute of Congress.

The discussion of economic consequences in regulation activity began during the Carter administration. However, it was the Reagan administration that explicitly required the administrative agencies to carry on a CBA with the issuance of Executive Order 12291. President Clinton replaced Executive Order 12291 with Executive Order 12866 on taking office in 1993. Within Order 12866, the economic analysis requirements remained and have actually been reaffirmed by Obama Executive Order 13563.

III Finally, both Congress and the President possess some tools to monitor the agencies' activity. Congress provides statutory and budget authority to the agencies¹⁸⁷; on the other hand, the President is the head of the executive branch and ultimately sits at the top of the bureaucratic hierarchy. In particular as provided for by Article II of

¹⁸⁵ APA Section 554

¹⁸⁶ APA Section 702

¹⁸⁷ Congress tends to use committee or subcommittee hearing to examine a number of different elements regarding agency activity or programs. Congress can also use its budgetary authority as a significant tool to influence agency policy.

the Constitution, Presidents have the power to appoint officials to government offices, such as the EPA Administrator and to remove them «at will»¹⁸⁸. Thus, Presidents can improve the chances of an agency following his agenda by appointing officials who have similar ideological views. «This dual political oversight demonstrates the interesting situation of an agency having multiple principals or, in other words, needing to respond to two different bosses»¹⁸⁹.

IV In order to appreciate the power of the court to limit EPA's discretion, I will use a famous case *Whitman v. American Trucking Associations, Inc.*¹⁹⁰

First, we have to consider the background from which this case arose. The power that the CAA confers on the federal government rests largely in EPA's right to establish uniform national ambient air quality standards (NAAQS), which the states could develop regulatory programs to enforce.¹⁹¹ The CAA mandates that EPA set the NAAQS at levels necessary «to protect public health». This unqualified language ensures that EPA has broad discretion in setting the NAAQS to achieve this goal.¹⁹² In 1997, the Administrator of EPA, revised the ozone and particulate matter NAAQS. Afterwards, her revised NAAQS were challenged in court. In particular, the matter was challenged by the American Trucking Association along with other private companies and the States of Michigan, Ohio, and West

¹⁸⁸ Differently from independent agencies where the President has the power to remove the members of the board only for “good cause”. STEWART B. R., BREYER S.G at all, *Administrative Law And Regulatory Policy: Problems, Text, And Cases*, Wolters Kluwer Law and Business, 2011. VIG N. J., COLLEGE C., KRAFT M.E., *Environmental policy: new directions for the twenty-first century*, University of Wisconsin, Green Bay Thousand Oaks, California: CQ Press; London: SAGE Publications Ltd., 2016

¹⁸⁹ SARA R. RINFRET S.R. and FURLONG S.R., *Defining Environmental Rule Making in Kraft M. E. and Kamieniecki S.*, *The Oxford Handbook of U.S. Environmental Policy*, 2012, 377

¹⁹⁰ *Whitman v. American Trucking Associations, Inc.*, 531 U.S. 457 (2001),

¹⁹¹ 42 U.S.C. §§ 7408(a), 7409(a) (1994).

¹⁹² Id

Virginia. The Supreme Court was asked to face two main issues: (i) whether the statute had impermissibly delegated legislative power to the agency, and (ii) whether the Administrator of the EPA, should consider the costs of implementation in setting the NAAQS.

The Court held that «[w]hether the statute delegates legislative power is a question for the courts, and an agency's voluntary self-denial has no bearing upon the answer»¹⁹³ and that the scope of discretion Section 109(b)(1) allowed was well within the outer limits of non delegation precedents. However, the Court affirmed that the text of Section 109(b) unambiguously barred cost considerations from the NAAQS-setting process and that EPA was wrong to consider them.

In conclusion, despite the fact that the Supreme Court upheld the delegation power of EPA, it double checked its authority within the boundaries of the delegation powers and determined a mistake on the part of the agency in considering implementation costs in setting the NAAQS.

2.3.3.3 Rule Monitoring and Enforcing

Enforcement in the United States is vigorous and takes a number of forms. Most federal pollution control statutes authorize EPA to delegate to states the authority to implement national requirements.¹⁹⁴ The state to be «delegated», to implement a federal environmental program, must demonstrate the capacity to administer aspects of the program's requirements, including the capacity to enforce those requirements¹⁹⁵. When EPA deems state enforcement against regulated parties to be inadequate, it normally has the authority at any

¹⁹³ Id

¹⁹⁴ ESWORTHY R., *Federal Pollution Control Laws How are They Enforced?* in Congressional Research Service, 2014 at <https://www.fas.org/sgp/crs/misc/RL34384.pdf>

¹⁹⁵ Id

time to override the state's failure and to issue an administrative order or, in some situations, to assess civil penalties on an administrative basis.

However, civil and criminal penalties for failure to comply with the relevant regulation in the U.S. system provide significant incentives for compliance with such requirements.

In any event, «EPA may enforce its administrative action in federal court, or it can bypass administrative action¹⁹⁶ in the first place and take the underlying violation directly into federal court for injunctive relief or civil or criminal penalties. Should EPA fail to enforce, citizens and environmental groups can themselves normally prosecute the violations in federal court under citizen enforcement suit provisions»¹⁹⁷.

Further, EPA has a set of Administrative Law Judges who hear disputes between the Agency and individuals, businesses, governmental entities, and other organizations that are subject to EPA regulations. «Once the Administrative Law Judge has made a decision, either party can appeal the decision to the Environmental Appeals Board. In this way, many agencies create a tiered system of adjudication that mimics the federal judiciary».¹⁹⁸

2.3.4 Expertise in US Climate Change Risk Regulation

Whether or not to regulate and, if so, the nature and form of regulation is decided in part on the basis of scientific analysis in part on the basis of information on costs, and in part on legal and political

¹⁹⁶ <https://www.epa.gov/enforcement/hyundai-and-kia-clean-air-act-settlement>: “A Clean Air Act settlement with Hyundai-Kia netted a \$100 million fine, forfeiture of emissions credits and more than \$50 million invested in compliance measures to help level the playing field for responsible companies and reduce greenhouse gas emissions fueling climate change”.

¹⁹⁷ Id

¹⁹⁸ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010 at 23

requirements. Unlike the EU, the US has set a legal requirement on carrying on a regulatory impact assessment (RIA) composed of a risk assessment and a cost benefit analysis from executive agencies. In fact, as the proponent of any new regulation, «although regulatory agencies do not have the technical burden of proving that a particular company's products or activities have caused or will cause a particular person's disease, they do have the burden of assembling a record containing sufficient scientific information and analysis to survive a reviewing court's 'hard look»¹⁹⁹.

With reference to cost benefit analysis, through executive orders, Presidents have required agencies to conduct regulatory impact analysis to justify the policy at hand. In particular, it was the Reagan administration, that with the issuance of Executive Order 12291 required agencies to conduct regulatory impact analyses «showing that the potential benefits to society would outweigh the potential costs; that the regulatory objective chosen would maximize net benefits; and that, among a series of alternatives, the one involving the least net cost to society would be chosen»²⁰⁰. Executive Order 12291 gave the Office of Management and Budget (OMB) the responsibility to oversee this requirement placed upon agencies. The requirement of economic analysis have remained with Clinton Executive Order 12866 and the Obama Executive Order 13563.

¹⁹⁹ Science and Decisions Advancing Risk Assessment National Research Council (US) *Committee on Improving Risk Analysis Approaches Used by the U.S. EPA*. Washington (DC): National Academies Press (US); 2009. MCGARITY, T.O., *Our science is sound science and their science is junk science: Science-based strategies for avoiding accountability and responsibility for risk-producing products and activities*, in 52 *Kan. L. Rev.* 897-937, 2004.

²⁰⁰ SARA R. RINFRET S.R. and FURLONG S.R., *Defining Environmental Rule Making in Kraft M. E. and Kamieniecki S., The Oxford Handbook of U.S. Environmental Policy*, 2012, 377

In addition to the CBA, according to E.O. 12866 «significant regulatory actions» are to be submitted for review to the Office of Information and Regulatory Affairs (OIRA) which is a specific section within the OMB. A «significant regulatory action», as defined by the E.O., is generally any regulatory action that is likely to result in a rule that may:

- «Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive order»²⁰¹.

The EPA has prepared a Regulatory Impact Analysis for the for the Clean Power Plan Rule considering that: «This action is an economically significant regulatory action because it may have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities».²⁰²

²⁰¹ EPA website at <https://www.epa.gov/laws-regulations/summary-executive-order-12866-regulatory-planning-and-review>

²⁰² Regulatory Impact Analysis For The Clean Power Plan Final Rule at <https://www.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule-ria.pdf>, 5

«E.O. 13563 reaffirms and amplifies the principles embodied in E.O. 12866 by encouraging agencies to coordinate their regulatory activities, and to consider regulatory approaches that reduce the burden of regulation while maintaining flexibility and freedom of choice for the public²⁰³. E.O 13563 requires agencies to quantify anticipated benefits and costs of proposed rulemakings as accurately as possible using the best available techniques, and to ensure that any scientific and technological information or processes used to support their regulatory actions are objective»²⁰⁴.

The EOs are the only generally applicable legal authority that requires CBA. The Administrative Procedure Act requires that rules not be 'arbitrary and capricious', and be such as a well conducted cost benefit analysis can help support, but the courts have not found that the APA requires CBA²⁰⁵.

Despite these seemingly clear and straightforward requirements on carrying on cost benefit analysis, the result is not as clear and straightforward as it seems. This is because the Presidential executive orders have to be read in connection with the provisions of the relevant statute. The Clean Air Act and the Supreme Court's recent *Michigan v. EPA* case represent a good example of the complex legal

²⁰³ "Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider". E.O. 13563 Sec. 1 (a)

²⁰⁴ Id supra note 91

²⁰⁵ REVESZ R.L. and LIVERMORE M.A., *Retaking Rationality: How Cost Benefit Analysis Can Better Protect The Environment and Our Health*, Oxford University Press, 2008.

issues that a cost benefit analysis requirement raises in environmental regulation and now, in particular, in climate change regulation²⁰⁶.

A recurring question among administrative law scholars has been «whether, and to what extent, agencies should account for cost when engaging in public-health and environmental regulation»²⁰⁷. In *Michigan v. EPA*²⁰⁸, the Court held that cost considerations were required under a provision of the Clean Air Act²⁰⁹ directing the Environmental Protection Agency to regulate power plants if such regulation was considered «appropriate and necessary» by the EPA itself.

EPA was requested by Congress to complete a study of the public-health hazards posed by power-plant emissions²¹⁰. Then, «after considering the results of the study», EPA was to regulate power plants under a specific program²¹¹ only if it found «regulation [was] appropriate and necessary».²¹² Therefore, Congress was identifying two steps: the first was the request to EPA to evaluate if it was appropriate and necessary to regulate power plant emissions; the second was – in case of a positive outcome of step one – to provide for the final regulation.

²⁰⁶ The debate on CBA in US is complex and vast, in this regard see: Livermore M.A, Revesz R., *The globalization of cost benefit analysis*, Oxford Univeristy Press 2013.

²⁰⁷ *Michigan v. EPA*, 129:311 Harvard Law Review 311, 2015. CASS R. SUNSTEIN, *Cost-Benefit Default Principles*, 99 Mich. L. Rev. 1651, 1656–68 (2001) (considering relationship between cost-benefit analysis and environmental law statutes).

²⁰⁸ Id

²⁰⁹ 42 U.S.C. § 7412(n)(1)(A)

²¹⁰ 42 U.S.C. § 7412(n)(1)(A); *Michigan*, 135 S. Ct. at 2705 (majority opinion).

²¹¹ NESHAP (The National Emissions Standards for Hazardous Air Pollutants)

²¹² Id

At step one, once completed the study, EPA concluded that regulation of power plants was «appropriate and necessary»²¹³, however, [c]rucially, EPA interpreted the statutory phrase «appropriate and necessary» to preclude it from considering cost when deciding whether to regulate power plants under the program²¹⁴.

At step two, at the moment of issuing the final rule, EPA, as requested by the E.Os., released the Regulatory Impact Analysis (RIA) of its power-plant regulations. It appeared from the RIA that the regulations would cost power plants \$9.6 billion per year and generate \$4 to \$6 million per year of quantifiable direct benefits from the reduction of hazardous air pollutants.²¹⁵

The regulation was immediately appealed by twenty-three states, along with numerous industrial groups. The plaintiffs argued, inter alia, that EPA acted unlawfully by refusing to consider cost in making its «appropriate and necessary» finding.

«Writing for the Court, Justice Scalia began by setting out the doctrinal backdrop for evaluating EPA's refusal to consider cost. As he explained, two fundamental administrative law doctrines governed: first, under *State Farm*, agencies must consider all of the 'relevant factors' of a problem when deciding how to regulate; second, under *Chevron*, although agencies deserve deference when interpreting ambiguous statutory provisions, they still «must operate within the bounds of reasonable interpretation»²¹⁶. Applying these principles, the Court found that because «the phrase appropriate and necessary

²¹³ Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826, 79,830 (Dec. 20, 2000); *Michigan*, 135 S. Ct. at 2705

²¹⁴ *Michigan v. EPA*, 129:311 Harvard Law Review 311, 2015

²¹⁵ *Michigan*, 135 S. Ct. at 2706

²¹⁶ *Id*

requires at least some attention to cost, EPA's contrary interpretation ran afoul of both *State Farm* and *Chevron*»²¹⁷.

The so called 'Chevron deference' doctrine rests on the principle that statutory ambiguity represents an implied delegation from Congress to an agency, thus a statutory provision that is silent as to cost delegates discretionary authority to the agency to account for cost as it sees fit.

Scholars have noticed that this decision is particularly important and risky at the same time considering its interaction with the two seminal administrative law doctrines: *Chevron* and *State Farm*. These doctrinal consequences shall be qualified as risky because of their potential to impede agencies pursuing aggressive public-health and environmental agendas. In fact, apart from the consideration according to which *Michigan v EPA* could reverse this background with reference to cost²¹⁸, what is interesting here is that this potential pro-cost clear-statement rule threatens numerous longstanding agency interpretations of ambiguous statutory language, especially language similar to the «appropriate and necessary» terminology. Thus, the significance of *Michigan* lies in the «unusually aggressive approach of the majority in scrutinizing and then rejecting EPA's legal and policy choices under a complex regulatory scheme»²¹⁹.

²¹⁷ Id. Further, according to the Court, the fact that cost may play a role in subsequent stages of the regulatory process does not establish its irrelevance at any prior stage.

²¹⁸ With specific reference to costs, the Clean Power Plan in discussion in chapter 3 has no similarity to the *Michigan* rule. In fact, the Section 111(d) on which the CPP derives, identifies cost as a relevant factor in setting standards of performance and EPA has analyzed and explicitly considered the costs of compliance in its CPP rulemaking. However, as explicated the significance of *Michigan* lies in the “unusually aggressive approach of the Supreme Court.

²¹⁹ See the Brookings Institution at <https://www.brookings.edu/blog/planetpolicy/2015/07/17/what-the-michigan-v-epa-scotus-ruling-means-for-the-presidents-clean-power-plan/>

In light of what is stated above, even the more rigorous legal requirements on CBA can be a double-edged sword from a merely legal point of view.²²⁰

Finally, with reference to risk assessment, it is important to underline that the term *risk assessment* does not appear in the statutes, this is mainly because these statutes were enacted prior to the emergence of risk analysis as an integrative discipline in the late 1970s. Actually, EPA risk assessment principles and practices stem from statutory provisions, and in particular there are other terms that stand for them. For example, the Clean Air Act, when addressing criteria pollutants, directs the agency to develop criteria «reflecting the latest scientific knowledge» and, on the basis of those criteria, to issue «national primary ambient air quality standards to ... protect public health with an adequate margin of safety» (CAA §§ 108,109)²²¹.

In 1981, Congress (PL-96528) directed that FDA support a National Research Council study of the «merits of an institutional separation of the scientific functions of developing objective risk assessments from the regulatory process of making public and social policy decisions and the feasibility of unifying risk assessment

²²⁰ In order to better understand the legal and economic consequences of CBA: REVESZ R. L. and LIVERMORE M.A., *Rethinking Health-Based Environmental Standards*, in 89 *New York University Law Review*, 1184, October 2014. SUNSTEIN C., *Risk and Reason: Safety, Law and the Environment*, Cambridge University Press 2002

²²¹ In other environmental statutes the wording can be different. For example, the Clean Water Act calls for standards “adequate to protect public health and the environment from any reasonably anticipated adverse effects” (CWA § 405 (d)(2)(D)). The primary purpose of the Toxic Substances Control Act is “to assure [that technologic] innovation and commerce in such chemical substances and mixtures do not present an unreasonable risk of injury to health or the environment” (TSCA § 2 (b)(3)). The Superfund National Contingency Plan specifies that “criteria and priorities [for responding to releases of hazardous substances] shall be based upon relative risk or danger to public health or welfare or the environment” (CERCLA § 105 (a)(8)(A)).

functions». ²²² The National Research Council organized the Committee on the Institutional Means for Assessment of Risks to Public Health in October 1981. The committee issued its famous report, the Red Book, on March 1, 1983. In his letter transmitting the report to the commissioner of FDA, the chairman of the National Research Council, Frank Press, stated:

«The Congress made provision for this study to strengthen the reliability and objectivity of scientific assessment that forms the basis for federal regulatory policies applicable to carcinogens and other public health hazards. Federal agencies that perform risk assessments are often hard pressed to clearly and convincingly present the scientific basis for their regulatory decision. In the recent past, for example, decisions on saccharin, nitrites in food, formaldehyde use in home insulation, asbestos, air pollutants and a host of other substances have been called into question. The report recommends no radical changes in the organizational arrangements for performing risk assessments. Rather, the committee finds that the basic problem in risk assessment is the incompleteness of data, a problem not remedied by changing the organizational arrangement for performance of the assessments. Instead, the committee has suggested a course of action to improve the process within the practical constraints that exist»²²³.

It is interesting to note that, as in the EU, the committee was sensitive to the fact that all assessments of scientific data are subject to uncertainties and because scientific knowledge is often incomplete, it is possible for different analysts to arrive at different interpretations of the same set of data. Thus, risk assessments could easily be

²²² Quoted from National Research Council of the National Academies, *Science and Decisions: Advancing Risk Assessment*, The National Academy Press, Washington DC, 2009, 30

²²³ Id

manipulated to achieve a predetermined risk-management outcome.²²⁴ Nevertheless, although the Red Book stressed the importance of a «conceptual distinction»²²⁵ between risk assessment and risk management, it rejected the concept of «institutional separation» between the processes. EPA has adhered to this principle so that assessors and managers may be collocated and interact regularly. However, as in the EU the final decision is political and is taken by assessors who do not set standards and decision-makers and do not conduct risk assessments. However, having to justify their decisions in the face of possible litigation, US regulatory agencies depend heavily on scientific data. Pressure from judicial review and the influence of interest groups only partly explain the reliance of US agencies on risk assessment²²⁶.

With reference to climate change, The National Research Council has organized a Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations which in its report Emissions, Concentrations, and Impacts over Decades to Millennia stated: «Emissions of CO₂ from the burning of fossil fuels have ushered in a new epoch where human activities will largely determine the evolution of Earth's climate. Because CO₂ in the atmosphere is long lived, it can effectively lock Earth and future generations into a range of impacts, some of which could become very severe. Therefore, emission reduction choices made today matter in determining impacts experienced not just over the next few decades, but in the coming centuries and millennia».²²⁷

²²⁴ Id

²²⁵ Id at 7

²²⁶ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010, 140

²²⁷ Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations, Board on Atmospheric Sciences and Climate, Division on Earth and Life Studies, National Research Council, *Climate Stabilization Targets: Emissions*,

Overall, there are some comparisons that can be made after comparative analysis of EU and US climate change regulatory states.

First, with reference to the historical background which aimed at understanding when and how climate change policy and law developed in the two analyzed countries, we can identify an interesting difference between the EU and the US. In fact, while the EU's domestic climate change policy and law are intertwined with the development of the international climate change regime this does not seem to be the case in the US. If on the one hand, the US has developed from the '70's a robust scientific climate change research and reporting program that has filled significant gaps in our understanding and which led, *inter alia*, to the proposal of creating the IPCC, on the other hand, the general attitude of the country is one of skepticism. This is shown by the absence of ratification of the Kyoto Protocol, which provided for legally binding targets. In this regard, the United States has advanced a new approach to forging an international agreement on climate—one that substitutes voluntary commitments for binding legal targets, and places obligations on both developed and developing countries.

Furthermore, while the EU has become the global leader in tackling climate change through its international and domestic policy, the US, on the contrary, has even failed to pass comprehensive domestic legislation to address climate change.

Second, with reference to the two regulatory states, despite their divergence in terms of legal category, constitutional settings and systems and styles of administration, the comparison is manageable because (i) we deal with a regulation-centered system. (ii) we deal

with a regulatory activity²²⁸ that has the force of law in both countries and (iii) we deal with a core role of the executive power in creating climate change regulation. The role of the executive power - under an internal and international level - is key in both the decision making phase (rule making and rule implementation) as well as in the post decision making phase (rule monitoring and enforcing) in both countries. In this regard, the European executive is not just one of the institutions working within the legislative process but an important regulator as well. «Fueled by the limited possibilities for steering through spending and built on the principle of conferred powers and defined regulatory mandates in the EC Treaty, the Institutions have developed their regulatory capacity»²²⁹. This is particularly true of the EU Commission, which has become a sort of super regulator. Further, the introduction of a comprehensive horizontal policy for lawmaking – namely ‘Better Regulation’ - can be seen as a confirmation of this broader development.

This prompt discussion similar to the ones we find in the US context. The highly technical powers of the EPA and of the EU Commission as well, their regulatory politics and the limited control of Congress in the US and of the Council and Parliament in the EU, make climate change regulation similar in the two settings.

In addition, in the US the broad delegation of legislative power, due to the expertise needed, made the EPA «rather than Congress, the arena for debate and decision on complex policy questions of fundamental importance to our democracy»²³⁰. This happens as well

²²⁸ Please note that in this thesis I am not referring to a regulatory act intended as a non-legislative act.

²²⁹ MEUWESE A., SCHUURMANS Y., VOERMANS W., *Towards a European Administrative Procedure Act*, in 2(2) *Review Eur. Admin. L.* 7, 2009

²³⁰ FREEDMAN, J. O., *Crisis and Legitimacy in the Administrative Process* in 27 *Stan L. Rev.* 104, 1974

within the EU Commission and in particular within the relevant DG (DG Clima).

Furthermore, in contrast with the US Congress, the constitutional and political legitimacy of US agencies rulemaking is rather weak. This is the same in the European context where in contrast with the European Parliament and the European Council, the political legitimacy of European Commission rulemaking is rather weak as well. Moreover, US agencies are not directly accountable to the electorate and delegation of legislative powers to them is controversial. Some European scholars, with reference to the EU Commission, have reported a similar controversy²³¹.

Finally, the possibility of appeal against executive regulations has proven central to the US system of administrative legal protection. Whereas the adoption of an Administrative Procedure Act was instrumental to the development of administrative law, «it was the combination with judicial review that produced such a coherent system»²³². In this regard, EU citizens do not have standing in the European court - one of the main requirements of good regulation - to apply for review of EU directives and regulations (I will deal with this issue in depth in chapter 4).

Nevertheless, the functions and tasks of administration differ widely in the US and the EU, as does the law permitting and

²³¹ See, e.g., SCHARPF F.W., *Governing in Europe: Effective and Democratic?* Oxford University Press, 1999, 14-19 (discussing sources of legitimacy in the European context); LINDSETH P.L., *Democratic Legitimacy and the Administrative Character of Supranationalism: The Example of the European Community*, in 99 *COLUM. L. REV.* 628, 721-22, 1999 (arguing that neither the EU nor other supranational bodies can become fully constitutional organizations as they lack a demos). WEILER J.H.H. and TRACHTMAN J.P., *European Constitutionalism and Its Discontents*, in 17 *NW. J. INT'L L. & BUS.* 354, 1996.

²³² SHAPIRO, M., *Trans-Atlantic: Harlow Revisited*, in: P. CRAIG and R. RAWLINGS, *Law and Administration in Europe; Essays in Honour of CAROL HARLOW*, Oxford: Oxford University Press, 2003, 225-239

harnessing administrative action²³³. In Europe debates on regulation, the regulatory state, oversight mechanisms and even public participation tend to be conducted in separate forums²³⁴. Then too, as already noticed by many scholars²³⁵, the European administrative law system at the EU level is considerably less developed than in the United States. The rule making of climate change regulation, which is own from the beginning by the DG Clima within the Commission is not perfectly transparent: it is not responsive to public input, and less accountable than that in the United States. In addition, there are no binding procedural rules dictating if and when a risk assessment and CBA should be conducted. Thus, while on the one hand the US has formal mechanisms designed to transmit public risk preferences of groups and individuals to public officials²³⁶, on the other, the EU system does not reflect the direct views of European groups or citizens. With reference to 'rule implementation' in both countries, there is an unclear delegation of powers. In the EU, the questions as to whether and when to delegate, pursuant to what instructions, and how broadly or narrowly have been caught up in both the horizontal and vertical power struggles among EU institutions, creating in the end an

²³³ WADE, W., RAGNEMALM, H. & STRAUSS, P.L., *Anglo-American and Nordic systems*, Milano, Giuffrè, 1991, 491

²³⁴ Id. See also MATTARELLA B. G., *La tutela degli interessati nel procedimento amministrativo: un convegno sull'esperienza europea*, in 3 *Rivista trimestrale di diritto pubblico* 884-886, 1996.

²³⁵ E.g.: HARLOW, C., *European Administrative Law and the Global Challenge*, in P. CRAIG AND G. DE BÚRCA, *The Evolution of EU Law*, Oxford: Oxford University Press, 1999. SHAPIRO, M., *Trans-Atlantic: Harlow Revisited*, in P. CRAIG AND R. RAWLINGS, *Law and Administration in Europe; Essays in Honour of Carol Harlow*, Oxford: Oxford University Press, 2003. MATTARELLA B.G., *The concrete options for a law on administrative procedure bearing on direct EU administration*, in 3-4 *Rivista italiana di diritto pubblico comunitario*, 537-545, 2012; *La risoluzione del Parlamento europeo sulla disciplina del procedimento amministrativo*, in 3 *Rivista trimestrale di diritto pubblico*, 883-884, 2013

²³⁶ DESHAZO J.R. and FREEMAN J., *Timing and Form of Federal Regulation: The case of Climate Change*, 155 *University of Pennsylvania Law Review*, 1499, 2007. KEHOANE N.O. and REVESZ R.L. and STAVINS R.N., *The Choice of Regulatory Instruments in Environmental Policy*, 22 *Harv. Envtl. Law Rev.* 313, 346, 1998

unbridled power over the EU Commission itself. The opposite occurs in the US, where the absence of more specific and updated delegation, has been blocking EPA's regulation. In this regard, in both countries we still find an unclear allocation of powers in creating climate change regulation dictated by, in the case of the EU, a not well developed and transparent administrative law framework. In the case of the US, as we will see better in the next chapter, by an old and not updated Statute, which does not grant a proper delegation of powers in the field of climate change regulation to the EPA.

In conclusion, «many of the recent policies to improve the accountability of the EU Institutions – as Better Regulation or comitology reform – can be interpreted as looking for legitimacy outside the paradigm of parliamentary democracy, or at least a narrow version of it. This is where the US experience can be of great use: its constitutional system is built around independent pillars of public powers, each deriving their legitimacy from a different source»²³⁷. The rulemaking power of the administration has come over time to be embedded in a fine net of presidential and judicial checks. This system of checks and balances; the citizen access to public decision-making and the great use of technical expertise, all have been crucial building blocks for achieving a 'better regulation'. Thus, it is likely that the EU may learn from the US when it comes to solving the problems that come with a 'regulation-centered' system.

²³⁷ MEUWESE A., SCHUURMANS Y., VOERMANS W., *Towards a European Administrative Procedure Act*, in 2(2) *Review Eur. Admin. L.* 9, 2009. WADE, W., RAGNEMALM, H. & STRAUSS, P.L., *Anglo-American and Nordic systems*, Milano, Giuffrè, 1991, 491

Chapter 3.

MODELS OF CLIMATE CHANGE REGULATION

TABLE OF CONTENTS: 3.1 Introduction. - 3.2 The EU ETS and the US Clean Power Plan. - 3.2.1 EU ETS. - 3.2.2 US Clean Power Plan. - 3.2.3 Key Similarities and Differences between the EU ETS and the US Clean Power Plan. - 3.2.3.1 Centrally Determined Targets. - 3.2.3.2 Phases of the Programs. - 3.2.3.3 Cooperative Federalism. - 3.2.3.4 National Allocation Plans and State Implementation Plans. - 3.2.3.5 Central Cohesive Laws?. - 3.2.3.6 Tools available in the EU ETS and in the US Clean Power Plan. - 3.2.3.7 Type of Installations Covered.

3.1 Introduction

In this chapter, I compare two examples of climate change regulation as a window into the process by which European and American regulation take shape. The two regulatory instruments here analyzed are: the EU Emission Trading Scheme Directive (EU ETS or ETS) and the US Clean Power Plan (CPP).

As I explained in details in the previous chapter, while the EU has been in the forefront of climate change action in reducing GHG emission by establishing the EU Emission Trading Scheme Directive (EU ETS) in 2003¹, on the contrary, the US has never had until recently a coherent federal approach to GHG emission reduction.

In the international arena, both the EU and USA are members of the United Nations Framework Convention on Climate Change (UNFCCC). However, while the EU committed to emission reduction under the Kyoto Protocol, the USA did not ratify the Kyoto Protocol,

¹ Directive 2003/87/EC

and signaled that it would not sign any new agreement that includes binding commitments to reduce emissions². The Kyoto Protocol to the UN Framework Convention for Climate Change (UNFCCC) was agreed on in December 1997 and set legally-binding GHG reduction caps³. Thus, one of the main reason why the EU decided to issue a specific Directive on GHG emission reduction was to comply with the requests of the Kyoto Protocol itself⁴.

The Emission Trading Scheme Directive emerged in the EU as the best mechanism to comply with the commitments of the Kyoto Protocol.

This has not been the case in the US which, in the absence of any binding international agreement never implemented a specific national mechanism in this regard.

Further, the EU and the USA have been having very different framework for dealing with climate change⁵. The most important characteristic in the EU is that its approach is based «on binding targets agreed among Member States, and implemented through a common legislative framework»⁶.

Whereas EU Member States closely coordinate their climate policies to achieve common targets, US states and cities have

² ERBACH G., *Climate Policies in the EU and USA*, European Parliamentary Research Service, 1, 2, November 2015, [http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571347/EPRS_BRI\(2015\)571347_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571347/EPRS_BRI(2015)571347_EN.pdf).

³The Kyoto Protocol, United Nations Framework Convention on Climate change, (2014)http://unfccc.int/kyoto_protocol/items/2830.php.

⁴ SCOVAZZI T., L'entrata in vigore del Protocollo di Kyoto, in Riv. Giur. Ambiente, 177, 2005. NESPOR S., Oltre Kyoto: il presente e il future degli accordi sul contenimento del cambiamento climatico, in Riv. Giur. Ambiente, 1 e sub., 2004

⁵ BAKKER C and FRANCONI F., *The EU, the US and Global Climate Governance*, European University Institute, Florence, Italy Ashgate 2014, 211

⁶ ERBACH G., Climate policies in the EU and USA Different approaches, convergent outcomes? European Parliament, Briefing, 2015

established a patchwork of regulations, complemented by federal plans and rules⁷.

The USA has not passed major climate change federal legislation since the issuance of the Clean Air Act because of a Congressional gridlock in American legislation. Thus, the actual US framework of response to the climate change issue is based on «powers given to the US President through pre-existing legislation, and on actions taken by state governments»⁸.

President Obama has made climate change one of the priorities of his presidency, even if he was not able to count on the US Congress to support new climate change legislation or binding international commitments. Thus, in order to carry on cohesive climate change action, in June 2013 President Obama announced a Climate Change Action Plan to reduce emissions of CO₂ and other greenhouse gases, and to encourage adaptation to climate change⁹.

In August 2015 the Environmental Protection Agency (EPA) released the Clean Power Plan (CPP) «which aims to reduce CO₂ emissions from the power sector to 32% below 2005 levels by 2030. The Clean Power Plan is the first federal regulation aimed at reducing carbon dioxide (CO₂) emissions from existing power plants, the

⁷ LITZ F. T., *Can The U.S. Get There From Here? Using Existing Federal Laws and State Action to Reduce Greenhouse Gas Emissions*, 1, 3 World Resources Institute (2013)

⁸ Id. To have an overview of U.S. government law and policy concerning climate change see DERNBACH J. C. and ALTENBURG R., *Evolution of U.S. Climate Policy*, in FREEMAN J. and GERRARD M. B., *Global Climate Change and US Law*, ABA Publishing, 2014

⁹ Executive Office of the President, *The President's Climate Change Action Plan*, 1, 5 (June 2013) <https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf> See also TARLOCK A. D., *Now Think Again about Adaptation*, in 9 *Ariz. J. Intl. Comparative L.* 169, 1992. MELILLO J. M., RICHMOND T., and YOHE G. W., *Climate Change Impacts in the United States: The Third National Climate Assessment*, 2014, U.S. Global Change Research Program, Washington, DC.

nation's largest source of greenhouse gas pollution¹⁰. Each state has an individual target and must develop a plan to meet it. The EPA says it has legal authority to enact such a plan under the Clean Air Act»¹¹, however the Clean Power Plan was challenged in the D.C. Circuit within a few days of its publication in the Federal Register and is currently under litigation.

On the other hand, the EU ETS has by now been in place for more than 10 years facing many different missteps as well as litigation. It is no surprise that the first phase of the EU ETS was called a 'learning by doing' phase¹². The lessons learned were incorporated in an amended Directive characterized by relevant modifications¹³. On the other hand, the brand new Clean Power Plan is the first cohesive federal action to tackle climate change in the US.

3.2 The EU ETS and the US Clean Power Plan

3.2.1 EU ETS

As already mentioned above, the EU ETS Directive (2003/87/EC) was born with the specific intent of providing for action to face climate change challenges after the Kyoto Protocol negotiations. With the *travaux préparatoires*, and in particular with the Green Paper on greenhouse gas emissions trading within the

¹⁰ EPA, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,662, 64,663 (Oct. 23, 2016); see also EPA, Learn About Carbon Pollution From Power Plants, <https://www.epa.gov/cleanpowerplan/learn-about-carbon-pollution-power-plants> (last visited Sept. 1, 2016) (noting that the electric power sector was the largest source of U.S. greenhouse gas emissions as of 2012).

¹¹ ERBACH G., *Climate Policies in the EU and USA*, European Parliamentary Research Service, 2015, 3

¹² DELBEKE J., VIS P., *EU Climate Change Policy Explained*, Rutledge 2016

¹³ Directive 2009/29/EC

European Union¹⁴, a debate across Europe on the suitability and possible functioning of greenhouse gas emissions trading within the European Union was launched. In its Conclusions of March 8, 2001, the Council recognized the «particular importance of the European Climate Change Program and the work based on the Green Paper, and underlined the urgent need for concrete action at Community level»¹⁵.

The EU ETS was established in 2003 when the European Parliament and the Council adopted Directive n. 2003/87/EC, which established a scheme for GHG allowances trading within the European Union. The Directive entered into force in 2005. The EU ETS is a 'cap and trade' system¹⁶. «It caps the total volume of GHG emissions from installations (and since 2012 also aircraft operators) responsible for around 50% of EU GHG emissions»¹⁷. This scheme, like each cap and trade system, limits the aggregate emission of the installations allowing for a limited number of tradable emission allowances so that the total emissions of the installations stays within the cap. The scheme creates a flexible system in which the need to release allowances to cover any emissions and the ability to trade those allowances create a price signal for emissions. This price signal

¹⁴ Commission of the European Communities, Green Paper on greenhouse gas emissions trading within the European Union, COM(2000) 87 final, (March 8, 2000)

¹⁵ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC

¹⁶ HAHN R. and STAVINS R., *The Effect of Allowance Allocations on Cap-and-Trade System Performance*, in 1, 17 *Harv. J.L. & Econ.*, Feb, 2010. Betsill, M., Hoffman, M., *The contours of "cap and trade": The evolution of emissions trading systems for greenhouse gases*, in 29(1) *Review of Policy Research* 83-106, 2011. Conniff, R., *The political history of cap and trade*, *Smithsonian Magazine*, 2009

from <http://www.smithsonianmag.com/air/the-political-history-of-cap-andtrade-34711212/> Heinmiller, T., *The politics of 'cap-and-trade' policies*, in 47 *Natural Resources Journal* 445-467, 2007. Stavins, R., *Cap-and-trade or a carbon tax*, in *The Environmental Forum*, 16, 2008. CLARICH M., *La tutela dell'ambiente attraverso il mercato*, in 1 *Dir. Pubbl.* 219 et sub., 2007.

¹⁷ European Commission, *EU ETS Handbook*, 1, 4, 2015 http://ec.europa.eu/clima/publications/docs/ets_handbook_en.pdf

provides installations «with an incentive to reduce emissions that influences their production and investment decisions»¹⁸.

The EU ETS is a major tool of the European Union in its efforts to meet emissions reduction targets now and in the future and has been the largest national program to reduce GHG emissions¹⁹. The trading approach helps to combat climate change in a cost-effective and economically efficient manner²⁰. As the first and largest emissions trading system for reducing GHG emissions, «the EU ETS covers more than 11,000 power stations and industrial plants in 31 countries, and flights between airports of participating countries»²¹. The EU ETS also covers around 50% of EU CO₂ emissions and 45% of total EU GHG emissions.²² The EU ETS covers CO₂ and, since 2013, nitrous oxide (N₂O) and perfluorocarbons (PFC) in specific cases (see table *infra* on page 142 of this thesis).

The system was first established in 2003 and started operating in 2005, and since then has undergone several changes.

Implementation of the system has been divided up into distinct trading periods over time, known as phases²³. The current phase of the EU ETS began in 2013 and will last until 2020 (phase III).

At first, the European Union broke down, with Council Decision 2002/358/EC²⁴, the obligation of reducing emission set by the Kyoto

¹⁸ STAVINS R. N., *A Meaningful U.S. Cap-and-Trade System to Address Climate Change*, in 32 *Harv. Env. L. Rev.* 2008

¹⁹ The EU ETS Directive is the jewel of the crown of the European package to tackle climate change, among which there is the Renewable Energy Directive (2009/28/EC) and the Energy Efficiency Directive (2012/27/EU)

²⁰ ELLERMAN D., *Are cap and trade programs more environmentally effective than conventional regulation?* Oxford University Press, 2007. FARBER D.A., *Modelling Climate Change and its Impacts: Law, Policy and Science*, in 86 *Texas Law Review* 1655, 2008

²¹ European Commission, *EU ETS Handbook*, (2015) http://ec.europa.eu/clima/publications/docs/ets_handbook_en.pdf

²² European Commission, *The EU Emission Trading Scheme*, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

²³ Phase I (2005-2007); Phase II (2008-2012) Phase III (2013-2020) Phase IV (from 2021)

Protocol between the different Member States, based on the characteristics of the industry, the energy mix used and the structure of economic growth expectations of each Member State.

For the first two trading periods (Phase I and II), the Member States were required to develop National Allocation Plans (NAPs) determining the cap on allowances and how allowances would be allocated.

The European Commission had to approve each NAP and could require changes to NAPs when they were not in compliance with the Directive. As I will explain below, the process of developing and approving NAPs resulted in a substantial portion of EU ETS litigation.

In order to strengthen the system, main changes were implemented and, as a result, the EU ETS Directive was amended²⁵. Phase III is significantly different from Phases I and II²⁶, and the main changes are: (i) the definition by the Commission of a single, EU-wide cap on emissions allowances which replaces the previous system of national caps on allowances, so that starting from Phase III the NAPs are no longer necessary and have been eliminated. (ii) The default method for allocating allowances is now auction, not free allocation, therefore the Member States do not allocate these allowances now. This means that businesses have to buy the necessary proportion of allowances through auctions. The auctioning of allowances is

²⁴ Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfillment of commitments thereunder

²⁵ 2009/29/EC. SKJAERSETH J. B. and WETTESTAD J, *The EU Emission Trading System Directive revised*, in *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*, ASP Edition, 2010, 101-123. VAN ASSELT H., *Emission Trading: the enthusiastic adoption of an alien instrument?* In *Climate Change Policy in the European Union. Confronting the Dilemmas of Mitigation and Adaptation*, Cambridge University Press, 2010, 125-145

²⁶ European Commission, The EU Emission Trading Scheme, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

governed by the EU ETS Auctioning Regulation. «This covers the timing, administration and other aspects of auctioning to ensure it is conducted in an open, transparent, harmonized and non-discriminatory manner. The Auctioning Regulation seeks to put into practice a number of criteria which the revised EU ETS Directive states auctions must meet, such as predictability, cost-efficiency, fair access to auctions and simultaneous access to relevant information for all operators»²⁷. For the electricity generation sector, the rule is that operators no longer receive free allowances but have to buy them. The experience of the first two trading periods shows that power generators have been able to pass on the national cost of allowances to customers even when they themselves received them free²⁸. Pursuant to Article 10(1) of the amended EU ETS Directive, 88% per cent of the allowances to be auctioned from 2013 to 2020 are distributed to the EU Member States on the basis of their share of verified emissions from EU ETS installations in 2005 or the average of the 2005-2007 period, whichever is the highest. 10% are allocated to the least wealthy EU member states as an additional source of revenue to help them invest in reducing the carbon intensity of their economies and

²⁷ Id

²⁸ LÖFGREN A., BURTRAW D., WRÅKE M. AND MALINOVSKAYA A., Architecture of the EU Emissions Trading System in Phase 3 and the Distribution of Allowance Asset Values, 1, 13 (October 2015) http://www.rff.org/files/document/file/RFF-DP-15-45_0.pdf. European Commission supra note 17 (“eight of the Member States which have joined the EU since 2004 - Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Poland and Romania - have made use of a derogation under Article 10c of the EU ETS Directive which allows them to give a decreasing number of free allowances to existing power plants for a transitional period until 2019. In return for transitional free allocation, the eight Member States have put up national plans setting out investments to be financed through the free allocation with a view to modernizing their electricity sectors and diversifying their energy mix. The investments are worth at least as much as the value of the free allowances. To ensure this conditionality, in most Member States concerned eligible operators only receive the free allocation upon proof of the investment of a corresponding amount having been carried out”).

adapting to climate change²⁹. «The remaining 2% is given as a 'Kyoto bonus' to nine EU Member States which by 2005 had reduced their greenhouse gas emissions by at least 20% of levels in their Kyoto Protocol base year or period. These are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia»³⁰. (iii) For those allowances still given away for free, harmonized allocation rules apply which are based on EU-wide benchmarks of emissions performance; (iv) some more sectors and gases are included³¹.

3.2.2 *US Clean Power Plan*

In the context of US action to address climate change and move towards low-carbon sources of energy, reducing GHG emissions is essential. It represents one of the Obama administration's priorities, considering that carbon dioxide (CO₂) accounts for 82% of US GHG emissions, and is as well a priority set by the December 2015 Paris Climate Agreement³².

President Obama's national climate strategy is based on regulation-making through the federal Environment Protection Agency (EPA) in order to circumvent the current blockade in Congress on climate legislation. Also, among the main players in US

²⁹ Art. 10 Amended Directive 2003/87/EC Of The European Parliament And Of The Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC OJ L 275 (2003)

³⁰ European Commission, The EU Emission Trading Scheme, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

³¹ Phase I (2005-07) was a “learning-by-doing” period. Phase II (2008-12): The scope of the EU ETS increased with the inclusion of the aviation sector and Iceland, Liechtenstein and Norway in 2012. Phase III (2013-20): The scope expanded to include 17 industrial activities, N₂O and PFCs. Croatia also joined the EU ETS, and the European Commission is negotiating a link between the EU ETS and the Swiss ETS.

³² EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013 – Executive Summary, _____EPA Gov 1, 7 (2013) <https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-Executive-Summary.pdf>.

policy making, besides Congress and the President, as already explained in the previous chapter, the judiciary holds a prominent role. It is well known that, to a certain extent, the US judiciary too has helped shape current US climate regulation. The most famous case that is emblematic – and probably exceptional – case emblematic of the strategic role of the judiciary³³ in shaping a climate change framework, is *Massachusetts v Environmental Protection Agency*³⁴, in which the Supreme Court ruled that, under the Clean Air Act (CAA), the EPA had the authority to regulate GHGs as air pollutants.

In order to achieve the climate goals above identified, the Obama administration released a Climate Action Plan as well as a Presidential Memorandum³⁵ relating to carbon pollution in 2013.

Through the Memorandum the President instructed the EPA to set carbon pollution standards for the power sector, the nation's largest source of carbon pollution (representing around 32-35% of US CO2 emissions³⁶). The President authorizes the EPA to use its authority under Sections 111(b) and (d) of the CAA, to «issue standards, regulations, or guidelines, that address carbon pollution from

³³ SHI-LING HSU, *A Realistic Evaluation of Climate Change Litigation through the Lens of a Hypothetical Lawsuit* in 79(3) *Univ. Colo. L. Rev.* 701, 2008. TRIBE L.H., *Too Hot for Courts to Handle: Fuel Temperatures, Global Warming, and the Political Question Doctrine*, Washington Legal Foundation, 2010, 12.

³⁴ OSOFSKY H., *The Intersection of Scale, Science, and Law in Massachusetts v. EPA* in 9 *Oreg. Rev. Intl. L.* 233, 2007.

³⁵ The White House, *Presidential Memorandum -- Federal Leadership on Energy Management*, The White House (December 2013) <https://www.whitehouse.gov/the-press-office/2013/12/05/presidential-memorandum-federal-leadership-energy-management>

³⁶ DEL MONTE M. and LEBLANC L., *US Supreme Court puts Clean Power Plan on hold*, European Parliamentary Research Service 1, 1 (February 2016) [http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA\(2016\)577989_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA(2016)577989_EN.pdf)

modified, reconstructed, and existing power plants and build on State efforts to move toward a cleaner power sector»³⁷.

In August 2015, the EPA determined emission-performance rates through the Clean Power Plan. This EPA Rule provides for guidelines for reduction of carbon pollution from existing power plants, and requests state governors to submit state-specific implementation plans (SIPs) by September 2016. In particular, the EPA sets state goals in the reduction of GHG emissions by defining a specific state emission reduction target. Under the Clean Air Act, EPA emission standards are required to reflect the «best system of emission reduction»³⁸ that has been adequately demonstrated, taking into account costs, energy needs, and other factors. These standards are based on the following three building blocks: «Building Block 1 involves improving the efficiency of existing coal-fired steam power plants, so that they emit less carbon pollution per unit of electricity produced. Building Block 2 involves gradually shifting generation from high-emitting coal and oil-fired steam power plants to lower-emitting power plants fueled by natural gas, over the time period from 2022-2030. Building Block 3 involves gradually shifting generation from all fossil fuel-fired power plants, including coal and gas-fired units, to zero-emitting, utility-scale renewable resources including wind, solar, and geothermal power»³⁹. Once EPA has set the states' goals, each state has to draft a compliance plan that demonstrates how it will meet its EPA-set state goal by 2030. While states have

³⁷ Id and see also EPA, Legal Memorandum Accompanying Clean Power Plan for Certain Issues, (2015) <https://www.epa.gov/sites/production/files/2015-11/documents/cpp-legal-memo.pdf>

³⁸ EPA, Fact Sheet: Clean Power Plan Framework, EPA_(Last updated on April 11, 2016) <https://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-framework>

³⁹ Bianco N. and Carbonell T., *An Early Look at the Clean Power Plan in Six Charts*, EDF Environmental Defense Fund (2015) <http://blogs.edf.org/climate411/files/2015/08/An-Early-Look-at-the-Clean-Power-Plant-in-Six-Charts.pdf>

significant flexibility in the emission reduction measures that may be used, the plan must be approved by EPA as «satisfactory».⁴⁰ If a state does not submit such a plan or if EPA does not find the plan satisfactory, EPA is required to issue its own federal compliance plan⁴¹.

The federal plan offers two market-based programs to achieve cost-effective emissions reductions. These may be adopted in part or in whole by states or used as a model for states to design their own plans.

In the rate-based program, «units must meet an emission standard or acquire a sufficient number of emission rate credits (ERCs), each representing a zero-emitting megawatt-hour, to bring their rate of emissions into compliance. ERCs can be generated by units not covered directly by this rule, and they can be bought, sold, or banked for later years»⁴² creating a trading system.

For a mass-based program, «EPA would create a state emissions budget equal to the total tons of CO₂ allowed to be emitted by the affected units in each state, consistent with the state targets. EPA would initially distribute the allowances within each state budget – less three proposed allowance set-asides – to the affected units based on their historical generation. Allowances may then be transferred, bought, sold, or banked for future use. The compliance obligation on each of the affected unit is to surrender the number of allowances sufficient to cover the unit's respective emissions at the end of a given compliance period»⁴³.

⁴⁰ U.S. EPA Final Rule 80 Fed. Reg. 64662 (2015) page 64702 - CAA section 111(d)(2)(A).

⁴¹ Id

⁴² Q&A: EPA's Federal Implementation Plan, Center for Climate and Energy Solution (2016) <http://www.c2es.org/federal/executive/epa/q-a-epas-federal-implementation-plan>

⁴³ Id

One of the main characteristics of the federal plan is that it will facilitate interstate trading as well as international trading with Canadian and Mexican units connected to a U.S. electric grid. EPA believes in the efficiency of a cap and trade program for the purpose of reducing GHG. Thus, the agency intends to set up and administer a program to track trading programs – both rate-based and mass-based – that will be available for all states that choose it. EPA proposes that affected units in any state covered by a federal plan may trade compliance instruments with affected units in any other state covered by a federal plan or by a state plan meeting the conditions for linkage to the federal plan⁴⁴. Thus, EPA encourages the use of a cap and trade scheme.

Cap and trade, as economic scholarship claims, represent the most environmentally and economically sensible approach to controlling greenhouse gas emissions. The cap sets a limit on emissions, which is lowered over time to reduce the amount of pollutants released into the atmosphere. The 'trade' creates a market for carbon allowances, helping companies innovate in order to meet, or come in under, their allocated limit. The less they emit, the less they pay, so it is in their economic incentive to pollute less. «The overall objective being that the US power sector cuts carbon emissions by 32% by 2030, from 2005 levels».

3.2.3 Key Similarities and Differences between the EU ETS and the US Clean Power Plan

In describing the two programs, it is now necessary to outline some key elements, which will help us identify the main similarities and differences between the EU ETS and the Clean Power Plan.

⁴⁴ Id

3.2.3.1 Centrally Determined Targets

The main similarity between the two programs here analyzed is that both involve centrally determined targets for the EU and the US as a whole. Also, the programs (the EU ETS and the Clean Power Plan) are managed by a specific authority: the EPA in the US and the European Commission in the EU.

This was actually not the case in the pre-amended EU ETS Directive, where, in Phases I and II, the EU ETS cap was formed by the sum of the national caps on allowances. In the pre-amended Directive, not only each Member State defined its own cap on allowances but also provided the allocation of allowances to its own installations. The Member states did that through the NAPs, which were then approved by the Commission.

As of 2013, starting from Phase III, the EU ETS cap is formed by a single, EU-wide cap on allowances decreasing by 1.74% annually and the major part of the allowances are now auctioned⁴⁵.

In the US the EPA establishes – for each state – a specific state emissions reduction target that the states must achieve by 2030. Thus, the EPA establishes the states' goals. This approach is, indeed, not welcomed by all the states. In fact, the setting of an emission performance standard by the EPA seems to create a hostile framework difficult to implement. This is particularly evident in US litigation, where the states in the briefs for petitioners argue that «the Clean Air Act is a program of *cooperative federalism* which expressly provides states – not EPA – with the right under section 111 (d) to 'establish' and 'apply' performance standards»⁴⁶.

⁴⁵EDF, European Union: An Emission Trading Case Study, 1, 4 (May 2015) http://www.ieta.org/resources/Resources/Case_Studies_Worlds_Carbon_Markets/eu_ets_case_study_may2015.pdf

⁴⁶Brief for petitioners, at 26, *State of West Virginia v. United States Environmental Protection Agency* No.15-1363 (and consolidated cases)

However, it seems that this centralized approach of EPA is perfectly efficient and, above all, seems to make the most of the European experience⁴⁷.

The establishment of national caps in the EU context was inefficient. EU industries, in fact needed an EU-wide cap consistent with its long-term targets for emissions reductions. What happened was that companies in a particular industry in one Member State faced tighter caps than comparable companies in another Member State⁴⁸. These differences distorted competition and undermined political support for the scheme. Thus, the absence of a centrally determined cap created the absence of a level playing field within the EU and gave unclear signals to markets and investors.

The actual centrally determined EU ETS cap is «based on the total quantities of allowances issued by the Member States in accordance with the Commission Decisions on their national allocation plans for the period from 2008 to 2012»⁴⁹; thus the EU-wide cap, like the state-specific emissions caps proposed by the EPA in the US, is established considering state priorities and capabilities.

The EPA, in fact, defines the state caps not maintaining an equal treatment of states and reflecting each state's energy mix. Formally, the criteria used for each of the three building blocks that together make up the best system of emissions reductions are uniform and

⁴⁷ For an earlier but still relevant discussion on centralized regulation see: REHBINDER E. and STEWART R. B., *Environmental Protection Policy*, Berlin De Gruyter, 1985. STEWART R. B., *Pyramids of Sacrifice: Problems of Federalism in Mandating State Implementation of National Environmental Policy*, in 86 *Yale LJ*. 1196 1977. WILS W.P.J., *Subsidiarity and EC Environmental Policy: Taking People's Concerns Seriously*, in 6 *J. Ewrr L. L.* 85, 1994. KIMBER C., *A comparison of Environmental Federalism in the United States and the European Union*, in 54 *Maryland Law Review* 1658, 1995

⁴⁸ SIMON TILFORD, *How To Make EU Emissions Trading A Success*, Center For European Reform 1, 22 (May 2008) https://www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/p_769-275.pdf

⁴⁹ Art. 9 Directive 87/2003 consolidated version

'location-oblivious' in the same manner as the federal standards promulgated by the agency under traditional cooperative federalism provisions, whether it be national environment air quality standards or best available control technology standards for new industrial sources⁵⁰. By doing so, the EPA grants a level playing field among industries within the US.

Given the above analysis, a centrally determined target represents the best solution for achieving a coherent decrease of emissions because it provides a long-term perspective eliminates the risk of the absence of level-playing field and guarantees a long-term investment.

However, the creation of this centralized approach represented by the establishment of an emissions performance standard by the EPA created a hostile framework difficult to implement in the US. Indeed, the setting of a centralized approach is one of the main reason for the present US litigation. The petitioners claim a better-shared allocation of powers and maintain that it is a state's duty to regulate the standard of performance for existing sources⁵¹, in other words, the states say that in defining and adopting the standard of performance for each state the EPA is intruding on the state's ability to regulate its operators and facilities⁵².

On the other hand, the EU Member States did not view the centralized approach as despicable; rather this approach has been considered as the best approach for maintaining the subsidiarity

⁵⁰ Respondent EPA's initial brief at 12 State of West Virginia v. United States Environmental Protection Agency No.15-1363 (and consolidated cases)

⁵¹ Brief for petitioners at 41, State of West Virginia v. United States Environmental Protection Agency No.15-1363 (and consolidated cases)

⁵² Id

principle as a general EU constitutional principle of the European Union⁵³.

In article 5 paragraph 3 of the Treaty of the European Union the subsidiarity principle is described like that:

«Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and insofar as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level».

The principle of subsidiarity – together with the principle of proportionality - governs the exercise of the EU's competences.

In areas in which the European Union does not have exclusive competence, such as environmental law, the principle of subsidiarity seeks to protect the capacity of the Member States to make decisions and to take action and authorizes intervention by the Union. In particular, as provided for under art. 5 par. 3 of the Treaty, when the objectives of an action cannot be sufficiently achieved by the Member States, but can be better achieved at Union level, «by reason of the scale and effects of the proposed action, the Union should regulate»⁵⁴.

⁵³ TRIDIMAS T., *The General Principle of EU Law*, Oxford University Press 2006, 419, 427. CRAIG P., *Subsidiarity: A Political and Legal Analysis*, in 50 *Journal of Common Market Studies* 72, 2012. DE SADELEER N., *Principle of Subsidiarity and the EU Environmental Policy*, in 9 *Journal of European Environmental and Planning Law* 72, 2012. SHUTZE R., *Subsidiarity after Lisbon: Reinforcing the Safeguards of Federalism?*, in 68 *Cambridge Law Journal* 525, 2009. Protocol n. 2 to the TFEU, *On the Application of the Principles of Subsidiarity and Proportionality*

⁵⁴ CHATEAU C., *The principle of Subsidiarity*, European Parliament (2016) http://www.europarl.europa.eu/ftu/pdf/en/FTU_1.2.2.pdf

Since environmental policy is not vested exclusively in the EU, the principle of subsidiarity applies and the proper application of the subsidiarity principle is actually a matter of allocation of powers⁵⁵.

In particular, the focus is on whether the EU is the most appropriate decision-maker compared to the Member States.

The EU action must satisfy two tests:

First, the EU legislator has to demonstrate that the goals proposed cannot be achieved by the Member States. Second, the EU legislator has to demonstrate that the proposed goal and consequent action by reason of their scale or their effects 'can be better achieved at Union level'⁵⁶.

This concept is not unknown to US environmental law. American scholars define it as the 'matching principle'⁵⁷. The «matching principle implies that regulatory authority must track a range of optimal environmental areas, reinforcing the case for governance at various scales, including the international level»⁵⁸.

Actually, taken literally, the matching principle would suggest that nearly every environmental problem has a distinct optimal regulatory scale.

⁵⁵ HENKEL C., *The Allocation of Powers in the European Union: A Closer Look at the Principle of Subsidiarity*, in 20 Berkeley J. INT'L L. 359, 363– 64 (2002)

⁵⁶ SCHUTZE R., *The European Union Law*, 253, (Cambridge University Press, 2015)

⁵⁷ BUTLER H.N. and MACEY J.R., *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, in 14 Yale L. & Pol'Y Rev. 23 (1996). OLSON M., *The Logic Of Collective Action: Public Goods And The Theory Of Groups*, 46, 48, 2d ed., Harvard Univ. Press 1971. OSTROM E., *Governing The Commons: The Evolution Of Institutions For Collective Action*, Cambridge Univ. Press 1990. SCHOENBROD D., STEWART R.B. and WYMAN K., *Breaking The Logjam: Environmental Protection That Will Work*, Yale University Press, 2010. ADELMAN D. and ENGEL K., *Adaptive Federalism: The case Against Reallocating Environmental Regulatory Authority*, in 92 Minn. L. Rev. 2008

⁵⁸ ESTY D. C., *Breaking the Environmental Law Logjam: The International Dimension*, in NYU Env. L.J., 17, 2008

Unfortunately, as regards environmental protection, what is better is also «embroiled with controversies»⁵⁹ in both the EU and US context. «Does it mean more effective, more democratic, more consistent with the internal market obligations, more consistent with international obligations, etc.? At first glance, no easy answer can be given to these questions»⁶⁰.

However, there are a number of good reasons supporting the view that EU and US environmental measures in climate change easily leap the hurdles of subsidiarity. Those reasons were definitely considered and supported in the EU context when the amended Directive was issued. The arguments to consider to supersede the subsidiarity/matching principle are the followings:

First and foremost, there is no doubt that environmental issues with a transboundary nature, such as climate change should be a matter for the central authority and not chiefly for the Member States/states: the bigger the scale of the issue the more centralized approach is needed⁶¹.

In the absence of such a common approach, the efforts made by the most zealous state would easily be frustrated by the passivity of the others; and this is exactly what happened in the EU (Phases I and II) and what is happening in the US⁶².

Finally, it is important to note that it is likely that unilateral measures would probably exacerbate the distortion of competition and provide an incentive for each state to favor its own industry.

⁵⁹ DE SADELEER N., *EU Environmental Law and The Internal Market*, 131 Oxford University Press 2014

⁶⁰ Id

⁶¹ CISTULLI V., *Environment in Decentralized Development - Economic and Institutional Issues*, 29 (FAO 2002)

⁶² REVESZ R.L., *Federalism and Environmental Regulation: An Overview*, in REVESZ R.L., SANDS P. and STEWART R.B., *Environmental Law, the Economy and Sustainable Development The United States, the European Union and the International Community*, Cambridge University Press, 2000, 37 and sub.

The above statements are also supported by economic reasons:

«The theoretical basis of the matching principle is neoclassical economics and specifically, models of perfect competition⁶³. Specifically, where externalities are fully internalized, the environmental standards of each jurisdiction will perfectly reflect the preferences of their residents in terms of any trade-off between environmental quality and economic benefits. [...] Remove the assumption of perfect competition, however, and the theoretical support for the matching principle crumbles. Scholars have demonstrated the rationality of federal regulation, for example, where local jurisdictions would otherwise establish inefficient standards, even as to fully-internalized environmental problems, based upon competition between jurisdictions to capture mobile industries with out-sized bargaining power. In such situations, scholars argue that the theoretical model that best ‘matches’ the dynamic at play is the non-cooperative game theory, as opposed to perfect competition»⁶⁴.

I believe that a stringent application of the subsidiarity principle should be applied to American environmental regulation in climate change action in order to achieve a cohesive federal climate change program, following the European example.

In light of the above, the subsidiarity/matching principle should be carefully followed in US statutes. It is time for the US to acknowledge the importance of having a degree of regulatory activity

⁶³ ENGEL K.H., *Policy Innovation Under Dynamic, Adaptive Federalism and Democratic Experimentalism Compared: Lessons for Federalism and Climate Change Adaptation Policy*, Arizona Legal Studies Discussion Paper No. 16-01, January 2016 quoting BUTLER H.N. and MACEY J.R., *Externalities and the Matching Principle: The Case for Reallocating Federal Authority*, in 14 *Yale J. on Reg.* 25, 1996

⁶⁴ENGEL K. H., *State Environmental Standard-Setting: Is There a “Race” and Is it “to the bottom”?*, in 48 *Hastings L. J.* 271 274-76 1997 see also REVESZ R.L., *Federalism and Environmental Regulation: A Public Choice Analysis*, in 115 *Harv. L. Rev.* 553, 571 2001

at the federal level in climate change action. Progress can be made by building on this basic principle and learning from Europe's international policymaking experience.

3.2.3.2 *Phases of the Programs*

Both the Programs are phased-in. EU ETS implementation has been divided into four phases: Phase I (2005-07). Phase I was a three-year pilot period of 'learning by doing' to prepare for phase II, when the EU ETS would have to function effectively to help ensure that EU and Member States met their Kyoto Protocol emission targets⁶⁵. In phase I the EU ETS covered only CO₂ emissions from power generators and energy-intensive industrial sectors. Almost all allowances were given to businesses free of charge. «Phase one succeeded in establishing a price for carbon, free trade in emission allowances across the EU and the necessary infrastructure for monitoring but in the absence of reliable emissions data, phase one caps were set on the basis of best guesses. In practice, the total allocation of EU ETS allowances exceeded demand by a sizeable margin and in 2007 the price of phase one allowances fell to zero (phase one allowances could not be banked for use in phase II)»⁶⁶.

Phase II (2008-12). The scope of the EU ETS increased with the inclusion of the aviation sector and Iceland, Liechtenstein and Norway in 2012. At the same time, the scope of the system was marginally widened through the inclusion of nitrous oxide emissions from the production of nitric acid by a number of Member States. Phase II coincided with the first commitment period of the Kyoto Protocol, which required the EU and Member States to meet their emission targets. On the basis of the verified emissions reported during phase I,

⁶⁵ European Commission, The EU Emission Trading Scheme, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

⁶⁶ Id

the European Commission asked the states to tighten the cap by cutting the total volume of emission allowances by some 6.5% compared with the 2005 level. However, the economic crisis that began in late 2008 depressed emissions, and thus the demand for allowances, by an even greater margin. This led to a large and growing surplus of unused allowances and credits which weighed heavily on carbon prices throughout the second trading period⁶⁷. The aviation sector was brought into the EU ETS on January 1, 2012.⁶⁸

Phase III (2013-20). The scope expanded to include 17 industrial activities, N₂O and PFCs. Croatia also joined the EU ETS, and the European Commission is negotiating a link between the EU ETS and the Swiss ETS. A major revision of the EU ETS Directive was approved in 2009 in order to strengthen the system. This means that Phase III is significantly different from phases I and II and is based on rules which are far more harmonized than before. The main changes are: a single, EU-wide cap on emissions applies in place of the previous system of national caps; auctioning, not free allocation, is now the default method for allocating allowances⁶⁹. For those allowances still given away for free, harmonized allocation rules apply which are based on ambitious EU-wide benchmarks of emissions performance; some more sectors and gases are included⁷⁰.

Phase IV (2021-28). Rules are still under development, but, the goal is at least a 40% EU target, while the sectors covered by the ETS have to reduce their emissions by 43% compared to 2005. To this end,

⁶⁷ Id

⁶⁸ European Commission, Reducing Emissions from Aviation, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/transport/aviation/index_en.htm

⁶⁹ ELLERMAN A. D., BUCHNER B. K., AND CARRARO C., *Allocation in the European Emissions Trading Scheme: Rights, Rents and Fairness*, Cambridge University Press, 2007, 17

⁷⁰ European Commission, The EU Emission Trading Scheme, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

the overall number of emission allowances will decline at an annual rate of 2.2% from 2021 onwards, compared to the current 1.74%.

The US Clean Power Plan is phased-in and I identify four phases in the CPP as well.

Phase I (2016-2019). The Rule provides that the states have to develop and submit their national plans (SIPs) within September 2016, however the states may submit an extension request in order to submit their plans within September 2018. (it seems that the September 2016 deadline will not be enforced as a result of a stay issued by the U.S. Supreme Court in February 2016).

Phase II (2019-2021). States have to submit a report to the EPA specifying how they will implement the approved final plans. In addition, States can opt to participate in the Clean Energy Incentive Program (CEIP). CEIP seeks to reward early investments in renewable energy and energy efficiency measures that generate carbon-free electricity or reduce end-use energy demand during 2020 and/or 2021⁷¹.

Phase III (2022-2030). Performance rates are phased in over the 2022–2029 interim period, which leads to a 'step down' reduction path. States may elect to set their own goals for the three interim periods as long as they meet their interim and final goals. States must also demonstrate they have reached their average interim goal, over the eight-year interim period.

Phase IV (2031 and afterwards). Starting in 2031 and every two years thereafter, states are required to demonstrate how they met their final goal.

⁷¹ C2ES, *Clean Power Plan Timeline*, Center For Climate and Energy Solution, Feb 2016 <http://www.c2es.org/publications/clean-power-plan-timeline>

3.2.3.3 *Cooperative Federalism*

Both the EU ETS and Clean Power Plan provide for a cooperative federalist approach albeit in different ways.

With reference to the European context, we have to take into account specific elements that testify to the application of a cooperative federalist approach, among others, in the inherent nature of the Directive. The Directive⁷² is a legislative act, under article 288 of the Treaty on the Functioning of the European Union:

«[a] directive shall be binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods».

The results to be achieved are agreed on before by the three main bodies of the EU (Commission, Council and European Parliament - where the Council is composed of the government of each Member State) in the legislative process.

Because of this, I define European cooperative federalism as democratic cooperative federalism, considering that, again, the goals and targets are evaluated and agreed on in advance by the Member States within the particular European legislative process involving the three main bodies of the Union.

Then too, it is interesting to note that the EU ETS is what I would define an enhanced Directive, enhanced by the strength of an international binding treaty: the Kyoto Protocol.

⁷² SCHUTZE R., *The European Union Law*, 253, (Cambridge University Press, 2015). See also for an earlier reconstruction of the EU Directive CLARICH M., La nozione di direttiva: problemi ricostruttivi e tendenze recenti, in *Foro amm.*, 1984, p. 891 ss. (republished in *Studi in onore di Vincenzo Palazzolo*, Milano, Giuffrè, 1986, p. 225 ss.

The above remarks explain why despite the fact that over 80% of EU climate change litigation arose almost exclusively out of the EU ETS, none of the challenges brought by the Member States before EU courts questioned the validity of the scheme as a whole. Thus, the main portion of EU ETS litigation resulted from the implementation and application of the scheme itself and in particular during the process of developing and approving the NAPs.

All of the above is missing in the US context. Nevertheless, I believe that a form of cooperative federalism exists within the Clean Power Plan, even if for different reasons.

First, as argued by some scholars, «the EPA has established the state's goal, but it is a goal that largely results from prior actions at the state and local levels over the course of the past decade»⁷³.

Second, the Clean Power Plan works with the states in a manner consistent with the traditional concept of cooperative federalism in general and the Clean Air Act's model in particular. Under the Plan, EPA establishes emission performance rates for greenhouse gases applicable to all large existing coal- and natural gas-fired power plants in the country. «EPA does not dictate to any State how it must do so, and requires only that a State plan provide the necessary assurances that the mix of controls it proposes will enable the regulated power plants to meet their required performance targets. Moreover, should a State's plan fall short, or should a State decide not to issue a plan, the Clean Power Plan imposes no sanction or any other means of forcing the State to act. The federal government instead assumes

⁷³ ENGEL K.H., *Policy Innovation Under Dynamic, Adaptive Federalism and Democratic Experimentalism Compared: Lessons for Federalism and Climate Change Adaptation Policy*, Arizona Legal Studies Discussion Paper No. 16-01, January 2016 at 23

responsibility for developing and administering the plan directly against the power plants, shouldering that burden itself»⁷⁴.

Third, thanks to the SIPs, states have the opportunity to truly function as «laboratories of democracy, generating innovative policy responses to the particular problem of national, and, in the case of climate change, global dimensions. At the same time, by incorporating the most effective of the state strategies into federal law, the federal government addresses the collective action problem that otherwise attends unilateral state efforts to address a problem with interstate or global dimensions such as climate change».⁷⁵

Finally, it can also be argued that the Rule issued by EPA is the result of notice and comment rulemaking, which is notably celebrated as a constitutionally valuable means: Congress designed it to be a means through which agencies are constrained from exceeding their delegated authority and thereby violating separation of powers principles or individual rights.

3.2.3.4 *National Allocation Plans and State Implementation Plans*

Both the EU ETS NAPs and Clean Power Plan SIPs can be considered a flexible mechanism able to guarantee a certain margin of maneuver to the Member States/states. However, despite this similarity, the NAPs and the SIPs are very different considering their functions and contents.

In Phases I and II of the EU ETS, the NAPs defined the number of allowances to allocate to each EU ETS installation in each state

⁷⁴ Final Brief Of Former EPA Administrators William D. Ruckelshaus and William K. Reilly As Amici Curiae In Support Of Respondents at 22 State of West Virginia v. United States Environmental Protection Agency No.15-1363 (and consolidated cases)

⁷⁵ ENGEL K.H., *Policy Innovation Under Dynamic, Adaptive Federalism and Democratic Experimentalism Compared: Lessons for Federalism and Climate Change Adaptation Policy*, Arizona Legal Studies Discussion Paper No. 16-01, January 2016

territory. On the other hand, the SIPs represents the flexible instrument given to the states through which each state will select the measures it contains the best for achieving the EPA's goal. Thus, despite the fact that the EPA establishes the states' goals (standard of performance), each state is able to choose how to meet those goals through whatever combination of measures reflects its particular circumstances and policy objectives.

While on the one hand the NAPs proved inefficient, I believe that the SIPs will be a valuable instrument also able to grant the cooperative federalism the states are looking for.

As mentioned above, the reasons why the NAPs proved to be inefficient are many: to start with, the process the process was very time-consuming. Another important lesson was that the NAPs were too complex and not sufficiently transparent. In fact, the emissions trading pre-amended directive only provided broad criteria for member states concerning the establishment of allocation plans. Consequently, in most cases, the NAPs resulted in lax emissions targets, complex special allocations to powerful interest groups and in some cases even in an over-allocation compared to actual emissions, creating a distorting signal for investors⁷⁶. And last but not least, as we will see below, the NAPs were the main cause of litigation. The NAPs provided for under Article 9 of the pre-amended EU ETS Directive were defined as the Achilles' heel of the scheme and in fact Article 9 was the only provision challenged by the Member States.

Because of the above issues, the amended Directive eliminated the NAPs and centralized the cap-setting procedure. The revised Directive, as mentioned above, stipulates that from 2013 onwards a

⁷⁶ BUTZENGEIGER S. AND MICHAELOWA A., *The EU Emissions Trading Scheme – Issues and Challenges, Greenhouse Gas Emissions Trading in the European Union – Background and Implementation of a “New” Climate Policy Instrument*, 39, 116-118 *Intereconomics Rev. of Europ. Economic Policy*, May 2004

Community-wide quantity of allowances is to be issued each year, decreasing by a linear factor 1.74%.

On the contrary, the Clean Power Plan already provides for a centralized target defined by the EPA, thus these issues related to the risk of lax emissions target and absence of a level playing field among the states with consequent unfair competition among industries will not exist.

There is another important difference to be underlined between the NAPs and the SIPs: the EU Commission only had the possibility to reject a NAP, while, on the contrary, the EPA must replace a state plan with the federal one in case a state fail to submit an approvable state plan (this will satisfy the matching principle).

Finally, while the NAPs were unsuccessful within the EU ET scheme, the SIPs may represent the necessary instruments to satisfy the right of each member state to choose the best mechanism for granting a cooperative federalist approach.

3.2.3.5 *Central Cohesive Laws?*

One of the main differences between the two programs is related to their decision making process as well as their 'age'.

In fact, as I explained in chapter 2 of this thesis, the Commission granted itself the implementation powers needed in order to make the EU ETS work. Furthermore, in the last amendment of the Directive the Commission monopolizes many of the regulatory powers available under the EU Emission Trading Scheme, which ensures cohesive application of the program. In fact, the shift of regulatory power from the Member States to the Union has been an advantage for national governments. «As a matter of fact, this way they have gained a preferential way to reform critical features of the administrative

system, bypassing the complex legislative procedures existing at a national level and the related political conflicts»⁷⁷.

On the other hand, the Clean Power Plan is a Rule issued by the EPA, a federal government agency based on the old clean power plan (even if amended in 1990) which did not mention GHGs and therefore did not provide for specific delegation powers. The statute, in fact, provides the authority for EPA to write regulations needed to implement this statute.

EPA has no more regulatory authority than Congress has granted it. Congress created the Environmental Protection Agency and legislated the Clean Air Act. In other words, EPA is required by law to be reasonable and to act within the bounds Congress established⁷⁸.

Because of the above limits on EPA, it is evident that an Act by the US Congress would be the best solution. Legal requirements to govern broader segments of society that cannot be achieved under existing legislation (such as the Clean Air Act) will require new legislation from Congress.

This analysis is validated by the fact that President Obama and his administration have repeatedly made it clear that they would prefer to see new federal legislation instead of using the old Clean Air Act as a vehicle to pass federal GHG regulation in US⁷⁹.

It is not easy to detect the reasons for the absence of Congressional climate change regulation. Some argue that this issue is linked to the recent economic crisis. Others say that Congress is unlikely to pass comprehensive climate legislation, because of the «Republican trend to deny the existence of climate change, as

⁷⁷ NAPOLITANO G., *Discovering the Logic of Administrative Law—A Reply to Guy Seidman and Dolores Utrilla*, Int'l J. Const. L. Blog, Sept. 3, 2014, at: <http://www.iconnectblog.com/2014/09/3307>

⁷⁸ OHLIGER T., *US Climate Change Policy*, European Parliament, 1, 11 March 2015

⁷⁹ Id

demonstrated by the Chairman of the House Committee on Science, Space and Technology, Republican Lamar Smith who stated that 'there is a great amount of uncertainty associated with climate science»⁸⁰.

3.2.3.6 *Tools available in the EU ETS and in the US Clean Power Plan*

Another difference between the EU ETS and the Clean Power Plan is the mechanism used to achieve the goal of reducing GHG emissions. The EU ETS works on the 'cap and trade' principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by the factories, power plants and other installations in the system. The cap is reduced over time so that total emissions diminish. Within the cap, companies receive or buy emission allowances which they can trade with one another as needed. If a company reduces its emissions, it can keep the spare allowances to cover its future needs or else sell them to another company that is short of allowances⁸¹. The flexibility that trading brings ensures that emissions are cut where it costs least to do so. A sufficiently high carbon price also promotes investment in clean, low-carbon technologies.⁸²

On the contrary, the Clean Power Plan works with multiple tools. The EPA has determined that each state has the flexibility to choose how to meet the goal using a combination of measures reflecting its particular circumstances and policy objectives. While

⁸⁰ SMITH L., *Overheated rhetoric on climate change doesn't make for good policies*, Washington Post, May 19, 2013. In order to have a better idea of the argument against American action and its errors see FREEMAN J. and GUZMAN A., *Climate Change and US Interests*, in 41 *Environmental Law Reporter* 10696, 2011

⁸¹ European Commission, *supra* note 17

⁸² The EU ETS is part of the 2020 package which is a set of binding legislation to ensure the EU meets its climate and energy targets for the year 2020. The package sets three key targets: 20% cut in greenhouse gas emissions (from 1990 levels) 20% of EU energy from renewables 20% improvement in energy efficiency

EPA identified a mix of three building blocks that make up the best system of emission reductions under the Clean Air Act, a state does not have to put in place the same mix of strategies that EPA used to set the goal. States are in charge of these programs and can draw on a wide range of tools, many of which they are already using, to reduce carbon pollution from power plants and meet the goal, including renewable energy portfolios and demand-side energy efficiency measures. Thus, the Program the EPA is putting in place is a multi-tool plan. However, despite the fact that the Final Rule leaves the State flexibility in defining the best mechanism to implement, it is important to note that market-based mechanisms are more explicitly encouraged in the Final Rule.

3.2.3.7 Type of Installations Covered

The final difference between the two programs relates to the type of installations covered. The Clean Power Plan covers only power plants which are the largest source of carbon dioxide emissions in the United States, making up roughly one-third of all domestic greenhouse gas emissions. On the other hand, the EU ETS has from Phase I covered many industrial sectors. Here is a table summarizing the sectors and related features covered.

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Key features	Phase 1 (2005–2007)	Phase 2 (2008–2012)	Phase 3 (2013–2020)
Geography	EU27	EU27 + Norway, Iceland, Liechtenstein	EU27 + Norway, Iceland, Liechtenstein Croatia from 1.1.2013 (aviation from 1.1.2014)
Sectors	Power stations and other combustion plants ≥ 20 MW Oil refineries Coke ovens Iron and steel plants Cement clinker Glass Lime Bricks Ceramics Pulp Paper and board	Same as phase 1 plus Aviation (from 2012)	Same as phase 1 plus Aluminium Petrochemicals Aviation from 1.1.2014 (aviation from 1.1.2014) Ammonia Nitric, adipic and glyoxylic acid production CO ₂ capture, transport in pipelines and geological storage of CO ₂ Aviation
GHGs	CO ₂	CO ₂ , N ₂ O emissions via opt-in	CO ₂ , N ₂ O, PFC from aluminium production
Cap	2058 million tCO ₂	1859 million tCO ₂	2084 million tCO ₂ in 2013, decreasing in a linear way by 38 million tCO ₂ per year

Overall, after the analysis of similarities and differences between the two programs we can draw two main conclusion: the first is related to which is the best entity in providing regulation and which is the best content of regulation to achieve the final goal of tackling climate change. The second is a more specific conclusion related to a strict comparison between the two programs analyzed and in particular, to the fact that the Clean Power Plan seems to make the best of the EU ETS experience. With reference to the latter, the EPA provides for a Rule able to guarantee a cooperative federalist approach through: (i) the definition of a centrally determined target able to avoid the issues experimented in the EU context such as the absence of a level playing field; also, the Rule is able to guarantee respect for the matching principle considering the transboundary nature of climate change. (ii) On the other hand, the SIPs are able to guarantee the flexibility for each state to choose whatever combinations of measures each state retains the best to achieve the EPA's goals, where the state fails to submit an approvable SIP, the EPA, in application of the matching principle, will substitute the SIP with the federal plan. In this sense, the SIPs (or the federal plans) also represent a step in the process of building a more cohesive approach that will eventually lead to a market-based mechanism such as a cap and trade program, while avoiding the mistakes of the EU NAPs.

With reference to the question of which is the best entity for providing regulation and which is the best content of regulation to achieve the final goal of tackling climate change, what we can conclude from the legal analysis conducted in this chapter is that within cooperative federalism a major federal role approach is better suited for tackling climate change. In fact, because of the particular

characteristics of GHGs⁸³, which do not create externalities on a local scale and do not cause harm as a result of local exposures, greater reliance on a central cohesive approach would maximize the uniformity of policies across all states, and create a predictable business environment. Further, an expert central authority is the only entity able to identify the main interest group preferences, which, according to the public choice theory, «holds that government policies are dictated by special interest group influence upon regulators»⁸⁴. In addition, a cap and trade program, which has been said to be the most cost effective instrument⁸⁵ is best implemented on a federal level, because the overall cost of the programs will be minimized, allowing for more significant reductions. Nevertheless, within a cohesive central approach I believe there is room for a cooperative federalism approach, which should be used, on the one hand, to better identify states' energy mix and capabilities and on the other hand, to avoid possible judicial review.

Finally, with reference to the content of the regulation, a market based mechanism⁸⁶ in the form of cap and trade seems to represent the best solution. A cap sets a maximum allowable level of pollution and penalizes companies that exceed their emission allowance. No other system can guarantee lower emissions. Why? First, the cap limits the amount of pollution that can be released and is based on science. Second, it covers all major sources of pollution because it is able to

⁸³ GHGs do not cause harm as a result of local exposures

⁸⁴ See OLSON M., *The Logic Of Collective Action: Public Goods And The Theory Of Groups* 1971, 111 -34. See also Napolitano G., *Le procedure e le tecniche di regolazione*, in *Arel/informazioni*, n. 1/2002

⁸⁵ It provides more certainty about the amount of emissions reductions that will result and little certainty about the price of emissions (which is set by the emissions trading market)

⁸⁶ CLARICH M., *La tutela dell'ambiente attraverso il mercato*, in *Associazione italiana dei professori di diritto amministrativo. Annuario 2006 : Analisi economica e diritto amministrativo : atti del convegno annuale : Venezia, fondazione Cini 28-29 settembre 2006. Milano, Giuffrè, 2007*

limit emissions economy-wide, covering electric power generation, natural gas, transportation, and large manufacturers. Third, emitters can release only limited pollution: «permits or allowances are distributed or auctioned to polluting entities: one allowance per ton of carbon dioxide, or CO₂ equivalent heat-trapping gases. The total amount of allowances will be equal to the cap. A company or utility may only emit as much carbon as it has allowances for»⁸⁷. Fourth, industry can plan ahead: each year, the cap is decreased on a gradual and predictable schedule, thus companies can plan well in advance to be allowed fewer and fewer permits each year. Further, companies can turn pollution cuts into revenue: if a company is able to cut its pollution it can end up with extra allowances to be traded. Fifth, the option to buy allowances gives companies flexibility, in fact, some companies might have trouble reducing their emissions, or want to make longer-term investments instead of quick changes.⁸⁸

⁸⁷ See the Environmental Defense Fund at <https://www.edf.org/climate/how-cap-and-trade-works>

⁸⁸ Id

Chapter 4.

LEGAL CHALLENGES TO CLIMATE CHANGE REGULATION: THE EU ETS AND THE CLEAN POWER PLAN LITIGATIONS

TABLE OF CONTENTS: 4.1 Introduction 142. - 4.2 The EU ETS and the US CPP Litigations. - 4.2.1 EU ETS: Introduction. - 4.2.1.1 EU Member States challenge the Commission. - 4.2.2 US Clean Power Plan: Introduction. - 4.2.2.1 The US States Challenge the Environmental Protection Agency. - 4.2.3 Similarities and differences in the two litigations.

4.1 Introduction

Climate change litigation represents the other piece of the climate change regulation framework that I am building in this thesis.

Until now, in fact, I dealt in chapter 2 and 3 with respectively the climate change decision-making process and the national regulatory programs. Thus, it is now time to turn to climate change litigation. Climate change litigation definitely matters as a component of the climate change governance system¹. In particular, by comparing

¹ Among others, see BERNSTEIN S., CASHORE B., Complex Global Governance and Domestic Policies: Four Pathways of Influence in 88(3) *Int. Affairs* 585, 2012. BIERMANN F., PATTERBERG P., AND ZELLI F., *Global Climate Governance beyond 2012: Architecture, Agency and Adaptation*, Cambridge University Press, Cambridge, 2010. ESTY D.C., *Climate Change and Global Environmental Governance*, 14 *Global Governance* 111 2008. GUNNINGHAM N., Confronting the Challenge of Energy Governance, in 1(1) *Transnatl. Environ. L.* 119 2012. HEY E. and NAUDÉ FOURIE A., *Participation in Climate Change Governance and Its Implications for International Law* in RAYFUSE R. and SCOTT S. V., *International Law in the Era of Climate Change* Edward Elgar, Cheltenham, 254, 2012. KULOVESI K., *Exploring the Landscape of Climate Law and Scholarship: Two Emerging Trends* in HOLLO E.J., KULOVESI K., and MEHLING M., *Climate Change and the Law*, Springer, Dordrecht, 31, 2013. PEEL J., GODDEN L., and KEENAN R.J., *Climate Change Law in an Era of Multi-Level Governance*, in 1(2) *Transnatl. Environ. Law* 245, 2012. SCOTT J., *The Multi-level Governance of Climate Change*

the litigations related to the regulatory programs examined in the previous chapter, we will be able to compare how important litigation is in shaping climate change regulation - directly or indirectly (regulation by litigation). In this regard, we have to consider that because international regulatory efforts are failing, increasing reliance on domestic regulatory solutions² is necessary and litigation can contribute to it³. In addition, climate governance operates across multiple scales and involves many actors, and litigation can be a useful means of connecting these different elements⁴. Finally, climate change litigation has indeed an important role in influencing the public debate, shifting social perceptions, endorsing the findings of climate science, and places or maintains the climate issue on the regulatory agenda as significant benefits of the lawsuits⁵.

This exercise of comparing the litigation of the regulatory programs analyzed previously has never been done before. In this

in 5(1) *Carbon Clim. L. Rev.* 25, 2011. PRESTON B. J., "The Influence of Climate Change Litigation on Governments and the Private Sector" in 2 *Clim. L.* 485, 2011.

² See, e.g., ENGEL K.H. and SALESKA S.R., *Subglobal Regulation of the Global Commons*:

The Case of Climate Change in 32 *Ecol. L. Q.* 183, 2005. CARLSON A.E., "Iterative Federalism and Climate Change" in 103 *Northwestern Univ. L. Rev.* 1097, 2009. FARBER D., "Carbon Leakage versus Policy Diffusion: The Perils and Promise of Subglobal Climate Action," in 13 *Chicago J. Intl. L.* 359, 2013. OSOFSKY H. M., "Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National, and International Networks" in 22 *Cornell J. L. Public Policy* 395, 2012. PEEL ET AL., "Climate Change Law in an Era of Multi-Level Governance," in 1 *Transnatl. Env. Law* 245-280, 2012

³ see, e.g., BODANSKY D., "The Copenhagen Climate Change Conference: A Postmortem" in 104 *Am. J. Intl. L.* 230, 2010. OBERTHUR S., "Global Climate Governance after Cancun: Options for EU Leadership" in 46(1) *Intl. Spectator* 5, 2011. OSTROM E., "A Polycentric Approach for Coping with Climate Change: Background Paper to the 2010 World Development Report," Policy Research Working Paper 5095, 2009, World Bank, New York

⁴ OSOFSKY M., "Climate Change Litigation as Pluralist Legal Dialogue?" in 26 *Stanford Environ. L. J.* 181, 2007. NESPOR S., "La Conferenza di Copenhagen: un accordo fallimentare o la base di un nuovo ordine internazionale per il contenimento del cambiamento climatico?," in 2 *Riv. Trim. Dir. Pubbl.*, 2010, 467.

⁵ HILSON C., "Climate Change Litigation in the UK: An Explanatory Approach (or Bringing Grievance Back In)" in FRACCHIA F. and OCCHIENA M., *Climate Change: La Riposta del Diritto*, Editoriale Scientifica, Naples, 421, 2010.

regard, as Professor Chris Hilson points out, «climate change framing of claims is a relatively new phenomenon.»⁶ In sum, «litigation may serve as a pathway to improved climate change regulation, and in the process influence mitigation and adaptive behaviors»⁷.

And lastly, in our case, litigations on the regulatory programs I have analyzed in the previous chapter are also a helpful instrument for showing the hurdles that the EU and the US are facing in trying to define a cohesive climate change action.

4.2 The EU ETS and the US CPP Litigations

4.2.1 EU ETS: Introduction

The EU ETS was established within Directive 2003/87 even if it started to be operative in 2005 (beginning of the first trial period). Thus, the EU ETS has by now been working for more than 10 years.

However, despite its success, it is known that the ETS faced some litigation⁸. Actually, EU litigation related to climate change, rose almost exclusively (around 80%) out of the EU ETS⁹. Nevertheless, none of the challenges brought against the ETS by the Member States questioned the validity of the scheme as a whole. This is because, as explained earlier, the Member States participated in the creation of the EU ETS Directive through a legislative process.

⁶ HILSON C., “Climate Change Litigation in the UK: An Explanatory Approach (or Bringing Grievance Back In)” in FRACCHIA F. and OCCHIENA M., *Climate Change: La Riposta del Diritto*, Editoriale Scientifica, Naples, 2010, 421.

⁷ PEEL J. and OSOFSKY J.H., *Climate Change Litigation Regulatory Pathways to Cleaner Energy*, Cambridge, 2015, 9

⁸ STEWART R., *Economics Incentives for Environmental Protection: Opportunities and Obstacles*, 171, 202 Cambridge University Press 2000

⁹ WILENSKY M., *Climate Change In The Courts: An Assessment of Non-U.S. Climate Litigation*, Columbia Law Sabin Center For Climate Change Law (February 2015) https://web.law.columbia.edu/sites/default/files/microsites/climate-change/white_paper_-_climate_change_in_the_courts_-_assessment_of_non_u.s._climate_litigation.pdf at 30

As mentioned above in the description of the scheme, during Phase I and II, Member States were required to develop National Allocation Plans (NAPs) determining the cap on allowances and how allowances would be allocated. The European Commission had to approve each NAP and could require changes to NAPs when they were not in compliance with the Directive.

The process of developing and approving NAPs resulted in the most substantial portion of EU ETS litigation.

Five Member States initiated five cases after the Commission rejected their NAPs. In each case, the Member State sought annulment of the Commission's decision. All five challenges by Member States were successful¹⁰.

In particular, I am focusing here on the two (of the five brought by Member States) twin cases challenging the Commission's regulatory powers under the Directive because those were the only decisions appealed before the European Court of Justice (ECJ) and the only two cases which specifically challenged the Commission's regulatory powers¹¹. The two cases are: *Commission v Estonia* and *Commission v Poland*.

It is necessary to underline here that emissions sources, such as cement producers, also brought twelve suits challenging the European Commission's rejection of a NAP fearing that a revision of the NAP

¹⁰ Id

¹¹ The other three cases dealt with the possibility of ex-post adjustments (adjustments to the NAPs after the Commission revised it) and relative deadlines. In these cases, the General Court held that if a NAP were based in part on incorrect information relating to the level of emissions in certain sectors or installations, the Member State concerned would have to be entitled to propose amendments, including an increase (or decrease) to the total quantity of allowances, in order to address those problems. Nonetheless, the Commission might reject the proposals on the merits if they are incompatible with the directive.

would result in more stringent emissions limits¹². None of these challenges were successful, «because the European Court of Justice found that the plaintiff corporations were not individually affected as required by EU law».¹³

The bulk of this jurisprudence relies on art. 263 (2)¹⁴ of the Treaty on the functioning of the European Union (TFEU), contesting the allocation of regulatory powers under the Directive between, on the one hand the Commission in reviewing the NAPs and, on the other hand, the Member States in implementing the Directive¹⁵.

In particular, the litigation here examined deals with the request by the two Member States for the annulment of the Commission's decision to reject their NAPs. The actions brought against the ETS, focused exclusively on competence issues and in particular on determining whether the regulatory power allocation between the EU institutions and the national authorities was respected in construing and managing the ETS.

Here, it is useful to highlight the main rule for determining a NAP as this constitutes the area of dispute between the parties.

Article 9 of the EU ETS Directive states that:

¹² WILENSKY M., *Climate Change In The Courts: An Assessment of Non-U.S. Climate Litigation*, Columbia Law Sabin Center For Climate Change Law (February 2015) https://web.law.columbia.edu/sites/default/files/microsites/climate-change/white_paper_-_climate_change_in_the_courts_-_assessment_of_non_u.s._climate_litigation.pdf at 31

¹³ E.g. ENBW Energie, Buzzi Unicem SpA v. Commission of the European Communities, Case T-387/04, [2007] E.C.R. II-01195 at para. 127-128; Drax Power v. Commission, Case T-130/06, [2007] E.C.R. II-00067.

¹⁴ "...It shall for this purpose have jurisdiction in actions brought by a Member State, the European Parliament, the Council or the Commission on grounds of lack of competence, infringement of an essential procedural requirement, infringement of the Treaties or of any rule of law relating to their application, or misuse of powers..." see also Sanja Bogojevic, *CJEU can you hear me? Access to Justice in Environmental Matters*, 2 *Europarättslig Tidskrift* (2013)

¹⁵ BOGOJEVIC S., *Emissions Trading Schemes: Markets, States and the Law*, 126 (Hart Publishing 2013)

«Each Member State shall develop a national plan stating the total quantity of allowances that it intends to allocate for that period and how it proposes to allocate them. The plan shall be based on objective and transparent criteria, including those listed in Annex III, taking due account of comments from the public. Within three months of notification of a national allocation plan by a Member State under paragraph 1, the Commission may reject that plan, or any aspect thereof, on the basis that it is incompatible with the criteria listed in Annex III or with Article 10. Reasons shall be given for any rejection decision by the Commission».

Thus, according to the Directive, the Commission may reject the NAP but the ultimate decision on the NAP is entrusted to the Member States, which at any rate need to provide information regarding the final quantity of emission allowances they intend to allocate and the allocation method they use following the criteria of Annex III.

4.2.1.1 EU Member States challenge the Commission

In 2006, Poland and Estonia notified their NAPs to the Commission for the period 2008 - 2012. In two decisions of 2007, the Commission found those NAPs to be incompatible with a number of criteria in the Directive and decided that it was necessary to reduce, by 26.7% and 47.8% respectively the total annual quantities of emission allowances based on the amounts those two Member States proposed to issue¹⁶.

To be exact, the Commission rejected the NAPs from the two Member States on the basis that their assessment data of emission quantities, on which emissions allowances were determined, did not match the Commission's own set of data. The Commission replaced the data contained in the Polish and Estonian NAPs by its 'own data'

¹⁶ European Commission Legal Services, *Summaries of Important Judgements*, http://ec.europa.eu/dgs/legal_service/arrets/07t183_en.pdf

obtained by its own method of evaluation of the Member States' national allocation plans, and by fixing the maximum level for the total quantity of allowances to be allocated by the Republic of Poland/Estonia¹⁷.

The Poland and Estonia core claim was that the Commission overstepped its function and rather than just reviewing the NAPs, it replaced their own emission measurements and thereby determined the emissions cap for the Member States.

The Commission, on the other hand, focused on the impacts of the NAPs on the emission market and the viability of the ETS regime to control the total level of emissions allowances in determining its regulatory competence to review emissions quantitative data in the NAPs under article 9 of the Directive.

According to the General Court, in acting like that, «the Commission modified the allocation of powers between the Commission and the Member States, as provided for in Articles 9 and 11 of Directive 2003/87 and exceeded its powers»¹⁸.

The Court stated that the Directive does not lay down a particular method for the drawing up of the NAP or the fixing of the total quantity of greenhouse gas emission allowances to be allocated. Indeed on the contrary, it expressly provides that the Member States must declare the total quantity of allowances to be allocated taking into account, inter alia, the national energy policy and the national climate change program.

Member States thus have a certain margin of maneuver in transposing Directive 2003/87 and, therefore, in choosing the

¹⁷ BOGOJEVIC S., *Emissions Trading Schemes: Markets, States and the Law*, 126 Hart Publishing 2013 at 127

¹⁸ Case T 263/07 *Estonia v. Commission* 2009 ECR II-3463; Case T 183/07 *Poland v. Commission* 2009 ECR II-3395

measures they consider most appropriate for achieving the objective laid down by that directive¹⁹.

The Court stated that any differences between the choices of the Member States are an expression of their margin for maneuver, which the Commission must respect in the context of its conformity review.

The Commission responded arguing that the Court «disregarded the extent of the Commission's competences concerning the analysis of national allocation plans as they result from Article 9(3) of Directive 2003/87. By classifying the Commission's review power as 'severely limited', it restricted itself to the literal content of the first sentence of that provision without taking into account the provision as a whole, the objective of the directive or the principle of equality of treatment».

In the appeal, the ECJ upheld the General's Court decisions and stated that: «only the Member States have the power, first, to draw up their national allocation plan and, second, to take final decisions fixing inter alia the total quantity of greenhouse gas emission allowances to be allocated. When exercising their competences, they have a certain margin for maneuver. The Commission is entitled, under Article 9(3) of Directive 2003/87, first, to verify the conformity of the national allocation plans with the criteria set out in the Directive and, second, to reject the plans if they are incompatible with those criteria and provisions. The Commission's review power is therefore limited to a review of legality».²⁰

According to the ECJ, «Directive 2003/87 determines clearly and explicitly, in Article 9(1) and (3) and in Article 11(2), the allocation of powers between the Commission and the Member States

¹⁹ Id

²⁰ Case C 505/09 Commission v. Estonia ECR I 8065; Case C 504/09 Commission v. Poland ECR I 8064

for the drawing-up, review and implementation of the national allocation plans, for the purposes of implementing a trading scheme for greenhouse gas emission allowances. With regard to the substantive limits of that power, the Commission is empowered only to verify the conformity of the measures taken by the Member State with the criteria set out in Annex III and the provisions of Article 10 of the Directive»²¹.

The Court stated that the Directive expressly provided that the Member States must lay down the total quantity of allowances to be allocated taking into account, *inter alia*, the national energy policy and the national climate change program. «The Member States thus [had] a certain margin for manoeuvre in transposing Directive 2003/87 and, therefore, in choosing the measures which they consider most appropriate to achieve the objective laid down by that directive»²². The Court stated that any differences between the choices of the Member States were an expression of their margin for manoeuvre, which the Commission must respect in the context of its conformity review.

Furthermore, the Court rejected the argument raised by the Commission that, in the interests of procedural economy, it should be given the right to fix the maximum quantity of greenhouse gas emission allowances to be allocated.

«To hold that the Commission may fix such a maximum quantity would be tantamount to conferring on that institution powers which lacked any legal basis».²³

In that context, the ECJ also held that the Commission acted properly when it stated that «it would not reject amendments to that

²¹ Id

²² Id

²³ Id

plan where they were in conformity with the proposals and recommendations made in that rejection decision. Such a procedure would be in conformity with the principle of loyal cooperation between the Member States and the Commission and would also meet the objectives of procedural economy»²⁴.

The ECJ held that the General Court was right to annul those decisions in their entirety. Thus, the Commission's decision against the two Member States was annulled.

4.2.2 US Clean Power Plan: Introduction

Since Obama's Clean Power Plan was released in August 2015, a coalition of multiple US states, corporations, and industrial groups has filed petitions in the US Court of Appeals for the District of Columbia (DC) Circuit to review the plan.

«At the same time, 18 states, several US cities, and multiple environmental groups also filed motions in support of the CPP»²⁵.

The case ended up in the US Supreme Court after the DC Circuit Court refused to put the plan on hold because petitioners «have not satisfied the stringent requirements for a stay pending court review»²⁶. The main complaint of such petitioners States as West Virginia, with a significant coal industry and Republican-dominated government, was (and is) that the EPA regulation imposes stringent obligations that violates state sovereignty.

«Critics of the Plan argue that, in its pursuit of substantial emission reductions, the Environmental Protection Agency

²⁴ Id

²⁵ DEL MONTE M. and LEBLANC L., *US Supreme Court puts Clean Power Plan on hold*, European Parliamentary Research Service, February 2016 [http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA\(2016\)577989_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA(2016)577989_EN.pdf)

²⁶ Order United States Court of Appeal DC Circ. *West Virginia v. United States Environmental Protection Agency*, 15-1363

dramatically overstepped its authority»²⁷ under the Clean Air Act²⁸ and invaded regulatory arenas— intrastate electricity markets—that have traditionally been managed by the states.²⁹ They accuse the agency of attempting to «fundamentally restructure the nation's electricity industry» and position itself as «the nation's energy czar».³⁰

It is certainly true that EPA's regulatory authority over existing power plants is not boundless. In particular, the Clean Power Plan complements EPA's Section 111(b) regulation of new power plants with regulation under Clean Air Act Section 111(d) of existing power plants. «Indeed, Section 111 of the Clean Air Act places several important limits on the agency's discretion to craft emission guidelines for power plants, such as forbidding the agency from imposing excessive costs, requiring it to consider how its guidelines might affect the nation's energy supply, and requiring it to base guidelines on reduction techniques that have been adequately demonstrated.»³¹

In particular, the states argued that the EPA misinterpreted an unclear provision of the CAA in «order to fundamentally restructure energy production»³². The states claim that «by distorting the law in

²⁷ REVESZ R. L., GRAB D.A., LIENKE J., *Bounded Regulation How the Clean Power Plan Conforms to Statutory Limits on EPA's Authority*, Institute for Policy Integrity, September 2016

²⁸ RUSSELL G., *Business, States Open Legal Fire on EPA's Clean Power Plan Rule*, FoxNews.com (Oct. 26, 2015), <http://www.foxnews.com/politics/2015/10/26/business-states-open-legal-fire-on-epas-clean-power-plan-rule.html> (quoting executive director of the National Federation of Independent Business's Small Business Legal Center).

²⁹ See Opening Br. of Pet'rs on Core Legal Issues 36–41, *West Virginia v. EPA*, No. 15-1363, Doc. No. 1610010 (D.C. Cir. Apr. 22, 2016)

³⁰ SCHERMAN W.S., *EPA Has Designed Its Clean Power Plan to Evade Court Review*, Forbes (Aug. 3, 2015), <http://www.forbes.com/sites/beltway/2015/08/03/epa-has-designed-its-clean-power-plan-to-evade-court-review>.

³¹ REVESZ R. L., GRAB D.A., LIENKE J., *Bounded Regulation How the Clean Power Plan Conforms to Statutory Limits on EPA's Authority*, Institute for Policy Integrity, September 2016 at 1

³² DEL MONTE M. and LEBLANC L., *US Supreme Court puts Clean Power Plan on hold*, European Parliamentary Research Service, February 2016

this way the EPA is actually imposing more stringent restrictions on old plants compared to new ones, as existing sources will need to focus on shifting production entirely»³³.

In their own application to the Supreme Court, electricity-generation and coal-mining companies expressed the view that the regulation would: require the immediate investment of billions of dollars in technically unnecessary – but now mandated – electrical generation infrastructure; precipitate the 'premature closure' of coal plants and mines; contribute in part to the bankruptcy of large coal companies; and prompt restructuring of the entire electricity sector.

Taking these arguments into account, on 9 February 2016, the US Supreme Court halted implementation of the Clean Power Act pending judicial review. There are a few implications on this stay. The first implication about the stay is that this is a temporary hold on the rule's implementation. Therefore, despite the fact the US Supreme Court does not say anything about the EPA Rule's ultimate legality, it still represents the signal of a certain skepticism on the part of at least 5 justices that voted for the stay³⁴. The 5-to-4 vote, with the court's four liberal members dissenting, was unprecedented — the Supreme Court had never granted a request to halt a regulation before review by a federal appeals court³⁵.

The second implication is that this stay seems to insert some tension into the international climate change process. The US committed to cutting GHG emission within the Paris Agreement, and

[http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA\(2016\)577989_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA(2016)577989_EN.pdf), at 2

³³ Id

³⁴ LIPTAK A. and DAVENPORT C., *Supreme Court Deals Blow to Obama's Efforts to Regulate Coal Emissions*, N.Y. Times February 9, 2016

³⁵ POWELL A., *Lazarus looks at Obama emissions plan in post-Scalia court*, Harvard Law Today, March 1, 2016

US did so largely because it believed it was ready to realize the cut through the Clean Power Plan.

This landscape is complicated by Justice Scalia's recent death (his vote was the 5th one): the sharply divided vote from the justices on the stay order means that there are currently four justices skeptical of the legality of the Clean Power Plan and four justices who are not. If that alignment persists after full briefing and oral argument, the result would be a 4-to-4 tie, affirming whatever the lower court ruled³⁶.

Furthermore, it is hard to decide whether the states should stop planning for electricity sector regulation by preparing their SIPs. According to Prof. Revesz: «There's no reason to believe deadlines will be tolled in the way opponents of the plan have said». However, «if the high court reviews and upholds the rule, the U.S. Court of Appeals for the D.C. Circuit would likely be responsible for resetting any deadlines that have passed and deciding whether to push back, or toll, future deadlines»³⁷ with reference to the SIPs.

The CPP is now under review by the US Court of Appeals for the DC Circuit, on an expedited schedule with a hearing that was fixed for September 27, 2016³⁸. «First a three-judge panel will review the plan, but once that panel has ruled, the case could be debated before the full Court of Appeals, and then either side might try to move the case to the US Supreme Court»³⁹.

³⁶ *Freeman and Lazarus: Is the President's Climate Plan Unconstitutional?*, Harvard Law Today, March 18, 2015

³⁷ HOLDEN E., *Clean Power Plan: With climate rule on hold, should states worry about deadlines?*, E&E Publishing LLC, March 24, 2016

³⁸ For a report of the oral argument see the EDF website at <http://blogs.edf.org/climate411/2016/09/27/todays-clean-power-plan-oral-argument-a-view-from-inside-the-courthouse/>

³⁹ DEL MONTE M. AND LEBLANC L., *US Supreme Court puts Clean Power Plan on hold*, European Parliamentary Research Service February 2016 at 2

If all these different steps will be completed, it is likely that implementation of the CPP will pass to the next US president, considering that President Obama's term ends in January 2017.

4.2.2.1 The US States Challenge the Environmental Protection Agency

The statements contained in the briefs of US petitioners may be divided into four main arguments.

1. The states are arguing that the EPA misinterpreted section 111 of the Clean Air Act «by requiring that States adopt standards of performance that are not 'for', and cannot be 'applied' to, individual existing fossil fuel-fired electric generating units, but that instead require the owners and operators of these facilities to subsidize EPA-preferred facilities». Thus, this argument regards the interpretation of the term 'standard of performance'. In particular, what the states are arguing here is that the EPA by defining the amount of the emission targets for existing fossil fuel power plants, is defining a generation shift which impinges on the energy mix of the state (a state prerogative). Also, they suggest that the targets defined by the EPA are not feasible because EPA requires the States to adopt standards of performance «that are not based on technological or operational processes that continuously limit the rate at which the regulated pollutant is emitted by regulated sources, but instead require nonperformance by sources». In addition, EPA is demanding that States adopt standards for existing units that are more stringent even than those EPA contemporaneously established under section 111(b) for the best new state-of-the-art units.

2. The states argue that the «Rule exceeds EPA's authority under CAA section 111(d) by requiring States to adopt standards of performance for sources in source categories that are already regulated under section 112». The plaintiffs here are challenging the authority of

EPA to set standards, which is, according to the plaintiffs, precluded because the power plants are already regulated by another program for their hazardous pollutants, so they cannot be regulated again. This argument is based in particular on the so called 'inconsistent amendments' argument: House language in the 1990 CAA amendments, which arguably bars regulation of CO₂ from fossil fuel-fired power plants because they are already subject to limits on hazardous air pollutants (HAPs), should prevail over more permissive Senate language also enacted in the 1990 CAA amendments.

3. In addition the states complain that the Rule «abrogates authority granted to the States under section 111(d) by forbidding States from setting performance standards less stringent than the Rule's national performance rates, and failing to authorize States to take into consideration, among other factors, the remaining useful life of an existing source». Here, the complaints are especially related to the State Plans. Under the Rule, States must submit plans establishing CO₂ emissions standards for existing coal-fired and gas-fired generating units that will meet EPA's emissions performance rates. Alternatively, the Rule gives EPA the authority «to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan». In this case the states are arguing that the CPP overreaches by considering factors other than technological or operational standards for individual power plants (beyond the fenceline argument).

4. Finally the states are raising a constitutional argument saying that «the Rule violates rights reserved to the States by the United States Constitution by reordering the mix of energy generation in such a way that States will have no choice but to carry out EPA's preferred energy policy, regardless of whether the Rule is implemented through a state or federal plan». In this sense the states say that among the powers the Constitution denies to the federal government is the power

to «use the States as implements of regulation»—in other words, to command them to carry out federal law.

4.2.3 Substantial and Procedural Legal Issues in the Analyzed litigations

The main similarity between the two litigations here examined is that the underlying issue is a dispute related to the allocation of powers between a central authority (the EU Commission and the US EPA) and the EU Member States/US states. In fact, in both the litigations the Member States and the states are claiming that the central authority exceeded its powers.

However, the main difference is that, in the EU context none of the Member States challenged the validity of the EU ETS Directive. The Member States challenged the abuse of power of the Commission under the EU ETS Directive with reference to its rejection of their National Allocation Plans and only 5 out of 28 Member States brought suits against the EU Commission.

On the contrary, in the US, 29 states out of 50 are challenging (along with the petitioning industries) the validity of the EPA's Rule, and insisting that EPA does not legally have the power to issue and implement the Rule itself. According to the petitioners, the EPA does not have the authority to set standards for existing power plants to reduce their emissions. The states are basing this challenge on both the Clean Air Act and the US Constitution.

Regarding the Clean Air Act, the states argue that the agency is precluded from regulating existing power plants under the provision EPA is using (section 111 (d)). As seen above, three arguments appear to be raised: (1) the argument regarding interpretation of the term standards of performance (2) the inconsistent amendments argument and (3) the beyond the fenceline argument.

As for the US Constitution, the states argue that the CPP violates the Tenth Amendment by coercing states into creating their own CO2 reduction plans or else risking the federal government's imposing its own plan.

Thus, the main difference between the two litigations is the absence of a challenge on the validity of the EU Directive on the one hand and the challenge of the validity of the Clean Power Plan Rule on the other.

Several points can be raised from what is stated above.

First, these described litigations represent the prototypes of climate change litigations that usually occur in the EU and the US. With reference to the US, as Markell and Ruhl have observed «the overwhelming majority of climate change litigation matters are concentrated in claims involving substantive challenges to agency permits and rules and in claims challenging agency environmental impact assessments. This regulatory context for climate change litigation—what one observer has likened to siege warfare with large armies that battle for decades—far overwhelms public nuisance and other forms of litigation in terms of volume and scope». With reference to the EU, the ETS NAPs issues represent 80% of the climate change litigation occurred in the Union.

Second, climate change litigation may represent a regulatory tool in the climate change governance system as a developer of regulation. However, it seems that there is no clear agreement among legal scholars on the U.S. climate change litigation's role in the development of climate change policy. In this regard, some scholars argue that climate change litigation has had an impact in shaping regulation and the most prominent example of a regulatory pathway for climate change litigation is the mandate established via the US Supreme Court's interpretation of the federal Clean Air Act in

Massachusetts v. EPA.⁴⁰ As discussed in the previous chapter, this decision found that EPA had statutory authority under the Clean Air Act to introduce regulations limiting greenhouse gas emissions from new motor vehicles. EPA has since engaged in a number of rulemaking exercises in response to this decision.⁴¹

However, other scholars sustain that in the USA the courts did not play, until now, an innovative role. According to the study of Markell and Ruhl⁴² American jurisprudence on climate change has not been innovative in contributing to climate change policy. Their assessment is that, «climate change litigation looks about the same as litigation over any other regulatory question that has ground its way through the courts...in terms of actual litigation outcomes and aftermaths and of judicial tone and temperament, climate change in the courts has been a story of business as usual.»⁴³ In this regard, these scholars claim that the renowned *Massachusetts v. Environmental Protection Agency* was not as innovative as depicted. The case, they say, «was about routine statutory interpretation. On the merits of whether EPA has authority to regulate GHGs under the CAA, the

⁴⁰ The *Massachusetts v. EPA* case alone generated a massive number of law review articles, as noted in Fisher E., Climate Change Litigation, Obsession and Expertise: Reflecting on the Scholarly Response to *Massachusetts v. EPA* in 35(3) *L. Policy* 236, 2013. Of the many examples, see, particularly, FREEMAN J. and VERMULE A., *Massachusetts v. EPA: From Politics to Expertise*, *Supreme Court Rev.* 51, 2007. OSOFSKY H.M., *The Intersection of Scale, Science, and Law in Massachusetts v. EPA* in BURNS W.G.C. and OSOFSKY H.M., *Adjudicating Climate Change: State, National, and International Approaches*, Cambridge University Press, New York, 129, 2009. WATTS K.A. and WILDERMUTH A.J., *Massachusetts v. EPA: Breaking New Ground on Issues Other Than Global Warming*, in 102 *Nw. Univ. L. Rev.* 1029, 2008. See also in *Re Otter Tail Power Company* 744 N.W.2d 594, 603 (S.D. 2008)

⁴¹ In particular a regulation on motor vehicle emissions, establishing greenhouse gas emissions standards for light- and heavy-duty vehicles. For an analysis on this Rule and other early regulation of the EPA see Martel J., Jaros C., Fayne Z. and Sahay S., *Clean Air Regulation*, in Freeman J. and Gerrard M. B., *Global Climate Change and US Law*, ABA Publishing, 2014

⁴² MARKELL D. AND RUHL J. B., *An Empirical Assessment of Climate Change In The Courts: A New Jurisprudence Or Business As Usual?*, 60 *Fla. L. Rev.* 15 (2012)

⁴³ Id at

majority approached the statutory interpretation question with sterile, narrowly confined precision, devoid of commentary on climate change»⁴⁴.

On the EU level, scholars agree that EU litigation is not concerned with the impact of climate change is not impact-oriented and is marked by a technical character dealing with technical details of the rule of law. They sustain that the main focus of European litigation has been the boundaries of EU regulatory competences already exercised, rather than an interest in mobilizing climate change action. That is, they believe that climate change in the EU has not an impact on climate change regulation.

The EU ETS, for example, has faced very few challenges; these challenges only pertained to certain sectors or countries and did not question the validity of the scheme as a whole. From the previous analysis of EU litigation, it would seem that the main legal dilemma in EU ETS jurisprudence has been related to restoring the correct allocation of powers between the parties. The main focus of both the General Court and the ECJ was on the rule of law and its correct application. In fact the ECJ definitely stated: «Directive 2003/87 determines clearly and explicitly, in Article 9(1) and (3) and in Article 11(2), the allocation of powers between the Commission and the Member States for the drawing-up, review and implementation of the national allocation plans, for the purposes of implementing a trading scheme for greenhouse gas emission allowances. With regard to the substantive limits of that power, the Commission is empowered only to verify the conformity of the measures taken by the Member State

⁴⁴Id at 77

with the criteria set out in Annex III and the provisions of Article 10 of the Directive». ⁴⁵

Despite the fact that the Commission tried to focus on the impact of the NAPs on emission markets and the viability of the ETS regime in determining its regulatory competence to review emission quantitative data, both the General Court and the ECJ defined a different role of the Commission in the emission trading scheme. The role of the Commission was shaped, by both courts, through reference to the rule of law in allocating its powers. The focus of the EU courts on respect for the rule of law testifies to the importance of this concept in the civil law legal culture ⁴⁶.

In the light of the above, scholars asserted that the ECJ did not play any innovative role at all in shaping the climate change policy framework.

While I can agree with the general view according to which American and European litigation do not always have a direct impact on climate change regulation, I have to disagree with the view that sustains no impact at all. Because, in any event, climate change litigation has been indirectly promotive of mitigation regulation. Both the EU ETS Directive and the Clean Power Plan are a good example of this. Even though the ECJ upheld the position of the states (Poland and Estonia) and not of the EU Commission, it brought to the Union's attention the fact that the NAPs were not functioning properly and that those problems were escalating to the judicial review level. The next year the Directive was amended eliminating the NAPs and providing for an EU-wide cap defined by the EU Commission.

⁴⁵ Case C 505/09 Commission v. Estonia ECR I 8065; Case C 504/09 Commission v. Poland ECR I 8064

⁴⁶ BOGOJEVIC S., *Emissions Trading Schemes: Markets, States and the Law*, Hart Publishing 2013 at 128

If the DC Circuit upholds the invalidity of the Clean Power Plan Rule, the regulatory work of EPA in tackling climate change will be undermined considering that the old provisions of the Clean Air Act do not provide for GHGs regulation reduction.

Therefore, climate change litigation always has an impact – even if indirect - on climate change regulation and can therefore be seen as a regulatory tool part of the climate change governance system.

Third, there is an interesting difference with regard to the number of climate change litigations in EU and US: the US cases are definitely more than the EU ones.⁴⁷ Why? Mainly because GHG emissions regulations in US have elicited numerous challenges, mostly by industrial groups and environmental groups. This did not happen in the EU because the EU courts found that these groups did not have right of standing (*locus standi*). For example, as mentioned before in the analysis of EU ETS litigation, emissions sources, such as cement producers, brought twelve suits challenging the European Commission's rejection of a NAP fearing that revision of the NAP would result in more stringent emissions limits. None of these challenges were successful because the European Court of Justice (CJEU) found that the plaintiff corporations were not individually affected as required by EU law.

Article III, section 2 of the United States Constitution holds the textual foundation of standing doctrine for American federal courts:

«[t]he judicial Power shall extend to all Cases...[and] Controversies...».⁴⁸

⁴⁷ WILENSKY M. supra note 8 at Executive Summary I. See also Arnold and Porter LLP, "U.S. Climate Change Litigation Chart at <http://www.arnoldporter.com/~media/files/climatechange-chemicallegislation/climatechangelitigationchart.pdf>

⁴⁸ U.S. Const. Article III, § 2, cl.1.

The current iteration of American standing doctrine requires satisfaction by a three-part test. The test is derived from Justice O'Connor's opinion in *Allen v. Wright*:

«A plaintiff must allege personal injury fairly traceable to the defendant's allegedly unlawful conduct and likely to be redressed by the requested relief».⁴⁹

Broken down into its components, the Court's opinion in *Allen* requires every plaintiff to show 1) an injury-in-fact, 2) the defendant(s) caused the plaintiff's harm, and 3) the redress sought will redress the plaintiff's injury. The court has to examine each prong in turn⁵⁰.

When US case law refers to «a plaintiff» it refers both to a state and a person. Thus, a person or citizen groups or a state all face the same difficulties in proving their standing. However, in environmental law, the state's sovereignty represents an inherent stake that an individual resident does not necessarily possess. Therefore, the injury-in-fact prong is easier to satisfy. Apart from that, though, there are no differences in the right of standing.

Like American standing doctrine European Union standing doctrine has a textual basis in one of the European Union treaties. Article 263(4) of the Treaty on the Functioning of the European Union states:

«Any natural or legal person may, under the conditions laid down in the first and second paragraphs, institute proceedings against an act addressed to that person or which is of direct and individual concern to them, and against a regulatory

⁴⁹ *Allen v. Wright*, 468 U.S. 737, 751 (1984).

⁵⁰ See also *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992) and CASS R. SUNSTEIN, *What's Standing After Lujan? Of Citizen Suits, "Injuries," and Article III*, 91 Mich. L. Rev. 163, 179-181 (1992) (examining the history of standing doctrine).

act which is of direct concern to them and does not entail implementing measures».⁵¹

«Also like American standing doctrine, the mere words of the founding document provide little illumination if the words are to have actual effect. Here, the words 'direct and individual concern' create the rule in European Union courts»⁵². European standing is a two-part test: 1) direct concern and 2) individual concern. Direct concern requires that the contested Community Act directly affect the individual's legal situation.⁵³ The individual concern requirement obliges applicants to show that the decision affects them by reason of certain attributes which are peculiar to them or by reason of circumstances in which they are differentiated from all other persons and which by virtue of these factors distinguish them individually.⁵⁴

However, while American states are subject to the standing rules as any other plaintiff, European Union institutions and member states have different set of standing rules. European Union institutions and member states are called privileged applicants. They enjoy unfettered access to Union courts and are not subject to the direct and individual concern requirements placed on «non-privileged applicants».⁵⁵ Article 263(2) of the Treaty on the Functioning of the European Union holds the textual foundation for the privileged applicants:

« [The Court of Justice of the European Union] shall for this purpose (judicial review) have jurisdiction in actions brought by a Member State, the European Parliament, the Council or the Commission on

⁵¹ Treaty on the Functioning of the European Union, art. 263, Dec. 13, 2007.

⁵² KEHOE R., *The Fight for Access: Comparing and Contrasting Standing Doctrine in the United States and the European Union, with a Focus on Environmental Litigation*, www.elizabethburleson.com

⁵³ LEWIS X., *Standing of Private Plaintiffs to Annul Generally Applicable European Community Measures: If the System is Broken, where Should it be Fixed?*, in 30 *Fordham Int'l. L.J.* 1496, 2007

⁵⁴ Case 25/62, *Plaumann v. Commission*, 1963 ECR 95

⁵⁵ *Id supra* note 305 at 1500-06

grounds of lack of competence, infringement of an essential procedural requirement, infringement of the Treaties or of any rule of law relating to their application, or misuse of powers».⁵⁶

European Union standing doctrine presents serious obstacles to participation in the judicial law and policy making process within the Union. The direct and individual concern test is extremely stringent. Actually, in the context of environmental litigation, the direct and individual concern requirement is nothing less than fatal.

It was thought that something might change in standing issues in environmental matters with the influence of the Aarhus Convention⁵⁷, but it really has not. Article 9(2) of the Convention provides that the contracting parties should ensure that members of the public concerned having a sufficient interest or, alternatively, maintaining impairment of a right (where the administrative procedural law of a party requires this as a precondition), have access to a review procedure to challenge the substantive and procedural legality of decisions concerning activities subject to the public participation requirements of Article 6 of the Convention itself.

However, article 9(2) also states that « [w]hat constitutes a sufficient interest and impairment of a right shall be determined in accordance with the requirements of national law...».

Furthermore, Article 9(3) provides that parties are obliged to provide for wide access of the members of the public to review procedures for challenging the legality of decisions affecting the

⁵⁶ Treaty on the Functioning of the European Union, art. 263, Dec. 13, 2007.

⁵⁷ The Aarhus Convention is an international instrument dealing with issues of standing in environmental matters, in the EU legal order. The Aarhus Convention¹³⁵ was adopted by the European Community on 17 February 2005 by Decision 2005/370/EC¹³⁶

environment⁵⁸. To apply the provisions of the Aarhus Convention to EU institutions and bodies, the European Community adopted Regulation No 1367/2006.⁵⁹

European courts have had the opportunity to comment upon the compliance of Article 263(4) TFEU with Article 9 of the Aarhus Convention, and they have invariably come to the conclusion that this international instrument, and the transposing Aarhus Regulation, did not require any change in the Plaumann interpretation of the criterion of individual concern. According to the Plaumann test, an act of general application has to affect «[members of the public] by reason of certain attributes peculiar to them, or by reason of a factual situation which differentiates them from all other persons and distinguishes them individually in the same way as the addressee of a decision»⁶⁰.

The EU Courts have arrived at the above mentioned conclusion because Article 9(2) of the Aarhus Convention refers expressly to «the requirements of national law...» for the contracting parties, and notes that those requirements are laid down in Article 263 TFEU complemented by its Plaumann interpretation. Thus, a claimant who seeks judicial review against a decision taken in an internal review procedure will have to meet the criteria of individual concern, as laid

⁵⁸ [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET\(2012\)462478_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET(2012)462478_EN.pdf)

⁵⁹ Regulation 1367/2006/EC of 25 September 2006 of the European Parliament and of the Council on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision making and Access to Justice in Environmental Matters to Community Institutions and Bodies [2006] OJ L 264/13. The Regulation entered into force on 28 September 2006 and started to apply from 17 July 2007.

⁶⁰ Case C-25/62 Plaumann & Co. v Commission of the European Economic Community [1963] ECR 95. See also H. C. H. Hofmann, G. C. Rowe, A. H. Turk, *Administrative Law and Policy in the European Union*, Oxford Press, 2011, 826

down in Article 263(4) TFEU⁶¹ as interpreted by the ECJ in Plaumann⁶².

This interpretation is so strict as to bar in particular all environmental members of the public from challenging acts relating to the environment, which are not in compliance with European law⁶³. In fact, applying the Plaumann test to environmental and health issues means that, in effect, no members of the public will ever be able to challenge an environmental measure before the ECJ.

Then too, with reference to climate change in particular – but also environmental law in general – the changes brought by the Lisbon Treaty to the wording of article 263 (4) have complicated a possible judicial review. In fact, article 263(4) states that:

«Any natural or legal person may, under the conditions laid down in the first and second paragraphs, institute proceedings against an act addressed to that person or which is of direct and individual concern to them, and against a regulatory act which is of direct concern to them and does not entail implementing measures».

⁶¹ The General Court has declared Article 10(1) of the Aarhus Regulation invalid on the grounds of its violation of Article 9(3) of the Aarhus Convention. According to the Court, a review procedure must be available against any action of the administration falling under the scope of the Convention, including measures of a general nature, like regulations. However, Article 10 (1) limits the review procedure to measures of individual scope. This judgment truly will widen the scope and application of Article 10 of the Aarhus Regulation and, therefore, access to internal review procedures. However, it is not likely that it will widen locus standi, especially for NGOs before EU courts,

⁶² ELIANTONIO M., BACKES C., VAN RHEE C.H., SPRONKEN T., BERLEE A., *Standing up for your right(s) in Europe A Comparative study on Legal Standing (Locus Standi) before the EU and Member States' Courts*, Directorate General For Internal Policies, 2012 at [http://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET\(2012\)462478_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET(2012)462478_EN.pdf)

⁶³ For a quite harsh criticism of this instrument, see JANS J., *Did Baron von Munchhausen ever Visit Aarhus? Some Critical Remarks on the Proposal for a Regulation on the Application of the Provisions of the Aarhus Convention to EC Institutions and Bodies* in MACRORY R., *Reflections on 30 Years of EU Environmental Law: A High Level of Protection?* Europa Law Publishing 2006, 474

As I mentioned in Chapter 2 of this thesis, the majority of climate change acts are directives that entail implementing measures. Thus, according to this provision, no judicial proceeding can be instituted. In conclusion, one could argue that the new wording of Article 263 TFEU will affect almost no measures and actions taken by EU institutions or bodies.

Hence, according to the majority of scholars, there is a violation of Article 9 of the Aarhus Convention.

Fourth, the challenge to the validity of the regulation as a whole, in the US context, is of no small importance and actually is representative of the hostility of the US to defining a cohesive climate change action.

This difference between the two litigations reflect: (i) the great controversy over regulating GHG reduction in the US and (ii) the polarized nature of the political debate on climate change and the reduction of GHG emissions in the US compared to the EU context.

With reference to the controversy in regulating GHG reduction «with supranational leadership guiding climate strategies at multiple governance levels, Europe benefits from the existence of mechanisms facilitating communication, cooperation, and consensus building»⁶⁴ among the Member States. The EU is able to set binding performance requirements, and to «accommodate varying social and economic needs all while presenting a united front in international dialogue»⁶⁵. In contrast, in the absence of a cohesive federal leadership, the US is «hamstrung domestically and internationally»⁶⁶. The lack of such cohesive federal leadership in implementing coordinated nationwide

⁶⁴ CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010

⁶⁵ Id

⁶⁶ Id

initiatives to mitigate climate change causes this persistent blockage of climate change action.

With reference to the political debate, it is not easy to detect the reasons for the absence of Congressional climate change legislation. I believe that this is mainly due to the lack of awareness in US citizens of global environmental issues as compared to European citizens, which is reflected in the political groups.

«As a whole, the American population and hence its politicians are becoming less concerned with climate change. While the United States has a strong environmental community, it is less radical and somewhat less influential than its European counterparts»⁶⁷.

According to a survey conducted by Yale University⁶⁸, only a small minority of Americans has thought a «great deal about how global warming might affect people's health». Asked how often, if ever, before taking this survey they had thought about how global warming might affect people's health : only one in 10 Americans said they had given the issue a «great deal» of thought. Only about two in

⁶⁷ ANDERSON O.L., *Shale Revolution Or Evolution: Opportunities And Challenges For Europe*, in 4 *Global Bus. L. Rev.* 1 2013. IMPINNA M.A., *Shale Gas: Present and Future Perspective in the US and EU*, in Vol 6 issue 3 *European Energy Journal*, 2016. VON STORCH H. and KRAUSS W., *Culture Contributes to Perceptions of Climate Change*, Nieman Reports, Winter 2005, at www.nieman.harvard.edu/reports/article/100600/Culture-Contributes-to-Perceptions-of-Climate-Change.aspx. LEISEROWITZ A. et al., *Climate Change in the American Mind: Americans Global Warming Beliefs and Attitudes in November 2013*, Yale Project on Climate Change Communication and George Mason University Center for Climate Change Communication, New Haven, CT at www.environment.yale.edu/climate-communication/files/Climate-Beliefs-November-2013.pdf. See also RAY J. and PUGLIESE A., *Worldwide, Blame for Climate Change Falls on Humans: Americans among Least Likely to Attribute to Human Causes*, Gallup, 22 April 2011

⁶⁸ Yale University, *Public Perceptions of the Health Consequences of Global Warming*, October 2013 <http://climatecommunication.yale.edu/publications/public-perceptions-of-the-health-consequences-of-global-warming/> See also LEISEROWITZ A. et al., *Extreme Weather, Climate and Preparedness in the American Mind*, 2013, Yale Project on Climate Change Communication, New Haven).

10 (22%) said they had thought about it a «moderate amount» and six in 10 (61%) said they had given the issue little or no thought⁶⁹.

On the contrary, according to a survey conducted in 2011⁷⁰ «more than two Europeans in three see climate change as a very serious problem and almost 80% consider that taking action to combat it can boost the economy and jobs»⁷¹.

Finally related to this lack of citizens awareness in the US, is the differing cultural perception of risk and the impact of risk perception on policy-making. Some scholars have suggested that, «beginning in the 1990s, the European Union—as compared to the United States—has become a more risk adverse society, especially in relation to consumer and environmental issues. This trend is reflected in the European Union's long term environmental policies, in particular its climate change strategy. Differing perceptions of long- and inter-generational risk are reflected in the United States and the European Union's climate change policies»⁷² and in fact, the specific interpretation of the precautionary principle reflects the climate change action implemented so far in both countries.

A final fifth point that can be raised is that climate change litigation plays a role in shaping social norms⁷³. In fact, case law can help increase awareness of the problems that climate change is

⁶⁹ Id

⁷⁰ Special Eurobarometer 372: Climate change

⁷¹ http://europa.eu/rapid/press-release_IP-11-1162_en.htm. See also Zorzoli G.B., Cambiamenti Climatici e Condizionamenti Culturali, in Ec. Fonti energia e ambiente, 2010 n. 1, 49 et sub.

⁷² CARLARNE C.P., *Climate change law and policy: EU and US approaches*, Oxford University Press, 2010

⁷³ BRULLE R.J., CARMICHAEL J. and JENKINS J.C., *Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010* in 114(2) *Climatic Change* 169, 2012. See also VERCHICK R., *Climate, Culture and Cognition*, October 30, 2014, SSRN, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2516887 (discussing the need for climate action to resonate with people's values and cultural world views in order to achieve progress).

causing. Climate change litigation – whether successful or not – has an important indirect influence on the regulatory landscape through the role it plays in shaping public perception of climate change⁷⁴. From America's largest newspapers - including the New York Times, USA Today, and the Los Angeles Times - to some of the smallest U.S. dailies – such as the Missoulian, the Anniston Star, and the Battle Creek Enquirer – all are discussing the Obama Clean Power Plan.

⁷⁴ KOLBERT E., *Watching Sandy, Ignoring Climate Change*, in *New Yorker*, Oct. 29, 2012 at, www.newyorker.com/online/blogs/newsdesk/2012/10/watching-hurricanesandy-ignoring-climate-change.html. *Federal Government Sets Uniform Flood Risk Reduction Standard for Sandy Rebuilding Projects*, Hurricane Sandy Rebuilding Task Force, U.S. Dept. of Hous. and Urban Dev. Apr. 4, 2013 at <http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding/FRRS>. BRYNE J.P. and GRANNIS J., *Coastal Retreat Measures*, in GERRARD M.B. and KUH K.F., *The Law of Adaptation to Climate Change: US and International Aspects*, American Bar Association, New York), 267, 2012. OWEN D., *Climate Change and Environmental Assessment Law* in 33 *Colum. J. Envtl L.* 57, 2008. PAINTER J., *Climate Change in the Media: Reporting Risk and Uncertainty*, London: IB. Tauris, 2013. MAXWELL B., *Who Speaks for the Climate: Making Sense on Media Reporting on Climate Change* New York: Cambridge University Press, 2011. MAXWELL T. B. and BOYKOFF J.M., *Balance as bias: global warming and the US prestige press* in 14 *Global Environmental Change* 125, 2004. BAILEY A., *How Grammatical Choice Shapes Media Representations of Climate (Un)certainty*, 8(2) *Environmental Communication* 197, 2014. WHITMARSH, L., LORENZONI I., O'NEILL S., *Engaging the Public with Climate Change : Behaviour Change and Communication*, Rutledge 2012. KOPICKI A., *Is Global Warming Real? Most Americans Say Yes*, *New York Times*, June 1, 2014 SUNSTEIN C.R., *On the Divergent American Reactions to Terrorism and Climate Change*, in 107 *Columbia L. Rev.* 503, 2004. BRODER J.M., *Climate Bill is Threatened by Senators*, *N.Y. Times*, Aug. 6, 2009 at http://www.nytimes.com/2009/08/07/us/politics/07climate.html?_r=1&. 3 LING K. and GEMAN B., *Senate Dems Wrestle over Carbon Market Regs, Oversight in Climate Bill*, *N.Y. Times*, July 24, 2009 at <http://www.nytimes.com/cwire/2009/07/24/24climatewire-senate-dems-wrestle-over-carbon-market-regs-91367.html?pagewanted=all>. EILPERIN J., *Manchin Lobbying White House on 'Totally Unreasonable' Coal Standards*, *Wash. Post Politics Blog*, Aug. 1, 2013 at <http://www.washingtonpost.com/blogs/post-politics/wp/2013/08/01/manchin-lobbying-white-house-ontotally-unreasonable-coal-standards/>. WALSH B., *Politics: The State of the Union is All about Energy – Not Climate*, *Time* Jan. 5, 2011 at <http://science.time.com/2011/01/25/politics-the-state-of-the-union-is-allabout-energy%E2%80%94not-climate/> BLOOMBERG M.R., *A Vote for a President to Lead on Climate Change*, *Bloomberg*, Nov. 1, 2012 at <http://www.bloomberg.com/news/2012-11-01/a-vote-for-a-president-to-lead-onclimate-change.html> (noting that “President Obama has taken major steps to reduce our carbon consumption” and “sees climate change as an urgent problem that threatens our planet”).

Chapter 5.

GLOBAL REGULATION OF CLIMATE CHANGE

TABLE OF CONTENTS: 5.1 Introduction: Climate Change and Global Administrative Law. - 5.2 The UNFCCC: Climate Change Global Regulator. - 5.3 The Paris Agreement. - 5.3.1 Transparency as a Legal Standard of Global Administrative Law in the Paris Agreement.

5.1 Introduction: Climate Change and Global Administrative Law

Climate change represents a problem of global dimension. Despite the fact that, as demonstrated in the previous chapters, climate change first requires local action (national regulation), it is also an issue that afterwards requires global regulation. To recall the image of the Roman aqueduct proposed in chapter 1, each arch, representing national regulation, relies on the integrity of all the other arches to hold up the larger system: global regulation. Furthermore, as specified in the first chapter of this thesis, a stable climate has been identified as a global public good. The emergence of a global public good was one of the causes of the expansion of global law's material scope, giving rise to the need to deal with it at global level¹. «This progressively led to the establishment of a set of international norms for the protection of a truly global public good»² such as climate change.

Tackling climate change at the global level, requires a global regulator with regulatory functions. The growth of regulatory functions at global level determines the growth of administrative

¹ NAPOLITANO G., *Les biens publics et les «tragédies de l'intérêt commun»*, in *Droit administratif*, 2007, p. 5 ss.

² CASINI L., *The Expansion of the Material Scope of Global Law*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016, 30

functions.³ So, if, as analyzed before, national climate change regulation is a matter for the so-called regulatory or administrative state⁴, global climate change regulation is a matter for the global regulatory state. The concept of the global regulatory state or 'global regulatory regime' was adapted within the field of legal analysis of the global institutions that hold regulatory powers. In particular, «the studies on 'Global Administrative Law' (GAL)⁵ played a primary role in the conceptualization of many of the decisions that constitute what is known as global governance in terms of 'administrative regulation'⁶. The emergence of 'global administrative regulation' has been demonstrated 'by the rapid growth of international and transnational regulatory regimes with administrative components and

³ KRISCH N. AND KINGSBURY B., *Introduction: Global Governance and Global Administrative Law in International Legal Order* in 17 *European Journal of International Law* 1, 2006.

⁴ WALDO D., *The Administrative State: A Study of the Political Theory of American Public Administration*, Ronald Press Company 1948; revised edn Holmes & Meier 1984.

⁵ On GAL in general, see KINGSBURY B, KRISCH N. and STEWART R. B., *The Emergence of Global Administrative Law* in 68(3-4) *Law and Contemporary Problems* 20, 2005. KINNEY E.D., *The Emerging Field of International Administrative Law: Its Content and Potential* in 54(1) *Administrative Law Review* 415, 2002. CHIMNI B.S., *Co-Option and Resistance: Two Faces of Global Administrative Law* in 37(4) *Journal of International Law and Politics* 799, 2005. HARLOW C., *Global Administrative Law: The Quest for Principles and Values* in 17(1) *European Journal of International Law* 187, 2006. VON BOGDANDY A., WOLFRUM R., VON BERNSTORFF J., DANN P. GOLDMANN M. (eds), *The Exercise of Public Authority by International Institutions: Advancing International Institutional Law*, Springer, 2009. KINGSBURY B., *The Concept of "Law" in Global Administrative Law* in 20(1) *European Journal of International Law* 23, 2009. KINGSBURY B. and CASINI L., *Global Administrative Law Dimensions of International Organizations Law*, in in 6(2) *International Organizations Law Review* 326, n 23, 319, 2009. AUBY J.B., *La globalisation, le droit et l'Etat*, 2nd edn, LGDJ, 2010. FERRARESE M.R., *Diritto sconfinato. Inventiva giuridica e spazi nel mondo globale*, Laterza, 2006. CASSESE S., *Il diritto globale*, Einaudi, 2009. CASSESE S., *Il diritto amministrativo globale: una introduzione*, in *Riv. trim. dir. pubbl.*, 331 ss, 2005. STEWART R.B., *Il diritto amministrativo globale*, in *Riv. trim. dir. pubbl.*, 633 ss, 2005. CASSESE S., *Lo spazio giuridico globale*, Roma-Bari, Laterza, 2003.

⁶ SCHEPEL H., *The Constitution of Private Governance. Product Standards in the Regulation of Integrating Markets*, Hart Publishing 2005.

functions'»⁷. The 'regulatory regime' is thus the basic unit of the institutional and administrative global system. According to Professor Sabino Cassese, «it can no longer be said that the world is run by national governments according to the Westphalian model, nor that the rulers of the world are to be found beyond the States, in the global space. It can only be concluded that power is shared between national and supranational rulers».⁸ The climate change example clearly demonstrates this conclusion. To control global warming, the 1997 Kyoto Protocol conferred on the United Nations Framework Convention on Climate Change (UNFCCC) the power to set caps for each nation, which are limits on the amount of pollutants that can be emitted. Countries that emit less than their quota of greenhouse gases can sell emission credits to polluting countries. This system, explained in depth in chapter 3, required the collaboration of global regulators, national governments (acting as co-regulators and implementers) and civil societies (i.e. polluters that buy or sell emission credits). Thus «the overall picture is not hierarchical because there are no multiple layers in which fields are exclusive and interference between two arenas does not exist. Rather, it resembles a marble cake, in which

⁷ BATTINI S., *The proliferation of global regulatory regimes*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016, 45; and See KINGSBURY B., KRISCH N. and STEWART R., *The Emergence of Global Administrative Law*, in 68 *Law and Contemporary Problems* 15, 18, 2005.

⁸ CASSESE S., *Governing the World*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016, 504. On the interactions between the global and the national level, see the works by BATTINI S. *Taking Outsiders' Interests into Account: il diritto amministrativo come Costituzione materiale dell'interdipendenza globale*, in 4 *Rivista trimestrale di diritto pubblico* 927, 2014. ZWART T., ANTHONY G., AUBY J.B. and MORISON J. (eds), *Values in Global Administrative Law*, Hart Publishing 2011, 61–80. *Il diritto amministrativo internazionale*, oggi in 6 *Rivista italiana di diritto pubblico comunitario* 1405, 2010. *Amministrazioni nazionali e controversie globali* (Giuffrè 2007). CASINI L., *Beyond the State: The Emergence of Global Administration* in CASSESE S., CAROTTI B., CASINI L., CAVALIERI E. and MACDONALD E. (eds), *The GAL Casebook* (3rd edition, IRPA–IILJ 2012).

global and national powers mix. The global legal space is not an additional layer with respect to the national level». ⁹

Climate change represents the paradigm of the necessity for global regulation. In fact, «a national interest model of sovereign regulation, where the state is free to regulate to satisfy the balance of diverse constituencies within its borders without regard to external effects, does not take into account these kinds of global 'commons' problems». ¹⁰

In global regulation, States cooperate by signing treaties and establishing the global regulator but, at the same time, States are also obliged to cooperate as implementers and enforcers of global regulations ¹¹. «National governments negotiate, establish global regulators, confer upon them public tasks, and control them, but at the same time are controlled by them, and act as their agents, implementers or enforcers» ¹². This increase of regulatory activities determines an increase of administrative functions and tasks in both national regimes and global regimes ¹³. In fact, international organizations may not necessarily develop their own administration, relying on national administration, or, on the contrary, the more a global administration they develop, the more likely will it be that

⁹ CASSESE S., *Governing the World*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016, 506.

¹⁰ HOWSE R., *The End of the Globalization Debate: a Review Essay* in 121(6) *Harvard Law Review* 1531, 2008. Howse also observes that 'the recognition of the inherent inseparability today of national security and global security illustrates the end of the globalization debate: national security cannot protect people against global insecurity', 1542.

¹¹ In this regards see FERRARA R., *Introduzione al Diritto Amministrativo*, 2014, 207

¹² CASSESE S., *Governing the World*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016, 505.

¹³ KRISCH N. and KINGSBURY B., *Introduction: Global Governance and Global Administrative Law in International Legal Order* in 17 *European Journal of International Law* 1, 2006.

international organizations require States to establish a domestic terminal entrusted with delivering a given function in that country¹⁴.

Richard B. Stewart has classified global regulators into four basic types:

«(1) formal treaty-based international or intergovernmental organizations (such as the WTO, the Security Council, the World Bank, and the **United Nations Framework Convention on Climate Change regime**); (2) transnational networks of domestic regulatory officials (such as the Basel Committee on Banking Supervision); (3) private regulatory bodies (such as international sports federations, the Society for Worldwide Interbank Financial Telecommunication, and the Forest Stewardship Council, constituted by non-state actors, including business firms, trade and professional associations, and NGOs); and (4) hybrid public-private regulatory bodies (such as the International Conference on Harmonization of technical requirements for registration of Pharmaceuticals for Human Use, the World Anti-doping Agency, ICANN, and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)) – composed of non-state actors and international organizations and/or governments».¹⁵

In the climate change context, the United Nations Framework Convention on Climate Change (UNFCCC) is the global regulator in charge of tackling the challenges posed by climate change.

¹⁴ The UNFCCC sees it all: For instance, when a Climate Change Convention working group composed by international civil servants develops technical standards for greenhouse gas emissions inventories, or when each country has to define its own NDCs.

¹⁵ STEWART R.B., *Remedying Disregard in Global Regulatory Governance: Accountability, Participation, and Responsiveness*, in 108 *American Journal of International Law* 216, 2014.

5.2 The UNFCCC: Climate Change Global Regulator

The UNFCCC is a supranational administration, which is characterized by an independent secretariat composed of international civil servants and supports the elaboration and implementation of decisions taken by intergovernmental bodies¹⁶. United Nations climate change conferences are the foremost global forum for multilateral discussion of climate change matters. The conferences, normally held every year in different locations around the world, are convened under the United Nations Framework Convention on Climate Change, the international treaty adopted in 1992¹⁷. The treaty has the key objective to «stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system»¹⁸. Under the UNFCCC, governments agreed to cooperatively consider what they could do to limit average global temperature increases and the resulting climate change, and to cope with the impacts. The annual conferences therefore serve as the formal meetings of the UNFCCC Parties (known as the Conference of the Parties— or the COP) to assess their progress.

The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation

¹⁶ ALVAREZ JE, *International Organizations as Law-makers*, Oxford University Press 2005.

¹⁷ UNFCCC, A handbook for hosting United Nations Climate Change Conferences, at http://newsroom.unfccc.int/media/167535/how_to_cop_unfccc.pdf

¹⁸ Art. 2 UNFCCC Treaty

of the Convention, including institutional and administrative arrangements¹⁹.

As a global regulatory body, the UNFCCC has an administrative character²⁰. In fact, it is managed by full-time officials and staff. It makes and implements regulatory decisions. It also gathers information, monitors the implementation of its regulatory programs, tracks compliance, and makes all kinds of informal decisions, so as to direct or influence the conduct of actors subject to regulation. These activities are the global version of the functions, recognized by public lawyers as administrative by nature, discharged by domestic and supranational regulatory bodies²¹.

The «marbled structure»²² typical of the global governance described above, is therefore evident in the UNFCCC context and in the new Treaty adopted by its COP: the Paris Agreement. In fact, States have been cooperating to adopt the Treaty by signing the UN Convention and establishing a climate change global regulator, but, at the same time, within the Paris Agreement, states are also obliged to cooperate as implementers and enforcers of global regulations²³.

¹⁹ Art. 7 UNFCCC Treaty. See also VON BERNSTORFF J., *Procedures of Decision-Making and the Role of Law in International Organizations* in 9 *German Law Journal* 1939, 2008.

²⁰ “Conceptually...administrative action can be distinguished from legislation in the form of treaties, and from adjudication in the form of episodic dispute settlement between states or other disputing parties...Global administrative action is rulemaking, adjudications, and other decisions that are neither treaty-making nor simple dispute settlements between parties.” KINGSBURY, KRISCH & STEWART at 17

²¹ STEWART R., *Remedying Disregard In Global Regulatory Governance: Accountability, Participation, And Responsiveness*, in 108 (2) *The American Journal of International Law*, 219, 2014. See also MASHAW JL, *Explaining Administrative Process. Normative, Positive and Critical Stories of Legal Development* in 6 *Journal of Law, Economics and Organization* 267, 1990.

²² CASSESE S., *Governing the World*, in CASSESE S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016.

²³ CAFAGGI F (ed.), *Enforcement of Transnational Regulation. Ensuring Compliance in a Global World*, Edward Elgar Publishing, 2012.

5.3 The Paris Agreement

The Paris Agreement represents the culmination of the third phase of the United Nations climate change regime. The first phase went from 1990 - 1995 and involved the negotiation, adoption, and entry into force of the UNFCCC. The second phase occupied the decade 1995 - 2004, from the start of Kyoto Protocol negotiations to its entry into effect. The current phase has focused on developing a more global approach, which limits the greenhouse gas (GHG) emissions of all countries. The negotiations that ultimately led to Paris effectively began in 2005, when attention turned to the question of what to do post-2012, after the Kyoto Protocol's first commitment period ended²⁴.

In contrast to the Kyoto Protocol, the Paris Agreement does not establish emission reduction and limitation targets for individual Parties. Instead, it formulates an overall climate change goal²⁵ and calls on Parties to contribute to this goal. It is up to the countries to decide how and how much they can contribute to meeting that goal in accordance with the «principle of common but differentiated responsibility and respective capabilities, in the light of different national circumstances»²⁶. In this regard, each Party will prepare, communicate and maintain the nationally determined contributions (NDCs) it intends to achieve²⁷. Parties have to adapt their mitigation contributions every five years²⁸, and these contributions have to increase over time to reflect with the «highest possible ambition' their

²⁴ BODANSKY D., *The Paris Climate Change Agreement: A New Hope?*, in 110(2) The American Journal of International Law 288-319, 2016 and *See, e.g.*, European Commission, *Winning the Battle Against Climate Change*, COM(2005) 35 final (Feb. 9, 2005).

²⁵ Art. 2 Paris Agreement

²⁶ Art. 2.2 Paris Agreement

²⁷ Art. 2.4 Paris Agreement

²⁸ Art. 4.9 Paris Agreement

changing capabilities»²⁹. To ensure that the overall goal is being met, the Conference of the Parties (COP) will, every five years, take stock of the progress of Parties 'towards achieving the purpose of this Agreement and its long-term goals'³⁰. NDCs will, in turn, be informed by this stock take³¹.

«To succeed, the hybrid model of international climate policy embodied in the Paris Agreement characterized by the nationally determined contributions, States need to implement an enhanced transparency framework to provide a clear understanding of climate change action in the light of the objective of the Convention»³².

The paramount importance of the transparency framework is, mainly related to the legal nature of the NDCs provision, which represents the core issue within the Paris Agreement's text.

The legal character of the Agreement's provisions was important to many delegations, and above all to the United States, due to the peculiarities of its domestic treaty-approval process. «Although the U.S. Constitution provides that treaties require the advice and consent of two-thirds of the Senate, most international agreements are adopted by the United States not under this procedure, but rather as executive agreements—in most cases with the approval of Congress, but in some cases by the President acting alone».³³

²⁹ Art. 4.3 Paris Agreement

³⁰ Art. 14 Paris Agreement

³¹ Art. 4.9 Paris Agreement

³² VAN ASSELT H., HALE T., DOELLE M., ABEYSINGHE A., MILKOREIT M., DIHL PROLO C., RUDYK B., *Maximizing the Potential of the Paris Agreement: Effective Review of Action and Support in a Bottom-up Regime Discussion brief 17 May 2016* at

https://www.bsg.ox.ac.uk/sites/www.bsg.ox.ac.uk/files/documents/Paris_Agreement_Review_Discussion_Brief_170516.pdf

³³ BODANSKY D., *Legal Options for U.S. Acceptance of a New Climate Agreement* 14 (Center for Climate and Energy Solutions, May 2015), at <http://www.c2es.org/docUploads/legal-options-us-acceptance-new-climate-change-agreement.pdf>.

The U.S. delegation in Paris wanted to ensure that the Agreement did not contain the type of legally binding provision that might trigger a need for legislative approval, in particular new financial commitments and above all, a legally-binding emissions target.³⁴

In this regard, the issue of legal form that proved most difficult to resolve concerned the legal character of Parties' NDCs especially because countries like the European Union – the climate change international leader (see chapter 2) argued the importance of giving the NDCs legal effect—for example, by creating an obligation to implement or achieve. On the contrary, pushing in the other direction, the United States argued that a strong transparency system could accomplish the same ends and that creating an obligation to implement or achieve NDCs could discourage participation and/or ambition³⁵.

«The Paris Agreement finally resolved this issue in Article 4.2, which establishes a number of procedural obligations relating to NDCs, and requires Parties to pursue domestic mitigation measures, with the aim of achieving the objective of [their] contributions».³⁶

Since Parties' NDCs are not legally binding, the Paris Agreement's transparency framework is the main mechanism for holding states accountable for doing what they say.³⁷ The premise is that peer and public pressure can be as effective as legal obligation in

³⁴ See DAUGIRDAS K. and MORTENSON J.D., *Contemporary Practice of the United States*, in 110 AJIL 374, 375. See also STEWART R.B., KINGSBURY B. AND RUDYK B. (eds), *Climate Finance. Regulatory and Funding Strategies for Climate Change and Global Development*, NYU Press 2009.

³⁵ BODANSKY D., *The Paris Climate Change Agreement: A New Hope?*, in 110(2) *The American Journal of International Law* 288-319, 2016

³⁶ Art. 4.2 Paris Agreement

³⁷ See generally VAN ASSELT H., SÆLEN H. AND PAUW P., *Assessment and Review Under a 2015 Climate Change Agreement*, 2015.

influencing behavior, an issue that has long been debated in the literature on soft law.³⁸

5.3.1 Transparency as a Legal Standard of Global Administrative Law in the Paris Agreement

Transparency is a core good governance attribute and the main pillar of national and global administrative law: open procedures contribute to virtually all of the foundations of legitimacy.³⁹

The word 'transparency' appears 30 times in the text of the Paris Agreement⁴⁰.

This reiteration within that text underlines how important transparency has become in global regulation. In this sense, the theory of global administrative law⁴¹ is the perfect analytical framework for the assessment of the transparency of the Paris Agreement and its outcomes.

The paramount importance of 'transparency' in global regulation is due to multiple factors. First, transparency is an important element of institutional legitimacy: transparency is the key in considering the «transfer of decision-making power to institutions beyond States, along with an increase in the interweaving of

³⁸ See SHELTON D., ed., *Commitment and Compliance: The Role of Nonbinding Norms in The International Legal System*, Oxford University Press, 2003. (DAVID VICTOR, KAL RAUSTIALA & EUGENE B. SKOLNIKOFF eds., *The Implementation And Effectiveness Of International Environmental Commitments: Theory And Practice*, Mit Press, 1998)

³⁹ ESTY D., *Good Governance at the Supranational Scale: Globalizing Administrative Law*, in 115 *Yale Law Journal* 1490, 2006 and See, e.g., FUKUYAMA F., *State-Building: Governance And World Order In The 21st Century*, 2004. VON BOGDANDY A., *Legitimacy of International Economic Governance: Interpretative Approaches to WTO law and the Prospects of its Proceduralization*, in S. GRILLER, *International Economic Governance and Non-Economic Concerns - New Challenges for the International Legal Order*, Wien-New York, 128, Springer, 2003.

⁴⁰ TABAU A.S., *The Paris Agreement: Rebooting Climate Cooperation Evaluation of the Paris Climate Agreement According to a Global Standard of Transparency*, in 10 *Carbon & Climate L. Rev.* 23, 2016

⁴¹ See in particular, YANG T. and PERCIVAL R.V., *The Emergence of Global Environmental Law*, in 36(3) *Ecology Law Quarterly* 615, 2009.

transnational, regional and internal legal and administrative processes». Second, transparency is a means to fight the opacity of institutions in view of the increasing role of expertise in governance. In this regard, under article 13 of the Paris Agreement, a technical expert group will review the information provided by countries⁴². In particular, the experts will check the consistency of information provided and identify areas of improvement. The transparency framework hence contains elements of a third party review while being '*facilitative, non-intrusive, non-punitive [in] manner, respectful of national sovereignty*'⁴³. «The fact that the new transparency framework will for the first time review the emissions of all Parties can be considered a significant step towards improving data and increasing transparency around national and global emissions and mitigation actions».⁴⁴ Third, transparency helps combating concern about the lack of access to information and a possible weakening of democratic accountability, especially in global administrations⁴⁵. In fact, «the activities of States are increasingly producing extraterritorial effects. It is therefore legitimate that affected persons who are outside the jurisdiction of a State in question can be informed of any activities with extraterritorial effects...Transparency must therefore allow the activity of global actors to be observed, interpreted and evaluated by

⁴² Art. 13.11 Paris Agreement

⁴³ Art. 13.3 Paris Agreement

⁴⁴ STRECK C., KEENLYSIDE P., VON UNGER M., *The Paris Agreement: A New Beginning*, in *Journal For European Environmental & Planning Law* 13 3-29, 2016

⁴⁵ The meetings of the bodies established under the UNFCCC are, in principle, directly accessible to accredited observers that are able to intervene, with the consent of the session President (Art. 7(6) of the UNFCCC, Art. 13(8) of the Kyoto Protocol and Art. 16(8) of the Paris Agreement). However, non-state actors do not have a "right" to information and to participate in the decision-making process. The last word always belongs to the UNFCCC Secretariat, its subsidiary bodies and its member States. In this regard see Sassen S, *The Participation of States and Citizens in Global Governance* in *10 Indiana Journal of Global Legal Studies* 5, 2003.

third parties»⁴⁶. In this regard, the Paris Agreement provides that Parties will have to collect and make available information necessary to track progress made in implementing and achieving its NDCs and keep track of their emissions in national inventory reports. In terms of support, developed Parties shall provide information on financial, technology transfer and capacity building support provided to developing Parties. Developing Parties shall provide information on support needed and received.

Although today, through the internet, it is possible to follow the negotiations – which are at the heart of the decision-making process at the global scale - of international organizations, the transparency of proceedings is relatively new in global governance, which has traditionally been surrounded by a culture of secrecy and confidentiality. In this regard, some still think that transparency is not a good tool for use in the international decision making process. They argue that «it is impossible to negotiate in public because deliberations would run the risk of degenerating into propaganda, where appearances become more important than openness and individual interests prevail over the overall decision-making process. Also, the exclusion of the public from deliberations could enable issues to be addressed in more depth. Behind closed doors, negotiators may dare to express more controversial views and may be more inclined to change their positions through reciprocal concessions»⁴⁷.

On the contrary, transparency as a legal standard of global administrative law, helps negotiations since it ensures trust between States. In addition, public monitoring, made possible by transparent negotiations, obliges decision-makers to explain their positions in

⁴⁶ TABAU A.S., *The Paris Agreement: Rebooting Climate Cooperation Evaluation of the Paris Climate Agreement According to a Global Standard of Transparency*, in *10 Carbon & Climate L. Rev.* 23, 2016

⁴⁷ Id at 25

reference to socially accepted standards. Finally, a treaty negotiated in secret, if it does not obtain public endorsement or the backing of State parliamentarians, has less chance of being ratified (one of the reasons why the Copenhagen Accord was never adopted). Furthermore, the importance of transparency as a core administrative law tool to be used in global governance is critical because the norm of transparency cannot be said to be part of international 'hard law'. Finally, in the Paris Agreement transparency is crucial for making the Treaty work. In fact, with its focus on voluntary contributions the Paris Agreement depends on a mechanism that allows individual Parties and the COP to assess whether Parties are on track to meeting the overall objective of the Agreement. Only if there is transparent tracking of progress will it be possible to adjust and sufficiently strengthen the ambition of NDCs.

As mentioned earlier, Article 13 establishes an 'enhanced transparency framework for action and support' that will provide a clear understanding of mitigation action and available climate financing. Parties will have to collect and make available the information needed to track progress made in implementing and achieving its NDCs and keep track of their emissions in national inventory reports.

In addition, transparency can compensate for the general lack of legally binding international commitments considering that the more the public puts pressure on governments to fix common guidelines and to elaborate and communicate national contributions, the more they will be inclined to do so. However, in order to ask for such an enhanced transparency of commitments, the public or qualified intermediaries need to be able to appreciate the initial level of comprehensiveness of self-commitment made by each party.

The Paris Agreement testifies in practice how important transparency is as a core administrative law tool. In this regard, transparency marks a progress within the UNFCCC as a global regulator and demonstrates as well a coherent connection between the deployment of a set of administrative-law-derived tools and the potential to enhance policymaking legitimacy on a global scale.

CONCLUSIONS

This thesis aims at defining the importance of climate change regulation on both a national and a global level, identifying its possible benefits and drawbacks in two specific jurisdictions: the EU and the US. These two “countries” are two of the biggest GHG polluters as well as two fundamental political players, whose participation in the international scenario can cause the success or the defeat of climate change regulation. Furthermore, in these two countries climate change regulation has been in the forefront of the legal debate among administrative and environmental legal scholars. Finally, both the EU Member States and the US states receive legally binding directives and regulations (EU) or acts and rules (US) regarding environmental legislation, from central governments - although differences appear between the US, a federation, and the EU, not a federation but a “collaboration” of 28 states.

In order to achieve this goal, I divided the thesis into five chapters, each of which represents a particular step in constructing a complex legal pathway. The five chapters follow a specific logic.

I began by analyzing the scientific and legal relevance of climate change and proved, through the instruments of economic analysis, that regulation is the most efficient tool. After that, I studied the historical background in which European and American climate change policy and legislation began. This comparative historical reconstruction, made as mentioned above, is new to legal literature, where the only comparative works focused mainly on the international aspect of climate change policy and legislation. The importance of this comparative historical reconstruction is twofold: on the one hand, it is chronologically and logically necessary to understand why and how

climate change policy and legislation developed; on the other hand, careful study of it demonstrates the realization of a regulatory state.

Having analyzed the historical background in which climate change legislation and regulation developed, I deemed it necessary to study the legal principles that inform the subject in the two jurisdictions. This analysis was indispensable before that dealing with the identification of EU and US regulators and their activities.

In my in-depth analysis of climate change regulators as creators of climate change regulation, I studied and compared the administrative procedures related to the rule-making, rule-implementing and rule-enforcing activities carried on respectively by the EU Commission in the form of the DG Clima (through proposals, consultation activity, comitology strategy, delegation of acts, impact assessment in the form of risk assessment and CBA) and by the US executive administration in the form of the Environmental Protection Agency – EPA (through the APA rules, OIRA review, delegation doctrine, impact assessment in the form of risk assessment and CBA). Despite the divergence of the two jurisdictions in terms of legal category and constitutional settings, the comparison provided revealed incredible similarities and possible drawbacks to be avoided.

This analysis then continued with the comparison of two examples of climate change regulation, as a practical window into the process by which regulators effectively create regulation. I thus analyzed the EU ETS Directive (EU ETS) and the US Clean Power Plan (CPP), as the last bastion of the Obama administration's regulation. This comparison, apart from outlining key similarities and differences in the regulatory methodologies concerned, showed, on a broader level, which is the best entity for providing regulation – linking in with what we learned in chapter 1 – and which is the best regulation technique for tackling climate change.

The analysis carried forward in this chapter had its natural development in the analysis of legal challenges to the climate change regulation just described (EU ETS and CPP). Detailed analysis of the challenges brought against the two regulations (the Directive and the Rule) not only gave me an opportunity to point out the importance of regulation through litigation but also raised several questions related to substantial and procedural legal issues.

I could not conclude without a final chapter dealing with global administrative law. The global aspect of the scientific and legal phenomena involved is undeniable and recognized by the most influential scholars who adopted and first explained the concept of global administrative law in general. This final chapter represents one of the first works on this specific issue and analyses the global regulation of climate change investigating, the UNFCCC as a global regulator, and the new - and possibly threatened - Paris Agreement, through the typical tools used by administrative legal scholars.

This thesis represents a four-year journey in learning, part of which was spent studying, experiencing and talking with experts in the administrative and environmental legal fields in Italy and in the United States, at the New York University School of Law, where I spent my last year of research. Thanks to this long educational opportunity, I was able to discover the new horizons of administrative and environmental law as a legal scholar, and was granted the possibility of dealing with the vital issue of climate change.

BIBLIOGRAPHY

ACKERMAN B. AND HASSLER W., *Clean Coal, Dirty Air*, Yale University Press, 1981.

ADELMAN D. AND ENGEL K., *Adaptive Federalism: The case Against Reallocating Environmental Regulatory Authority*, in 92 *Minn. L. Rev.* 2008

ADGER WN, AGRAWALA S, MIRZA MMQ, CONDE C, O'BRIEN K, PULHIN J, PULWARTY R, SMIT B, TAKAHASHI K, *Assessment of adaptation practices, options, constraints and capacity*, in IPCC 2007b.

ADLER M., *Regulatory Theory*, in Patterson D., *A Comparison To Philosophy Of Law And Legal Theory*, 2010.

Administrative Procedure Act 5 U.S.C.

AGRAWALA S., *Context and Early Origins of the International Panel on Climate Change*, in 39 *Climate Change* 605, 1998.

ALEMANNO A. AND MEUWESE A., *Impact Assessment of EU non Legislative Rulemaking: The Missing Link in New Comitology* in 19 *European Law Journal* 76, 2013.

ALEMANNO A., *Le principe de précaution en droit communautaire. Stratégie de gestion ou risque d'atteinte au marché intérieur*, in *Revue du droit de l'Union Européenne*, 917.

Allen v. Wright, 468 U.S. 1984.

ALVAREZ JE, *International Organizations as Law-makers*, Oxford University Press 2005.

ANDEREGG W. R. L., *Expert Credibility in Climate Change*, in 107(27) *Proceedings of the National Academy of Sciences*, 12107-12109, 2010.

ANDERSON, J.E., *The Emergence of the Regulatory State*, Public Affairs Press, Washington, 1962.

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ANDERSON O.L., *Shale Revolution Or Evolution: Opportunities And Challenges For Europe*, in 4 *Global Bus. L. Rev.* 1 2013.

ANDREW JORDAN AND TIM RAYNER, *The Evolution of Climate Change Policy in the European Union: An Historical Overview* in JORDAN A., HUITEMA D., VAN ASSELT H., RAYNER T. AND BERKHOUT F. *Climate Change Policy In The European Union Confronting the Dilemmas of Mitigation and Adaptation?* Cambridge 2010

ARANSON P. H., GELLHORN E. AND ROBINSON G.O., *Theory of Legislative Delegation*, in 86 *Cornell Law Review* 2, 1982.

ASHBY W. R. *An Introduction to Cybernetic*, London Chapman And Hall, 1956 at <https://archive.org/details/introductiontoocy00ashb>.

Aspen Forum 2015 - Fall and Rise of the Regulatory State <https://www.youtube.com/watch?v=Tt0hy4IMMZI>.

AUBY J.B., *La globalisation, le droit et l'Etat*, 2nd edn, LGDJ, 2010.

BAKKER C AND FRANCONI F., *The EU, the US and Global Climate Governance*, European University Institute, Florence, Italy Ashgate 2014.

BALDWIN R. AND CAVE M. AND LODGE M., *Understanding Regulation: Theory, Strategy and Practice*, Oxford University Press 2011.

BARBER S., *The Constitution And The Delegation Of Congressional Power*, University of Chicago Press 1975.

BARDACH E, KAGAN R.A. *Going by the Book: The Problem of Regulatory Unreasonableness*. Temple University Press, Philadelphia 1982.

BARNES P, *The Role of the Commission of the European Union: creating external coherence from internal diversity* in RÜDIGER K.W, WURZEL AND CONNELLY J., *The European Union as a Leader in Climate Change Politics*, Routledge 2011.

BATTINI S. *Taking Outsiders' Interests into Account: il diritto amministrativo come Costituzione materiale dell'interdipendenza globale*, in 4 *Rivista trimestrale di diritto pubblico* 927, 2014.

BATTINI S. *The proliferation of global regulatory regimes*, in Cassese S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016.

BATTINI S., MATTARELLA B.G., SANDULLI A., *Il Procedimento*, in G. NAPOLITANO, *Diritto amministrativo comparato*, Milano, Giuffrè, 2007.

BAILEY A., *How Grammatical Choice Shapes Media Representations of Climate (Un)certainty*, 8(2) *Environmental Communication* 197, 2014.

BEGG I. ET AL. *Social Exclusion and Social Protection. The Future Role of the EU*, EXSPRO Policy report, Southbank University, European Institute, London, 2001.

BERGKAMP L., SMITH T.T. JR, *Legal and Administrative System*, in JAMES H., MICHAEL R., PETER S., *The Reality of Precaution: Comparing Risk Regulation in the United States and Europe*, Washington, D.C. RFF Press, 2011.

BERNSTEIN S., CASHORE B., *Complex Global Governance and Domestic Policies: Four Pathways of Influence* in 88(3) *Int. Affairs* 585, 2012.

BETSILL, M., HOFFMAN, M., *The contours of "cap and trade": The evolution of emissions trading systems for greenhouse gases*, in 29(1) *Review of Policy Research* 83-106, 2011

BIANCO N. AND CARBONELL T., *An Early Look at the Clean Power Plan in Six Charts*, EDF Environmental Defense Fund (2015) <http://blogs.edf.org/climate411/files/2015/08/An-Early-Look-at-the-Clean-Power-Plant-in-Six-Charts.pdf>

BICKEL A., *The Least Dangerous Branch*, Yale University Press, 1962.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

BIERMANN F., PATTBERG P., AND ZELLI F., *Global Climate Governance beyond 2012: Architecture, Agency and Adaptation*, Cambridge University Press, Cambridge, 2010.

BIGNAMI F., *Three Generations of Participation Rights in European Administrative Proceedings*, Jean Monnet Working Paper 11/03 New York: New York University School of Law, 2003.

Biological Diversity v. Brennan, 571 F. Supp. 2d 1105 (N.D. Cal., Aug. 21, 2007).

BLACK J., *Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World* in 54(1) *Current Legal Prob.* 103, 142, 2001.

BLOOMBERG M.R., *A Vote for a President to Lead on Climate Change*, Bloomberg, Nov. 1, 2012 at <http://www.bloomberg.com/news/2012-11-01/a-vote-for-a-president-to-lead-onclimate-change.html>

BLUMANN C. *Le Pouvoir exécutif de la Commission et le problème de la comitology*, in Riv. It. Dir. Publ. Comp., 1993.

BODANSKY D., *Legal Options for U.S. Acceptance of a New Climate Agreement* 14 (Center for Climate and Energy Solutions, May 2015), at <http://www.c2es.org/docUploads/legal-options-us-acceptance-new-climate-change-agreement.pdf>.

BODANSKY D., *The Copenhagen Climate Change Conference: A Postmortem* in 104 *Am. J. Intl. L.* 230, 2010.

BODANSKY D., *The Paris Climate Change Agreement: A New Hope?*, in 110(2) *The American Journal of International Law* 288-319, 2016 and See, e.g., European Commission, *Winning the Battle Against Climate Change*, COM(2005) 35 final (Feb. 9, 2005).

BOGOJEVIC S., *CJEU can you hear me? Access to Justice in Environmental Matters*, 2 *Europarättslig Tidskrift* (2013)

BOGOJEVIC S., *Emissions Trading Schemes: Markets, States and the Law*, 126 (Hart Publishing 2013)

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

BORRÁS, S. AND RADAELLI C.M., *The politics of governance architectures: creation, change and effects of the EU Lisbon Strategy*, in 18(4) *Journal of European Public Policy*, 463-484, 1982.

BOZZINI E., *The Role of Civil Society Organisations in Written Consultation Processes: From the European Monitoring Centre to the European Fundamental Rights Agency*, in DELLA SALA V., RUZZA C., *Governance and Civil Society in the European Union*, Volume 2, Manchester: Manchester University Press, 2007.

BRAITHWAITE V., *Ten Things You Need to Know about Regulation and Never Wanted to Ask*, RegNet Occasional Paper No. 10 (2006), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>.

BRAITHWAITE, J. COGLIANESE C., LEVI-FAUR, D. *Can Regulation and Governance make a Difference*, in 1(1) *Regulation and Governance*, 1-7, 2007.

BREYER S. AND STEWART R., *Administrative Law and Regulatory Policy* 263, Aspen, 1979.

BREYER S. G., STEWART R. B., SUNSTEIN C. R., VERMEULE A., HERZ M.E., *Administrative Law and Regulatory Policy*, Wolters Kluwer, 2011.

BRIGGS A., *The Welfare State in Historical Perspective*, in 2 *European Journal of Sociology*, 221, 1961.

BRODER J.M., *Climate Bill is Threatened by Senators*, N.Y. Times, Aug. 6, 2009 at http://www.nytimes.com/2009/08/07/us/politics/07climate.html?_r=1 & 3

BRULLE R.J., CARMICHAEL J. AND JENKINS J.C., *Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010* in 114(2) *Climatic Change* 169, 2012.

BRYNE J.P. AND GRANNIS J., *Coastal Retreat Measures*, in GERRARD M.B. AND KUH K.F., *The Law of Adaptation to Climate Change: US*

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

and International Aspects, American Bar Association, New York), 267, 2012.

BRYNER G., *Bureaucratic Discretion: Law and Policy*, New York: Pergamon, 1987.

BUTLER H.N. AND MACEY J.R., *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, in 14 *Yale L. & Pol'Y Rev.* 23 (1996).

BUTZENGEIGER S. AND MICHAELOWA A., *The EU Emissions Trading Scheme – Issues and Challenges, Greenhouse Gas Emissions Trading in the European Union – Background and Implementation of a “New” Climate Policy Instrument*, 39, 116-118 *Intereconomics Rev. of Europ. Economic Policy*, May 2004.

C2ES, *Clean Power Plan Timeline*, Center For Climate and Energy Solution, Feb 2016 <http://www.c2es.org/publications/clean-power-plan-timeline>

C-343/99 *Afton Chemical Ltd v. Secretary of State for Transport* ECR I-7027[54].

CAFAGGI F (ed.), *Enforcement of Transnational Regulation. Ensuring Compliance in a Global World*, Edward Elgar Publishing, 2012.

CAFAGNO M., *Cambiamenti climatici tra strumenti di mercato e potere pubblico*, in Cartei G.F., *Cambiamento Climatico e Sviluppo Sostenibile*, Torino Giappichelli, 2013.

CAHILL, L. S., *Globalisation and the Common Good*, in COLEMAN, J. A. AND RYAN, W.F. *Globalization and Catholic Social Thought: Present Crisis, Future Hope* Ottawa: St Paul University, 2005.

CAMACHO A. E., *Adapting Governance to Climate Change: Managing Uncertainty Through a Learning Infrastructure*, in 59 *Emory L.J.* 1, 2009.

CARLARNE C.P., *Climate Change Law and Policy: EU and US Perspectives*, Oxford, 2010.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

CARLARNE C.P., *Delinking International Environmental Law & Climate Change*, in 4:1 *Michigan Journal of Environmental & Administrative Law* 38, 2014.

CARLSON A.E., *Iterative Federalism and Climate Change* in 103 *Northwestern Univ. L. Rev.* 1097, 2009.

Case T-13/99 Pfizer Animal Health SA v. Council ECR II-3305.

CASINI L., *Beyond the State: The Emergence of Global Administration* in CASSESE S, CAROTTI B, CASINI L, CAVALIERI E AND MACDONALD E (eds), *The GAL Casebook* (3rd edition, IRPA–IILJ 2012).

CASINI L., *Beyond The 'Bureaucratic Haze': The Emergence Of Global Law*, in Cassese S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016

CASSESE S. and Della Cananea G., *L'esecuzione del Diritto Comunitario*, in Riv. It. Dir. Pubbl. Com., 1991.

CASSESE S., *Diritto ambientale comunitario* Milano, Giuffrè, 1995.

CASSESE S., *Governing the World*, in Cassese S., *Research Handbook in Global Administrative Law*, Elgar Publishing, 2016.

CASSESE S., *Il diritto amministrativo globale: una introduzione*, in Riv. trim. dir. pubbl., 331 ss, 2005.

CASSESE S., *Il diritto globale*, Einaudi, 2009.

CASSESE S., *Lo spazio giuridico globale*, Roma-Bari, Laterza, 2003.

CHATEAU C., *The principle of Subsidiarity*,_European Parliament (2016) http://www.europarl.europa.eu/ftu/pdf/en/FTU_1.2.2.pdf

CHIMNI B.S., *Co-Option and Resistance: Two Faces of Global Administrative Law* in 37(4) *Journal of International Law and Politics* 799, 2005.

CHITI E., *European Agencies' Rulemaking: Powers, Procedures and Assessment*, in 19(1) *European Law Journal*, 93-110, 2012.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

CHITI E., *Le agenzie Europee. Unità e decentramento nelle amministrazioni comunitarie*, Padova, Cedam, 2003.

CHITI M.P., *L'Organizzazione Amministrativa Comunitaria*, in *Trattato di Diritto Amministrativo Europeo*, T. 1, Giuffrè, 2007.

CHITI M.P. AND GRECO G., *Trattato di Diritto Amministrativo Europeo*, Giuffrè, 2007.

CHITI M.P., *Diritto amministrativo europeo*, IV ed., Milano, Giuffrè, 2011.

CHLISTALLA M., *Bidding For The Better EU Emissions Trading Scheme Moves To Auctioning*, Deutsche Bank Research 2010.

CHRISTENSEN T. AND LAEGREID P., (Eds), *Autonomy and Regulation. Coping with Agencies in the Modern State*. Cheltenham: Edward Elgar, 1961.

CISTULLI V., *Environment in Decentralized Development - Economic and Institutional Issues*, 29 (FAO 2002)

CLARICH M. *La responsabilità nel sistema comunitario*, in: M. P. CHITI AND G. GRECO, *Trattato di diritto amministrativo europeo*. vol. 2, 589-610, Milano, Giuffrè, 2007.

CLARICH M., *La Law and Economics e la frontiera del diritto pubblico*, in *Rivista Trimestrale Di Diritto Pubblico* 3, 2009.

CLARICH M., *La nozione di direttiva: problemi ricostruttivi e tendenze recenti*, in *Foro amm.*, 1984, p. 891 ss. (republished in *Studi in onore di Vincenzo Palazzolo*, Milano, Giuffrè, 1986.

CLARICH M., *La tutela dell'ambiente attraverso il mercato*, in *Dir. Pubbl.* 1, 219 et sub., 2007

CLARICH M., *La tutela dell'ambiente attraverso il mercato*, in *Associazione italiana dei professori di diritto amministrativo. Annuario 2006 : Analisi economica e diritto amministrativo : atti del convegno annuale : Venezia, fondazione Cini 28-29 settembre 2006*. Milano, Giuffrè, 2007

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

CLARICH M., *Manuale di Diritto Amministrativo*, Bologna, Il Mulino, 2013.

CLARICH M., MATTARELLA B.G., *Un nuovo sistema regolatorio per lo sviluppo economico*, in *Analisi Giuridica Dell'economia*, 2, pp 363-382, Il Mulino 2013.

CLARICH M., SCLAFANI F. in collaboration with M. IMPINNA, *Liberalizzazione e regolazione del mercato italiano: l'Autorità*, in ALBERTO CLÔ STEFANO CLÔ FEDERICO BOFFA, *Riforme elettriche tra efficienza ed equità*, Il Mulino, 2015

Clean Air Act, 42 USC.

Climate Change Sci. Program, The Revised Research Plan for the U.S. Climate Change Science Program (2008), <http://www.globalchange.gov/about/strategic-planning/strategic-planning-history/revised-research-plan>

COASE R.H., *Impresa, mercato e diritto*, Bologna, 1995.

COASE R.H., *The Problem of Social Cost*, in *J. Law and Econ.* 1-44, 1960.

COEN D., RICHARDSON J., *Lobbying the European Union: Institutions, Actors, and Issues*, Oxford University Press 2009.

COERCELLE G., *La perspective communautaire du principe de précaution*, in 450 *Revue du Marché commun*, 447, 2001.

Commission Communication, *Towards a reinforce culture of consultation and dialogue – General principles and minimum standards for consultation of interested parties*, Brussels 11/12/2002 COM 2002 704

Commission Decisions 2008/50/EC and 2008/401/EC.

Commission Decisions 2008/50/EC and 2008/401/EC.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

Commission of the European Communities, Green Paper on greenhouse gas emissions trading within the European Union, COM(2000) 87 final, (March 8, 2000).

Commission Regulation (EU) No 601/2012 n. 1.

Commission v. Estonia ECR I 8065 Case C 505/09

Commission v. Poland ECR I 8064 Case C 504/09

Committee on Stabilization Targets for Atmospheric Greenhouse Gas Concentrations, Board on Atmospheric Sciences and Climate, Division on Earth and Life Studies, National Research Council, *Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia* National Academies Press, 2011.

CONNIFF, R., *The political history of cap and trade*, in *Smithsonian Magazine*, 2009.

Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)

COOK J., et al, *Consensus on consensus: a synthesis of consensus estimates on human-caused global warming*, in 11(4) *Environmental Research Letters*, 13 April 2016.

CORNES, R. AND SANDLER, T., *The Theory of Externalities, Public Goods and Club Goods*, Cambridge: Cambridge University Press, 1996.

COWEN, T. *Public Goods and Market Failures*, New Brunswick: Transaction Publishers, 1992.

CRAIG P., *Subsidiarity: A Political and Legal Analysis*, in 50 *Journal of Common Market Studies* 72, 2012.

CRAIG R.K., *Stationarity Is Dead—Long Live Transformation: Five Principles for Climate Change Adaptation Law*, in 34 *Harv. Env'tl. L. Rev.* 9, 2010.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

Cross F.B., *Paradoxical Perils of the Precautionary Principle*, in 53 Wash. & Lee L. Rev. 851 1996.

DAUGIRDAS K. AND MORTENSON J.D., *Contemporary Practice of the United States*, in 110 AJIL 374, 375, 2016.

DAVID VICTOR, KAL RAUSTIALA & EUGENE B. SKOLNIKOFF eds., *The Implementation And Effectiveness Of International Environmental Commitments: Theory And Practice*, Mit Press, 1998.

DAVIS K., *Administrative Law Of The Seventies The Lawyers Cooperative Publishing Company*, Rochester, NYC, 1979.

DAVIS K., *Administrative Law Treatise* in 8(2) *Hofstra Law Review* 471 sub, 1978. Senate Comm. on Governmental Affairs, 95th Cong., Sess., Study on Federal Regulation 132-52 (Comm. Print 1977).

DE BURCA G. AND SCOTT J., *Law and Governance in the EU and US* Hart Publishing, London, 2006.

DE CENDRA DE LAGARRÀN J., *Distributional Choices in EU Climate Change Law and Policy*, Wolters Kluwer Law and Business, 140, 2011.

DE SADELEER N., *Environmental Principles: From Political Slogans to Legal Rules*, Oxford Scholarship Online, 2002.

DE SADELEER N., *EU Environmental Law and The Internal Market*, 131 Oxford University Press 2014.

DE SADELEER N., *Principle of Subsidiarity and the EU Environmental Policy*, in 9 *Journal of European Environmental and Planning Law* 72, 2012.

DE SADELEER N., *The Polluter-Pays Principle in EU Law - Bold Case Law and Poor Harmonisation*, in *Pro Natura. Festschrift til H.-C. Bugge*, Oslo, Universitetsforlaget, 405-419, 2012.

DEL MONTE M. AND LEBLANC L., *US Supreme Court puts Clean Power Plan on hold*, European Parliamentary Research Service, February 2016

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

[http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA\(2016\)577989_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/577989/EPRS_ATA(2016)577989_EN.pdf)

DELBEKE J., VIS P., *EU Climate Change Policy Explained*, Rutledge 2016.

DELLA CANANEA G., *L'organizzazione amministrativa della Comunità Europea*, in *Riv. It. Dir. Pubbl. Comp.* 1993, 1105.

DENEULIN S. AND TOWNSEND N., *Public Goods, Global Public Goods and the Common Good*, in ESRC - Economic and Social Research Council Wed Working Paper 18, 2006.

DERNBACH J.C. AND ALTENBURG R., *Evolution of U.S. Climate Policy*, in FREEMAN J. AND GERRARD M.B., *Global Climate Change and US Law*, ABA Publishing, 2014 and also Exec. Rep. No. 102-55, 102d Cong., 1st Sess., at 10-11, 1992.

DESHAZO J.R. and Freeman J., *Timing and Form of Federal Regulation: The case of Climate Change*, 155 *University of Pennsylvania Law Review*, 1499, 2007.

DG Clima 20/07/2016 (COM(2016)482/F1 and COM(2016)479/F1)

DICKINSON B., *The Precautionary Principle in CITES: A Critical Assessment* in 39 *Nat. Resources J.* 211 1999.

DORAN P. T., ZIMMERMAN M.K., *Examining the Scientific Consensus on Climate Change*, in 90(3) *Eos Transactions American Geophysical Union* 22, 2009.

DOREMUS H., *Adapting to Climate Change with Law That Bends Without Breaking*, in 2 *San Diego J. Climate & Energy L.* 45, 2010.

Drax Power v. Commission, Case T-130/06, 2007.

DUNN W.N., *Public Policy Analysis: An Introduction*. New York: Longman, 2009.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

DUPRE, L., *The Common Good and the Open Society*, in DOUGLAS, R. B. AND HOLLENBACH, D. *Catholicism and Liberalism* Cambridge: Cambridge University Press, 1994, 172-195.

EDF, European Union: An Emission Trading Case Study, 1, 4 (May 2015)

http://www.ieta.org/resources/Resources/Case_Studies_Worlds_Carbon_Markets/euets_case_study_may2015.pdf

EILPERIN J., *Manchin Lobbying White House on 'Totally Unreasonable' Coal Standards*, Wash. Post Politics Blog, Aug. 1, 2013 at <http://www.washingtonpost.com/blogs/post-politics/wp/2013/08/01/manchin-lobbying-white-house-ontotally-unreasonable-coal-standards/>.

ELIANTONIO M., BACKES C., VAN RHEE C.H., SPRONKEN T., BERLEE A., *Standing up for your right(s) in Europe A Comparative study on Legal Standing (Locus Standi) before the EU and Member States' Courts*, Directorate General For Internal Policies, 2012 at [http://www.euoparl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET\(2012\)462478_EN.pdf](http://www.euoparl.europa.eu/RegData/etudes/etudes/join/2012/462478/IPOL-JURI_ET(2012)462478_EN.pdf)

ELLERMAN A. D., BUCHNER B. K., AND CARRARO C., *Allocation in the European Emissions Trading Scheme: Rights, Rents and Fairness*, Cambridge University Press, 2007.

ELLERMAN A.D. AND BUCHNER B.K., *The European Union Emission Trading Scheme: Origins, allocation and early results*, in 1(1), *Review of Environmental Economics*, 66-87, 2007.

ELLERMAN A.D. AND CONVERY F. J. AND PERTHUIS C.D., *Pricing Carbon – The European Union Emission Trading Scheme*, Cambridge University Press, 2010.

ELLERMAN A.D. AND JOSKOW P.L. AND HARRISON D.L., *Emission Trading: Experience Lessons and Consideration for Greenhouse Gases*, Washington DC, Pew Center on Climate Change, 2003.

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ELLERMAN D., *Are cap and trade programs more environmentally effective than conventional regulation?* Oxford University Press, 2007.

ELLERMAN D., *Tradable Permits for Greenhouse Gas Emissions: A Primer with Particular Reference to Europe*, in 69 *MIT Jo INT PROGRAM ON SCI. & POL'Y GLOBAL CHANGE* 2 (2000), available at <http://web.mit.edu/globalchange/www/MITJPSGCRpt69.pdf>

ELY J., *Democracy and Distrust*, Harvard University Press 1980.

ENBW Energie, Buzzi Unicem SpA v. Commission of the European Communities, Case T-387/04, 2007.

ENGEL K.H., *State Environmental Standard-Setting: Is There a "Race" and Is it "to the bottom"?*, in 48 *Hastings L. J.* 271 274-76 1997 .

ENGEL K.H., *Policy Innovation Under Dynamic, Adaptive Federalism and Democratic Experimentalism Compared: Lessons for Federalism and Climate Change Adaptation Policy*, Arizona Legal Studies Discussion Paper No. 16-01, January 2016.

ENGEL K.H., SALESKA S.R., *Subglobal Regulation of the Global Commons: The Case of Climate Change*, in 32 *Ecology Law Quarterly* 190 2005.

Environmental Defense Fund at <https://www.edf.org/climate/how-cap-and-trade-works>

EPA website at <https://www.epa.gov/laws-regulations/summary-executive-order-12866-regulatory-planning-and-review>

EPA, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,662, 64,663 (Oct. 23, 2016)

EPA, Fact Sheet: Clean Power Plan Framework, EPA_ (Last updated on April 11, 2016) <https://www.epa.gov/cleanpowerplan/fact-sheet-clean-power-plan-framework>

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EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013 – Executive Summary, EPA Gov 1, 7 (2013)
<https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Chapter-Executive-Summary.pdf>

EPA, Learn About Carbon Pollution From Power Plants,
<https://www.epa.gov/cleanpowerplan/learn-about-carbon-pollution-power-plants>

EPA, Legal Memorandum Accompanying Clean Power Plan for Certain Issues, (2015)
<https://www.epa.gov/sites/production/files/2015-11/documents/cpp-legal-memo.pdf>

ERBACH G., *Climate Policies in the EU and USA*, European Parliamentary Research Service, 1, 2, November 2015,
[http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571347/EPRS_BRI\(2015\)571347_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571347/EPRS_BRI(2015)571347_EN.pdf).

Estonia v. Commission 2009 ECR II-3463 Case T 263/07.

ESTY D.C., *Breaking the Environmental Law Logjam: The International Dimension*, in *NYU Env. L.J.*, 17, 2008.

ESTY D.C., *Good Governance at the Supranational Scale: Globalizing Administrative Law*, in 115 *Yale Law Journal* 1490, 2006.

ESTY D.C., *Climate Change and Global Environmental Governance*, 14 *Global Governance* 111 2008.

ESTY D.C., *Toward Optimal Environmental Governance*, in 74 *N.Y.U. L. REV.* 1495, 1555, 1999.

ESWORTHY R., *Federal Pollution Control Laws How are They Enforced?* in Congressional Research Service, 2014 at <https://www.fas.org/sgp/crs/misc/RL34384.pdf>

EU Commission Impact Assessment Guidelines SEC 2009.

EU Commission, *The Greenhouse Effect and The Community*, Communication 1986, 56

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

EU Observer, Retrieved 04/22, 2013, from www.lexisnexis.com/uk/nexis. ENDS Europe. (2009b).

European Commission, *EU ETS Handbook*, 1, 4, 2015 http://ec.europa.eu/clima/publications/docs/ets_handbook_en.pdf

European Commission, Reducing Emissions from Aviation, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/transport/aviation/index_en.htm

European Commission, The EU Emission Trading Scheme, Climate Action, (Last update: 13/05/2016) http://ec.europa.eu/clima/policies/ets/index_en.htm

European Community Decision 2005/370/EC136 The Brookings Institution at <https://www.brookings.edu/blog/planetpolicy/2015/07/17/what-the-michigan-v-epa-scotus-ruling-means-for-the-presidents-clean-power-plan/>

European Council Decision 2002/358/EC of 25 April 2002.

European Parliament and Council Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy 2000 OJ L327/1.

European Parliament and Council Directive 2003/87/EC Of The European Parliament And Of The Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC OJ L 275 2003.

European Parliament and Council Directive 2009/29/EC Amending Directive 2003/87/EC as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

Executive Office of the President, The President's Climate Change Action Plan, 1, 5 (June 2013) <https://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

FARBER D., *Carbon Leakage versus Policy Diffusion: The Perils and Promise of Subglobal Climate Action*, in 13 *Chicago J. Intl. L.* 359, 2013.

FARBER D.A., *Modelling Climate Change and its Impacts: Law, Policy and Science*, in 86 *Texas Law Review* 1655, 2008.

Federal Government Sets Uniform Flood Risk Reduction Standard for Sandy Rebuilding Projects, Hurricane Sandy Rebuilding Task Force, U.S. Dept. of Hous. and Urban Dev. Apr. 4, 2013 at <http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding/FRRS>.

FERRARA R., *I principi comunitari della tutela dell'ambiente*, in *Dir. amm.* 3, 509, 2005.

FERRARA R., *Il "posto" del diritto amministrativo: fra tradizione e globalizzazione*, in *Dir. e Società* 2, 2004.

FERRARA R., *Introduzione al Diritto Amministrativo*, Laterza, 2014.

FERRARA R., *La tutela ambientale tra diritto comunitario e diritto interno*, in 2 *Diritto e gestione dell'ambiente*, 9, 2001.

FERRARA R., *Qualità della regolazione e problemi della multilevel governance*, in 6 *Foro amm. Tar*, 2251, 2005.

FERRARESE M.R., *Diritto sconfinato. Inventiva giuridica e spazi nel mondo globale*, Laterza, 2006.

Final Brief Of Former EPA Administrators William D. Ruckelshaus and William K. Reilly As Amici Curiae In Support Of Respondents at 22 State of West Virginia v. United States Environmental Protection Agency No.15-1363 (and consolidated cases).

FINNIS, J., *Public Good: The Specifically Political Common Good in Aquinas*, in George, R. P. *Natural Law and Moral Enquiry* Washington: Georgetown University Press, 1988.

FIORINA M., *Legislative Choice of Regulatory Forms: Legal Process or Administrative Process*, in 39(1) *Public Choice* 33–66, 1982.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

FIORINO D.J., *Environmental Bureaucracies: The Environmental Protection Agency*, in Kraft M. and Sheldon K. *The Oxford Handbook of U.S. Environmental Policy*, 2012.

FISHER E., *Climate Change Litigation, Obsession and Expertise: Reflecting on the Scholarly Response to Massachusetts v. EPA* in 35(3) *L. Policy* 236, 2013.

Fisher E., *Risk Regulation and Administrative Constitutionalism*, Hart Publishing, 2007.

FISHER E., *Precaution, Precaution Everywhere: Developing a Common Understanding of the Precautionary Principle in the European Community*, in 9(1) *Maastricht Journal of European and Comparative Law*, 7-28, 2002.

FLANAGAN S., *The Administrative Powers of the President: Environmental Policy from Clinton to Obama*, at http://cspc.nonprofitsoapbox.com/storage/Fellows2011/Flanagan-Final_Paper.pdf

FOLGER P., *The Carbon Cycle: Implications For Climate Change And Congress* in Congressional Research Service Report, Mar. 13, 2008, available at <http://www.usembassy.at/en/download/pdf/carbon-cycle.pdf>

FONDERICO G., *La tutela della concorrenza e la regolazione del mercato*, in GIULIO VESPERINI, *Diritto amministrativo speciale*, Milano, Giuffrè, 2005.

FONDERICO G., *Regolazione economica, diritto della*, in M. CLARICH E G. FONDERICO *Dizionario di diritto amministrativo*, Milano, Il Sole 24 ore, 2007.

FOX S.T., *Responding to Climate Change: The Case for Unilateral Trade Measures to Protect the Global Atmosphere*, in 84 *GEO. L. J.* 2499, 2503, 2507-08, 1996.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

FRACCHIA F., *Cambiamento climatico e sviluppo sostenibile: lo stato dell'arte*, in CARTEI G.F., in *Cambiamento climatico e sviluppo sostenibile*, Torino Giappichelli, 2013.

Framework Convention on Climate Change (2015) Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.

FREEDMAN, J. O., *Crisis and Legitimacy in the Administrative Process* in 27 *Stan L. Rev.* 104, 1974.

FREEMAN AND LAZARUS: *Is the President's Climate Plan Unconstitutional?*, Harvard Law Today, March 18, 2015.

FREEMAN J. AND GUZMAN A., *Climate Change and US Interests*, in 41 *Environmental Law Reporter* 10696, 2011.

FREEMAN J. AND VERMULE A., *Massachusetts v EPA: From Politics to Expertise* in 57 *Supreme Court Review* 2007.

FUKUYAMA F., *State-Building: Governance And World Order In The 21st Century*, 2004.

GENSCHEL P. AND JACHTENFUCHS M., *Beyond The Regulatory Polity? The European Integration of Core State Powers*, Oxford University Press, 2014.

GIOVINAZZO C. T., *Defending Overstatement: The Symbolic Clean Air Act and Carbon Dioxide*, in 30 *Harvard Environmental Law Review* 101, 2006.

GLICKSMAN R.L., *Ecosystem Resilience to Disruptions Linked to Global Climate Change: An Adaptive Approach to Federal Land Management*, in 87 *Neb. L. Rev.* 833, 2009.

GOLDTHAU A. AND SITTER N., *A liberal Actor in a Realist World. The European Union Regulatory State and the Global Political Economy of Energy*, Oxford University Press, 2015.

GOLDTHAU A., ANDERSON S. S., AND SITTER N., *The EU Regulatory State, Commission Leadership and External Energy Governance* in

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

JAKUB M. GODZIMIRSKI, *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses* Palgrave Macmillan, 2015.

GORE A. for TED.com available at <https://www.youtube.com/watch?v=gVfgkFaswn4>.

GREGOR E., *Climate Policies in the EU and USA*, European Parliamentary Research Service, 2015.

GUNNINGHAM N., *Confronting the Challenge of Energy Governance*, in 1(1) *Transnatl. Environ. L.* 119 2012.

H. C. H. HOFMANN, G. C. ROWE, A. H. TURK, *Administrative Law and Policy in the European Union*, Oxford Press, 2011.

HAHN R. AND STAVINS R., *The Effect of Allowance Allocations on Cap-and-Trade System Performance*, in 1, 17 *Harv. J.L. & Econ.*, Feb, 2010.

HAHN R. AND STAVINS R., *The Effect of Allowance Allocations on Cap-and-Trade System Performance*, in 1, 17 *Harv. J.L. & Econ.*, Feb, 2010.

Hampton J.W. Jr. & Co. v. United States. *Justia US Supreme Court Center. April 9, 1928. 276 U.S. 394 (1928)*.

HARDIN G., *The Tragedy of the Commons*, in 162 *Science*, 1243, 1968.

HARLOW C., *Global Administrative Law: The Quest for Principles and Values* in 17(1) *European Journal of International Law* 187, 2006.

HARLOW, C., *European Administrative Law and the Global Challenge*, in P. CRAIG AND G. DE BÚRCA, *The Evolution of EU Law*, Oxford: Oxford University Press, 1999.

HEINMILLER, T., *The politics of 'cap-and-trade' policies*, in 47 *Natural Resources Journal* 445-467, 2007.

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HEINZERLING L., *Regulatory Costs of Mythic Proportions* in 107 *Yale Law Journal* 1998.

HELM D., *Climate Change Policy: Why Has So Little Been Achieved?*, in *Oxford Review of Economic Policy* 211, 2008.

HENKEL C., *The Allocation of Powers in the European Union: A Closer Look at the Principle of Subsidiarity*, in 20 *Berkeley J. INT'L L.* 359, 363– 64 2002.

HEY E. AND NAUD'É FOURIE A., *Participation in Climate Change Governance and Its Implications for International Law* in RAYFUSE R. AND SCOTT S.V., *International Law in the Era of Climate Change* Edward Elgar, Cheltenham, 254, 2012.

HEYVAERT V., *Facing the Consequences of the Precautionary Principle in European Community Law*, in 31 *European Law Review* 185, 2006.

HEYVAERT V., *Governing Climate Change: Towards a New Paradigm of Risk Regulation*, 74 *Modern Law Review* 817, 2011.

HILSON C., *Climate Change Litigation in the UK: An Explanatory Approach (or Bringing Grievance Back In)* in FRACCHIA F. AND OCCHIENA M., *Climate Change: La Riposta del Diritto*, Editoriale Scientifica, Naples, 421, 2010.

HM Treasury, *The Stern Review on the Economics of Climate Change*, UK Treasury 2006. See also Stern N., *Un piano per salvare il Pianeta*, Feltrinelli, 2009.

HM Treasury, *The Stern Review on the Economics of Climate Change*, UK Treasury 2006.

HOLDEN E., *Clean Power Plan: With climate rule on hold, should states worry about deadlines?*, E&E Publishing LLC, March 24, 2016.

HOLLENBACH, D., *The Common Good and Christian Ethics*, Cambridge: Cambridge University Press, 2002.

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HOLLO E.J., KULOVESI K., MEHLING M., *Climate Change and The Law*, New York : Springer, 2013.

HOWSE R., *The End of the Globalization Debate: a Review Essay* in 121(6) *Harvard Law Review* 1531, 2008.

IMPINNA M.A., Shale Gas: Present and Future Perspective in the US and EU, in Vol 6 issue 3 *European Energy Journal*, 2016.

in *ReOtter TailPower Company* 744 N.W.2d 594, 603 S.D. 2008.

Industrial Union Department, *AFL-CIO v. American Petroleum Institute* (1980), *American Textile Manufacturers Institute v. Donovan* (1981), and *Whitman v. American Trucking Associations* (2001)).

IPCC Assessment Report 2014 and the NASA at <http://climate.nasa.gov/>

IPCC, *Climate Change 2013: The Physical Science Basis*, 2013.

JAFFE L.L., *An Essay on Delegation of Legislative Power* in 1, 47 *Colum. L. Rev.* 359, 1947.

JAGER J. AND O'RIORDAN T., *The history of climate change science and politics*, in *Politics of climate change*, Routledge, London, 1996.

JANS J., *Did Baron von Munchhausen ever Visit Aarhus? Some Critical Remarks on the Proposal for a Regulation on the Application of the Provisions of the Aarhus Convention to EC Institutions and Bodies* in MACRORY R., *Reflections on 30 Years of EU Environmental Law: A High Level of Protection?* Europa Law Publishing 2006.

JOHNSON S.P. AND COERCELLE G., *The environmental policy of the European Communities*, Graham & Trotman, London 1989.

JORDAN A. AND ADELLE C., *Environmental Policy in the EU, Actors, Institutions and Process*, Routledge, London, 2013.

JOYNER C.C., *Burning International Bidges, fueling global discontent: The United States and rejection of the Kyoto Protocol*, in 33, 1 *Victoria U. Wellington L. Rev.* 27, 2007.

KARKKAINEN B. C., *'New Governance' in Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping* in 89 *Minn. L. Rev.* 471, 2004.

KAUL, I., GRUNBERG, I. AND STERN, M. A., *Global Public Goods: International Cooperation in the 21st Century*, Oxford: Oxford University Press, 1999.

KEESSEN A., *In search of a European legislative approach to adaptation to climate change*, in PEETERS M. AND UYLENBURH R., *EU Environmental legislation legal Perspective on Regulatory Strategies*, Edward Elgar 2014.

KEHOANE N.O. AND REVESZ R.L. AND STAVINS R.N., *The Choice of Regulatory Instruments in Environmental Policy*, 22 *Harv. Envtl. Law Rev.* 313, 346, 1998.

KEHOE R., *The Fight for Access: Comparing and Contrasting Standing Doctrine in the United States and the European Union, with a Focus on Environmental Litigation*, www.elizabethburleson.com

KIMBER C., *A comparison of Environmental Federalism in the United States and the European Union*, in 54 *Maryland Law Review* 1658, 1995.

KINGSBURY B, KRISCH N. AND STEWART R.B., *The Emergence of Global Administrative Law* in 68(3-4) *Law and Contemporary Problems* 20, 2005.

KINGSBURY B. AND CASINI L., *Global Administrative Law Dimensions of International Organizations Law*, in in 6(2) *International Organizations Law Review* 326, n 23, 319, 2009.

KINGSBURY B., *The Concept of "Law" in Global Administrative Law* in 20(1) *European Journal of International Law* 23, 2009.

KINNEY E.D., *The Emerging Field of International Administrative Law: Its Content and Potential* in 54(1) *Administrative Law Review* 415, 2002.

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KOHLER-KOCH B., FINKE B., *The Institutional Shaping of EU–Society Relations: A Contribution to Democracy via Participation?* in 3(3) *Journal of Civil Society*, 205–21, 2007.

KOLBERT E., *Watching Sandy, Ignoring Climate Change*, in *New Yorker*, Oct. 29, 2012 at, www.newyorker.com/online/blogs/newsdesk/2012/10/watching-hurricanesandy-ignoring-climate-change.html.

KOPICKI A., *Is Global Warming Real? Most Americans Say Yes*, *New York Times*, June 1, 2014.

KOSLOW S., STANDARDLESS, *Administrative Adjudication*, in 22 *Ad. L. Rev.* 407, 1970.

KOTCHEN M., *Public Goods*, in J. WHITEHEAD AND T. HAAB, *Environmental and Natural Resource Economics: An Encyclopedia*, CA: ABC CLIO, 2014.

KRAFT M. E., *Congress and Environmental Policy*, in KRAFT M. E., AND KAMIENIECKI S., *The Oxford Handbook of U.S. Environmental Policy*, 2012.

KRISCH N. AND KINGSBURY B., *Introduction: Global Governance and Global Administrative Law in International Legal Order* in 17 *European Journal of International Law* 1, 2006.

KULOVESI K., *Exploring the Landscape of Climate Law and Scholarship: Two Emerging Trends* in HOLLO E.J., KULOVESI K., AND MEHLING M., *Climate Change and the Law*, Springer, Dordrecht, 31, 2013.

Kyoto Protocol to the UN Framework Convention on Climate Change 1997.

LARSON E.T., *Why Environmental Liability Regimes in the United States, the European Community, and Japan Have Grown Synonymous With the Polluter Pays Principle* in 38 *Vand. J. Transnat'l L.* 541, 2005.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

LAZARUS R., *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, in 94 *Cornell L Rev* 1153, 2009.

LE TREUT H. et al., *Historical Overview of Climate Change*, in Intergovernmental Panel On Climate Change, *Climate Change 2007 - The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the IPCC* 115-16 2007.

LEE M., *EU Environmental Law, Governance and Decision-Making*, Hart Publishing 2014.

LEISEROWITZ A. ET AL., *Climate Change in the American Mind: Americans Global Warming Beliefs and Attitudes in November 2013*, Yale Project on Climate Change Communication and George Mason University Center for Climate Change Communication, New Haven, CT at www.environment.yale.edu/climate-communication/files/Climate-Beliefs-November-2013.pdf.

LEISEROWITZ A. ET AL., *Extreme Weather, Climate and Preparedness in the American Mind*, 2013, Yale Project on Climate Change Communication, New Haven.

LERUM BOASSON E. AND WETTESTAD J., *EU Climate Policy*, Ashgate 2013.

LEVI-FAURR D., *The odyssey of the regulatory state*, Jerusalem Papers in Regulation & Governance Working paper n. 39, 2011.

LEVIN K. ET ALL, *Playing it Forward: Path Dependency, Progressive Incrementalism, and the "Super Wicked" Problem of Global Climate Change* unpublished manuscript, available at 5 http://environment.research.yale.edu/documents/downloads/0-9/2010_super_wicked_levin_

LEWIS X., *Standing of Private Plaintiffs to Annul Generally Applicable European Community Measures: If the System is Broken, where Should it be Fixed?*, in 30 *Fordham Int'l. L.J.* 1496, 2007.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

LINDSETH P.L., *Democratic Legitimacy and the Administrative Character of Supranationalism: The Example of the European Community*, in 99 *COLUM. L. REV.* 628, 721-22, 1999.

LING K. AND GEMAN B., *Senate Dems Wrestle over Carbon Market Regs, Oversight in Climate Bill*, N.Y. Times, July 24, 2009 at <http://www.nytimes.com/cwire/2009/07/24/24climatewire-senate-dems-wrestle-over-carbon-market-regs-91367.html?pagewanted=all>.

LIPTAK A. AND DAVENPORT C., *Supreme Court Deals Blow to Obama's Efforts to Regulate Coal Emissions*, N.Y. Times February 9, 2016.

LITZ F. T., *Can The U.S. Get There From Here? Using Existing Federal Laws and State Action to Reduce Greenhouse Gas Emissions*, 1, 3 World Resources Institute 2013.

LIVERMORE M.A, REVESZ R., *The globalization of cost benefit analysis*, Oxford Univeristy Press 2013.

LOBEL O., *Setting the Agenda for New Governance Research* in 89 *Minn. L. Rev.* 498; 2004.

LOBEL O., *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought* in 89 *Minn. L. Rev.* 342, 2004.

LODGE M., *Regulation, The Regulatory State and European Politics*, in 31 *West European Politics* 280, 2008.

LÖFGREN A., BURTRAW D., WRÅKE M. AND MALINOVSKAYA A., *Architecture of the EU Emissions Trading System in Phase 3 and the Distribution of Allowance Asset Values*, 1, 13 (October 2015) http://www.rff.org/files/document/file/RFF-DP-15-45_0.pdf.

LOFSTEDT R. E. AND VOGEL D., *The changing Character of Regulation: A comparison of Europe and the United States*, in 21(3) *Risk Analysis*, 400, 2001.

Lujan v. Defenders of Wildlife, 504 U.S. 555, 560, 1992.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

MADISON J. *The Federalist*, 1801.

MAJONE A., *Regulating Europe*, Rutledge, London, 1996.

MAJONE G., *From the Positive to the Regulatory State: Causes and Consequences of Changes in the Mode of Governance*, in 17(2) *Journal of Public Policy*, 139-67, 1997.

MAJONE G., LA SPINA A., *Lo Stato Regolatore*, Il Mulino, 2000.

MAJONE G., *The regulatory state and its legitimacy problems*, in 22(1) *West European Politics*, 1-24, 1999.

MAJONE G., *The rise of the regulatory state in Europe*, *West European Politics* Vol. 17, Iss. 3, 1994.

MANCUR O., *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press, 1971.

MANSON N. A., *Formulating the Precautionary Principle*, in 24 (3) *Environmental Ethics* 263-274, 2002.

MARITAIN, J., *The Person and the Common Good*, Notre Dame: University of Notre Dame Press, 1946.

MARKELL D. AND RUHL J. B., *An Empirical Assessment of Climate Change In The Courts: A New Jurisprudence Or Business As Usual?*, 60 *Fla. L. Rev.* 15 2012.

MARTEL J., JAROS C., FAYNE Z. AND SAHAY S., *Clean Air Regulation*, in FREEMAN J. AND GERRARD M.B., *Global Climate Change and US Law*, ABA Publishing, 2014.

MARTELLA R. AND FRANCKE G., *Federalism in Environmental Decision Making* in 27 (1) *Natural Resources & Environment*, ABA, 2012.

MASHAW J.L., *Predelegation: Why Administrators Should Make Political Decisions*, in 84 *Journal of Law, Economics and Organization* 82, 1985.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

MASHAW J.L., *Explaining Administrative Process. Normative, Positive and Critical Stories of Legal Development* in 6 *Journal of Law, Economics and Organization* 267, 1990.

Massachusetts v. EPA, 549 U.S. 497 (2007).

MATTARELLA B.G., *La tutela degli interessati nel procedimento amministrativo: un convegno sull'esperienza europea*, in 3 *Rivista trimestrale di diritto pubblico*, 1996.

MATTARELLA B.G. AND CHITI E., *Global Administrative Law and European Administrative Law. Relationships, Legal Issues and Comparison*, Berlin/Heidelberg/New York, Springer, 2011.

MATTARELLA B.G., *La risoluzione del Parlamento europeo sulla disciplina del procedimento amministrativo*, in 3 *Rivista trimestrale di diritto pubblico*, 883-884, 2013.

MATTARELLA B.G., *Procedimenti a atti amministrativi*, in Mario P. Chiti, *Diritto amministrativo europeo*, Milano, Giuffrè, 2013.

Mattarella B.G., *The concrete options for a law on administrative procedure bearing on direct EU administration*, in 3-4 *Rivista italiana di diritto pubblico comunitario*, 2012.

MATTHEWS F., *Governance and State Capacity*, in Levi-Faur D., *The Oxford Handbook of Governance*, Oxford University Press, 2012.

MAXWELL B., *Who Speaks for the Climate: Making Sense on Media Reporting on Climate Change* New York: Cambridge University Press, 2011.

MAXWELL T. B. AND BOYKOFF J.M., *Balance as bias: global warming and the US prestige press* in 14 *Global Environmental Change* 125, 2004.

MCGARITY, T.O., *Our science is sound science and their science is junk science: Science-based strategies for avoiding accountability and responsibility for risk-producing products and activities*, in 52 *Kan. L. Rev.* 897-937, 2004.

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MCGOWAN C., *Congress, Courts and Control of Delegated Power*, 77 *Colum. L. Rev.* 1119, 1977. Stewart R., *The Reformation of American Administrative Law*, 88 *Harv. L. Rev.* 1667, 1975.

MELILLO J. M., RICHMOND T., AND YOHE G. W., *Climate Change Impacts in the United States: The Third National Climate Assessment*, 2014, U.S. Global Change Research Program, Washington, DC.

MEUWESE A., SCHUURMANS Y., VOERMANS W., *Towards a European Administrative Procedure Act*, in 2(2) *Review Eur. Admin. L.* 7, 2009.

Michigan v. EPA, 576 US 2015.

MILLS E., *Whitman v. American Trucking Associations Inc*, in 29(2) *Ecology Law Quarterly*, 159, 2002.

Mistretta v. United States (1989), citing *J. W. Hampton, Jr. & Co. v. United States*, 276 U.S. 394, 406, 48 S.Ct. 348, 351(1928).

MONNET J., *Memories*, Paris, 1976.

MORAN M., *The British Regulatory State: High Modernism and Hyper-Innovation*, Oxford University Press, 2003.

MORAN M., *Understanding the Regulatory State*, in 22 *British Journal of Political Science*, 400, 2002.

MORGAN D., *Beyond Epistemological Pluralism: Toward an Integrated Vision of the Future*, in *Futures* May 19, 2011.

NAPOLITANO G., ABRESCIA M., *Analisi Economica del Diritto Pubblico*, Bologna Il Mulino, 2009.

NAPOLITANO G., *Diritto amministrativo comparato*, Milano, Giuffrè, 2007.

NAPOLITANO G., *Discovering the Logic of Administrative Law—A Reply to Guy Seidman and Dolores Utrilla*, *Int'l J. Const. L. Blog*, Sept. 3, 2014, available at: <http://www.iconnectblog.com/2014/09/3307>.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

NAPOLITANO G., *Espansione o riduzione dello Stato? I poteri pubblici di fronte alla crisi* in G. Napolitano, *Uscire dalla crisi. Politiche pubbliche e trasformazioni istituzionali*, , Bologna, il Mulino, 2012.

NAPOLITANO G., *L'energia elettrica e il gas*, in *Trattato di diritto amministrativo*, a cura di S. Cassese, *Diritto amministrativo speciale*, III, II ed., Giuffré, Milano, 2003.

NAPOLITANO G., *Le procedure e le tecniche di regolazione*, in *Arel/informazioni*, n. 1/2002.

NAPOLITANO G., *Les biens publics et les «tragédies de l'intérêt commun»*, in *Droit administratif*, 2007.

NAPOLITANO G., *The Role of the State in (and after) the Financial Crisis: New Challenges for Administrative Law*, in P. Lindseth e S. Rose-Ackerman, *Comparative Administrative Law*, Cheltenham, Edward Elgar, 2010.

NAPOLITANO G., *Towards a European Legal Order for Services of Economic General Interest*, in *European Public Law*, 2005.

NAPOLITANO, G., *Sul futuro delle scienze del diritto pubblico: variazioni su una lezione tedesca in terra americana*, in 1 *Riv. trim. dir. pubbl.*, 1 sub., 2010.

National Climate Program Act of 1978, Pub. L. No. 95-367, 92 Stat. 601 (1978) (as amended at 15 U.S.C. §§ 2901–2908).

National Research Council of the National Academics, *Science and Decisions: Advancing Risk Assessment*, The National Academy Press, Washington DC, 2009.

NESPOR S., *La Conferenza di Copenhagen: un accordo fallimentare o la base di un nuovo ordine internazionale per il contenimento del cambiamento climatico?*, in 2 *Riv. Trim. Dir. Pubbl.*, 2010.

NESPOR S., *Oltre Kyoto: il presente e il future degli accordi sul contenimento del cambiamento climatico*, in *Riv. Giur. Ambiente* 1, 2004.

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New energy DG plan outlined. ENDS Europe REPORT, Retrieved 04/22, 2013, from www.lexisnexis.com/uk/nexis

NIXON R., Executive Order 11507 Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities.

NORDHAUS W.D., YANG Z., *A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies*, in 86 AMER. ECON. REV. 754, 1996.

OBERTHUR S., *Global Climate Governance after Cancun: Options for EU Leadership* in 46(1) *Intl. Spectator* 5, 2011.

OBERTHUR S., *The European Union's Performance in the International Climate Change Regime*, in 33(6) *Journal of European Integration*, 667-682, 2011.

OBERTHÜR, S. AND OTT H., eds. *The Kyoto Protocol*, Berlin: Springer-Verlag, 1999.

OHLIGER T., *US Climate Change Policy*, European Parliament, 1, 11 March 2015.

OLIVER D., PROSSER T, RAWLINGS R., *The Regulatory State Constitutional Implications*, Oxford University Press 2010.

OLSON M., *The Logic Of Collective Action: Public Goods And The Theory Of Groups*, 46, 48, 2d ed., Harvard Univ. Press 1971.

OLSON M., *The Logic of Collective Action: Public Goods and the Theory of Groups*, 1965.

Opening Br. of Pet'rs on Core Legal Issues 36–41, *West Virginia v. EPA*, No. 15-1363, Doc. No. 1610010 (D.C. Cir. Apr. 22, 2016).

ORESQUES N., *Beyond the Ivory Tower: The Scientific Consensus on Climate Change*, in 306(5702) *Science* 1686, 2004.

OSOFSKY H.M., *Suburban Climate Change Efforts: Possibilities for Small and Nimble Cities Participating in State, Regional, National,*

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

and International Networks in 22 *Cornell J. L. Public Policy* 395, 2012.

OSOFSKY H.M., *The Intersection of Scale, Science, and Law in Massachusetts v. EPA* in Burns W.G.C. and Osofsky H.M., *Adjudicating Climate Change: State, National, and International Approaches*, Cambridge University Press, New York, 129, 2009.

OSOFSKY M., *Climate Change Litigation as Pluralist Legal Dialogue?* in 26 *Stanford Environ. L. J.* 181, 2007.

OSTROM E., *A Polycentric Approach for Coping with Climate Change: Background Paper to the 2010 World Development Report*, Policy Research Working Paper 5095, World Bank, New York 2009.

OSTROM E., *Governing The Commons: The Evolution Of Institutions For Collective Action*, Cambridge Univ. Press 1990.

OWEN D., *Climate Change and Environmental Assessment Law* in 33 *Colum. J. Envtl L.* 57, 2008.

PACHAURI, R. K. AND REISINGER A., *Climate Change 2007: Synthesis Report*. Geneva: Intergovernmental Panel on Climate Change, 2007.

PAINTER J., *Climate Change in the Media: Reporting Risk and Uncertainty*, London: IB. Tauris, 2013.

PALLEMAERTS M., WILLIAMS R., *Climate change*, in PEETERS M. AND DEKETELAERE K., *EU Climate Change Policy*, Cheltenham: Edward Elgar, 2006.

PARKER C., BRAITHWAITE V., "Regulation" in PETER CANE AND MARK TUSHNET, *The Oxford Handbook of Legal Studies* Oxford University Press, 2003.

PEEL J ET AL., *Climate Change Law in an Era of Multi-Level Governance*, in 1 *Transnatl. Env. Law* 245-280, 2012.

PEEL J AND OSOFSKY J.H., *Climate Change Litigation Regulatory Pathways to Cleaner Energy*, Cambridge, 2015.

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PEEL J., GODDEN L., AND KEENAN R.J., *Climate Change Law in an Era of Multi-Level Governance*, in 1(2) *Transnatl. Environ. Law* 245, 2012.

Plaumann v. Commission, 1963 ECR 95 Case 25/62

Poland v. Commission 2009 ECR II-3395 Case T 183/07

POWELL A., *Lazarus looks at Obama emissions plan in post-Scalia court*, Harvard Law Today, March 1, 2016.

President's Sci. Advisory Comm., *Restoring the Quality of Our Environment* (1965), available at <http://dgs.stanford.edu/labs/caldeiralab/Caldeira%20downloads/PSAC.%201965,%20Restoring%20the%20Quality%20of%20Our%20Environment.pdf>.

Press Release, Ctr. for Biological Diversity, Sen. Kerry and Rep. Inslee Join Conservation Groups in Global Warming Lawsuit Against Bush Administration (Feb. 8, 2007), http://www.biologicaldiversity.org/news/press_releases/national-assessment-02-08-2007.html.

PRESTON B.J., *The Influence of Climate Change Litigation on Governments and the Private Sector* in 2 *Clim. L.* 485, 2011.

Protocol n. 2 to the TFEU, *On the Application of the Principles of Subsidiarity and Proportionality*.

Q&A: EPA's Federal Implementation Plan, Center for Climate and Energy Solution (2016) <http://www.c2es.org/federal/executive/epa/q-a-epas-federal-implementation-plan>

QUITTKAT C., *The European Commission's Online Consultations: A Success Story?* in 49(3) *Journal of Common Market Studies*, 653–674, 2010.

RAMANATHAN V. AND FENG Y., *On Avoiding Dangerous Anthropogenic Interference with the Climate System: Formidable Challenges Ahead*, in 105 *Proc. Nat'L Acad. SCI.* 14,245, 14, 245, 2008.

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RAMLOGAN R., *Sustainable Development: Towards a Judicial Interpretation*, Martinus Nijhoff Publishers, Boston 2011.

RANCI P., *Fermare il cambiamento del clima: quanto costa? Possiamo permettercelo? Chi paga?* In Migliavacca M., Rigamonti L., *Cambiamenti Climatici. Un Approccio Interdisciplinare per Capire un Pianeta in Trasformazione*, Bologna, Il Mulino, 2010.

RAY J. AND PUGLIESE A., *Worldwide, Blame for Climate Change Falls on Humans: Americans among Least Likely to Attribute to Human Causes*, Gallup, 22 April 2011.

Regulation 1367/2006/EC of 25 September 2006 of the European Parliament and of the Council.

Regulation No 525/2013 on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change.

Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826, 79,830 (Dec. 20, 2000).

Regulatory Impact Analysis For The Clean Power Plan Final Rule at <https://www.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule-ria.pdf>

REHBINDER E. AND STEWART R.B., *Environmental Protection Policy*, Berlin De Gruyter, 1985.

REVESZ R. L. AND LIVERMORE M.A., *Rethinking Health-Based Environmental Standards*, in 89 *New York University Law Review*, 1184, October 2014.

REVESZ R. L., *Environmental Regulation Cost Benefit Analysis and the Discounting of Human Live*, 99 *Columbia Law Review* 941, 1999.

REVESZ R. L., GRAB D.A., LIENKE J., *Bounded Regulation How the Clean Power Plan Conforms to Statutory Limits on EPA's Authority*, Institute for Policy Integrity, September 2016.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

REVESZ R., DATLA K., *Deconstructing Independent Agency (and executive Agencies)*, in 98(4) *Cornell Law Review* 770-842, 2013.

REVESZ R.L. AND LIVERMORE M.A., *Retaking Rationality: How Cost Benefit Analysis Can Better Protect The Environment and Our Health*, Oxford University Press, 2008.

REVESZ R.L., *Federalism and Environmental Regulation: A Public Choice Analysis*, in 115 *Harv. L. Rev.* 553, 571 2001.

REVESZ R.L., *Federalism and Environmental Regulation: An Overview*, in REVESZ R.L., SANDS P. AND STEWART R.B., *Environmental Law, the Economy and Sustainable Development The United States, the European Union and the International Community*, Cambridge University Press, 2000.

RINGIUS, L., *Differentiation, leaders, and fairness. International Negotiation*, 4, 133–66, 1999.

RITTEL H., WEBBER M., *Dilemmas in a General Theory of Planning*, in 4 *Policy Sci* 155 1973.

ROSENZWEIG C., ET AL., *Assessment of Observed Changes and Responses in Natural and Managed Systems*, in Intergovernmental Panel On Climate Change, *Climate Change 2007 - Impacts, Adaptation And Vulnerability: Contribution Of Working Group Ii To The Fourth Assessment Report Of The IPCC (2007)*. U.S. Global Change Research Program, *Global Climate Change Impacts In The United States* 9 (2009), available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impactsreport.pdf>

ROWLANDS I., *The Politics of Global Atmospheric Change*, Manchester University Press, 1995.

RUBIO M. AND TRUMP D. at <https://www.theguardian.com/us-news/2016/feb/01/republicans-ted-cruz-marco-rubio-climate-change-scientists>. Smith L., *Overheated rhetoric on climate change doesn't make for good policies*, *Washington Post*, May 19, 2013.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

RUHL J.B. AND SALZMAN J., *Climate Change, Dead Zones and Massive Problems in the Administrative State: A guide for Whittling Away*, in 98 California Law Review, 59, 2010.

RUHL J.B., AND SALZMAN J., *Climate Change Meets the Law of the Horse*, in 62: 5 Duke Law Journal 1015, 2013.

RUHL J.B., *Climate Change Adaptation and the Structural Transformation of Environmental Law*, in 40 *Envtl. L.* 363, 365–71, 2010.

RUHL J.B., *What is Climate Change Law?*, in Oxford University Press OUP Blog available at <http://blog.oup.com/2015/08/what-is-climate-change-law/>

RUSSELL G., *Business, States Open Legal Fire on EPA's Clean Power Plan Rule*, FoxNews.com (Oct. 26, 2015), <http://www.foxnews.com/politics/2015/10/26/business-states-open-legal-fire-on-epas-clean-power-plan-rule.html> (quoting executive director of the National Federation of Independent Business's Small Business Legal Center).

SAMUELSON P., *The Pure Theory of Public Expenditure*, 36 *Rev Economics and Statistics* 387, 1954.

SARA R. RINFRET S.R. AND FURLONG S.R., *Defining Environmental Rule Making in Kraft M. E: and Kamieniecki S., The Oxford Handbook of U.S. Environmental Policy*, 2012.

SASSEN S., *The Participation of States and Citizens in Global Governance* in 10 *Indiana Journal of Global Legal Studies* 5, 2003.

SCHARPF F.W., *Governing in Europe: Effective and Democratic?* Oxford University Press, 1999.

SCHEPEL H., *The Constitution of Private Governance. Product Standards in the Regulation of Integrating Markets*, Hart Publishing 2005.

SCHERMAN W.S., *EPA Has Designed Its Clean Power Plan to Evade Court Review*, Forbes (Aug. 3, 2015), <http://www.forbes.com/sites/>

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

beltway/2015/08/03/epa-has-designed-its-clean-power-plan-to-evade-court-review.

SCHOENBROD D., STEWART R.B. AND WYMAN K., *Breaking The Logjam: Environmental Protection That Will Work*, Yale University Press, 2010.

SCHREURS M., (2004). *The climate change divide: the EU, the USA and the future of the Kyoto Protocol* in Vig N. and Faure M. *Green Giants*, Cambridge, MA: MIT 2004, 213 and quoting Oberthür S., Ott H., *The Kyoto Protocol*, Berlin: Springer-Verlag, 1999.

SCHUTZE R., *From Rome to Lisbon: Executive Federalism in the (New) European Union*, 47 in *Common Market Law Review*, 1385, 2010.

SCHUTZE R., *Subsidiarity after Lisbon: Reinforcing the Safeguards of Federalism?*, in 68 *Cambridge Law Journal* 525, 2009.

SCHUTZE R., *The European Union Law*, 253, Cambridge University Press, 2015.

Science and Decisions Advancing Risk Assessment National Research Council (US) Committee on Improving Risk Analysis Approaches Used by the U.S. EPA. Washington (DC): National Academies Press (US); 2009.

SCOTT J., *The multilevel governance of climate change*, in Craig P. and De Burca G., *The Evolution of EU Law*, Oxford University Press, 2008, 805. Ruhl J.B., *The Political Economy of Climate Change Winners*, in 97 *MINN. L. REV.* 206, 217–41, 2012

SCOTT J., VOS E., JOERGES C., and DEHOUSSE M., *Good governance in Europe's integrated market*, Oxford University Press, 2002.

SCOVAZZI T., L'entrata in vigore del Protocollo di Kyoto, in *Riv. Giur. Ambiente*, 177, 2005.

SEERDEN R., *Administrative Law of the European Union, It's Member States and the United States: A comparative Analysis*, Cambridge 2012.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

SELIN H. AND VANDEVEER S., *EU Environmental Policy Making and Implementation: Changing Process and Mixed Outcomes*, Paper presented at the 14th Biennial Conference of the European Union Studies Association, Boston, March 2015.

SELIN H. AND VANDEVEER S., *European Union and Environmental Governance*, Rutledge 2015.

SHAPIRO, M., *Trans-Atlantic: Harlow Revisited*, in P. CRAIG AND R. RAWLINGS, *Law and Administration in Europe; Essays in Honour of Carol Harlow*, Oxford: Oxford University Press, 2003.

SHELTON D., ed., *Commitment and Compliance: The Role of Nonbinding Norms in The International Legal System*, Oxford University Press, 2003.

SHI-LING HSU, *A Realistic Evaluation of Climate Change Litigation through the Lens of a Hypothetical Lawsuit* in 79(3) *Univ. Colo. L. Rev.* 701, 2008.

SKJAERSETH J. B. AND WETTESTAD J., *The EU Emission Trading System Directive revised*, in *The New Climate Policies of the European Union: Internal Legislation and Climate Diplomacy*, ASP Edition, 2010, 101-123.

SKJÆRSETH J. B., *The climate policy of the EC* in 32(1), *Journal of Common Market Studies*, 26, 1994.

SKJAERSETH J.B. AND WETTESTAD J., *EU Emission Trading: Initiation Decision-Making and Implementation*, Aldershot Ashgate, 2008.

SMITH B., PILIFOSOVA O., BURTON I., CHALLENGER B., HUQ S., KLEIN R.J.T., YOHE G., *Adaptation to climate change in the context of sustainable development and equity*, in: *IPCC, Climate Change 2001: Impacts, Adaptation and Vulnerability, IPCC WG II*. Cambridge, UK: Cambridge University Press; 2001.

SMITH C., *The Precautionary Principle and the Environmental Policy. Science, Uncertainty and Sustainability*, in Vol. 6 no. 3 *Int. J. Occup. Environ. Health*, 2000.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

SMITH L., *Overheated rhetoric on climate change doesn't make for good policies*,_Washington Post, May 19, 2013.

SOLOMON S., PLATTNER GK., KNUTTI R. AND FRIEDLINGSTEIN P., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, in 106 *Proc. Nat'L Acad. SCI.* 1704, 1704, 2009.

State of West Virginia v. United States Environmental Protection Agency No.15-1363 (brief for petitioners and consolidated cases)

STAVINS R.N., *Policy Instruments for Climate Change: How can National Governments Address a Global Problem?*, in *U. CHL LEGAL F.* 293, 1997.

STAVINS R.N., *A Meaningful U.S. Cap-and-Trade System To Address Climate Change*, in 32 *Harv. Envtl. L. Rev.* 294, 2008.

STAVINS, R.N, *Cap-and-trade or a carbon tax*, in *The Environmental Forum*, 16, 2008.

STEWART B.R., BREYER S.G ET ALL, *Administrative Law And Regulatory Policy: Problems, Text, And Cases*, Wolters Kluwer Law and Business, 2011.

STEWART R.B., *Pyramids of Sacrifice: Problems of Federalism in Mandating State Implementation of National Environmental Policy*, in 86 *Yale LJ.* 1196 1977.

STEWART R.B. *Environmental Law in the United States and the European Community: Spillovers, Cooperation, Rivalry, Institutions*, in *The University of Chicago Legal Forum*, Issue 1 article 4, 1992.

Stewart R., *Economics Incentives for Environmental Protection: Opportunities and Obstacles*, 171, 202 Cambridge University Press 2000.

STEWART R.B., *Remedying Disregard In Global Regulatory Governance: Accountability, Participation, And Responsiveness*, in 108 (2) *The American Journal of International Law*, 219, 2014.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

STEWART R.B., *Environmental Regulation and International Competitiveness*, in 102 *YALE L. J.* 2039, 2099, 1993.

STEWART R.B., *Il diritto amministrativo globale*, in *Riv. trim. dir. pubbl.*, 633 ss, 2005.

STEWART R.B., KINGSBURY B. AND RUDYK B. (eds), *Climate Finance. Regulatory and Funding Strategies for Climate Change and Global Development*, NYU Press 2009.

STEWART R.B., *Remedying Disregard in Global Regulatory Governance: Accountability, Participation, and Responsiveness*, in 108 *American Journal of International Law* 216, 2014.

STEWART. R.B., *Economic Incentives for Environmental Protection: Opportunities and Obstacles*, IN REVESZ R.L. AND SANDS P AND STEWART. R.B., *Environmental Law The Economy and Sustainable Development: The United Sates, The European Union and the International Community*, Cambridge University Press, 2000.

STOKES E., *The EC Courts' Contribution to Refining the Parameters of Precaution*, *Journal of risk research* 491, 2008.

STONE, C.D., *Is There a Precautionary Principle?* In 31 *Environmental Law Reporter* 10790, 2001.

STRAUSS P., SMITH T.T. JR. AND BERGKAMP L., *EU Rulemaking*, in *Administrative Law of the European Union*, American Bar Association, 2008.

STRECK C., KEENLYSIDE P, VON UNGER M., *The Paris Agreement: A New Beginning*, in *Journal For European Environmental & Planning Law* 13 3-29, 2016.

SUNSTEIN C.R., *Beyond the Precautionary Principle*, 151 *University of Pennsylvania Law Review* 1003 – 1054, 2003.

SUNSTEIN C. R., *Risk and Reason: Safety, Law and the Environment*, Cambridge University Press 2002.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

SUNSTEIN C.R., Cost-Benefit Default Principles, 99 Mich. L. Rev. 1651, 1656–68 (2001) (considering relationship between cost-benefit analysis and environmental law statutes).

SUNSTEIN C.R., *On the Divergent American Reactions to Terrorism and Climate Change*, in 107 *Columbia L. Rev.* 503, 2004.

SUNSTEIN C.R., What's Standing After Lujan? Of Citizen Suits, "Injuries," and Article III, 91 Mich. L. Rev. 163, 179-181, 1992.

SUNSTEIN C.R., *Beyond the Precautionary Principle*, in 151 *University of Pennsylvania Law Review* 1003 – 1054, 2003.

SCHWARTZ B., *An Introduction to American Law*, University of Pennsylvania 2ed. 1962.

TABAU A.S., *The Paris Agreement: Rebooting Climate Cooperation Evaluation of the Paris Climate Agreement According to a Global Standard of Transparency*, in 10 *Carbon & Climate L. Rev.* 23, 2016.

TARLOCK A. D., *Now Think Again about Adaptation*, in 9 *Ariz. J. Intl. Comparative L.* 169, 1992.

The National Academies of Sciences, Engineering, and Medicine available at: <http://nas-sites.org/americasclimatechoices/sample-page/panel-reports/87-2/>.

The White House, Presidential Memorandum -- Federal Leadership on Energy Management, The White House (December 2013) <https://www.whitehouse.gov/the-press-office/2013/12/05/presidential-memorandum-federal-leadership-energy-management>

The World Economic Forum, The Global Risks Report 2016 11th Edition.

THOMPSON B. H. JR., *Tragically Difficult: The Obstacles to Governing the Commons*, in 30 *ENVTL. L.* 241, 253 (2000).

TILFORD S., *How To Make EU Emissions Trading A Success*, Center For European Reform 1, 22 May 2008.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

https://www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/p_769-275.pdf

TODD S. A., *Environmental Law as a Legal Field: An Inquiry in Legal Taxonomy*, in 95 *Cornell L. Rev.* 221, 251–82, 2010.

Treaty on the Functioning of the European Union, art. 263, Dec. 13, 2007.

TRENBERTH K.E., *Observations: Surface and Atmospheric Climate Change*, in LE TREUT H. et al., *Historical Overview of Climate Change*, Intergovernmental Panel On Climate Change, Climate Change 2007 - The Physical Science Basis: Contribution of Working Group I to the Fourth Assessment Report of the IPCC 115-16, 2007.

TRIBE L.H., *Too Hot for Courts to Handle: Fuel Temperatures, Global Warming, and the Political Question Doctrine*, Washington Legal Foundation, 2010.

TRIDIMAS T., *The General Principle of EU Law*, Oxford University Press 2006.

U.S. EPA Final Rule 80 Fed. Reg. 64662, 2015.

U.S. Global Change Research Program, *Global Climate Change Impacts in the United States* (2009), <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>.

U.S. Global Change Research Program, *The National Global Change Research Plan 2012–2021* (2012), <http://downloads.globalchange.gov/strategic-plan/2012/usgcrp-strategic-plan-2012.pdf>.

UNBEHAUN S., *A Façade Of Unity: The EU As A Global Climate Policy Leader*, Transatlantic Policy Symposium 2016 at Georgetown University.

UNFCCC, *A handbook for hosting United Nations Climate Change Conferences*, at http://newsroom.unfccc.int/media/167535/how_to_cop_unfccc.pdf

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

United Nations Framework Convention on Climate Change, May 9, 1992

United States v. Florida East Coast Ry. Co., 410 U.S. 224, 1973.

VAN ASSELT H., *Emission Trading: the enthusiastic adoption of an alien instrument? In Climate Change Policy in the European Union. Confronting the Dilemmas of Mitigation and Adaptation*, Cambridge University Press, 2010.

VAN ASSELT H., HALE T., DOELLE M., ABEYSINGHE A., MILKOREIT M., DIHL PROLO C., RUDYK B., *Maximizing the Potential of the Paris Agreement: Effective Review of Action and Support in a Bottom-up Regime Discussion brief 17 May 2016* at https://www.bsg.ox.ac.uk/sites/www.bsg.ox.ac.uk/files/documents/Paris_Agreement_Review_Discussion_Brief_170516.pdf

VAN ASSELT H., SÆLEN H. AND PAUW P., *Assessment and Review Under a 2015 Climate Change Agreement*, 2015.

VERCHICK R., *Climate, Culture and Cognition*, October 30, 2014, SSRN, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2516887 (discussing the need for climate action to resonate with people's values and cultural world views in order to achieve progress).

VIG N. J., COLLEGE C., KRAFT M.E., *Environmental policy: new directions for the twenty-first century*, University of Wisconsin, Green Bay Thousand Oaks, California: CQ Press; London: SAGE Publications Ltd., 2016.

VOGEL D., *The politics of risk regulation in Europe and united States*, in 3 *Yearbook of European Environmental Law* 31-42, 2003.

VOGEL D., TOFFEL M., POST D. AND ULUDERE N., *Environmental Federalism in the European Union and the United States*, at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1573698.

VOGLER J., BRETHERTON C., *The European Union as a Protagonist to the United States on Climate Change*, in 7[1] *Intl Studies Perspectives* 17, 2006.

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VON BERNSTORFF J, *Procedures of Decision-Making and the Role of Law in International Organizations* in 9 *German Law Journal* 1939, 2008.

VON BOGDANDY A., *Legitimacy of International Economic Governance: Interpretative Approaches to WTO law and the Prospects of its Proceduralization*, in S. GRILLER, *International Economic Governance and Non-Economic Concerns - New Challenges for the International Legal Order*, Wien-New York, 128, Springer, 2003.

VON BOGDANDY A., SONNEVEND P, *Constitutional Crisis in the European Constitution Area*, Hart publishing 2015.

VON BOGDANDY A., WOLFRUM R., VON BERNSTORFF J., DANN P. AND GOLDMANN M. (eds), *The Exercise of Public Authority by International Institutions: Advancing International Institutional Law*, Springer, 2009.

VON STORCH H., KRAUSS W., *Culture Contributes to Perceptions of Climate Change*, Nieman Reports, Winter 2005, at www.nieman.harvard.edu/reports/article/100600/Culture-Contributes-to-Perceptions-of-Climate-Change.aspx.

WADE, W., RAGNEMALM, H., STRAUSS, P.L., *Anglo-American and Nordic systems*, Milano, Giuffrè, 1991.

WALDO D., *The Administrative State: A Study of the Political Theory of American Public Administration*, Ronald Press Company 1948; revised edn Holmes & Meier 1984.

WALLACH P., *The administrative state's legitimacy crisis*, Center for Effective Public Management at Brookings available at https://www.brookings.edu/wp-content/uploads/2016/07/Administrative-state-legitimacy-crisis_FINAL.pdf

WALSH B., *Politics: The State of the Union is All about Energy – Not Climate*, Time Jan. 5, 2011 at

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<http://science.time.com/2011/01/25/politics-the-state-of-the-union-is-allabout-energy%E2%80%94not-climate/>

WATTS K.A., WILDERMUTH A.J., *Massachusetts v. EPA: Breaking New Ground on Issues Other Than Global Warming*, in 102 *Nw. Univ. L. Rev.* 1029, 2008.

WEILER J.H.H., TRACHTMAN J.P., *European Constitutionalism and Its Discontents*, in 17 *NW. J. INT'L L. & BUS.* 354, 1996.

WEILER J.H.H., *The Transformation of Europe*, in 100 *Yale Journal*, 2403, 1991.

Whitman v. American Trucking Ass'ns, 531 U.S. 457 (2001).

WHITMARSH, L., LORENZONI I., O'NEILL S., *Engaging the Public with Climate Change : Behaviour Change and Communication*, Rutledge 2012.

WIENER J. B., *Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems*, in 13 *Duke Journal of Comparative and International Law*, 207, 2003.

WIENER J.B., ROGERS M.D., *Comparing precaution in the United States and Europe*, in 5(4) *Journal of Risk Research* 320-321, 2002.

WILENSKY M., *Climate Change In The Courts: An Assessment of Non-U.S. Climate Litigation*, Columbia Law Sabin Center For Climate Change Law (February 2015)
https://web.law.columbia.edu/sites/default/files/microsites/climate-change/white_paper_-_climate_change_in_the_courts_-_assessment_of_non_u.s._climate_litigation.pdf at 30

WILS W.P.J., *Subsidiarity and EC Environmental Policy: Taking People's Concerns Seriously*, in 6 *J. Ewrr L. L.* 85, 1994.

WILSON W., *The Study of Administration*, in 2 *Pol. Sci. Q.* 197, 209-10, 1887, reprinted in W. Wilson, *The Papers Of Woodrow Wilson* 370 A. Link ed. 1968.

Tesi di Dottorato di Maria Antonia Impinna, discussa presso l'Università LUISS Guido Carli nell'anno accademico 2016-2017. Soggetta a copyright. Non riproducibile, in tutto o in parte, se non con il consenso scritto dell'autore. Citazione libera con indicazione della fonte.

World Bank, *Crowding Out or Crowding In? Climate Change and the Broader Environmental Agenda* available at http://siteresources.worldbank.org/ENVIRONMENT/Resources/244380-1250028593656/6382907-1252510780845/6428643-1256655379723/6510806-1258739266750/Rebalancing_the_environment_agenda_draft_CN.pdf accessed 26 July 2013.

World Energy Outlook Introduction at <http://www.iea.org/publications/freepublications/publication/WorldEnergyOutlookSpecialReport2016EnergyandAirPollution.pdf>

Yale University, *Public Perceptions of the Health Consequences of Global Warming*, October 2013 <http://climatecommunication.yale.edu/publications/public-perceptions-of-the-health-consequences-of-global-warming/>

YANG T. AND PERCIVAL R.V., *The Emergence of Global Environmental Law*, in 36(3) *Ecology Law Quarterly* 615, 2009.

YOHE G, TOL R. *Indicators for social and economic coping capacity: moving toward a working definition of adaptive capacity*, in 12 *Glob Environ Change* 25–40, 2002.

ZORZOLI G.B., *Cambiamenti Climatici e Condizionamenti Culturali*, in *Ec. Fonti energia e ambiente*, 2010 n. 1, 49 et sub.

ZWART T., ANTHONY G., AUBY J.B. AND MORISON J. (eds), *Values in Global Administrative Law*, Hart Publishing 2011.