1. Introduction

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1. PROBLEM DEFINITION: REASONS FOR THIS BOOK

Emissions trading can no longer be seen as just an interesting theoretical exercise: this market-based approach has developed an increasingly important role, first within the environmental law framework of the USA and later also within that of the EU. The instrument of emissions trading has been applied in order to combat significant environmental problems like acid rain, ozone-depleting substances and climate change. Regarding the two latter problems, the instrument is applied both on the international level as well as on national levels.

Notably for the greenhouse gas emissions problem, emissions trading seems to be very much suited to reaching the necessary reductions in a cost-effective way. In Europe there is now some experience with emissions trading as a result of the implementation of the greenhouse gas Emissions Trading Scheme (EU ETS).¹ The EU ETS is the biggest regional emissions trading system established thus far. The first trading period started on 1 January 2005 and finished on 31 December 2007; the second trading period, during which this book will be published, runs till 2013 and thus comprises five years. In the meantime, only three years after the start of the first trading period, the European Commission released on 23 January 2008 a proposal for a major revision of the EU ETS, which should change the system from 2013 onwards.² This proposal includes challenging new topics, like auctioning of allowances, an additional and gradually declining free allocation of allowances on the EU level, and a specific provision for industries facing international competition. The experience with the EU ETS had already

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¹ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, OJ L 275/32 25.10.2003.

² 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, Brussels 23.1.2008.

started before 2005, as important decisions regarding the distribution of the tradable allowances to the covered industries needed to be taken before the start of the first trading period. Moreover, the design of the legislative framework necessary for emissions trading was an interesting exercise too, leading to all kinds of new questions. Strikingly enough, those questions, which were in fact quite new for the European governments because there was thus far hardly any experience with this market-based instrument, needed to be answered in an extremely short time period because of the firm deadline set by the politicians aiming to have the EU ETS established before the start of the first commitment period of the Kyoto Protocol.

Moreover, the EU intends to expand its current greenhouse gas emissions trading regime, thereby indeed stressing that this instrument is the core climate change instrument for the EU.³ Certain member states, like the UK and The Netherlands, intend to adopt domestic measures for applying the instrument to other sources and other pollution problems. In the same vein, the idea of citizens' budgets for carbon emissions is also emerging.⁴ Meanwhile, in the USA several initiatives for greenhouse gas emissions trading have been taken at a regional level. In addition, industries initiate voluntary emissions trading activities, not least to prevent future liability claims. In addition, the setting up of a legal framework for trustworthy voluntary emission offsets needs to be considered as well.

The first European experiences with trading of greenhouse gas allowances have thus led to a lot of questions from various perspectives.⁵ In this respect it is worthwhile analysing the experience with the ETS in a critical way, aiming to answer the question of what can be learned from this experience at theoretical and policy level, and what lessons thus can be learned for the future application of the instrument. The purpose of this book is to focus on the domestic applications of the emissions trading instrument, especially for greenhouse gases, thereby learning from fresh experiences, critically examining the current practice, and looking to the future for new challenges for the instrument. It may be clear that both lawyers and economists have already questioned the effectiveness of the ETS from various perspectives. For example, lawyers have been critical with regard to the rush for adopting the instrument, and have questioned the flexibility allowed as far as the national

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³ See about EU climate change policy Bothe and Rehbinder (2005) (part II of the book); Deketelaere and Peeters (2006).

⁴ Starkey and Anderson (2005).

⁵ See an earlier examination of the US and European greenhouse gas emissions trading developments Hansjürgens (2005). See for a specific examination of allocation issues: Ellerman et al. (2007). A description of the development and content of the initial EU ETS has been elaborated on in Delbeke (2006).

allocation plans are concerned, pointing to possible distorting effects for competition and thus for the internal markets. Economists have critically questioned whether the current cap-and-trade system implied in the ETS can be considered as a cost-effective, let alone efficient, tool to reach the targets of reducing climate change. Moreover, the book should not only take into account these critical perspectives on the ETS from a legal and economic perspective. There are, in addition, experiences with emissions trading in other legal systems (like the US) which can be usefully taken into account in rethinking the effectiveness of this ETS. Indeed, the goal of this book is not only to analyse the effectiveness of the ETS, but equally to see what the current experience with the ETS can teach the existing literature with respect to emission trading. In addition, at the policy level, the book also aims to collect some lessons for the future design of the instrument.

Hence, the book will discuss the regulatory schemes for greenhouse gas emissions within the EU and the US. The design and implementation of the legal framework for emissions trading still raises important questions. First of all, we examine why different choices have been made in setting up the current schemes, and what those differences mean for the legal and economic effects in practice. Secondly, we question whether design options thus far only discussed in literature should be applied in practice, like the concept of auctioning, and the benchmark and trade option. It could even be asked whether the emissions trading system is indeed a better solution than the other highly recommended instrument of taxation. In a broader context, one should not forget that emissions trading is part of a comprehensive environmental law system. In that respect, the question emerges of how the instrument relates to other important instruments of environmental law, like integrated licensing.

The book has a theoretical and a policy perspective. The experience with the ETS can usefully be applied to existing theories on emissions trading. Thus, this experience can constitute a fruitful test case to examine to what extent the predictions in the literature concerning the effectiveness of emissions trading have materialized as a result of the ETS. Moreover, the actual experience with the ETS may also allow the refinement of existing theoretical insights and the procurement of more detailed knowledge about the optimal shape and structure of this particular environmental instrument. Indeed, some of the weaknesses of the ETS may thus contribute to a better design of emissions trading in the future. The latter point immediately shows that this book also has a clear policy objective since, in equal measure, it aims at formulating suggestions for improving the current emissions trading scheme concerning greenhouse gases.

2. METHODOLOGY

2.1 Multidisciplinary

As we already indicated, the whole concept of emissions trading is essentially an invention by economists.⁶ However, the effectiveness of the emissions trading scheme may to a large extent depend upon the specific way in which the system has been put into a legislative framework. In that respect particular legal aspects, for example concerning the procedure and method of the allocation mechanism, the way in which trading is controlled or the enforcement, are of particular importance. Furthermore, case law, as well, can influence the operating of the scheme in particular cases. Hence, a book that aims at analysing the effectiveness of the European emissions trading scheme for greenhouse gases inevitably has to choose a multidisciplinary approach. Combining a legal and economic approach is also useful since it allows many contributors to use the so-called ‘law and economics’ methodology to analyse specific aspects of the emissions trading scheme. Indeed, this particular methodology has analysed to what extent legal rules can be considered as promoting efficiency and has equally indicated under what kind of particular conditions one can expect emissions trading to be welfare improving.

The economic approach chosen by various contributors to this book combines classic environmental economic analysis with the previously mentioned law and economics approach. For example, to some extent economic insights are used to analyse the economic consequences of the choice for grandfathering as allocation mechanism rather than auctioning. Other contributors use economic tools to compare, for example, predictions made before the entry into force of the emissions trading scheme with the actual development of the scheme (*inter alia* looking at prices) after the scheme had been functioning for some time.

This multidisciplinary approach, combining a legal and economic perspective, thus allows a few modest conclusions on the relative effectiveness of the emissions trading scheme. However, as the contributions in the book make clear, one has to be very cautious about drawing policy conclusions on the basis of an analysis of, for instance, the development of the price of a ton of CO₂. This development alone does not necessarily provide hard proof that the emissions trading scheme was either effective or ineffective in reaching

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⁶ There is an ample economic literature about emissions trading. See for instance the important work of Tietenberg (1985) and for a further overview of economic literature his website http://www.colby.edu/personal/t/ttieten/tradable_permits.htm. See for a concise overview of law and economics literature Faure (2008).

particular policy goals (more particularly the reduction of CO₂ emissions as agreed to in the Kyoto Protocol). The reason is that it remains often difficult to show that particular effects are necessarily the direct consequence of a policy instrument chosen, in this particular case emissions trading. Another reason to be careful in this respect is that even if it could be shown on the basis of economic data that emissions trading would have had the effect of reducing emissions this does not necessarily imply that it is henceforth also an optimal instrument. The latter would imply that a comparison with other instruments, like taxation, is also made. Some contributors in this book hint at other possible instruments to achieve emission reductions (like *inter alia* taxation), but these remarks unavoidably remain largely speculative since (at least within the European Union) there is no empirical evidence concerning the effectiveness of a tax system which could be used to analyse the comparative effectiveness of taxation as a policy tool to achieve emission reductions.

2.2 Legal Interdisciplinary

Also within the legal discipline itself many approaches have been chosen within this book to analyse the effectiveness of the emissions trading scheme. For example, some authors used the traditional environmental legal literature with respect to instrument design to analyse the effectiveness of the current design of the emissions trading scheme. An important point of view to analyse the emissions trading scheme is the role that legal principles could play. In that respect, for example, the question arises whether the allocation method of grandfathering chosen in the ETS is in conformity with the polluter-pays principle. More broadly the question also arises whether generally legal principles could serve as a tool in guiding the policy maker when making difficult distributional choices in climate change policy.

The effects of an emissions trading scheme obviously go far beyond environmental law. Hence, the question not only arises to what extent the emissions trading scheme is, given its particular legal design, able to reach the policy goals given. Particular choices also have important implications from a competition law perspective. Hence, the question, for example, arises as to whether the choice for a particular allocation mechanism (more particularly grandfathering) can be reconciled with EU rules concerning state aid.

Moreover, the analysis of the legal aspects of the emissions trading scheme can of course not be limited to an analysis of the legal framework by merely analysing the contents of the EU directive and related EU policy documents and guidelines. More particularly given the importance of legal principles, the question arises as to what extent the judiciary can play its important role in, on the one hand, guaranteeing the effectiveness of the emissions trading scheme and, on the other hand, guaranteeing that the emissions trading scheme still

respects basic legal principles following from the rule of law. The question is of course not merely theoretical, since both with the EU directive itself as well as in the decisions at the level of the national member states (by means of national allocation plans and national allocation decisions) decisions may have been taken that to a large extent can affect the rights of actors involved. If they feel that where room for interpretation resulting from ambiguity is possible as well, they will inevitably call on the court system in an attempt to correct decisions which they experience as unfair. Indeed, both at the level of national member states as well as at EU level, interesting case law has meanwhile emerged that provides answers to some of these and other questions. An analysis of the emissions trading directive therefore necessarily also needs to address the question of to what extent the court system has been able to interpret the emissions trading scheme as developed in the directive in such a way that its environmental effectiveness is optimized, whereas on the other hand the interest of actors involved is not jeopardized in an unreasonable way. The question of course also arises whether courts, when asked to answer this necessarily vague question, call for examples of legal principles as an interpretation guideline.

Finally, the legal perspective should not only address the regulatory framework and case law, but also pay attention to the dynamic perspective, thus addressing the question of to what extent the policy maker (and in this particular case more particularly the national member states deciding on allocation plans, or, following the proposal to revise the directive, the Commission or EU legislator itself) is entitled to adapt policy decision concerning the allocation of the tradable allowances to changing circumstances. It is this dynamic perspective which is included in the complicated question mostly referred to as the admissibility of so-called *ex post* adjustments. The latter question is of particular interest since the opinions concerning its admissibility seem to be quite diverging, at least when one compares the opinion of the European Commission (largely negative towards *ex post* adjustments) with opinions in some member states (and recently also supported by case law).

2.3 Comparative Approach

This book clearly chooses not only a multidisciplinary, but also a legal interdisciplinary approach. It places emphasis on legal comparison as well. The need to do so when addressing emissions trading seems obvious: this book largely focuses on the European emissions trading scheme as developed within the framework of the EU. However, the particular implementation of the initial EU ETS depends to a large extent on the way in which member states deal with the emissions trading directive and more particularly via national allocation plans. There interesting differences may appear, also

resulting from differences in case law, for example with respect to the mentioned issue of *ex post* adjustments.

However, a comparison should not only take place between EU law and the (varying) approaches in some member states. It also seems interesting to take one particularly interesting member state and devote an entire chapter to it. This is particularly the case for the UK. As the chapter on the UK will show, this legal system is of particular importance, not only for being one of the first to establish a (national) emissions trading scheme (hence giving rise to interesting questions concerning the integration between the EU and the national emissions trading scheme), but also because of a wide experience as well with tools other than emissions trading as instruments to fight climate change. More particularly, the seeming success story concerning so-called climate change agreements made it worthwhile paying specific attention to the UK. The chapter also illustrates how difficult the design of climate change policy becomes: the comprehensiveness between EU law and national law, and between different applicable regulatory instruments, is a complicated issue for the legislative institutions.

A comparison with the United States was interesting as well since the US has some regional greenhouse gas trading regimes where (given the absence of a federal trading scheme) specific problems arise of so-called emissions leakage. The original solutions worked out in several of the regional US regimes are, within a comparison with Europe, highly interesting as well. Moreover, the issue of carbon leakage is also one of the core points of attention within the major revision of the EU ETS, as the proposal includes a specific regime for the energy-intensive sectors or sub-sectors being exposed to significant risks of carbon leakage. However, the determination of these sectors, and the design of the specific approach, are yet to be done.

3. FRAMEWORK

The project originated within the Maastricht European Institute for Transnational Legal Research (METRO) to which the two editors of this book and many of the authors are connected.⁷ Many of the European researchers who contributed to the book also participate within the transboundary environmental law programme of the Ius Commune Research School.⁸ The Ius Commune Research School is a collaboration between the Universities of Amsterdam, Leuven, Maastricht and Utrecht and focuses on the role of law in integration processes.

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⁷ See www.rechten.unimaas.nl/metro.

⁸ See www.iuscommune.eu.

Many researchers connected to both METRO and the transboundary environmental law group of the Ius Commune Research School are interested in environmental law and more particularly climate change issues. The current book is in that respect building upon earlier projects with Edward Elgar. For example, after a conference on 'Institutions and Instruments to Control Global Climate Change' held in Maastricht in June 2001, resulting in a publication (M. Faure, J. Gupta and A. Nientjes (eds), *Climate Change and Kyoto Protocol. The Role of Institutions and Instruments to Control Global Change*, Edward Elgar Publishing, Cheltenham, 2003) subsequent projects focused on the role of environmental law in developing countries, more specifically paying attention to the role of market-based instruments (M. Faure and N. Niessen (eds), *Environmental Law in Development. Lessons from the Indonesian Experience*, Edward Elgar Publishing, Cheltenham, 2006) and on EU climate change policy (M. Peeters and K. Deketelaere (eds), *EU Climate Change Policy. The Challenge of New Regulatory Initiative*, Edward Elgar Publishing, Cheltenham, 2006). The current book focuses specifically on the European emissions trading scheme, thus to a large extent builds upon this earlier research.

4. STRUCTURE OF THE BOOK

As the table of contents shows, the book is divided into four parts and fourteen chapters. This first part contains this editorial foreword drafted by the editors, followed by a general introduction concerning the legislative choices within the European greenhouse emissions trading scheme by Marjan Peeters in chapter 2.

Part 2 discusses the greenhouse gas emissions trading system in the EU from a critical economic and legal perspective. Javier De Cendra de Larragán addresses the allocation of greenhouse gas allowances in the EU from the perspective of legal principles and addresses the issue of harmonization (chapter 3). Nicolas Van Aken discusses (in chapter 4) the possibilities of going to court in the case of emissions trading, followed by an analysis of already-existing case law. Edwin Woerdman, Stefano Clò and Alessandra Arcuri discuss the present design of the EU ETS and more particularly its compatibility with the polluter-pays principle from a legal and economic perspective (chapter 5). Next, Stefan Weishaar discusses the relationship between the EU greenhouse gas emissions trading scheme and competition law (chapter 6). The complicated issue of the admissibility of *ex post* interventions in the present EU ETS is addressed by Chris Backes, Kurt Deketelaere, Marjan Peeters and Marijke Schurmans in chapter 7. They compare the position of the European Commission concerning *ex post* interventions with the way some

case law in member states has dealt with it as well as with the important ruling of the Court of First Instance of 7 November 2007. The last paper in this part, by Onno Kuik and Frans Oosterhuis, provides some preliminary elements of the economic impacts of the EU ETS (chapter 8).

Part 3 pays attention to several new developments at the EU level and also discusses a few alternatives and specific case studies. Erik B. Bluemel discusses regional emissions trading initiatives, thereby specifically addressing means for preventing GHG leakage in the US (chapter 9). Karen E. MacDonald and Zen Makuch introduce us to the components of a domestic climate change regulatory and policy framework, by elaborating on the package of climate change policy initiatives in the UK in their discussion (chapter 10). An interesting question from a legal perspective is also the possible linking of different domestic or regional emissions trading schemes, for instance the linking between the EU ETS and regional emissions trading schemes within the US. This complicated issue is addressed by Janneke Bazelmans in chapter 11. Finally a few recent evolutions are discussed, one of them being the expansion of the EU emissions trading scheme to emissions resulting from aviation. Particular problems that arise when applying the EU ETS to aviation emissions are discussed by Giedre Kaminskaite-Salters in chapter 12. Given the fact that the European Commission in its latest proposals provided for auctioning as an allocation mechanism for greenhouse gases, one specific chapter is devoted to the design issues related to the auctioning of greenhouse gases. Stefan Weishaar thus addresses both legal and economic questions relating to the use of auctioning in chapter 13.

Part 4 provides for a few conclusions and an outlook to the future and contains chapter 14 with concluding remarks from the editors.

5. CONTRIBUTORS

As we mentioned above, many of the contributors have worked together either on previous projects or with the editors. Javier De Cendra De Larragán, Michael Faure, Marjan Peeters and Stefan Weishaar are all connected with the Maastricht European Institute for Transnational Legal Research (METRO). They all participate in the Ius Commune Research School as well. The same is the case for other contributors who are connected with partners within the Ius Commune Research School like Kurt Deketelaere and Marijke Schurmans (Catholique University of Leuven), Nicolas Van Aken (Liège) and Janneke Bazelmans (University of Amsterdam); Giedre Kaminskaite-Salters is a solicitor at Norton Rose LLP (London) undertaking Ph.D. research at METRO under supervision of the editors of this book. Karen E. McDonald and Zen Makuch are connected with Imperial College London; Erik B. Bluemel with

University of Denver Sturm College of Law. We also want to mention that several contributors are connected with member institutions of the IUCN Academy of Environmental Law. Both Maastricht University (METRO), The Catholic University of Leuven and Imperial College London are members of this worldwide organization aimed at the further development of environmental law.⁹ The editors have worked together on other projects with Alessandra Arcuri (Erasmus University Rotterdam), Edwin Woerdman (University of Groningen) and Stefano Clò (University of Bologna), as well as with Onno Kuik and Frans Oosterhuis (Free University of Amsterdam).

A complete list of contributors and their affiliation is provided following the table of contents.

6. WORD OF THANKS

As editors of this book we are grateful to all contributors for their willingness to participate in this highly interesting and challenging project and for meeting the stringent deadlines we imposed upon them.

The METRO Institute has for many years received support from a consortium of industries for carrying out research into the legal and economic aspects of emissions trading.¹⁰ Moreover, The Netherlands Ministry of the Environment (VROM) sponsored a research team which evaluated the reform of environmental law in The Netherlands (structurele evaluatie milieuwetgeving – STEM) in which other partners inter alia the Free University of Amsterdam (to which Onno Kuik and Frans Oosterhuis are connected), also participated.¹¹ Some of the papers presented in this book, like chapter 6 on the compatibility of the EU greenhouse gas emissions trading scheme with competition law, chapter 7 on *ex post* interventions and chapter 13 on auctioning, are at least partially a follow-up to research performed earlier for this consortium of industries. We are grateful for the financial support provided and more particularly for the fact that our partners always allowed us to (which may seem obvious but is unfortunately not always) execute our research in full academic independence. A special word of thanks in this respect we owe to Mr. Vianney Schyns (of USG) for his never-ending efforts to support our research initiatives and provide us with challenging feedback on our research results.

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⁹ See www.iucnael.org.

¹⁰ See for further information the METRO website, www.rechten.unimaas.nl/metro under contract research.

¹¹ See the website, in Dutch; www.evaluatiemilieuwetgeving.nl.

We owe thanks as well to Chantal Kuijpers and Yleen Simonis of the secretariat of the Maastricht European Institute for Transnational Legal Research (METRO) for editorial assistance in the preparation of this book for publication. We owe special thanks to our research assistants Franziska Weber and Escada Kerckhoffs who reviewed the footnotes and the referencing. Finally we are most grateful to our publisher Edward Elgar for their kind professional and efficient support in the publication of this book.

The texts were finalized in April 2008, thus developments after that date could not be taken into account.

Michael Faure and Marjan Peeters
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