

Two Stories About E.U. Climate Change Law and Policy

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The European Union has styled itself a global leader in climate action. In so doing, it presents itself as responding to science and public concern and its historic responsibilities. In terms of its means of response, the European Union's emissions trading scheme (EU ETS) has been the primary instrument. A rational response to liberal economic theory, the EU ETS is often trumpeted as a cost-effective success story internally and as a model to be adopted externally. This optimistic narrative is challenged herein.

INTRODUCTION

Viewing climate change through the lens of “international cooperation” may be, to international lawyers, a rather loaded concept. Or at least one that betrays a particular approach to the discipline. One method of public international law focuses on disputes, their settlement and pertinent rules, sources and principles. According to Benedict Kingsbury, this entails the tilting of “the subject towards specific questions of whether one state has become bound by a particular rule which the other state may invoke, and away from what might otherwise have been an overwhelming preoccupation with the construction of a global normative order.”¹ An approach that permits of a broader range of systemic objectives, building on legal realism,² has developed in the United States, with a greater focus on international institutions, their managerial

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1 Benedict Kingsbury, *The International Legal Order*, in THE OXFORD HANDBOOK OF LEGAL STUDIES 272 (Peter Cane & Mark Tushnet eds., 2005).

2 See NEIL DUXBURY, PATTERNS OF AMERICAN JURISPRUDENCE 191-200 (1997).

and problem-solving properties. Best known in its incarnation as the New Haven “policy science” approach, this has not been broadly accepted outside the United States and the “dominant jurisprudential approach to the global practice of international law continues to be positivist.”³

By focusing on international cooperation in the climate action realm and deploying interdisciplinary materials and techniques, this Article tends towards the latter approach. Instead of focusing on states *stricto sensu*, our scrutiny is trained on a regional integration economic organization, the European Union; rather than analyze treaties and general principles, we examine market-based mechanisms and their use in that polity; and instead of exclusively deploying familiar techniques of legal analysis, we reserve a key role for liberal economics. Can transnational mimesis be identified in the narrative of emissions trading?⁴ The purpose of this Article is not to sunder the positivist approach, but rather to seek the integration of what are argued herein to be relevant interdisciplinary materials and their problem-solving capacities, with traditional positivism. Bluntly put, can market-based instruments facilitate international cooperation on climate mitigation, and what light does the European Union’s Emissions Trading Scheme (EU ETS) cast on that question?

The discussion considers the European Union’s climate change law and policy, its approaches, successes and failures, and its emergent dynamics. In so doing, two competing narratives or ways of understanding the European Union’s legal response to anthropogenic climate change are apparent. The first of these, which has something of the “official history” about it, characterizes the European Union as the leading global actor in the fight against climate change. Building on its energetic role in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations — their initial phases, the “Kyoto moment,” its implementation, and beyond — the European Union has adopted a series of mitigation measures, which commit it to reducing its greenhouse gas (GHG) emissions by eighty percent by 2050.⁵

3 Kingsbury, *supra* note 1, at 272.

4 For one prominent, albeit rather limited, argument to this effect, see Jonathan Wiener, *Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law*, 27 *ECOLOGY L.Q.* 1295 (2001).

5 EUR. COMM’N, EU ACTION AGAINST CLIMATE CHANGE: LEADING GLOBAL ACTION TO 2020 AND BEYOND 10 (2009) (stating that “[t]he adoption of the climate and energy package makes the European Union the first region of the world to have both committed to such ambitious targets and put in place the measures needed to achieve them”); ANDREW JORDAN ET AL., CLIMATE CHANGE POLICY IN THE EUROPEAN UNION: CONFRONTING THE DILEMMAS OF MITIGATION AND ADAPTATION? 76 (2010) (referring to the European Unions’s Climate and Energy Package as “a momentous development”).

These steps, consistent with the science of climate change and the principle of common but differentiated responsibilities, have at their heart the EU ETS. Launched in 2005, it is a conceptually straightforward cap-and-trade system that has borrowed from the toolkit of American experiments with “economic-incentive instruments,”⁶ and built a €140,000,000,000 regime, which sits at the heart of the global carbon market and leads it. This is, so the story goes, a rational response to liberal market theory and free of the flaws of discredited “command and control” approaches to pollution control. Buttressed by its wide-ranging Climate and Energy Package (CEP) and having created a polity-wide carbon price, the EU ETS will drive the low-carbon reconstruction of the European economy. In many respects a classic environmental externality,⁷ by seeking a solution in markets and hence private resources, the public or state realm is not implicated.

The alternative history is both less optimistic and more complex. Rather than a Damascene conversion to the merits of marketization, as preached by the Kyoto Protocol,⁸ this narrative considers that the shift in instrument choice owes much to political compromise at the 1997 UNFCCC’s third Conference of the Parties at Kyoto and a broader phenomenon internal to the European Union, captured by the “new governance.” As elaborated below, this turn to market-based regulatory solutions has wrought a decisive shift in the governance techniques of the European Union.

Moreover, rather than seeing the EU ETS as a resounding success it has been plagued by problems of over-allocation, lobbying, fraud and windfall

6 Robert Stavins, *Economic Incentives for Environmental Regulation*, in 2 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 6 (Peter Newman et al. eds., 2d ed. 1998) (discussing the following applications of economic-incentive instruments in the United States: the U.S. Environmental Protection Agency’s Emissions Trading Program, the leaded gasoline phasedown, water quality permit trading, the chlorofluorocarbon (CFC) phaseout, the SO₂ allowance scheme for acid rain control, and the RECLAIM program in the Los Angeles metropolitan region).

7 NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW 27 (2007):

In common with many other environmental problems, human-induced climate change is at its most basic level an externality. Those who produce greenhouse-gas emissions are bringing about climate change, thereby imposing costs on the world and on future generations, but they do not face directly, neither via markets nor in other ways, the full consequences of the costs of their actions.

8 Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 162, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf> [hereinafter Kyoto Protocol].

payments. Instead of the market seamlessly providing private solutions to societal problems, we see the necessity for repeated state intervention. Claims as to the effectiveness and efficiency of market-based mechanisms look somewhat different in this light. And can a carbon price of seven Euros per ton (the 2012 average) really drive the low-carbon investment necessary for the complete retooling of the European economy that is necessary to meet its self-imposed target of eighty percent emissions reductions by 2050? The answer is self-evident, and rather than rely on invisible green hands, European policymakers have recently resorted to a further round of climate change measures, to further political tightening of the emissions cap, and to unilateral measures aimed at cajoling those that have failed to follow the European lead.

In unpacking these issues, the Article starts in Part I with the theoretical basis for the EU ETS and the necessary excursus into microeconomic theory and the seminal work of Ronald Coase. Although this body of work will be familiar to many, it remains the case that it is misunderstood and misrepresented by environmental law scholars. By taking Coase seriously, as it were, we will be in a better position to discuss the merits of market-based approaches to environmental problems and to assess those who should urge policymakers to draw on them. Part II establishes the environmental/constitutional structures of the European Union that form the basis of our analysis. Hand in hand with the gradual development of environmental constitutionalism within this polity, we see the adoption of techniques of “governance,” which themselves are in dialogue with the economic turn mapped out above. As far as the European Union’s legal response to climate change is concerned, Part III presents the heart of the matter — the transition of the European Union towards market-based solutions to environmental problems, their application to climate change and the creation of the EU ETS, and the subsequent, comprehensive package of measures adopted by the European Union. This, the Climate and Energy Package (CEP), has sought to address the climate change problem seriously within the European Union and also to pester, entice and persuade the rest of the world to do the same. The mixed success, both internally and externally, of the CEP has led to what is herein termed the European Union’s *Second Climate Change Package*. The effusive rhetoric of marketization has not been matched by real-life performance. This might have been anticipated not only by reference to the history of such schemes, but also had careful attention been paid to Coase. The conclusion attempts to frame these arguments in the context of international cooperation on climate change, a task that continues to elude the grasp of policymakers.

I. MARKET CONCEPTS, ECONOMIC INSTRUMENTS AND THEIR LEGAL RECEPTION

“For better or for worse, and without regard to one’s politics, the borrowing of market concepts has *transformed* legal reasoning and captured an authoritative position in the legal imagination.”⁹

The importance of emissions trading in climate change mitigation is only one of many proofs of this claim. Most enduringly and enthusiastically deployed in antitrust¹⁰ and private law¹¹ contexts in American legal scholarship, the use of economic concepts and instruments in legal analysis has extended geographically,¹² intellectually,¹³ and into non-private law disciplines.¹⁴ Most importantly for present purposes, it is well embedded in practical policy- and law-making. Indeed, the European Union’s energetic and comprehensive response to climate change is substantially characterized by its use of economic instruments, foremost amongst which is the EU ETS. The European use of economic instruments for environmental regulation is not wholly novel, either in theory or practice.

For nearly two decades, scholars of E.U. law have been debating the merits and operationalization of economic instruments *vis-à-vis* other forms of regulation.¹⁵ The present discussion examines the rationale of economic

9 ROBIN PAUL MALLOY, *LAW IN A MARKET CONTEXT: AN INTRODUCTION TO MARKET CONCEPTS IN LEGAL REASONING* 3 (2004).

10 Aaron Director, *Review of Carl Kaysen, United States v. United Shoe Machinery Corporation: An Economic Analysis of an Antitrust Case*, 24 U. CHI. L. REV. 606 (a short note that would become a *locus classicus* in the field of law and economics).

11 For exemplars of the “old law-and-economics,” see ANTHONY T. KRONMAN, *THE ECONOMICS OF CONTRACT LAW* (1979); RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* (1973).

12 UGO MATTEI, *COMPARATIVE LAW AND ECONOMICS* (1997).

13 The dogma associated with the first wave and law-and-economics (its insistence on certain behavioral assumptions and focus on wealth maximization) generated a “post-Chicago” law-and-economics movement, which purports to avoid these flaws and seeks a broader engagement with other social sciences, *see, e.g.*, NEIL K. KOMESAR, *IMPERFECT ALTERNATIVES: CHOOSING INSTITUTIONS IN LAW, ECONOMICS AND PUBLIC POLICY* (1997). For an overview of these debates, see Anthony Ogus, *Law and Economics from the Perspective of Law*, in 2 *THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW*, *supra* note 6, at 486.

14 ROBERT COOTER, *THE STRATEGIC CONSTITUTION* (2002).

15 Timothy Swanson, *Special Issue on Economic Instruments and the Environment*, 4 REV. EUR. COMMUNITY & INT’L ENVTL. L. 287 (1995).

instruments as regulatory tools. No apology is made for rehearsing arguments that are familiar to specialists, as it is still the case that some detractors of market-based mechanisms continue to misrepresent the claims and arguments made for them. This is of particular significance to those, such as the present author, that have reservations about market-based mechanisms, but the duty nonetheless remains to represent our opponents and their positions accurately.

“Externalities” are the starting point for understanding the role of economic reasoning in environmental policy. Formally stated as a “cost or benefit arising from any activity which does not accrue to the person or organization carrying out the activity,”¹⁶ an externality may be the uncompensated noise, dust or odor etc. suffered by residents adjacent to a dirty industrial operator (a “negative externality”) or the pleasure one receives from viewing the herbaceous border of one’s neighbor (a “positive externality”). In both cases, the *social* cost or benefit is greater than the *private* one. Consider the case of a coal-fired steel mill that emits great volumes of soot which then fall on a neighboring laundry. Such negative externalities impose a cost on society (the laundry and its customers) that is not borne by the operator who views this cost as external to — hence “externalities” — its own profit calculations, resulting in too much steel being produced and too few clothes being laundered. As noted by Nicholas Stern, climate change-contributing activities can readily be seen in this light.¹⁷ But how to redress this imbalance, this problem of social costs?

Such discussions are necessarily framed by the famous interventions of Ronald Coase, which in turn challenged the Pigovian solution to problematic externalities.¹⁸ When faced with a market activity that generates negative externalities,¹⁹ Arthur Cecil Pigou’s response was to engage the state and require direct governmental intervention in the form of the imposition of a tax on each unit of pollution equal to the marginal social damages at the efficient level of pollution. In its absence, argued Pigou, the social cost of a market activity would not be covered by the private cost of the activity — an inefficient outcome that would likely lead to overproduction, as operators are incentivized to produce beyond the optimum level. By burdening the activity in question, the market would be brought back into balance.

16 JOHN BLACK, NIGAR HASHIMZADE & GARETH MYLES, *A DICTIONARY OF ECONOMICS* (3d ed. 2009); see also MICHAEL J. TREBILCOCK, *THE LIMITS OF FREEDOM OF CONTRACT* ch. 3 (1994); Carl J. Dahlman, *The Problem of Externality*, 22 J.L. & ECON. 141 (1979).

17 STERN, *supra* note 7, at 27

18 ARTHUR CECIL PIGOU, *THE ECONOMICS OF WELFARE* (1920).

19 Ronald Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 1 (1960) (“[T]hose actions of business firms which have harmful effects on others . . .”).

Before turning to Coase's *The Problem of Social Cost*, we should pause to consider the attractions of Pigou's "internalization of externalities." At the very least, it responds to a lawyerly instinct that wrongdoers should desist from and make reparations for their actions — a sort of polluter-pays principle. Not unrelatedly, this approach has the virtue of simplicity. It seems obvious that the factory should compensate, even if only indirectly, those who bear costs arising from its activities. Similarly, if we tweak Pigou's taxing of wrongdoing and replace it with a delictual liability rule whereby those causing damage to the property of others are required to compensate them for their losses, this too would correspond to our intuitions regarding causation and responsibility.

Coase's response to Pigou's simple and intuitive solution²⁰ is cast in the form of a series of familiar examples and recourse to the English common law,²¹ but at its very heart is the matter of transaction costs. Assuming zero transaction costs — "a very unrealistic assumption"²² — Coase provocatively posits that social and private costs would be equal and that resources would be efficiently allocated between the interacting activities.²³ If the legal regime in place allows the burning of highly polluting coal and does not grant the laundry a right to clean air, the laundry owner is incentivized to pay the steel mill to reduce its output (or take other steps) to reduce soot output. That source of potential revenue thus becomes an implicit cost to the steel mill if it declines to reduce production, and in this way the private costs, explicit and implicit, are equal to the social cost of steelmaking. As summarized by Harold Demsetz, "we may conclude from Coase's analysis that if transaction cost is zero no special government action is needed. Negotiations between the interacting parties will result in an efficient mix of outputs."²⁴ Pigou's solution of the "internalization of externalities" will thus impose a cost on the parties that cannot "ensure optimal outcomes (even in principle) within the constraints imposed by transaction costs."²⁵ Rather than requiring the intervention of the state to determine legal entitlements, Coase argued that

20 Neil Duxbury is surely correct in that the "guiding impulse behind law and economics is counter-intuitiveness." Neil Duxbury, *A Century of Legal Studies*, in *THE OXFORD HANDBOOK OF LEGAL STUDIES* 950, 961 (Peter Cane & Mark Tushnet eds., 2005).

21 Coase, *supra* note 19, pts. III-V, VII.

22 *Id.* at 15.

23 Harold Demsetz, *Ronald Coase*, in 2 *THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW*, *supra* note 6, at 268 (on which this discussion draws).

24 *Id.* at 269.

25 MATTHEW H. KRAMER, *A Coda to Coase*, in *IN THE REALM OF LEGAL AND MORAL PHILOSOPHY: CRITICAL ENCOUNTERS* 101 (1999).

individuals will come to an agreement with a paretian efficient result in the absence of transaction costs.

It is at this point that objections may be raised that transaction costs are rarely if ever zero and that this fatally undermines the “Coase Theorem.”²⁶ Coase anticipates this response:

In order to carry out a market transaction it is necessary to discover who it is that one wishes to deal with, to inform people that one wishes to deal and on what terms, to conduct negotiations leading up to a bargain, to draw up a contract, to undertake the inspection needed to make sure that the terms of the contract are being observed, and so on. These operations are extremely costly, sufficiently costly at any rate to prevent many transactions that would be carried out in a world in which the pricing system worked without cost.²⁷

The implications of this recognition are significant for Coase’s subsequent arguments about transaction costs (discussed below), but also for understanding the nature of markets themselves. Rather than assume that markets resolve competing demands for scarce resources by an automatic price system free from central planning, a core tenet of neoclassical economics, Coase recognizes that markets do not operate without cost, that they can be “extremely costly.” As such, they cannot be relied upon always to succeed without the aid of social planning, but rather only when “the increase in the value of production consequent upon the rearrangement is greater than the costs which would be involved in bringing it about.”²⁸

It should be clear then that to characterize the Coasean world as one in which transaction costs are unimportant suggests at the very least an unfamiliarity with his work. As he has pointed out,

26 In addition, some scholars have challenged the use of the term “theorem” in this context, see Robert D. Cooter, *Coase Theorem*, in *THE WORLD OF ECONOMICS* 51 (John Eatwell & Murray Milgate eds., 1991) (highlighting the fact that no “theorem” bearing his name was ever written by Coase — the term was coined by George Stiglitz — and that there are “several conventional interpretations of the Coase Theorem”); see also David de Meza, *Coase Theorem*, in *2 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW*, *supra* note 6, at 270 (noting that “the word ‘theorem’ evokes a mathematical style which is alien to Coase’s taste and may have done a disservice in diverting attention from his broader message”).

27 Coase, *supra* note 19, at 15.

28 *Id.* at 15-16.

[in *The Problem of Social Cost*] I examined what would happen in a world in which transaction costs were assumed to be zero. My aim in so doing was not to describe what life would be like in such a world but . . . to make clear the fundamental role which transaction costs do, and should, play in the fashioning of the economic system.²⁹

Given the clarity of both Coase's original article and subsequent restatements, it is remarkable how commonly the basic elements of the argument are misrepresented.³⁰ A particularly egregious example of this tendency comes from Chris Hilson³¹ — the editor of the *Journal of Environmental Law* from 2007 to 2012 and, as such, a particularly important interlocutor. He claims that “the Coase Theorem suggests that a Pigouvian tax is not necessary to achieve the economists' ideal of efficiency — all that is required is a bargained solution between polluter and polluted.”³² No pinpoint reference to *The Problem of Social Cost* is given for this interpretation for the obvious reason that none exists. Moreover, it misstates one of the central impulses of the article — that whilst frictionless bargaining *may* result in optimal outcomes from an efficiency perspective, it is deeply improbable given the ubiquity of transaction costs. Hilson goes on to claim in the attendant footnote that “it has long been pointed out that the theorem falls down where large numbers are involved and where bargaining cannot therefore take place without considerable transaction costs. Most modern pollution problems do of course involve large numbers, which means that the Coasian approach is of limited utility.”³³ Again, Hilson's is a rather baffling assertion. In Coase's own words cited above, transaction costs will have the whip hand in determining which bargains are struck and which are not. Moreover, if they are present in the circumstances of simplistic scenarios of launderers and elementary arithmetic, they will certainly be present in the real world. Finally, Hilson's ignominy is complete when he claims that “Coase . . . is a true free marketeer, who believes that an efficient solution can be found without the need for government intervention of any kind.”³⁴ Again, there is no direct reference for this statement, it ignores the implications of Coase's treatment of transaction costs, and it appears oblivious of Coase's own recognition that governmental regulation may “lead to an improvement in economic efficiency. This would seem particularly likely when, as is normally the case with smoke nuisance, a large number of people are involved and in

29 R.H. COASE, THE FIRM, THE MARKET AND THE LAW 13 (1990).

30 See KRAMER, *supra* note 25 (citing numerous misreadings of the argument).

31 CHRIS HILSON, REGULATING POLLUTION: A UK AND EC PERSPECTIVE (2000).

32 *Id.* at 7.

33 *Id.* at 7 n.29.

34 *Id.*

which therefore the costs of handling the problem through the market or the firm may be high.”³⁵ One of the most important ways in which government intervention can improve efficiency is by assigning binding property rights where there were previously none — an intervention at the heart both of Coasian thought (as it is a prerequisite to the free exchange of entitlements and the operation of the market³⁶) and its specific application to emissions trading (as without assigned property rights in the environment, there can be no trading). For a sense of how radical this step was, it should be recalled that water and air were traditional examples of free goods in economics.

Having cleared some of the undergrowth from the debate surrounding Coase, we can return to the fundamental problem of how to deal with externalities. Thomas H. Tietenberg summarizes the pre-Coasian position as a series of standoffs between economists, who regarded legal regimes (so-called “command-and-control” regimes) as not cost-effective, and policymakers. With a switch to Pigouvian taxes, the economists argued, more pollution control could be gained with the same expenditure. To this, the policymakers not only doubted that the bureaucracy could design of efficient taxes, owing to the information burden, but that taxes based upon limited information might not be any better than legal regulation.³⁷ By thinking about the issue as one of property rights,³⁸ and arguing for such rights to be explicit and transferable, market actors can allocate the use of this property in a cost-effective way, that is, one that achieves the overall emissions objective at the lowest cost.

The application of this basic Coasian logic to the problem of pollution is now relatively straightforward and commonly associated with the proposals of T.D. Crocker³⁹ and J.H. Dales.⁴⁰ They elaborated schemes in which environmental resources such as air and water are recognized as tradable property in the form

35 Coase, *supra* note 19, at 18.

36 *Id.* at 44; see also Ronald Coase, *The Federal Communication Commission*, 2 J.L. & ECON. 1 (1959) (“[T]he delineation of rights is an essential prelude to market transactions”).

37 T.H. TIETENBERG, EMISSIONS TRADING: PRINCIPLES AND PRACTICE 2 (2006).

38 *Id.*; see also Coase, *supra* note 19, at 44:

If factors of production are thought of as rights, it becomes easier to understand that the right to do something which has a harmful effect . . . is also a factor of production The cost of exercising a right (of using a factor of production) is always the loss that is suffered elsewhere in consequence of the exercise of that right.

39 T.D. Crocker, *The Structuring of Atmospheric Pollution Control Systems*, in THE ECONOMICS OF AIR POLLUTION 61 (Howard Wolozin ed., 1966).

40 J.H. DALES, POLLUTION PROPERTY AND PRICES: AN ESSAY IN POLICY-MAKING AND ECONOMICS (1968).

of transferable discharge permits, a regulator determines the total quantity of allowed emissions (the “cap”) and distributes rights in line with the cap, and a well functioning market allows for permit holders (individual sources of emissions) to trade their permits until a cost-effective allocation has been reached. The great virtue of such a scheme, according to Dales, is that “no person, or agency, has to *set* the price — it is set by the competition among buyers and sellers of rights.”⁴¹

The application of economic theory to the real life of public policy is a necessarily involved story. According to one version, the confluence of failed command-and-control regulations and political pressure in the late 1970s forced the United States Environmental Protection Agency to consider “an early form of emissions trading.”⁴² This led to the adoption of a series of new economic instruments to address a variety of environmental problems, both domestic and international. The former of these schemes included lead trading, SO₂ trading under the Clean Air Act Amendments (1990),⁴³ and the RECLAIM program;⁴⁴ the latter included, albeit later, the Montreal and Kyoto Protocols.⁴⁵ In the same period, advocates of “liberal law and economics”⁴⁶ argued along similar lines in the legal academy. A good place to start is the argument of Bruce Ackerman and Richard Stewart.⁴⁷ Two liberal early adopters of law and economics, they write in an American context, concerned with environmental regulation in its broadest aspect:

41 *Id.* at 80; *see also* TIETENBERG, *supra* note 37, at 4 (“[T]ransferability, at least in principle, allows the market to handle the task of ensuring that the assignment of control responsibility ultimately ends up being placed on those who can accomplish the previously stipulated reductions at the lowest cost”).

42 TIETENBERG, *supra* note 37, at 6-7.

43 Clean Air Act Amendments of 1990, Pub.L. 101-549, 104 Stat. 2399, 1990-11-15.

44 *See* Robert Stavins, *Experience with Market-Based Environmental Policy Instruments*, in HANDBOOK OF ENVIRONMENTAL ECONOMICS 407 (2003).

45 Kyoto Protocol, *supra* note 8; Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3. For a synoptic analysis of these policy initiatives, *see* Robert W. Hahn & Robert N. Stavins, *The Effect of Allowance Allocations on Cap-and-Trade System Performance*, 54 J.L. & ECON. 267 (2011); Stavins, *supra* note 44.

46 The term derives from the seminal article of Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387 (1981) (arguably still the leading critique of the law and economics movement and method).

47 Bruce Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333 (1985).

The present regulatory system wastes tens of billions of dollars every year, misdirects resources, stifles innovation, and spawns massive and often counter-productive litigation. . . . Powerful organised interests have a vested stake in the status quo. The congressional committees, government bureaucracies, and industry and environmental groups that have helped to shape the present system want to see it perpetuated. But the current system is also bolstered by an often inarticulate sense that, however cumbersome, it “works,” and that complexity and limited information make major improvements infeasible.⁴⁸

In these four sentences we see arguments that clearly resonate with the economic literature. The matter of “waste” or inefficiency is at the heart of the Coasian assault — the claim that whatever the other merits of Pigouvian taxes (intuitive appeal, simplicity, etc.) or governmentally imposed standards, they are not efficient and, as such, result in the mis-deployment of resources with the attendant consequences.⁴⁹ Such standards, whether straightforward command-and-control or “best available technology” (BAT) techniques, are what Julia Black calls “prescriptive regulation.”⁵⁰ Further, Ackerman and Stewart’s is a critique of BAT controls and the “lengthy regulatory and legal proceedings” that they entail, which delay and discourage new investment and stifle innovation.⁵¹ As with setting the levels of Pigouvian taxes, the centralized determination of technical controls and standards “impose[s] massive information-gathering burdens on administrators and provide[s] a fertile ground for complex litigation in the form of massive adversary rulemaking proceedings and protracted judicial review.”⁵²

These claims, it should be noted, are founded on an array of empirical studies. What is of interest for present purposes is the extent to which the rent-seeking, inefficiency, litigation and other suboptimal outcomes associated with prescriptive regulation by Ackerman and Stewart are unknown to European practices of emissions trading. Their claim is an example of the broader claims made of “marketization”: that it can draw on well-known strengths of information processing, the opening up of enormous financial resources for effective and informed regulation, timely and effective enforcement,

48 *Id.* at 1333-34

49 *Id.* at 1335.

50 Julia Black, *Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a ‘Post Regulatory’ World*, 54 *CURRENT LEGAL PROBS.* 103 (2001).

51 Ackerman & Stewart, *supra* note 47, at 1336.

52 *Id.* at 1337.

and powerful incentives for monitoring and enforcement.⁵³ In terms of the failings of the “statist” approach, the promise is of avoiding cozy deals with incumbent industries and wasteful litigation.

Having surveyed the intellectual foundations for emissions trading and briefly considered their application in the environmental context in the United States, the discussion now moves to their use in the European Union. It is argued that the European Union’s ready adoption of economic instruments in the climate change context has on occasion been somewhat oversimplified. “Legal borrowing” between regulatory spaces certainly has a place in the narrative, and Jonathan Wiener writes of “the remarkable fact that Europe has also borrowed the regulatory tool of emissions trading from the US in order to implement the Kyoto Protocol. . . . The basic reason is not mystery: cost-effectiveness.”⁵⁴ As true as this argument may be, it is somewhat hamstrung by its narrowness. It mistakes the part for the whole, ignoring broader trends and dynamics in E.U. governance, which have played no less significant a role in the European Union’s climate change policies, both internal and external. In describing the European turn away from state planning in the second half of the twentieth century, historian Tony Judt frames the broader context as follows:

The state [as “neo-liberals”] insisted, should be removed as far as possible from the market for goods and service . . . it should not allocate resources In the view of one leading exponent of free-market liberalism, the Austrian economist Friedrich Hayek, even the best-run states are unable to process data effectively and translate it into good policy: in the very act of eliciting economic information they distort it. . . . Economic liberalization did . . . illustrate a seismic shift in the allocation of resources and initiative from public to private sectors.⁵⁵

II. FROM SINGLE MARKET TO ENVIRONMENTAL CONSTITUTIONALISM

The shift from prescriptive regulation to incentive-based regulation has taken hold in Europe as in the United States, albeit with some time lag. In tandem with this shift there has also occurred in the European Union a marked change in its recognition of environmental concerns. What follows highlights the repositioning of the environment from the periphery to the center of E.U.

53 *Id.* at 1343.

54 Jonathan Wiener, *Better Regulation in Europe*, 59 CURRENT LEGAL PROBS. 447, 457 (2006).

55 TONY JUDT, *POSTWAR: A HISTORY OF EUROPE SINCE 1945*, at 537, 558 (2010).

policy debates and action. Although the history of environmental regulation is necessarily shallow in almost all polities, as discussed below, in the case of the European Union this is especially so. That said, the European Union has not allowed this fact to constrain its environmental regulatory efforts, especially not in the field of climate change. Far from it. The European Union immodestly proclaims itself to be the international leader in climate change legislation, and not without cause. The following sections briefly track the development of the European Union's environmental competence and activities from the foundational period to the present day.⁵⁶ The transition from passivity to near-frenzied action is striking.

A. The Treaty of Rome (1957) and First Environmental Steps

Whether one views the legal constructs of the European Union as a capitalist conspiracy⁵⁷ or historic guarantor of peace in the Atlantic world, it should not be surprising that environmental concerns were not present at the birth. The Treaty of Rome⁵⁸ — the constitutive legal text of the European Union — made no explicit reference to the environment, and it was not until the mid-1960s that environmental legislation was passed by the European legislator.⁵⁹ Given its firm foundations in the environmentally antithetical worlds of steel and coal market development, this slow start was inevitable. The elaboration and articulation of the Treaty of Rome's Article 3's "four freedoms"⁶⁰ was the

56 I here draw on the classification adopted in JANE HOLDER & MARIA LEE, ENVIRONMENTAL PROTECTION LAW AND POLICY: TEXT AND MATERIALS ch. 4 (2d ed. 2007); *see also* Ingmar von Homeyer, *The Evolution of EU Environmental Governance*, in ENVIRONMENTAL PROTECTION: EUROPEAN LAW AND GOVERNANCE 1 (Joanne Scott ed., 2009).

57 IAN WARD, A CRITICAL INTRODUCTION TO EUROPEAN LAW 138-39 (2d ed. 2003):
The free market lay at the heart of the Treaty of Rome . . . [the] four "freedoms" [of goods, persons, services and capital] are the heartbeat of the common market . . . But perhaps the deepest problem lies at the very heart of the notion of a "free market" . . . For, whilst the "common market" might be "free" in the economic sense, it is certainly not free in the political or ethical sense.

58 Treaty Establishing the European Economic Community, March 25, 1957, 298 U.N.T.S. 3 [hereinafter *The Treaty of Rome*].

59 Damian Chalmers, *Inhabitants in the Field of EC Environmental Law*, in THE EVOLUTION OF EU LAW 653 (Paul Craig & Gráinne de Búrca eds., 1st ed. 1999) (citing Council Directive 67/548/EEC on the Approximation of Laws, Regulations and Administrative Provisions Relating to the Classification, Packaging and Labelling of Dangerous Substances, 1964 O.J. (196) (EC)).

60 The "four freedoms" that underpin the European "common market" are free

overwhelming priority of the then European Economic Community (EEC),⁶¹ until the intervention of U.N.-sponsored environmental activism in the form of the Stockholm conference in 1972.⁶²

This kick-started “European” environmentalism (which had, of course, been steadily developing at the Member State level) in typically hortatory fashion, with the European Council of that year declaiming that “economic expansion is not an end in itself . . . the protection of the *human* environment is a major issue which affects the well being of people and economic development throughout the world.”⁶³ There followed in 1973 the first of the Action Programmes for the Environment,⁶⁴ a four-year policy framework for E.C. action relating to pollution control, biosphere protection, resource management, etc.⁶⁵ But if such considerations were not to be found within the foundational Treaty of Rome, upon which legal or constitutional authority could environmental protection be built?

B. Legal Basis

Questions of “legal basis” loom large in E.U. legal discussions. The reason is straightforward, namely that the European Union is based on the principle of attributed competence, meaning that its powers are limited to those conferred by the Member States in the founding treaties.⁶⁶ It follows that without a dedicated legal basis for taking action, the European Union finds itself hamstrung. And so it was with environmental matters in the early days.

movement of goods, workers, services and capital. The Treaty of Rome also provided common policies in agriculture, competition and transport, as well as in the social policy field.

61 For an account of the “ordo-liberalism” of the internal market, see DAVID J. GERBER, *LAW AND COMPETITION IN TWENTIETH-CENTURY EUROPE: PROTECTING PROMETHEUS* (2001).

62 Declaration of the United Nations Conference on the Human Environment, Stockholm, Swed., June 16, 1972, *available at* <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID=1503>.

63 *Quoted in* HOLDER & LEE, *supra* note 56, at 157 (emphasis added).

64 Eur. Comm’n, Action Programme for the Environment (1st EPA), 1973 O.J. (C 112/1). The Sixth EAP runs from 2002-2012, *see The Sixth Environment Action Programme of the European Community 2002-2012*, EUR. COMM’N, <http://ec.europa.eu/environment/newprg/> (last visited July 11, 2012).

65 *See generally* JAN H. JANS & HANS VEDDER, *EUROPEAN ENVIRONMENTAL LAW: AFTER LISBON* (4th ed. 2011).

66 Gráinne de Búrca, *The Constitutional Challenge of New Governance in the European Union*, 56 *CURRENT LEGAL PROBS.* 403, 409 (2003).

Without a legal basis for legislating, the European Community's environmental policymaking relied on a bodge, or, at the very least, a strained interpretation of the Treaty of Rome, especially Article 2, which stated the Community's tasks to include the promotion of "harmonious development [and] raising the standard of living through the establishment of a common market."⁶⁷ As such, the European Community's early environmental policy existed under the guise of social policy. "Functional spillover"⁶⁸ was deployed as a device to justify the Dangerous Substances Directive,⁶⁹ on the basis of Article 100,⁷⁰ the protection of migratory birds on the basis of Article 235,⁷¹ and indeed in myriad other instances.⁷² Such creative use of these provisions to advance environmental ends might be thought to have required the imprimatur of the European Court of Justice, and indeed this was duly delivered in the case of *Procureur de la République v. Association de Défense Des Brûleurs D'huiles Usagées (ADBHU)*.⁷³ In a "radical reading of the Treaty with, it must be said, little textual support,"⁷⁴ the Court determined environmental protection to be an "essential objective" of the Community.

The formalization of this position came hard on the heels of the *ADBHU* judgment in the 1986 *Single European Act* (SEA),⁷⁵ which created a specific

67 Treaty of Rome, *supra* note 58, art. 2.

68 Functional spillover is the notion that integration is given impetus when cooperation in certain sectors of society creates technocratic pressure for cooperation in adjacent sectors, *see* ERNST B HAAS, *THE UNITING OF EUROPE: POLITICAL, SOCIAL AND ECONOMIC FORCES, 1950-1957*, at xxxiii (2003).

69 Council Directive 76/464/EEC on Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment of the Community, 1976 O.J. (L 129) 23 (EC).

70 Treaty of Rome, *supra* note 58, art. 100 ("[The Council may] issue directives for the approximation of such laws, regulation or administrative provisions of the Member States as directly affect the establishment or functioning of the common market").

71 *Id.* art. 235:

If action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures.

72 HOLDER & LEE, *supra* note 56, at 158-61.

73 Case 240/83, *Procureur de la République v. Association de Défense Des Brûleurs D'huiles Usagées (ADBHU)*, 1985 E.C.R. 531 (concerning Council Directive 75/439/EEC on the Disposal of Waste Oils, 1975 O.J. (L 194) (EC)).

74 HOLDER & LEE, *supra* note 56, at 161.

75 *Single European Act*, 1987 O.J. (L 169) 1 (EC).

title on environmental protection in the form of its Articles 130r-130t, and Article 100a. *Inter alia*, environmental considerations were required “to be a component of the Community’s other policies.”⁷⁶ Although this gave legislative effect to the *ADBHU* judgment, environmental policy continued to operate as a “flanking policy,” complimentary to the internal market.⁷⁷ That said, the SEA also introduced the concept of subsidiarity, thereby flagging the desire on the part of some Member States to constrain the development of a Community-wide environmental regime.⁷⁸

Subsequent treaty processes have followed the hares set running by the SEA. The 1992 Treaty on European Union (TEU) formally established environmental protection as a fundamental objective of the Community,⁷⁹ and the 1997 Treaty of Amsterdam included in Article 2 the promotion of “balanced and sustainable development of economic activities [and] a high level of protection and improvement of the quality of the environment” as objectives of the Community.⁸⁰

In addition to the TEU’s inclusion of sustainable development as among the objectives of the European Union, the title on the European Union’s external action states that the,

Union shall define . . . shall work for a high degree of cooperation in all fields of international relations, in order to . . . foster the sustainable economic, social and environmental development of developing countries . . . help develop international measures to preserve and improve the quality of the environment and the sustainable management of global natural resources, in order to ensure sustainable development.⁸¹

76 *Id.* art. 130r(2).

77 Complimentary but hierarchically subordinate, *see* de Búrca, *supra* note 66.

78 Single European Act, art. 130r(4). The general aim of the principle of subsidiarity is to guarantee a degree of independence for a lower authority in relation to a higher body. It therefore involves the sharing of powers between several levels of authority, a principle which forms the institutional basis for federal states. When applied in a European context, the principle of subsidiarity serves to regulate the exercise of shared powers between the entity of the Community and the Member States. On the one hand, it prohibits Community intervention when an issue can be regulated effectively by Member States at central, regional or local level. On the other, it means that the Community exercises its powers when Member States are unable to achieve the objectives of the Treaties satisfactorily.

79 Treaty on European Union, Feb. 7, 1992, arts. 3(3), 3(5), 1992 O.J. (C 191) 1 (EC).

80 Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and Certain Related Acts, Oct. 2, 1997, 1997 O.J. (C 340) 1 (EC).

81 Consolidated Version of the Treaty on the European Union, arts. 21(2)(d),

Accordingly, not only can environmental considerations form the legal basis for internal action, they can also be deployed to shape the “external action” of the European Union and its common foreign and security policy.

The latest element in the European Union’s constitution-by-treaty process is the Treaty of Lisbon.⁸² Whilst it does not radically alter the constitutional architecture of the European Union for environmental purposes, it should be noted that the policy of integrating environmental policies is mentioned in a general context,⁸³ and in respect of energy policy.⁸⁴ Moreover, Title XX, entitled “Environment,” states *inter alia* that “Union policy on the environment shall contribute to . . . promoting measures at international level to deal with regional or worldwide environmental problems, and *in particular combating climate change*.”⁸⁵ The specific reference to climate change is highly significant.

A final Lisbon-inspired innovation comes in the field of E.U. external action, such as negotiations with other countries.⁸⁶ In the particular context of the multilateral climate change negotiations this was of particular importance, as the question of “who negotiates for the European Union” arises: Is it the European Union itself or its Member States? The problem of “who do I call when I want to speak to Europe?” (apocryphally attributed to former American Secretary of State Henry Kissinger) has been putatively addressed by Article 18 of TEU: “The European Council, acting by a qualified majority, with

21(2)(f), 2006 O.J. (C 155) 13 (EC).

82 Treaty of Lisbon amending the Treaty on European Union and the Treaty Establishing the European Community, Dec. 13, 2007, 2007 O.J. (C 306) 50 (EC). *See generally* THE EUROPEAN UNION AFTER THE TREATY OF LISBON (Diamond Ashiagbor, Nicola Countouris & Ioannis Lianos eds., 2012).

83 Consolidated Version of the Treaty on the Functioning of the European Union art. 11, Sept. 5, 2008, 2008 O.J. (C 155) 47 (EC) [hereinafter TFEU] (“Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development”).

84 *Id.* art. 194(1):

In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks.

85 *Id.* art. 191(1) (emphasis added).

86 *See generally* MARISE CREMONA, DEVELOPMENTS IN EU EXTERNAL RELATIONS LAW (2008); MARISE CREMONA & BRUNO DE WITTE, EU FOREIGN RELATIONS LAW: CONSTITUTIONAL FUNDAMENTALS (2008).

the agreement of the President of the Commission, shall appoint the ‘High Representative of the Union for Foreign Affairs and Security Policy.’” The High Representative was intended in some quarters to operate as the European Union’s “Foreign Secretary,” although the current incumbent, Catharine Ashton, is rarely viewed in those lofty terms. Indeed, at the recent Durban Summit, the European Union delegation was led, apparently with efficacy, by the Commissioner for Climate Action, Connie Hedegaard.⁸⁷

What the foregoing demonstrates, at least in formal terms, is the remarkable development of legal capacity for the European Union in the environmental realm. A policy area unknown to the EEC in its formative period, it has developed into a complex and sophisticated set of legal institutions, instruments and norms. In terms of functions, it is notable that although the European Union and Member States commonly conclude “mixed agreements” with third countries and international organizations⁸⁸ in the environmental field, the negotiations of the same — in the climate change arena at least — are very much led by the Commission, not by Member States. As far as internal measures are concerned, the constitutional architecture has evolved to foreground environmental considerations and new modes of governance have emerged to respond to such ambitions.

C. Environmental Governance

With the environment firmly located within the European legal firmament, the 1990s saw a shift in the modes of environmental protection. The longstanding “command and control” model, so-called,⁸⁹ was supplanted by more “flexible” and “responsive” modes of governance.⁹⁰ The reasons for change are in some respects common to cognate developments in other polities — the ascendancy of classical liberal thought in public policymaking, globalization

87 Fiona Harvey, *Durban Talks: How Connie Hedegaard Got Countries to Agree on Climate Deal*, THE GUARDIAN, Dec. 11, 2011, <http://www.guardian.co.uk/environment/2011/dec/11/connie-hedegaard-durban-climate-talks> (U.K.).

88 CHRISTOPHE HILLION & PANOS KOUTRAKOS, MIXED AGREEMENTS REVISITED: THE EU AND ITS MEMBER STATES IN THE WORLD (2010).

89 Black, *supra* note 50, at 103:

“[C]ommand and control” is more a caricature than an accurate description of any particular regulatory system Essentially the term is used to denote all that can be bad about regulation: poorly targeted rules, rigidity, ossification, under- or over-enforcement, unintended consequences. The extent to which CAC does or does not live up to its caricatures is an empirical question which has been debated elsewhere.

90 See von Homeyer, *supra* note 56, at 7-24.

and economic competition — but there are other reasons particular to the European Union, such as waves of enlargement (with first Greece, Spain and Portugal, and then Central and Eastern European states), leading to a focus on the implementation of policy rather than new enactments. Specifically with reference to the discussion in the previous Section, Simon Deakin has argued that “the revival and growth of interest in economic theories of law is closely bound up with contemporary policy debates over regulation versus deregulation . . . and the appropriate role of the state in ensuring the efficient delivery of public services.”⁹¹

The retreat from the high constitutionalism of the European Union to governance or regulation can be evidenced in numerous ways. One of those which attracted much commentary in the 1990s was the increased variety of actors engaged in the E.U. policymaking processes, which included functionally dense committee structures,⁹² agencies, and advisory bodies.⁹³ Although operating within existing structures of E.U. policymaking (the Council, the Commission, etc.), these new institutional actors brought with them influential new modes of working, such as comitology.⁹⁴

Gráinne de Búrca focuses “on the range of policy processes that have been evolving over the past decade or more and expanding considerably in recent years both to new and existing areas of EU activity . . . the open method coordination.”⁹⁵ A form of governance which is cast in contradistinction to the traditional modes of European constitutionalism and command-and-control, it is described by de Búrca as “less top-down in nature than before [and] premised on a more participatory and contestatory conception of democracy . . . [but not without] the risk of dominance of particular economic values.”⁹⁶

Given the new governance’s problem-solving, deliberative and accommodating nature, it is not surprising that there has been an impact on flexibility in instrument choice. Moreover, the embrace of flexible regulation is in part a response to the changing nature of the objects of environmental law. Acute end-of-pipe air and water pollution, which can be readily solved

91 SIMON DEAKIN, *Law and Economics*, in LEGAL FRONTIERS 66 (1996).

92 CHRISTIAN JOERGES & ELLEN VOS, *EU COMMITTEES: SOCIAL REGULATION, LAW AND POLITICS* (1999).

93 Renaud Dehousse, *Regulation by Networks in the European Community: The Role of Agencies*, 4 J. EUR. PUB. POL’Y 246 (1997).

94 JOERGES & VOS, *supra* note 92.

95 de Búrca, *supra* note 66, at 404 (the open method coordination consists of (1) setting EU-level guidelines for achieving objectives, (2) establishing benchmarks for comparison, (3) translating EU guidelines into (sub-)national policies, and (4) periodic peer review).

96 *Id.*

by BATs, is increasingly being supplanted by more complex, globally salient and persistent, open-ended environmental challenges, of which climate change is obviously one.⁹⁷

The point is not that these are developments unique to the European Union — they are not⁹⁸ — but that they represent new forms of governance within it that are procedurally characterized by multilevel integration, participation, decentralization and experimentation.⁹⁹ Substantively, and most pressingly for present purposes, they mark a shift in the choice of tools in the environmental realm from the classic licensing approach towards flexible instruments, a mode of “new governance” that foreshadows the keystone in the European Union’s current climate change policy — the EU ETS.

III. E.U. CLIMATE CHANGE REGIME¹⁰⁰

The confluence of economic theories of law, the growth of environmental policy within the structures of the European Union and the instrumentalization of climate change policy for both internal and external reasons by the E.U.¹⁰¹ leads with seeming inevitability to the EU ETS. This Part briefly surveys the Scheme’s prehistory before explaining its operation to date and the important revisions made to it in the form of the 2009 *Climate and Energy Package*. Whilst it may be seen as an exemplar of cost-effective market-based regulation, the better view is more nuanced.

97 Ingmar von Homeyer, *Emerging Experimentalism in EU Environmental Governance*, in *EXPERIMENTALIST GOVERNANCE IN THE EUROPEAN UNION: TOWARDS A NEW ARCHITECTURE* 121, 127 (Charles F. Sabel & Jonathan Zeitlin eds., 2010).

98 Richard Burleson Stewart, *Administrative Law in the Twenty-First Century*, 78 N.Y.U. L. REV. 437 (2003).

99 Charles Frederick Sabel & Jonathan Zeitlin, *Learning from Differences: The New Architecture of Experimentalist Governance in the EU*, in *EXPERIMENTALIST GOVERNANCE IN THE EUROPEAN UNION: TOWARDS A NEW ARCHITECTURE*, *supra* note 97, at 1.

100 See generally Navraj Singh Ghaleigh, *Emissions Trading Before the European Court of Justice: Market Making in Luxembourg*, in *LEGAL ASPECTS OF CARBON TRADING: KYOTO, COPENHAGEN, AND BEYOND* 367 (David Freestone & Charlotte Streck eds., 2009).

101 See the discussion on the motivations for the European Union’s Climate and Energy Package in Section III.C. below.

A. Pre EU ETS: From Direct Regulation to Market-Based Mechanisms

European leadership in combating climate change has become a familiar trope. In the multilateral arena, Europe has led efforts for efficient and effective approaches to climate change mitigation. That said, the deployment of a market-based mechanism as a solution to GHG emissions is a turnaround of some moment, given the European Union's historic hostility to such tools.¹⁰² Since Kyoto, however, the European Union has sought to position itself as a global leader in this policy area, with market mechanisms as its primary instrument.¹⁰³

The European Union's warm embrace of market solutions to environmental problems is emblematic of its changing policy toolkit over the past decade. For present purposes, it suffices to note that prior to and continuing into the 1990s, the European Union is commonly characterized as having adopted a policy approach of "regulatory environmentalism," premised on the assumption that reliance on free-market solutions would misallocate natural resources and produce inadequate incentives to prevent environmental degradation.¹⁰⁴ There also existed, however, a secondary and emerging strain in E.U. policy that, as early as 1993 in the form of the Community's Fifth Environmental Action Programme, acknowledged the limitations of command-and-control regulation and the utility of market mechanisms to "internal[ize] external environmental costs."¹⁰⁵ This approach cohered somewhat better with the well-detailed preference of the United States for environmental markets, which were deployed with mixed success in the SO_x/NO_x contexts.¹⁰⁶ Indeed, according to one account, the schooling of E.U. officials by their U.S. counterparts in the "great success of the US acid rain training program put to rest many concerns

102 See Chad Damro, Iain Hardie & Donald MacKenzie, *The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels*, 4 J. CONTEMP. EUR. RES. 185 (2008).

103 See Sebastian Oberthür & Claire Roche Kelly, *EU Leadership in International Climate Policy: Achievements and Challenges*, 43 INT'L SPECTATOR 35 (2008).

104 NEW INSTRUMENTS FOR ENVIRONMENTAL POLICY IN THE EU (Jonathan Golub ed., 1998).

105 A European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development, 1993 O.J. (C 138) 5 (EC); see also Swanson, *supra* note 15.

106 A. Denny Ellerman, *Are Cap-and-Trade Programs More Environmentally Effective Than Conventional Regulation?*, in MOVING TO MARKETS IN ENVIRONMENTAL REGULATION: LESSONS FROM TWENTY YEARS OF EXPERIENCE 48 (Jody Freeman & Charles D. Kolstad eds., 2006); see also *supra* notes 41-50 and accompanying text.

about cap and trade.”¹⁰⁷ Also familiar is the influence that American domestic policy had on the negotiations at Kyoto, the architecture of the Kyoto Protocol, and in particular the flexibility mechanisms contained in its Articles 6, 12, and 17.¹⁰⁸ Although it might be tempting to characterize this as the European Union having “lost” the battle of ideas over the optimal means by which to tackle climate change and subsequently embraced the new settlement, we have already seen that the European Union was in the early 1990s already experimenting with economic incentives.¹⁰⁹

The Kyoto Protocol commits the EU-15 and all Member States (except Cyprus and Malta) to an eight percent GHG reduction by the end of 2012 compared to 1990 base-year levels.¹¹⁰ Reductions were to be reassigned to Member States pursuant to the European Union’s own “Burden Sharing Agreement”.¹¹¹ Foremost amongst the jointly implemented¹¹² responses of the European Union is the Emissions Trading Directive.¹¹³ The Directive

107 Jonathan B. Wiener & Barak D. Richman, *Mechanism Choice*, in RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW 363 (Daniel A. Farber & Anne Joseph O’Connell eds., 2010). The “greatness” of these successes is far from universally agreed, see Stavins, *supra* note 6; Stavins, *supra* note 44.

108 Navraj Singh Ghaleigh, *The Environment and Anti-Americanism*, in 1 ANTI-AMERICANISM: HISTORY, CAUSES, THEMES 139 (Brendon O’Connor ed., 2007).

109 See Swanson, *supra* note 15.

110 “EU-15” refers to the member countries in the European Union prior to the accession of ten candidate countries on May 1, 2004, namely: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

111 Council Decision 2002/358 Concerning the Approval, on Behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the Joint Fulfilment of Commitments Thereunder, 2002 O.J. (L 130) (EC). Pursuant to this, some Member States with historically low emissions are permitted to increase their emissions (i.e., Portugal +27.0%, Greece +25.0%, Spain +15.0%), whilst others with historically high emissions are required to cut their emissions significantly below Kyoto-mandated levels (i.e., Germany — 21.0%, United Kingdom — 12.5%).

112 Kyoto Protocol, *supra* note 8, art. 4(1) (“Any Parties included in Annex I that have reached an agreement [may] fulfil their commitments under Article 3 jointly . . .”).

113 Directive 2003/87, of the European Parliament and of the Council, Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61, 2003 O.J. (L 275) 32 (EC). For various articles on aspects of the Scheme’s details, see *Special Issue on EU Emissions Trading*, 5 CLIMATE POLICY (2009).

followed Commission consultations, studies, and finally a “Green Paper,”¹¹⁴ which not only acknowledged the European Union’s Kyoto obligations but also deemed it necessary that the UNFCCC process should not represent the outer limits of the European Union’s relevant ambitions.

B. E.U. Emissions Trading Scheme

The EU ETS, which came into force in 2005, is a central policy instrument to achieve the climate policy objectives of the European Union. All twenty-seven Member States participate in the scheme, as well as three non-Members (Iceland, Liechtenstein and Norway). Its coverage will extend in 2013 to aluminium and ferrosilicon production, having included aviation in 2012, which was added to the original sectors of power and heat generation, oil refineries, installations for the production of ferrous metals, cement, limes, paper, and ceramics.¹¹⁵ In 2009 the scheme accounted for forty-three percent of the European Union’s total GHG emissions, encompassing approximately 11,000 emitting installations.¹¹⁶ Whilst the European Climate and Energy Package (discussed below) extends to issues of fuel efficiency and quality, vehicular emissions, biofuels, renewables, and carbon capture and storage, it is no exaggeration to describe the EU ETS as the keystone in the architecture of the European response to global climate change.

The EU ETS is in its basic structure a conventional cap-and-trade scheme. An overall “cap” on emissions is set by a central authority and divided into tradable units. These units represent an allowance to emit a specified amount of GHG. Installations subject to the cap are required to surrender an allowance for every ton they emit. The number of allowances under the cap can be reduced annually, ratcheting down emissions. These allowances may be given away for free to installations (“grandfathered”¹¹⁷) or sold at auction. Covered installations trade these allowances, so that the cheapest reductions possible are achieved. Companies that emit more than they have allowances to cover face a penalty.

114 *Green Paper on Greenhouse Gas Emissions Trading Within the European Union*, COM (2000) 87 final (Mar. 8, 2000).

115 Directive 2009/29, of the European Parliament and of the Council of 23 April 2009 Amending Directive 2003/87 so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading Scheme of the Community, Annex I, 2009 O.J. (L 140/63) (EC).

116 EUR. ENV’T AGENCY, GHG EMISSION TRENDS AND PROJECTIONS IN EUROPE 41 (2011).

117 See Kim Keats Martinez & Karsten Neuhoff, *Allocation of Carbon Emission Certificates in the Power Sector: How Generators Profit from Grandfathered Rights*, 5 CLIMATE POLICY 61 (2005).

Beyond this generic schema, the EU ETS's specific approach to coverage and allowance should be noted. The Directive's coverage of activities in its first two phases (i.e., 2005-2007 and 2008-2012), excluded aviation, shipping and, most contentiously, the aluminum and chemical sectors.¹¹⁸ The Commission's Explanatory Memorandum to its original proposal justified the chemical exemption on the basis of the industry's limited contribution to the European Union's total CO₂ emissions (approximately one percent of the total) and the fact that the large number of installations (approximately 34,000) would add significant administrative complexity to the scheme.¹¹⁹ The Memorandum remained silent on the exclusion of the aluminum sector.¹²⁰ These choices have generated much subsequent controversy, not least before Community Courts. Indeed, as I have written elsewhere, the EU ETS is the most heavily litigated instrument of E.U. environmental law.¹²¹

Allowances have been a source of at least equal controversy.¹²² Defined by Article 3(a) as the right to emit one ton CO_{2e}¹²³ during a specified period,¹²⁴ allowances are allocated and issued to installations by way of a two-stage process. Stage one requires each Member State to develop national allocation

118 Directive 2003/87, *supra* note 113, Annex I. Amendments to the scope of the Directive to include aviation have recently been adopted, *see* Directive 2008/101 of the European Parliament and of the Council, of 19 November 2008 Amending Directive 2003/87 so as to Include Aviation Activities in the Scheme for Greenhouse Gas Emission Allowance Trading Within the Community, 2009 O.J. (L 8) (EC).

119 Proposal for a Directive of the European Parliament and of the Council Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61 COM (2001) 581 final, pt. 11, 2002 O.J. (C 75E) 33.

120 For a very good discussion of the role of industry lobbying and regulatory capture in the design of the EU ETS, *see* JONAS MECKLING, *CARBON COALITIONS: BUSINESS, CLIMATE POLITICS, AND THE RISE OF EMISSIONS TRADING* ch. 5 (2011).

121 Navraj Singh Ghaleigh, *Six Honest Serving-Men: Climate Change Litigation as Legal Mobilization and the Utility of Typologies*, 1 CLIMATE L. 31 (2010).

122 For an *ex ante* discussion of the problem and challenges, *see* Michael Grubb, Christian Azar & U. Martin Persson, *Allowance Allocation in the European Emissions Trading System: A Commentary*, 5 CLIMATE POL'Y 127 (2005).

123 One ton of carbon dioxide equivalent (CO_{2e}) is used as the standard measurement in the carbon market. It is a measure of the global warming potential of various GHGs.

124 Directive 2003/87, *supra* note 113, art. 3(A) ("‘Allowance’ means an allowance to emit one tonne of carbon dioxide equivalent during a specified period, which shall be valid only for the purposes of meeting the requirements of this Directive and shall be transferable in accordance with the provisions of this Directive").

plans (NAPs) “stating the total quantity of allowances that it intends to allocate for that period and how it proposes to allocate them . . . based on objective and transparent criteria, including those listed in Annex III.”¹²⁵ Such NAPs are subject to Commission approval, only after which may Member States definitively determine the total quantity of allowances and the allocation of the same amongst installations.¹²⁶

The EU ETS has been implemented in phases — 2005 to 2007 and 2008 to 2012 — which are coordinated with the Kyoto Protocol compliance period, with Phase III to run from 2013 to 2020. Phase I was commonly described as a learning-by-doing phase, allowing Member States to get acquainted with a novel system, to make progress towards their Kyoto Protocol commitments and towards meeting their particular CO₂ goals pursuant to the Burden Sharing Agreement.¹²⁷ It has been decided that the scheme will be extended to other GHGs and installations in Phase III. As is well known, the “trial period” of Phase I was characterized by a price collapse in late April 2006 after the publication of the verified emissions data by Member State after Member State revealed that emissions were significantly below their allocations to installations. Early 2006 pre-announcement over-the-counter prices were slightly over thirty Euro per ton, by mid-May had fallen to approximately fifteen Euro per ton, and then to near zero from early 2007 until the end of Phase I. In a sense, it is inaccurate to characterize this as a market failure — the market reacted precisely as it ought to have by adjusting when information that changes expectations was made available. Once aggregate emissions and the resulting demand for allowances were known, the fact of over-allocation had its predictable price consequences.¹²⁸

Thereafter, Phase II forward contracts dominated the markets’ attention, with December 2008 E.U. Allowances (EUAs) ranging between twelve to twenty-five Euro per ton, remaining within the twenty to twenty-four Euro band for the majority of 2007. Upon the commencement of Phase II, such

125 *Id.* art. 9(1).

126 *Id.* art. 9(3).

127 Council Decision 2002/358, *supra* note 111.

128 In the view of the Commission, the “swiftly corrected market price of allowances demonstrat[es] convincingly that the carbon market is working.” *Proposal for a Directive of the European Parliament and of the Council Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community*, COM (2008) 16 final 2 (Jan. 23, 2008). There is, however, also an argument that over-allocation was accompanied by over-abatement, see A. Denny Ellerman & Barbara K. Buchner, *Over-Allocation or Abatement? A Preliminary Analysis of the EU ETS Based on the 2005-06 Emissions Data*, 41 ENVTL. & RESOURCE ECON. 267, 270 (2008).

prices remained durable (at around twenty to twenty-five Euro for most of 2007), revealing the price of emitting GHG in the European Union, but also sending a strong signal to Clean Development Mechanism (CDM) and Joint Implementation (JI) project developers that emissions reductions generated through projects which generate carbon credits would find a robust market in the EU ETS.¹²⁹

A consequence of the Phase I price collapse was its impact on the design of Phase II. The Commission's approach to the Phase II caps was much tighter, in an overt attempt to create demand for emissions reductions whether generated within the European Union or in non-Annex I countries. The Phase II cap for the EU-27¹³⁰ is 2098 Megaton per year, cutting Member States' suggested allocations in NAPs by 245 Megaton per year (10.4%). The largest absolute cuts were in Poland, Germany and Bulgaria, and the largest relative cuts in the Baltic states.¹³¹ These figures represent a cut of 130 megatons CO₂ (6%) below 2005 verified emissions and 160 megatons CO₂ (7.1%) below 2007 verified emissions. Whilst the cuts in Member States' allowances were deep, the pain has been considerably eased by Phase II's "credit limits" (the maximum CDM/JI volumes that can be purchased for compliance purposes), which vary according to Member States, from ten percent in most cases, up to twenty-two percent for Germany.¹³² Coupled with tightness of allocations, this creates the possibility for sizable offset/credit imports.¹³³

Two lessons emerge from this narrative. First, we should make explicit the function and implications of a market-wide carbon price, as delivered by the EU ETS. A carbon price is a necessary element of any effective package to reduce GHG emissions.¹³⁴ The reason is that it creates incentives for businesses

129 For the very extensive use made of Kyoto mechanism credits in the European Union for compliance purposes, see EUR. ENV'T AGENCY, *supra* note 116.

130 The full membership of the European Union, to be contrasted with the EU-15, *supra* note 110.

131 POINT CARBON ET AL., CARBON 2008 — POST-2012 IS NOW 28 tbl. 1 (2008).

132 Facilitated by Directive 2004/101 of the European Parliament and of the Council Amending Directive 2003/87 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community, in Respect of the Kyoto Protocol's Project Mechanisms, 2004 O.J. (L 228) (EC) 18 (known as the "linking directive").

133 Although outside the scope of this Article, large-scale credit imports create a reliance on emissions reductions made in CDM/JI projects whose ability to achieve actual emissions reductions continues to be questioned, see Michael Wara & David G. Victor, *A Realistic Policy on International Carbon Offsets* (Stan. Program on Energy & Sustainable Dev., Working Paper No. 74, 2008) (raising questions of effectiveness and thereby market and public confidence).

134 STERN, *supra* note 7, ch. 15.

throughout the economy to reduce emissions, and for consumers to use energy more wisely; activities that cause the problem become more costly, and those that address the problem less so. Carbon pricing sends a signal across the economy and creates incentives that reveal the cheapest ways of reducing pollution — it allocates capital to improve efficiency and reduce emissions intensity, with the effect that over time, the most efficient, least polluting firms will have an advantage over less efficient, higher polluting firms.¹³⁵

The carbon price collapse detailed above obviously undermines the rationale of carbon pricing as a driver of low-carbon investment. Although 2008 saw relatively strong carbon prices of between nineteen and twenty-nine Euro per ton, since the onset of the global recession that price has steadily declined. As of August 2012, a familiar combination of factors has reduced the EUA market to a parlous state. The ongoing global recession has combined with the Eurozone crisis and Canada's withdrawal from Kyoto to reduce European carbon prices to historic (Phase II) lows, around €3.80.¹³⁶ Needless to say, such prices are utterly inadequate for the purposes of driving the vast investments necessary to decarbonize the E.U. economy.¹³⁷

Of more direct concern to lawyers is the matter of litigation. We will recall Ackerman and Stewart's claim that market-based mechanisms have the merit, over command-and-control, of attracting less litigation — a "system of tradable rights will . . . reduce the incentives for litigation, simplify the issues in controversy, and facilitate more intelligent setting of priorities."¹³⁸ It is certainly true that litigation of the precise sort associated with BATs and its associated inefficiencies has not been a feature of the EU ETS. Rather, it has generated its own varieties of litigation, hand-in-glove with the development of the EU ETS to date. As I have explored elsewhere, the sheer volume of litigation before the Community Courts that has arisen in respect of the EU ETS

135 See Ackerman & Stewart, *supra* note 47.

136 Pillita Clark & Javier Blas, *Brussels Urged to Help Failing Carbon Market*, FIN. TIMES, Dec. 15, 2011, <http://www.ft.com/cms/s/0/d34fd038-273d-11e1-864f-00144feabdc0.html>; see also EUR. ENV'T AGENCY, *supra* note 116, at 46-47.

137 See HOUSE OF COMMONS, ENERGY AND CLIMATE CHANGE COMMITTEE, THE EU EMISSIONS TRADING SYSTEM 4, 63 (2012) (oral evidence of Professor Michael Grubb and Professor Samuel Fankhauser; citing fifty Euro per tonne as the carbon price needed to drive low carbon investment to meet the target of eighty percent emission reductions by 2050).

138 Ackerman & Stewart, *supra* note 47, at 1341-42; *id.* at 1337 ("Given the high costs of regulatory compliance and the potential gains from litigation brought to defeat or delay regulatory requirements, it is often more cost-effective for industry to "invest" in such litigation rather than to comply").

Directive is remarkable.¹³⁹ The Directive has generated over forty proceedings before the European Court of Justice, falling into four categories: challenges to the validity of the Directive; infringement proceedings; challenges to Commission decisions on the “national allocation plans” in Phase I (2005-2007) and Phase II (2008-2012) of the EU ETS’s operation; and a category of miscellaneous cases. That body of case law compares unfavorably in volume term with all other environmental instruments of E.U. law.

To determine the relevant comparators to the EU ETS, the approach of Jan H. Jans and Hans Vedder is followed.¹⁴⁰ This maps twenty-six substantive areas of policy (from environmental impact assessments to environmental governance, eco-labeling, flood risk, emissions into the air, waste, trans-frontier shipments of waste, wild birds, and climate change), which are addressed in seventy-four separate legal instruments. By comparing the total and per-annum number of E.U. court cases involving these environmental instruments and those relating to the EU ETS, we are given an indication of the exceptional nature of the EU ETS in E.U. law in respect of frequency of litigation. For ease of representation herein, however, those instruments that have been the subject of legal challenge fewer than five times have been excluded from the following table.¹⁴¹

Table 1¹⁴²

Legal Instrument	Number of Actions	Years in Force	Actions per Annum
DIR 2003/47 EC (Emissions Trading Directive)	43	6	7.2
DIR 2004/35 EC (Environmental Liability Directive)	7	3	2.3
DIR 75/442 EEC (Waste)	59	30	2.0
DIR 92/43 EEC (Habitats protection)	25	16	1.6
DIR 85/337 EEC (Environmental Impact Assessment Directive)	34	22	1.5
DIR 79/409 EEC (Wild Birds protection)	42	29	1.4

¹³⁹ Ghaleigh, *supra* note 121.

¹⁴⁰ JANS & VEDDER, *supra* note 65.

¹⁴¹ For a fuller analysis of the table, and its methodology, see Ghaleigh, *supra* note 121, at 50-51.

¹⁴² Reproduced from Ghaleigh, *supra* note 121.

Legal Instrument	Number of Actions	Years in Force	Actions per Annum
REG 259/93 EEC (Control of Shipments of Waste)	17	14	1.2
DIR 2000/60 EC (Water Framework Directive)	5	6	0.8
DIR 96/82 EC (Protection from Major Industrial Accidents)	7	10	0.7
DIR 2006/11 EC , codifies DIR 76/464 EEC (Pollution by Dangerous Substances Directive - aquatic environ)	17	34	0.5
DIR 80/68 EEC (Groundwater Protection Directive)	11	27	0.4
DIR 90/313 EEC (Freedom of Access to Information on the Environment Directive)	5	13	0.4
DIR 67/548 EEC (Relating to the classification, packaging and labelling of dangerous substances)	7	38	0.2

The key column is the fourth, “Actions per Annum” (by which the table is sorted). First, the number of cases brought before the Community Courts pertaining to the EU ETS Directive is very high in comparison with all other instruments of E.U. environmental law. Of the seventy-four instruments surveyed herein, in terms of frequency of challenge, the EU ETS, with forty-three actions, ranks second only to the venerable Waste Directive (fifty-nine actions). More significantly however, when these figures are scrutinized on an annualized basis to reflect intensity of challenge, the EU ETS is an extraordinary outlier, attracting over seven challenges per year in its short life. The next most frequently litigated instrument in E.U. environmental law is the Environmental Liability Directive with 2.3 actions per annum, but with only seven actions in total for the latter, the possibility of statistical skewing is present. The Waste Directive has more data points, but at a rate of only two challenges per year, it is quite clearly the case that across the entirety of E.U. environmental law the EU ETS has attracted a unique number of challenges.

However we explain this, and whatever the merits of market-based mechanisms, they are not free from litigation. Rather, they are zones of the most intense contestation known to E.U. environmental law where national governments, industrial actors and indeed extra-E.U. business interests entreat the courts to revisit substantive decisions taken by the political branches of

the European Union.¹⁴³ By way of the uncertainty that this adds to the carbon market, these can have direct impacts on the carbon price. Although the courts have in general resisted the pleas of litigants to expand supply (by loosening the overall level of the EU ETS cap)¹⁴⁴ or limit demand (by narrowing the class of those within the ambit of the EU ETS Directive),¹⁴⁵ they have not always done so and cannot be guaranteed to do so in the future.

To be fair to Ackerman and Stewart, their claim is that allowance auctioning is the key mechanism for the avoidance of litigation and this will only feature significantly in the EU ETS from 2013 onwards.¹⁴⁶ Would auctioning have taken the heat out of the challenges to the EU ETS and will it do so in the future? It is unlikely to be beyond the wit of lawyers to challenge auctioning's introduction. Further, as noted, allowance-based challenges have not been the only form of challenge facing the EU ETS, nor the most important. Like other forms of environmental regulation, market-based mechanisms cannot be commended on the basis of their immunity from suit (even if one were to agree that that were a basis for commendation).

C. The Climate and Energy Package(s) — All Too Visible Hands?

Partly in response to these issues of robust legal challenges and weak price signals, the European Union adopted a significant suite of additional policies in 2008 and 2009. The motivations for so doing, in addition to instrument effectiveness and coherence, certainly include the desire on the part of the Commission to appear relevant by responding to an issue of high public saliency and demonstrate its global environmental leadership.¹⁴⁷ Dieter Helm posits a further reason, noting that “in 2008 the EU effectively made [climate

143 See Case C-366/10, *The Air Transport Ass'n of Am. v. Sec'y of State for Energy & Climate Change*, [2012] 2 C.M.L.R. 4.

144 See *Gorazdze Cement v. Commission*, [2008] E.C.R. II-186.

145 Ghaleigh *supra* note 121, at 50-51.

146 In Phase III (2013-2020) a minimum of fifty percent of emissions allowances will be allocated by auctioning, *see* Directive 2003/87, as amended in Directive 2009/29, *supra* note 115. In Phases I and II respectively, only five percent and ten percent of allowances had to be auctioned, *see* Directive 2003/87, *supra* note 113, art. 10 (before the amendments). This is subject to various caveats, *see* Directive 2003/87, *supra* note 113, art. 14 (of the amended Directive). These caveats will likely themselves be the subject of litigation.

147 Miranda A. Schreurs & Yves Tiberghien, *European Union Leadership in Climate Change: Mitigation Through Multilevel Reinforcement*, in *GLOBAL COMMONS, DOMESTIC DECISIONS: THE COMPARATIVE POLITICS OF CLIMATE CHANGE* 23 (Kathryn Harrison & Lisa McIntosh Sundstrom eds., 2010).

change] its central policy focus” as a matter of expediency arising from the policy gap left by the failure quickly to ratify the Lisbon Treaty.¹⁴⁸ To this may be added the desire to arrive at the 2009 Copenhagen Conference of the Parties with a record of national achievement, both to placate non-Annex I concerns as to seriousness and to shame laggard Annex I parties, the United States in particular.

At the heart of what became the *Climate and Energy Package* was the 20-20-20 goal.¹⁴⁹ The numbers refer to the policy goal of achieving twenty percent emissions reductions (below 1990 levels) and twenty percent energy efficiency and generating twenty percent of the European Union’s primary energy from renewable sources, all by 2020. The package consists of six separate instruments, which (i) amend the EU ETS Directive,¹⁵⁰ (ii) differentiate national efforts to meet the goal,¹⁵¹ (iii) regulate carbon capture and storage,¹⁵² (iv) promote renewable energy,¹⁵³ (v) amend vehicle fuel quality,¹⁵⁴ and (vi) amend performance standards for cars.¹⁵⁵ There is a considerable literature on the Package,¹⁵⁶ and, as a policy platform it has received all manner of

148 Dieter Helm, *EU Climate Change Policy — A Critique*, in *THE ECONOMICS AND POLITICS OF CLIMATE CHANGE* 222, 223 (2009).

149 *20 20 by 2020: Europe’s Climate Change Opportunity*, COM (2008) 30 final (Jan. 23, 2008).

150 Directive 2009/29, *supra* note 115.

151 Decision 406/2009 of the European Parliament and of the Council of 23 April 2009 on the Effort of Member States to Reduce Their Greenhouse Gas Emissions to Meet the Community’s Greenhouse Gas Emission Reduction Commitments up to 2020, 2009 O.J. (L 140/136) (EC).

152 Directive 2009/31 of the European Parliament and of the Council of 23 April 2009 on the Geological Storage of Carbon Dioxide and Amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006, 2009 O.J. (L 140/114) (EC).

153 Directive 2009/28 of the European Parliament and of the Council of 23 April 2009 on the Promotion of the Use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC, 2009 O.J. (L 140/16) (EC).

154 Directive 2009/30 of the European Parliament and of the Council of 23 April 2009 Amending Directive 98/70/EC as Regards the Specification of Petrol, Diesel and Gas-Oil and Introducing a Mechanism to Monitor and Reduce Greenhouse Gas Emissions and Amending Council Directive 1999/32/EC as Regards the Specification of Fuel Used by Inland Waterway Vessels and Repealing Directive 93/12/EEC, 2009 O.J. (L 140/88) (EC).

155 Commission Regulation 443/2009, 2009 O.J. (L 140/1) (EC).

156 *E.g.*, Helm, *supra* note 148; Elisa Morgera, Kati Kulovesi & Miquel Muñoz,

plaudits, both from its authors¹⁵⁷ and no less gushingly from some academic commentators.¹⁵⁸ The present author shares, however, some of Helm's archly expressed doubts:

Any package with a title of matching "20" numbers has got to be primarily political . . . [It] targets an arbitrary number (20 per cent), and then for primarily political reasons applies this arbitrary argument to renewables and energy efficiency as well . . . [T]he package is very unlikely to have the intended effects. Though politicians may legislate for the future, if the package lacks credibility it will almost certainly be revised *ex post*.¹⁵⁹

Given the flood of *ex post* revision, discussed below, we might conclude that Helm's suspicions were well founded.

The European Union's *Second Climate Change Package* — the adjective being italicized to indicate that this is not at all an official designation — seems to have picked up where the CEP left off, with scarcely a break in time between the two, to remedy its flaws. To some extent, the Second Package adds to the list of complementary measures of the first Package with new measures on the eco-design of goods¹⁶⁰ and enhanced energy efficiency standards for buildings.¹⁶¹ These measures knit with the "2050 Roadmap" of the Commission's Directorate General for Climate Action, which plans for the post-2020 period, and include a series of proposed Directives on energy efficiency, energy infrastructure, an initiative on project bonds, and

Environmental Integration and Multi-Faceted International Dimensions of EU Law: Unpacking the EU's 2009 Climate and Energy Package, 48 COMMON MKT. L. REV. 829 (2011); Joanne Scott, *The Multi-Level Governance of Climate Change*, in THE EVOLUTION OF EU LAW 805 (Paul Craig & Gráinne de Búrca eds., 2d ed. 2011).

157 EUR. COMM'N, *supra* note 5.

158 ANDREW JORDAN ET AL., *supra* note 5 (referring to the Package as "a momentous development").

159 Helm, *supra* note 148, at 226, 229; *see also* DIETER HELM, THE CARBON CRUNCH 175-86 (2012).

160 Directive 2009/125 of the European Parliament and of the Council of 21 October 2009 Establishing a Framework for the Setting of Ecodesign Requirements for Energy-Related Products 2009 O.J. (L 285) (EC).

161 Directive 2010/31 of the European Parliament and of the Council of 19 May 2010 on the Energy Performance of Buildings O.J. (L 153) (EC); *see* Kathleen Mertens, *The Energy Efficiency Framework for Energy-Related Products — Is It Really the Story of a Life Cycle?*, in 3 EU ENERGY LAW AND POLICY ISSUES: ELRF COLLECTION 327 (Bram Delvaux, Michael Hunt & Kim Talus eds., 2012).

two further packages — a forthcoming E.U. infrastructure package and a *Third Energy Package* which was enacted in 2009.¹⁶² Yet more demanding low-carbon ambitions are contained in the “Energy Roadmap 2050” of late 2011.¹⁶³ A “statement of intent” document rather than a binding instrument, the Roadmap expresses the goal of ninety-five percent emissions reductions by 2050,¹⁶⁴ deploying and deepening the goals and mechanisms of the CEP.¹⁶⁵

E.U. climate change policy has been in a state of almost permanent revolution since its inception. EU ETS Phase III¹⁶⁶ will run for eight years from January 1, 2013. The emissions cap will henceforth be set not by individual Member States but by the Commission — a direct response to the various challenges to National Allocation Plans — and features a steady trajectory towards 2020 to reduce emissions by twenty-one percent overall, based on linear annual reductions of 1.74%.¹⁶⁷ The cap is then divided among Member States according to emission levels under the EU ETS and subject to a redistribution mechanism. Notably, the overall “cap” figures are subject to modification by the Commission during the detailed implementation phase, in order to meet the overall target of twenty percent by 2020 against a 1990 baseline.¹⁶⁸ Recent debates at Member State level and in the European Parliament have accordingly called for measures to ratchet down supply so as to drive up price. These have included proposals for a setting aside of 1,400,000,000 allowances *and* an adjustment of the annual emissions reduction factor to 2.25%.¹⁶⁹ Although benefiting from the support of some Member States, such as the United Kingdom and Denmark (which have traditionally been “pro-climate action”), others, most notably Poland, are strongly opposed to such measures, which they sees as “gamble” with Europe’s economic future.¹⁷⁰

162 Mertens, *supra* note 161.

163 *Energy Road Map*, COM (2011) 885/2 final (Dec. 15, 2011).

164 *Id.* at 2.

165 *Id.* at 4.

166 COM (2008), *supra* note 128.

167 Directive 2003/87, *supra* note 113, art. 9.

168 *Id.* preamble para. 14.

169 Sandbag, a leading environmental NGO, has argued that over-allocation and the effects of the global recession require a Phase III setting aside of at least 3,100,000,000 allowances and a linear reduction factor of 2.52%, *see* DAMIEN MORRIS, SANDBAG, LOSING THE LEAD? EUROPE’S FLAGGING CARBON MARKET 7 (2012).

170 Joshua Chaffin & Pilita Clark, *Poland Warns EU on Climate Policy*, FIN. TIMES, Mar. 7, 2012, <http://www.ft.com/cms/s/0/4422e92c-6883-11e1-b803-00144feabdc0.html>.

Phase III exhibits a higher degree of harmonization, partly in response to criticism of Phases I and II. This is evident in the E.U.-wide cap being determined by the Commission and harmonized rules for transitional free allocation. Although these measures benefit EU ETS participants by creating a more level playing field, that goal is achieved by the Commission exercising a higher degree of control in implementing the scheme. Further centralization has been mooted by the U.K. Parliament's proposal for a "market oversight body [which] could make independent and expert adjustments to ensure that the ETS maintains the intended investment signals."¹⁷¹

A relatively new approach to climate change policy, and arguably the most significant, is the turn to unilateralism. In the European Union, which is frustrated by the now long-familiar state of affairs whereby it is leading but nobody is following, a marked turn to unilateralism is discernible. The unilateralism of the European Union is substantially motivated by the desire to negate carbon leakage,¹⁷² but also can serve as a bargaining tool for the European Union to deploy in international negotiations. Early instances of this approach are evidenced in Article 25 of the amended EU ETS Directive,¹⁷³ which creates a scheme whereby border tax adjustments could be put in place to protect E.U. industries vulnerable to leakage (such a scheme was in part mirrored by the defunct American Clean Energy and Security Bill of 2009¹⁷⁴).

More telling, however, has been the "courageous"¹⁷⁵ step to include aviation in the EU ETS. This extension of the scope of the EU ETS has forced all airline operators whose flights take off from or land in the European Union to surrender allowances equal to the CO₂ emitted in the entirety of those flights, including the portion outwith E.U. airspace. A decision that has attracted considerable scholarly criticism,¹⁷⁶ this matter has been adjudicated by the

171 HOUSE OF COMMONS, *supra* note 137, at 49-50.

172 Carbon leakage is the term often used to describe the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries which have laxer constraints on GHG emissions. This could lead to an increase in their total emissions. The risk of carbon leakage may be higher in certain energy-intensive industries.

173 Directive 2009/29, *supra* note 115.

174 American Clean Energy and Security Bill of 2009, H.R. 2454, 111th Cong. (2009). For a comparison of the two measures and their WTO compliance, see Navraj Singh Ghaleigh & David Rossati, *The Spectre of Carbon Border-Adjustment Measures*, 2 CLIMATE L. 63 (2011).

175 HOUSE OF COMMONS, *supra* note 137, at 32.

176 Joanne Scott & Lavanya Rajamani, *EU Climate Change Unilateralism: International Aviation in the European Emissions Trading Scheme*, 23 EUR. J. INT'L L. 469 (2012).

European Court of Justice, which dismissed the challenge brought by the Air Transport Association of America.¹⁷⁷ Whether the case comes before the International Court of Justice (ICJ) or other fora, it seems likely that threats of a trade war will not disappear quickly.¹⁷⁸ As of November 2012, the European Union has agreed to suspend this extension of the scheme until the end of 2013 in order to facilitate a comprehensive aviation agreement under the auspices of the International Civil Aviation Organisation.

One very obvious inference to be drawn from this narrative of repeated correctives is that the presence of markets does imply the absence of the intervening hand of the state. Whilst this may not be news to those familiar with the Cohen/Hale assault on laissez-faire liberalism.¹⁷⁹ Both those that laud and lambast market-based solutions often fall into the trap of believing them to operate outside the state's control. The European climate action experience demonstrates the fallacy of this mindset in two different ways. First, as the EU ETS's dismal experience of problems of over-allocation, scope and a carbon price to drive polity-wide investment demonstrate, markets are far from self-correcting. In each of these respects the state, whether in the form of the legislator or the courts, has had to intervene to effect some sort of market correction. It remains to be seen whether these corrections will be effective. *Learning-by-doing* is not a quick process. Second, the many non-ETS or even market-based elements of the European Union's climate packages highlight the question of instrument choice that faces regulators. While economists sometimes bemoan this fact — the “one striking feature of current climate policy responses is that they are strongly guided by political factors, and only weakly by basic insights of economic theory”¹⁸⁰ — the evidence of the EU ETS and cognate regimes¹⁸¹ is that this balance is not obviously wrong.

177 Case C-366/10, *The Air Transport Ass'n of Am. v. Sec'y of State for Energy & Climate Change*, [2012] 2 C.M.L.R. 4.

178 Joshua Chaffin & Andrew Parker, *EU Freezes Foreign Airline Carbon Charge*, FIN. TIMES, Nov. 12, 2012, <http://www.ft.com/cms/s/0/52716c10-2cc8-11e2-9211-00144feabdc0.html#axzz2EHbXyUob>.

179 This New Deal-era body of work is comprehensively surveyed and referenced in MATTHEW H. KRAMER, *In Praise of the Critique of the Public/Private Distinction*, in *IN THE REALM OF LEGAL AND MORAL PHILOSOPHY: CRITICAL ENCOUNTERS*, *supra* note 25, at 112.

180 CAMERON HEPBURN, CARBON TAXES, EMISSIONS TRADING, AND HYBRID SCHEMES, in *THE ECONOMICS AND POLITICS OF CLIMATE CHANGE* 365 (2011).

181 Stavins, *supra* note 6.

CONCLUSION

There can be no doubt that emissions trading is an instrument that solves problems for environmental lawyers and policymakers. With its promises of cost-efficiency and drawing on the many minds of the marketplace, it is a fixture in many climate change solutions, whether in existence,¹⁸² forthcoming,¹⁸³ or nixed.¹⁸⁴ As a vehicle for achieving international cooperation on climate change mitigation, it clearly has considerable traction. The terms transplantation and legal borrowing have been used to describe the process of transnational mimesis by which economic instruments for environmental regulation traveled from the United States to the European Union;¹⁸⁵ the direction of travel seems to have been both reversed and diverted, despite the less than optimistic narrative — much of which is well known to policymakers — of the European Union's experience. Indeed, the optimistic narrative of the European Union's climate change policy is clearly difficult to sustain. Accordingly, the question is less whether market-based instruments *can* facilitate international cooperation on climate mitigation, but whether they *should*.

Starting with the motivations of the European Union's shift to market-based regulation, these are far more complex than is often asserted. Lessons from the U.S. SOx/NOx experience certainly played a role, but they must be seen in the context of whole-scale regulatory shifts within the European Union more generally, in areas ranging from food safety to product liability, and including environmental protection. Moreover, the enhanced "constitutional" prominence of environmental concerns within the European Union's treaty structure has knitted with an emerging strategic desire for the European Union to project powers and norms through its external actions. The prospect of a first mover's advantage in the global carbon market certainly loomed. On

182 In addition to the EU ETS, the International Emissions Trading scheme of the Kyoto Protocol, and those surveyed by Stavins, *supra* note 6, there are schemes in operation in Australia (in New South Wales and more recently at the federal level), New Zealand, the city of Tokyo, and in the United States (the Regional Greenhouse Gas Initiative operates in the North Eastern states of the United States; the Western Climate Initiative operates in ten western states of the United States and provinces of Canada).

183 Emissions trading schemes are scheduled to begin in China (pilot schemes in six provinces and cities in 2013, with a view to developing a nationwide trading scheme by 2015), and South Korea (from 2015, with approximately sixty percent coverage of its GHG emissions), as well as in California and Quebec.

184 The American Clean Energy and Security Bill of 2009, *supra* note 174, proposed a cap-and-trade scheme but failed to achieve Senate approval in mid-2010.

185 Wiener, *supra* note 4.

the evidence to date, the approach of the Harvard theologian, Peter Gomes, seems apt — it is the second mouse that gets the cheese.¹⁸⁶ Although the European Union has sought to protect its position in the carbon market and more broadly by way of unilateral measures, it is far from clear that they will achieve their aim.

Secondly, and drawing on Ackerman and Stewart,¹⁸⁷ if one of the expected outcomes of an emissions trading scheme is the avoidance of “counterproductive litigation” by powerful organized interests, the EU ETS has not delivered. On the contrary, the remarkable volume of litigation before the E.U. courts can be seen as a series of attempts by Member States (and private parties coordinating with them) to limit the impacts of the European Union’s ambitious climate change policy on their activities and those of enterprises operating on their territory. This is unlikely to be a lesson that has gone unnoticed in other polities.

Thirdly, the notion of a simple recourse to markets is just that — simplistic. As evidenced by the CEP and the plethora of measures since, market mechanisms need to be buttressed by a range of more-or-less traditional forms of “direct regulation” — whether fuel standards, energy efficiency goals, or subsidies for infrastructure, etc. Like all other markets, the ETS is a creation of the state and is necessarily reliant on regular maintenance from the same. Invisible hands are notable for their absence. The intervention of the state has been substantial and iterative. The idea that markets can “do the job” is heavily undercut by fairly traditional command-and-control mechanisms that operate at various levels.

Finally, the promise of seamless markets has not been delivered in the European Union. The contrast herein is to the costly bureaucracies which are necessary for the operation of command-and-control systems and which necessarily involve the lobbying of industry and environmental groups as well as government intervention. Again, the above narrative can be characterized in exactly those ways, with the extraordinary windfall payments to the power sectors (€19,000,000,000 in Phase I, €71,000,000,000 in Phase II¹⁸⁸) being only the best known example of this. Whether responding to oversupply in the

186 Peter Gomes, A Final Word, Address at the Collegiate School Graduation Ceremony (July 24, 2003), *available at* <https://www.collegiateschool.org/podium/default.aspx?t=204&tn=%22A+Final+Word%2C%22+a+Graduation+Address+by+Reverend+Professor+Peter+Gomes+of+Harvard&nid=42162&ptid=52302&sdb=0&mode=0&vcm=0>. Perhaps the Chinese or Australian or South Korean advocates of forthcoming emissions trading schemes see themselves in this light?

187 Ackerman & Stewart, *supra* note 47.

188 HOUSE OF COMMONS, *supra* note 137, at Evidence 63.

allowance market or the need to address the non-traded sector, or increasing the scope of the EU ETS, since its coming into force the Scheme has been reviewed, amended and extended almost continuously. As a consequence, the role of the various E.U. and Member State bureaucracies has been central. Given the transfer of responsibility in setting the overall cap from Member States to the Commission, this process of bureaucratic centralization has only increased over time.

Whatever else can be said of E.U. climate change law and policy, straightforward or handy characterizations are simply not available. For non-environmental strategic reasons, the European Union has placed climate change at the heart of its external relations and internal industrial and energy policy. The operative mechanisms are diverse. Whatever may be said of the European Union's climate change project, its past performance and current instantiation give few grounds for believing it to be, or likely to become, a success.

