
Sense and Flexibility

Striking a Balance between Sovereignty and Harmonisation in the Implementation of the EU ETS

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Notre Europe

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The association also organises meetings, conferences and seminars in association with other institutions or partners. Proceedings are written in order to disseminate the main arguments raised during the event.

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Glossary

TERM	DEFINITION
Acid Rain Program	The Acid Rain Program is a cap and trade system adopted by the EPA to curtail sulphur dioxide emissions, the primary cause for acid rain.
Accreditation	The procedures and processes used to determine the competence of organisations to verify installations' emissions reports
Advance auctions	Advance auction is an auction for allowances that can only be used 7 years later i.e. allowances bought in 1993 could be used only in 2000 and later.
Allowance	According to the Directive, this 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 the EU ETS Directive and shall be transferable in accordance with the provisions of the EU ETS Directive
Allowance Tracking System	A central database for electronic recordkeeping and notification system to track allowance transactions and the status of allowance accounts.
Allowance Tracking Workstation	The software used by companies in the SO ₂ program to track and project emissions throughout the year, compare emissions to allowance holdings and manage allowance transfers.
Auctioning	Allocation method for issuing emission permits, or allowances, to emitters and firms, based on a willingness to pay for those allowances.
Banking	The process by which allowances not used in a given compliance period may be saved, or "banked" for the following compliance period
Benchmarking	The use of a standard representing an equal position for all installations in a sector or subgroup. The standard may be based on an average, BAT or another physical standard of emissions per unit of production

Broad Definition (of Combustion Installations)	This definition, used by a Member State to determine which installations should be required to participate in the EU ETS, includes all combustion installations whether or not they are being used specifically for energy production.
Burden sharing agreement	European Union agreement to share the 8% reduction target under the Kyoto Protocol among the EU-15
Business As Usual projections	The prediction of future emissions scenarios based on economic growth and no changes in processes
Calculation-based methods	The process by which projections of what should be emitted are based on the levels of inputs into a system and are subject to the accuracy of input measures (such as fuel). This is in contrast with Measurement Methodologies, which are utilised in the US. Measurement methodologies measure emissions output directly through emissions monitors.
Carbon Dioxide	A greenhouse gas whose atmospheric concentrations have been increasing from pre-industrial (1750-1800) levels of 280 parts per million (ppm) to present day levels of 356-360 ppm, depending on location. CO ₂ decreases in summertime when plant productivity consumes CO ₂ and increases in winter when biota is less active and respiration exceeds photosynthesis. A main source of CO ₂ increase in the atmosphere has been the burning of fossil fuels.
Clean Air Act Amendments of 1990	Title IV of the Clean Air Act Amendments of 1990 (CAAA) instituted the Acid Rain program, a cap and trade system to control sulphur dioxide emissions within the United States and reduce emissions by 50% 1980 to 2012
Closure	Installation's permanent 100% cessation of production
Community Independent Transaction Log	The transaction log established under the ETS through which all transactions are communicated, recorded, checked, and completed or rejected as appropriate. It accounts for the issuance, holding, transfer and cancellation of all allowances under the ETS.
Competent Authority	The authority designated by a particular Member State as the national administrator of the EU ETS.
Compliance Supplement Pool	A one time upfront allocation of allowances made to units to prevent closure of units and to allow them to phase in to compliance within the NOx Budget Trading Program

Continuous Emissions Monitoring System	A stringent monitoring mechanism adopted within the Acid Rain Program by the EPA, by which sources conducted quarterly reporting of hourly emissions to EPA.
Directive	A type of legislation promulgated by the European Parliament and the Council of the European Union that binds member countries to achieve stated objectives within a certain time limit, but allows the national authorities in each country to choose the choice of form and means to be used to meet those objectives. Directives must be implemented in national legislation in accordance with the procedures of the individual member countries.
Environmental Protection Agency	EPA is the primary federal agency within the US whose mission is to protect human health and the environment
EPA NO_x Allowance Tracking System	An electronic allowance compliance system set up by the EPA to keep track of the allowances traded through the nitrogen oxide acid rain program
Grandfathering	Allocation method by which allowances are allocated according to historical emissions
Greenhouse gas	A gas that absorbs infrared radiation and in turn emits it in the atmosphere. The net effect is a local trapping of energy and a tendency to warm the earth's surface. Water vapour (H ₂ O), carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O) and ozone (O ₃) are the primary greenhouse gases in the Earth's atmosphere.
Harmonisation	An increase in the standardisation of guidelines or rules
Installation	A factory participating in the EU ETS
Known New Entrants	New installations that begin operation in the middle of an EU ETS phase that were planned to be coming into operation at the beginning of the phase
Kyoto Protocol	An international treaty designed to address the problems associated with global climate change through legally binding limits on anthropogenic emissions of greenhouse gases.
Medium Definition (of Combustion Installations)	This definition, used by a Member State to determine which installations should be required to participate in the EU ETS, includes only combustion installations being used specifically for energy production.

Member States	Countries that are members of the European Union
National Allocation Plan	A mandatory provision of Directive 2003/87/EC whereby each Member State has to develop an implementation plan within the EU-wide greenhouse gas trading scheme for determining the total number of allowances that will be distributed to installations covered by the EU ETS.
National Ambient Air Quality Standards	Within the Clean Air Amendment Act of 1990, National Ambient Air Quality Standards were established for six primary pollutants that were considered harmful to people and the environment
National Registry	An electronic database set up by each Member State to track emissions transactions between installations covered by the EU ETS.
New Entrant Reserve	A predetermined amount of emissions allowances set aside to be allocated to new installations entering a participating sector in the middle of a Phase.
NOx Budget Trading Program	A collaborative effort by the north-eastern states of the US to establish a cap and trade program to curtail nitrogen oxide emissions in the summer months (ozone season)
Opt-in	An ETS provision that allows installations not covered by the Directive to voluntarily participate in the scheme.
Opt-out	The ability of an installation to opt out of the initial phase (Phase I) of the EU ETS based on coverage by country-specific greenhouse gas reduction policies. If there are no "equivalent" policies, installations are required to enter the EU ETS in 2008 (Phase II).
Phase I	The initial stages of the EU ETS (2005-2007) that is designed to transition Member States into the emissions trading market by developing greenhouse gas emission reductions plans, NAPs, to assist Member States in the implementation of the Kyoto Protocol from 2008-2012.
Phase II	The EU ETS trading period that links up to the Kyoto Protocol during the 2008-2012 compliance phase.
Phase III	The post-Kyoto EU ETS trading period starting in 2013.
Pooling	The ability of multiple installations to collectively manage their allowances through a designated authority.

Special Allowance Reserve	Within the Acid Rain Program, 2.8% of the allowances are auctioned annually in spot and advance auctions. This reserve is called the Special Allowance Reserve.
Sulphur dioxide	A pollutant from combustion installations that is a principle cause of acid rain and is regulated under the US Acid Rain Program.
Tiers	Minimum levels of accuracy in measuring and reporting emissions, defined by the size and type of the installation
Trading sector	The population of all trading installations, as defined by the types and size of installations required to participate
Unknown New Entrants	New installations that begin operation in the middle of an EU ETS phase that were not known to be coming into operation at the beginning of the phase
Vintage Allowances	Each allowance in the Acid Rain Program specifies a particular year, its "vintage", in which it is first available to be used to cover SO ₂ emissions.

Commonly Used Acronyms

BAU	Business as Usual
CEMS	Continuous Emissions Monitoring System
CDM	Clean Development Mechanism
CO₂	Carbon Dioxide
EA	European Cooperation for Accreditation
EMAS	Eco-Management and Audit Scheme
ETS	Emissions Trading Scheme
EU	European Union
GHG	Greenhouse Gas
IETA	International Emission Trading Association
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
ITL	International Transaction Log
M&R	Monitoring and Reporting
NAP	National Allocation Plan
NO_x	Nitrogen Oxide
SO₂	Sulphur Dioxide
US	United States

Foreword

FROM SCEPTIC TO WORLD LEADER? THE EU EMISSIONS TRADING SCHEME, AS A NEW FORM OF EU INTEGRATION AND A TEST FOR GLOBAL GREENHOUSE GAS EMISSIONS TRADING

The EU Emissions Trading Scheme is an historic first. While market-based instruments have been accepted over the past two decades as effective tools to address environmental and other policy issues, never in history have they been applied at such a scale between so many countries. The issue at hand, global climate change, indeed warrants policy innovation. But, is the EU ETS efficient and effective? And, to use vocabulary common in Brussels these days, does it provide "better regulation"?

One year into the scheme, this report, compiled for Notre Europe by an international group of highly dedicated students from Columbia University's MPA programme in environmental science and policy, will come as good news: the EU ETS is working. Beyond numerous investigations of the impact of the scheme on industry's competitiveness and its ability to achieve meaningful reductions in carbon dioxide emissions, Notre Europe commissioned the 11-strong team to determine whether the scheme's day-to-day implementation in national administrations and at the level of installations could be improved. Unsurprisingly, the authors have identified several areas for improvement through a systematic review of literature, a comparison with equivalent US systems, a questionnaire sent to nearly 7,000 installations, and interviews with national and EU officials.

Making sure that emissions trading between 25 countries with very different situations works requires flexibility. Wisely, the European Commission decided to have a trial period, which will end in 2008. It also opted for a directive, giving Member States considerable leeway in deciding how to implement the scheme. However, a market mechanism incorporating very different countries however also requires a clear operating framework. A trading scheme indeed offers incomparable latitude in the means chosen to achieve the desired target. Companies that need to reduce their emissions can choose to invest in whatever new technology they feel is appropriate, reduce their production, or simply buy allowances from companies that have lower marginal costs of abatement. However, in order to ensure the liquidity of the market and to avoid competitive distortions and unnecessary transaction costs, one should not add confusion and uncertainty to flexibility.

Is the right level of harmonisation achieved? A key consideration for the EU ETS is its unprecedented decentralisation relative to previous schemes, with very different sectors and countries involved.¹ While the scheme incorporates lessons from previous trading experiments, it is also the result of political bargaining between the 25 EU Member States. Inevitably, it

¹ Kruger, J. and W.A. Pizer (2004a)

includes design elements that constrain the coordination of its implementation. Some have argued that the Commission caved in and failed to harmonise key elements of the scheme.²

On the positive side, the EU ETS Directive harmonises a lot, with common guidelines more detailed than in past EU regulations. Single market legislation requires equal treatment of firms across the EU, and to this end, the Commission will monitor cases of market distortion. In practice though, Member States have a lot of discretion in crucial areas, which may lead to an uneven playing field for different industries and affect their relative competitiveness within and possibly outside the EU.

This reports aims to provide insights regarding the areas where greater efforts towards harmonisation are necessary, both in theory and in practice. It shows that allowance allocation, the monitoring of emissions, reporting, and verification procedures are aspects where the correct balance between harmonisation at the EU level and flexibility in Member States' implementation has not yet been struck. If and when emissions trading is extended to other regions of the world, the lessons learnt through the ETS will be extremely valuable.

However, identifying such areas for improvement should not detract from the fact that the EU ETS is functioning relatively well. The survey conducted for this report indicates that the actors involved are satisfied with its administration and do not consider it too burdensome, although it has required huge efforts. Generally, companies approve of the level of administration chosen for various aspects of the scheme. While some may argue that this is the confirmation that they obtained what they wished for through effective lobbying, we also know from experience and theory that emissions trading is a cost effective form of regulation. The report indicates ways in which, if the European Commission and the Member States are willing, procedures for companies and administrations involved could be simplified and harmonised across borders.

More generally, the EU ETS has proven that international regulation through market-based mechanisms works. As a de facto form of taxation, it shows that harmonisation at the EU level in this area too is feasible. European integration now has a new tool in its toolbox, which could be applied in the future to other policy problems within the EU, such as water pollution, the promotion of renewable energy, and emissions of other chemical pollutants.

A few years ago, when the Kyoto Protocol was being negotiated, EU governments frowned upon the notion of emissions trading. Now, lessons learnt from the EU ETS could be important in determining whether other countries choose emissions trading as part of their climate change strategies. Norway, Canada, Switzerland, a number of Australian states, some states in the North Eastern part of the United States, and other parts of the world are considering putting in place domestic trading schemes. The example given by the EU ETS is watched closely. Today, the Commission gets more visitors from around the world to study the system than its civil servants can meet. The EU ETS has become the leading carbon market with at

² Godard, O (2005)

least 250 million allowances traded in 2005 at a market value of some 9 billion euros. Triggered by the EU ETS, JI and CDM initiatives, the mechanisms by which trading can be extended to countries in transition in Europe and the rest of the world, are developing rapidly. As expressed by a Commission expert closely involved in the design and implementation of the scheme "a global carbon market may emerge out of all these 'bottom-up' initiatives rather than a 'top-down' international approach".

We hope that, as the European Commission itself is assessing the scheme and Member States are preparing for a second round of National Allocation Plans, the findings and recommendations provided in this report will prove useful.

We also hope that the European Union will keep its momentum, by increasing the coverage of the scheme to new sectors and new gases, and by making sure that national allocation plans are not too generous but contribute genuinely to achieving the Kyoto Protocol targets. This is now, more than ever, the key concern. The design and implementation of the EU ETS can be improved, but its first year of operations provides the basis for expansion within and outside the EU. The litmus test will now be whether Member States and the Commission are serious about using it to tackle greenhouse gas emissions.

Stephen Boucher, *Notre Europe*

Executive Summary

The European Union Emissions Trading Scheme (EU ETS) has just completed its first year of operation. This 'cap-and-trade' programme, designed to help European Union Member States meet their Kyoto Protocol targets, sets a cap on carbon dioxide emissions from a number of key industrial sectors across Europe and allows trading among affected installations. The success of this regime and its ability to reduce greenhouse gases emissions will be decided by how effectively it is implemented. Yet, the flexibility that the EU ETS directive provides to Member States raises potential challenges and concerns for administering key programme elements across Member States.

In response, *Notre Europe* tasked a group in Columbia University's Master of Public Administration Program in Environmental Science and Policy to investigate and report on the implementation and administration of the EU ETS. Specifically, the study focuses on seven EU ETS programme elements: allocation, monitoring and reporting, verification, banking, registries, taxation and accounting, and expansion. To analyse these programme elements, the study team used four key methodologies: 1) a synthesis of the existing literature on the EU ETS and its implementation; 2) identification of successful components of the United State's Acid Rain Program for controlling sulphur dioxide emissions from power plants; 3) an on-line survey of participating installations to assess their experiences during the first year of implementation; and 4) telephone interviews with government officials, market intermediaries, and relevant non-profit organisations.

Overall, we find allowance allocation to be the most critical and contentious programme element, as it governs the distribution of billions of Euros of newly created assets. Most importantly, a sufficiently stringent allocation cap will be the key to environmental success of the EU ETS. Other concerns with allocation that we have identified include: the reliance on grandfathering as an allocation methodology, inconsistent rules on new entrants' reserves and closure, and a lack of clarity and transparency in some allocation plans. In order to alleviate these concerns, we recommend a greater degree of harmonisation at the EU-level for allocation methodologies, and suggest that as the scheme progresses, it should look to increase the use of 'best-available-technology' benchmarking and auctioning as allocation methodologies.

Monitoring, reporting, and verification are three components that are critical to the scheme's success. Emissions reports must be accurate and reliable in order for the scheme to have enough credibility to support a functioning market. While recognising that EU-wide harmonisation of these three programme elements may be administratively impossible, we recommend that a common accreditation scheme for verifiers be implemented across the EU and that monitoring and reporting be increasingly standardised through a greater reliance on common templates and information technology, such as electronic reporting. Banking, taxation and accounting of allowances, and the expansion of the EU ETS to other sectors or greenhouse

gases, are also examined in this report as additional elements that are important to the success of the scheme as it progresses into the future.

In sum, this report offers practical policy guidance on EU ETS administration that builds upon the current, extensive literature on the EU ETS. It also serves to identify and reiterate many key issues being discussed by Member States and industries and highlight areas of programme implementation that can be improved in the coming years.

Performance evaluation

The following table presents our overall assessment of each programme area of the EU ETS, based on four criteria that we identified as critical to successful administration of the scheme: effectiveness, efficiency, transparency, and consistency.³ Notably, consistency is the area in which we rate EU ETS' performance the poorest; however, this does not translate to ineffectiveness or inefficiencies in the scheme in all programme elements.

	Effectiveness	Efficiency	Transparency	Consistency
Allocation	✗	✗	—	✗
Monitoring and Reporting	✓	✗	—	✗
Verification	—	—	✗	✗
Banking	✗	✓	✗	✗
Registries	—	✓	✓	—
Tax and Accounting	—	—	✗	—

³ We have used a green check to indicate good performance as measured against a particular criterion, a yellow dash to indicate mediocre performance or inconclusive evidence on the level of performance, and a red 'X' to indicate poor performance.

Overview of recommendations

Our recommendations for improving the implementation and administration of the EU ETS are grouped by programme element:

Allocation

Amounts

- Member States should provide a clear demonstration that the quantity allocated to the trading sector will be sufficient to meet the country's Burden Sharing Agreement target, taking into account reductions from non-trading sectors and planned use of CDM and/or JI credits.
- The EU should move towards common policies regarding Greenhouse Gas emissions reductions in non-trading sectors.

Methodologies

- The EU ETS should increase the use of benchmarking. Through consultation with industry and national governments, the EU should establish sector-specific, EU-wide performance benchmarks, where feasible.
- The EC should encourage Member States to use auctioning to the full extent allowed (10%) for Phase II by establishing guidance for how auctions should be conducted.

New Entrant and Closure Rules

- The EC should study the implications of establishing allocation provisions for those installations experiencing growth versus limiting reserves exclusively for new entrants.
- Allocation methodologies should be uniform for both new entrants and existing installations, so as to avoid providing an incentive for extending the life of aging, inefficient plants.
- The approach for identifying and allocating allowances to new entrants should be harmonised across the EU.
- Closure rules should also be standardised at the EU level to allow for consistency across Member States.
- The Commission should establish an EU-wide closure provision that allows operators of closed plants to retain their remaining allowances within that Phase only, in order to

encourage older, more inefficient plants to close sooner.

Monitoring and Reporting

- M&R guidelines should be more prescriptive, thereby helping to ensure that they are implemented more consistently across Member States.
- The EC should actively participate in the development of international standards for the monitoring and reporting of greenhouse gas emissions.
- The EC and Member States should automate M&R by developing emissions reporting software and utilizing other electronic means to standardise and streamline emissions reporting.

Verification

- The EU should standardise protocol for the accreditation of verifiers, requiring common standards for verifiers operating throughout the EU.
- Member States should solicit industry commentary on their experiences with the verification process and use this feedback to improve the process.
- The EC should conduct spot audits of verified emissions reports, with an eye towards ensuring that M&R and Verification meets minimum standards throughout the EU.

Banking

- The EU should sponsor research into the effects of banking on the abatement behaviour of installations: specifically, identify whether installations participating in banking tend to invest in *more* or *less* abatement technology.
- Before banking is adopted on an EU level, ensure that the registries of each Member State are equipped to monitor and track banked allowances.
- The EU must carefully consider the potentially difficult situation that may arise at the end of Phase I, as inter-phase banking is not currently permitted.

Registries

- The EC should provide technical assistance to those Member States that do not yet have registries or encourage these countries to become a part of the group of Member States that have adopted the GRETA software.

- The EU should anticipate linking the EU ETS registry system to other international schemes to allow for the seamless integration of accounting systems, trading platforms, and registries including software related to data accuracy and security.

Taxation and Accounting

- The EC or Member States should contact Member State auditing boards to hear and address any concerns that accountants found during the financial audit of the fiscal year starting in January 2005.
- The EU and Member States should jointly decide upon an allowance accounting and taxation methodology to be implemented consistently across Member States, putting the EU in a position, as the international market grows, to ensure that the same tax and accounting standards are adopted worldwide.
- Member States should actively seek input from installations on whether or not they are experiencing confusion regarding the taxation and accounting of allowances. This input should be used in developing an EU-wide accounting and taxation methodology, and also in identifying where EU-wide guidelines may need to be enhanced to function on an individual Member-state level.

Expansion

- Taking into account the full universe of greenhouse gas emissions, the EU should consider establishing a comprehensive sector-based, EU-wide emissions reduction strategy, utilising the ETS and other policy mechanisms. Such a harmonised approach would prevent competitive distortions and help focus investment in new technologies.
- Expansion of the EU ETS must be based on a careful examination of the costs and benefits of including new sectors and/or gases. As a general rule, expansion should only be considered for new sectors if the scheme can result in emissions reductions at a lower cost than alternative policy mechanisms.
- The EU should collaborate in the development of new regional emissions trading schemes, in order to ensure that they are compatible with established EU ETS architecture and ultimately will enable international emissions trading.

1. Introduction

1.1 Research Purpose

In 2003, the European Union (EU) established the *Emissions Trading Scheme (EU ETS)* in order to limit and ultimately reduce its *carbon dioxide (CO₂)* emissions from large industrial activities. While the European Commission established the EU ETS through a Commission Directive, each Member State is responsible for developing a national plan to implement the scheme. The EU ETS' purpose is to achieve greenhouse gas emissions reductions in the most efficient manner possible, so as to facilitate EU compliance with commitments outlined in the Kyoto Protocol with minimal impact on the competitiveness of its industries.

A year into its initial learning phase, a number of questions exist regarding the successes and challenges of the scheme. The goal of our research project is to evaluate the performance of the EU ETS by highlighting commonalities and disparities among Member States' administrative systems and assessing whether they serve to impede or promote the scheme's effective functioning. Our research focuses on how the EU ETS is administered in practice. Of particular interest are issues such as:

- problems with the establishment and implementation of national allocation plans;
- the regulatory effectiveness of monitoring, reporting and verification;
- the scheme's impact on competition within the EU; and generally,
- difficulties encountered during the initiation of the scheme.

From January to April of 2006, eleven graduate students have undertaken this research project as a 'workshop' in Columbia University's Master of Public Administration Program in Environmental Science and Policy. We are conducting this research for the Paris-based think-tank *Notre Europe*. This research venture is one of *Notre Europe's* first forays into environmental policy; thus, the authors hope that *Notre Europe's* expertise on European integration and EU policies combined with our training in environmental science and policy produces a meaningful collaboration that synthesises and advances research on the EU ETS' implementation.

Our analysis has included a comprehensive literature review of the governing documents of the EU ETS and research published on its design and implementation, as well as an original survey and telephone interviews. This survey of participating installations, administered by *Notre Europe*, provided a primary source of information about the programme's administration and stakeholders' perceptions of the scheme's strengths and weaknesses. The survey received 130 responses from participating EU ETS installations; this was supplemented by twelve in-depth

interviews with government representatives, relevant non-profit organisations, and Carbon market intermediaries.

Finally, to better comprehend the factors that enable the success of established emissions trading schemes, we supplemented our ETS research with an analysis of emissions trading schemes in the US. We identified the **Acid Rain Program**, designed to curtail **sulphur dioxide (SO₂)** emissions in the US, as a successful program from which certain lessons could be applied to the implementation of the EU ETS. For full information on survey administration, please refer to Appendix C.⁴ For survey results, please refer to Appendix D. Finally, for information on the two US based trading programmes we examined, the Acid Rain Program and the **Nitrogen Oxides Budget Trading Program**, please refer to appendices E and F.

1.2 Report Structure

This paper reports our findings for each of the key programme elements we have examined. Additional background information, methodology descriptions, and survey results are included in the report's appendices, available on *Notre Europe's* website.⁵

For those readers who may be less familiar with the ETS, we provide a summary of the rationale and structure of the scheme in Appendix A. Additionally, Appendix B provides an explanation of how the ETS relates to EU commitments outlined in the **Kyoto Protocol**, providing data on each Member State's Kyoto targets and initial EU ETS allocations.

The body of this report assumes a level of familiarity with the basic functioning of the EU ETS and discusses particular programme elements, defining these where necessary. Section 2 of this report outlines and explains seven key programme elements upon which we have focussed our investigation: allocation, monitoring and reporting, verification, banking, registries, tax and accounting issues, and expansion. Section 3, 'Findings', draws on existing and original research to form conclusions about the administration of the ETS and make recommendations for how it could be improved.

⁴ All appendices are available on *Notre Europe's* website: <http://www.notre-europe.asso.fr/sommaire.php3?lang=fr>

⁵ <http://www.notre-europe.asso.fr/sommaire.php3?lang=fr>

2. Key Programme Elements and Criteria

Our investigation focuses on seven key programme elements: allocation of allowances, monitoring and reporting, verification, tax and accounting, registries, banking, and expansion. For the sake of organisation, these are divided into two groups: prioritised (those which we deem critical to the success of the EU ETS) and secondary (those which play an important role in the functioning of the EU ETS but are not of greatest immediate concern).

We developed this list of seven elements based on our literature review, which helped us to understand areas in which the existing literature on EU ETS implementation is already robust and other areas where critical discussions or issues remain unanswered. While current literature spans a wide range of concerns from environmental effectiveness to day-to-day administrative considerations such as accounting methods for allowances, we have narrowed the scope of our investigation for the sake of collecting original research and presenting meaningful findings on those elements of the programme that are key to implementation.

The EU ETS' enabling *Directive* intentionally provides Member States with a considerable amount of flexibility and discretion in how they choose to implement the scheme. While this flexibility is necessary and valuable in some programme elements (e.g. the establishment of an historical baseline for determining allocations), there is concern in others (e.g. definition of combustion installation used) that a lack of uniformity may complicate implementation of the EU ETS, create competitive distortions, and ultimately undermine its credibility.^{6,7} For each of the programme elements we examine, we attempt to identify those elements in which flexibility is warranted and those in which a greater degree of harmonisation would improve the scheme, either administratively or in terms of effective, efficient implementation.

The goal of this section is to provide a brief description of each key programme element as well as to highlight how we used the online and telephone surveys to expand upon the current discussions of these elements.

⁶ Egenhoffer, C. and N. Fujiwara (2005):12

⁷ Mullins, F. and Karas, J (2003)

2.1. PRIORITISED PROGRAMME ELEMENTS

Our prioritised programme elements are:

1. Allocation of allowances;
2. Monitoring and reporting, and
3. Verification.

We chose these elements because they are consistently highlighted throughout the literature as elements of central importance that are creating challenges to the successful administration of the scheme. Although our research into these programme areas is based in large part on existing research and analysis, this report serves to synthesise multiple sources of information and emphasise some central themes.

2.1.1. ALLOCATION OF ALLOWANCES

Under the EU ETS, EU Member States establish a cap on CO₂ emissions, approved by the European Commission, and issue allowances to *installations* covered under the scheme (power plants, industrial plants, etc) through the creation of a *National Allocation Plan (NAP)*. These NAPs state the total number of allowances that will be allocated during a trading period and outline the country's allocation methodology.⁸ The European Commission is responsible for approving the NAPs that the Member States draft and use to determine allocations to installations within their borders. Our research seeks to identify the optimum allocation methods to be used across the EU based on the criteria we discuss below and to determine those allocation decisions that are best suited to flexibility at the Member State level versus the allocation decisions that could be standardised across the EU.

2.1.2. MONITORING AND REPORTING

The Commission adopted guidelines for the monitoring of emissions under the EU ETS with Commission Decision 2004/156/EC, which works toward harmonising the monitoring methodologies for the trading sector. The decision emphasises the use of *calculation-based methods* for determining emissions, as opposed to direct measurements such as *Continuous*

⁸ European Commission (2003)

Emissions Monitoring Systems, used in the United States.⁹ Once the calculations have been made, installations must have their emission reports verified by an independent verifier before submitting them to the **Competent Authority**. The Competent Authority then uses the emission reports to determine the number of allowances that an installation must surrender by April of the following year. While the EU Commission has provided guidance regarding monitoring and reporting processes, the Commission's Directive on monitoring and reporting does allow for considerable flexibility for each Member State to devise monitoring and reporting systems. Our analysis of monitoring and reporting centres on the administrative challenges that governments and installations have encountered, whether or not there are consistent monitoring and reporting practices among Member States, and how these could be improved.

2.1.3. VERIFICATION

The EU ETS Directive requires every installation to have a third-party verifier certify their monitoring reports prior to their submission to the competent authority. However, as of Phase I, Directive 2003/87/EC only lays out general competency criteria for verifiers,¹⁰ while calling for the training and accreditation of verifiers to be done within each Member State. Our research considers how the verification process affects compliance throughout the EU and if existing accreditation procedures for verifiers are acceptably consistent from one Member State to another.

2.2. SECONDARY PROGRAMME ELEMENTS

In addition to the three primary programme elements discussed above, there are a number of less fundamental but nevertheless important programme elements that we have found to be under-represented in the existing literature. Thus, we have selected the following four programme elements as areas in which we feel that additional research could make a significant contribution to the working body of knowledge on the implementation and administration of the EU ETS.

⁹ European Commission (2004a)

¹⁰ Ibid.

2.2.1. BANKING

A system of *banking* allowances from one year to the next enables installations to make greater reductions in emissions when it is less costly to do so and put the “extra” allowances towards a future time when reductions may be more costly. Currently a few Member States make provisions for banking between years in Phase I of the EU ETS but not across to Phase II. There is concern that a large amount of banking could undermine the liquidity of the market.¹¹ The lack of uniformity in banking rules has an impact on industry trading strategies, the environmental effectiveness of the market, and the value of allowances in different trading periods.¹²

We have found banking to be a critical component of success in the United State’s Acid Rain Programme and are interested in the extent to which banking could also improve the efficiency of the EU ETS. While banking has not been a prevalent feature or major area of contention in the first phase of EU ETS implementation, it is clear that over time discrepancies in this area could undermine the emissions trading market. We are interested in understanding how banking affects the effectiveness and efficiency of the EU ETS, the support or disapproval for greater use of banking, and the level of authority under which this should be determined.

2.2.2. REGISTRIES

Each Member State is required to establish a *national registry* in which all allowances will exist electronically. These registries will accurately account for the issuance, holding, transfer, and cancellation of allowances between installations.¹³ In order to ensure the compatibility and comparability between different national registries, the Commission created Commission Regulation No. 2216/2004 which outlines specific data requirements.¹⁴

In addition, the regulation intends for information in each registry to be largely transparent and accessible to the public.

As national registries provide the tracking mechanism for monitoring and reporting as well as the electronic forum through which the trading market is expected to function, their success and smooth operation is vital in the scheme’s efficiency and effectiveness. While we did not find concern over registries to exist in early research on the EU ETS, we are interested in verifying that registries are indeed functioning as intended and are sufficiently transparent. We

¹¹ RIIA Report (2003)

¹² Ibid.

¹³ Ibid.

¹⁴ European Commission (2004b)

are also interested in identifying any challenges faced during the establishment of the registries.

2.2.3. TAX AND ACCOUNTING OF ALLOWANCES

The creation of the EU ETS has created a new dimension of assets and liabilities for companies that fall under the trading scheme.¹⁵ The requirement to track and report allowances granted and traded under the EU ETS has led to the need for new taxation, financial and legal reporting mechanisms. How allowances are recorded, reported, and taxed depends largely on national financial and legal classification of the allowances (i.e. commodity, good, and equity).¹⁶ The Directive, however, does not propose clear guidelines to address these uncertainties¹⁷ and there is ambiguity across EU Member States. As companies have largely focused on the emissions monitoring and reporting involved in the implementation of the trading scheme, less attention has been paid to the accounting, financial reporting, and legal side of the EU ETS.¹⁸

Nevertheless, the manner in which allowances are accounted for and their legal classification can affect the administration of the scheme at both the installation and Competent Authority levels. Thus, our research seeks to understand whether or not Member States have created guidance on how the taxation and accounting of allowances is to proceed, and how this information differs across Member States.

2.2.4. EXPANSION

For the initial trading phase from 2005 – 2007, drawing largely on the input of relevant stakeholders, the Commission focused on ease of design and implementation as a key goal of EU ETS creation.¹⁹ One essential decision was to designate a target population that would engage in trading within the EU ETS. This population is known as the *trading sector*.

In 2000, the European Commission published a “Green Paper” that examines the possibility of introducing market mechanisms as part of an effective climate change mitigation policy²⁰. This Green Paper called for the trading sector to focus on large, point source emitters of CO₂, as they would be the easiest to monitor and regulate. The trading sector includes: combustion

¹⁵ PricewaterhouseCoopers (2005)

¹⁶ Mullins, F., J. Karas (2005)

¹⁷ Ibid.

¹⁸ King, B. (2005)

¹⁹ European Commission (2000)

²⁰ Ibid.

installations, mineral oil refineries, coke ovens, metal ore roasting and sintering installations, iron and steel producers, cement and lime producers, glass manufacturers, ceramic manufacturers, and paper and pulp producers.

While the initial scheme covers only carbon dioxide emissions from these specified sectors, the Directive leaves open the possibility that the scheme may be expanded to include the other five **greenhouse gases (GHGs)** identified under the Kyoto Protocol. These include:

- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur Hexafluoride (SF₆)

The possibility also exists, either at the Member State or EU level, for expansion to include additional sectors as well as gases. Our study therefore considers whether or not the administrative capacity and political will exist to make expansion possible, and identifies the circumstances that should be considered when deciding to expand the scheme.

2.3. KEY CRITERIA FOR EVALUATING THE EU ETS

The EU ETS is a market-based, environmental policy mechanism that has been designed to achieve an environmental objective in the most efficient manner possible. Its specific function is to enable EU compliance with the Kyoto Protocol with minimal impact on the competitiveness of European industry. Ultimately, its success will be determined by the degree to which it achieves environmental results and the relative burden or cost it places on the European community as a whole. This will depend in large part upon how the scheme is administered in practice.

We have identified four general criteria as a means to evaluate the efficacy of EU ETS administration. These were distilled from our research into background policy documents, keys to success of the Acid Rain Program, and requirements found within the Directive itself. While the criteria are articulated in general terms, we applied them to assess the specific function of each programme area. Thus, the following criteria represent standards by which we have evaluated the success of EU ETS administration:

- **Effectiveness:** this criterion evaluates if or how the EU ETS is successful in producing its desired result, and in how the programme areas fulfil their specified function. It is related to the ultimate objective of the EU ETS itself, as well as the specified objective(s) of each programme area.

- **Efficiency:** this criterion assesses whether the EU ETS achieves its objective in the most efficient manner possible, so that there is no unnecessary expenditure of time or financial resources in implementing the rules for each programme area.
- **Transparency:** this criterion evaluates whether the EU ETS rules and procedures for the programme areas are open, clear and coherent, and that the rationale for them is easy to perceive. It also assesses whether decision-making is made openly.
- **Consistency:** this criterion examines whether the EU ETS is administered uniformly from one member state to another and from one installation to another. As we have been tasked to identify where further harmonisation is needed for the optimal functioning of the scheme, we are chiefly concerned with areas in which inconsistent administration is detrimental to success of the scheme. Thus, in each programme area we are examining if or where the variances create competitive imbalances, market distortions, or other disparities that impede the optimal functioning of the scheme or otherwise undermine its integrity.

These four criteria manifest themselves differently across different programme elements; however, we try to address where any of the four may be problematic or particularly successful in our 'Findings' section for each programme element. Moreover, we provide a ranking of each programme element across these four criteria in the 'Conclusions' section for each programme element.

3. Findings

This findings section, organised by programme element, synthesises data from the survey and interviews and discusses how this data supports and builds upon information from the existing literature and previous studies on the EU ETS. (For details on the methodology and results of *Notre Europe's* online survey of installations and our telephone interviews with governments, academics, and non-profit organisations, please refer to Appendices C, D, and E.)²¹

3.1. ALLOCATION

The use of different allocation methodologies by each Member State has raised five major concerns that stand out in the literature and in stakeholder perspectives:

- Stringency of allocation amounts
- The most appropriate allocation methodology
- Transparency and simplicity of NAPs
- Treatment of new entrants and plants facing closure
- The most appropriate level of harmonisation for allocation methodologies

The data and evidence we collected to assess these four key elements are discussed in detail below.

3.1.1. FINDINGS

ALLOCATION AMOUNTS

The EU ETS covers 45 percent of the EU's carbon dioxide emissions, placing the EU ETS in a central role in the EU's climate change policy.²² However, some scholars contend that Phase I allocation amounts, if maintained, could undermine the EU ETS' ability to help the EU achieve its Kyoto Protocol commitments.²³

²¹ In reporting results from the survey of installations, we must note that the survey yielded widely different numbers of respondents across Member States and Sectors. Appendix D shows detailed information on the number of respondents from each sector, country, and size category of installations.

²² Kruger, J. and W. A. Pizer (2004)

²³ Grubb, M., C. Azar, et al. (2005)

Commentators have suggested that the EU ETS suffers from weak allocation, in which a surplus of allocations exists in the market with respect to actual greenhouse gas emissions.²⁴ Per the EU

We need to be clear about the overall cap at the EU level. At the national level, there is a need to definitively set the cap before even beginning to talk about allocation, because then...there is no room for increases. Otherwise, people get too caught up in issues of distribution rather than answering the cap question.

-Member State Government Representative

Directive 2003/87/EC, Member States' NAPs should base total allowances on the EU Burden Sharing Agreement with respect to the Kyoto Protocol.²⁵ However, for Phase I, allocations were based on **Business As Usual** (BAU) projections, which predict future emissions scenarios based on economic growth and no change in processes.²⁶ As a result of these BAUs, Member States consistently projected an increase in greenhouse gas emissions for the period of 2000 to 2012 and used these projections to create their allocations.²⁷

Germany and Slovenia are the sole countries whose Phase I NAPs provide an allocation of allowances that is less than current emissions.²⁸ Some have suggested that the prevailing "over-allocation" came about as a result of lobbying efforts and political battles within EU Member States, causing powerful interest groups to win special provisions and lax emissions targets.²⁹ Notably, the issue of allocating more allowances than current emissions will be more problematic for countries with ambitious Kyoto targets, whereas in countries that allow considerable growth in emissions under the Kyoto burden-sharing agreement could understandably have NAP allowances greater than current emissions.

Business as usual projections are contradicted by historical evidence: between 1990 and 2000, the intensity of carbon reductions among Member States met or exceeded nearly all economic growth.³⁰ However, projections for the current decade of 2000 to 2010 show an opposite trend. This predicted emissions increase does not take into account any incentives the EU ETS will provide as it operates over the second half of the decade.³¹ This discrepancy between projections and reality is likely to create a surplus of allowances, weakening the effectiveness of the EU ETS in meeting Kyoto targets.³²

²⁴ Ibid

²⁵ European Commission (2003)

²⁶ Grubb, M., C. Azar, et al. (2005)

²⁷ Ibid

²⁸ Ibid: 134.

²⁹ Butzengeiger, S. and A. Michaelowa (2004)

³⁰ Ibid

³¹ Ibid

³² Ibid

The *Commission Guidance Document on Phase II NAPs* calculates that there will need to be a six percent reduction in the total allowances allocated if the trading sector is to bring itself on track to meeting Kyoto Protocol goals under the EU burden sharing agreement.³³ While the document stresses the NAPs' commitment to honouring the Kyoto Protocol targets as well as the benefits of technology in carbon intensity reductions, plans contained in second-phase NAPs— to be submitted in June 2006—will illustrate Member States' level of commitment to using the EU ETS as a tool for Kyoto Protocol Compliance.

ALLOCATION METHODOLOGIES

Three possible allocation methodologies are under serious consideration for the EU ETS: grandfathering, auctioning, and benchmarking. The allocation process is mostly left to the discretion of each Member State's *Competent Authority*, usually a government agency that is responsible for the administration of the scheme. However, the Directive mandates each country to allocate at least 95 percent of the allowances free of charge, or grandfathered, during the initial trading period. During the second period beginning in 2008, at least 90 percent of allowances must be allocated free of charge.³⁴ During Phase I, the vast majority of Member States relied almost exclusively on grandfathering³⁵; only Denmark, Hungary, and Ireland used auctioning for a percentage of their allocations (5 %, 2.5 %, and 0.75 %, respectively).³⁶

Grandfathering

The allocation method most widely used by cap and trade programmes is *grandfathering*. Grandfathering gives allowances at no cost to installations based on emissions from a particular reference point, or baseline year.³⁷ Under this system, the allowances become property rights of the installations.³⁸ Because allowances can be bought and sold, those installations with competitive advantages in reducing emissions may be in a position to accumulate substantial wealth relative to their competitors from this allocation scheme.³⁹ Thus, grandfathering raises some concerns over equity due to its reliance on historical

³³ European Commission (2005)

³⁴ Ibid

³⁵ In many cases, countries augmented grandfathering through special considerations for process-related emissions, combined heat and power plants, and installations that had taken early action. However, these special considerations fall outside the scope of this report due to their highly technical nature.

³⁶ Mullins, Fiona and Jacqueline Karas (2003)

³⁷ Ibid

³⁸ US EPA (2003)

³⁹ Center for Clean Air Policy (1999)

emission quantities as a baseline for determining allocations.⁴⁰

There are also concerns that grandfathering does not provide the appropriate incentive to reduce emissions.⁴¹ According to the Centre for European Policy Studies, however, this is not necessarily the case because the allowances, though provided for free, have an opportunity cost, and companies will abate as long as the emission reduction cost is cheaper than an allowance price.⁴²

Auctioning

Another potential allocation methodology is **auctioning**. Under this method, the property rights of the allowances belong to the government and installations bid to buy the allowances they will need.⁴³

The biggest challenge to EU ETS governance was, without a doubt, the establishment of historical emissions to determine the amount of allowances each installation should have. This was a problem because of the lack of data.

-Non-Governmental Organisation Representative

Auctioning creates immediate price signals regarding the allowances, which businesses can use to gauge trade options. Moreover, the revenue generated from the sales of auctions can be recycled to help offset administrative costs or alleviate taxes. However, auction revenue recycling can be politically contentious and there is no guarantee that the revenues that governments acquire will be used for economically beneficial purposes.⁴⁴

Auctioning has not played a prevalent role in the EU ETS to date, but could be expanded in subsequent phases. However, it carries a number of practical concerns in spite of some theoretical advantages. Theoretically, auctioning is the most economically efficient allocation methodology.⁴⁵ Other approaches "face major problems in ensuring comprehensive and non-distorting incentive structures of the EU ETS (i.e. the full and comprehensive pricing of carbon)."⁴⁶ However, a 2005 survey of businesses, governments, and non-profit organisations implemented by McKinsey & Company found that auctioning poses political problems, as most companies and trade associations oppose more auctioning, whereas governments, market intermediaries, and non-governmental associations support it. Another problem arises in determining how to distribute the resulting revenues. Unsurprisingly, McKinsey & Company found that most companies and trade associations would like to see the revenues distributed

⁴⁰ Egenhofer, C. and N. Fugiwara (2005)

⁴¹ Ibid

⁴² Ibid

⁴³ EPA (2003).

⁴⁴ Center for Clean Air Policy (1999)

⁴⁵ Ibid

⁴⁶ Ibid: 12.

to the relevant industries, whereas governments and non-governmental organisations prefer earmarking the funds to be used for other emissions reductions related activities.⁴⁷

Climate Action Network Europe (CAN-Europe), in its position paper on NAPs for Phase II, urges Member States to use auctioning to the full extent allowed (10%) for Phase II. Beyond Phase II, it recommends that this limit be lifted and auctioning be made the primary means of allocating allowances under the EU ETS.⁴⁸ The World Wildlife Fund also supports auctioning as the allocation methodology that ensures the greatest environmental effectiveness and efficiency and suggests a move to full auctioning in subsequent phases. According to WWF, “all other allocation methodologies that give allowances for free fail to provide the non-distorting incentives needed to drive investment in cleaner technologies and fuels.”⁴⁹

One participant in our focused interviews also pointed out that auctioning could be helpful in keeping the price of allowances low. Conversely, another participant commented that auctioning may, in fact, *not* be a good solution to EU ETS allocation. This is due to the potential competitive disadvantage European industries would face with installations in non-carbon constrained economies. These additional costs could specifically impact steel, paper, and cement manufacturers who operate in competitive international markets.

Benchmarking

A final allocation methodology authorised for use under the Directive is **benchmarking**, which allocates allowances based on good performance, best available technology, or efficiency standards for particular sectors. Based on the qualitative responses obtained through *Notre Europe's* survey, a preference for benchmarking versus grandfathering is revealed, supporting comments in the existing literature and results of previous surveys. Plants wish to be rewarded for good performance, and multiple respondents commented that the best means to achieve this is to base allocation on best available technology through a benchmark. Otherwise, installations that are ahead of others in terms of technological innovation or efficiency feel that they are at a disadvantage.

While benchmarking is technically a good idea, it is quite complicated for some Member States. Also, there are major logistical barriers to EU-wide benchmarking: there is no one system for collecting statistics. Each country collects their own data in the categories they determine...so there is no uniformity.

-EU Official

Non-profit organisations also seem to prefer benchmarking over grandfathering, with particular stipulations. CAN-Europe states that “benchmarks must be product-specific and measure carbon-intensity, irrespective of the fuel

⁴⁷ McKinsey & Company (2005).

⁴⁸ Climate Action Network Europe (2005)

⁴⁹ World Wildlife Fund (2005): 9.

input.”⁵⁰ In addition, they recommend that benchmarks be harmonised across the EU and they be based on best available technology as opposed to average performance of existing plants.⁵¹

Respondents to our phone interviews highlighted the administrative and technical difficulties of implementing benchmarking. According to one respondent, benchmarking would be quite complicated to implement at the Member State level due to the amount of information that is needed to establish appropriate sector-wide benchmarks. The Netherlands was provided as an example of a Member State that has successfully instituted benchmarking, but one that has relied on years of particularly reliable record-keeping. For Member States without such information, establishing benchmarking standards could be technically challenging. Establishing EU-wide benchmarking standards process would be even more difficult, as currently there is little standardised information available across the EU.

Comparative Analysis: US Acid Rain Program Allocation Methodologies

The U.S. Acid Rain Program offers some insights into the debate over grandfathering versus auctioning (for a full programme introduction and description, please see Appendix F). Under this programme, the U.S. Environmental Protection Agency initially allocated allowances through grandfathering. In Phase I of the Acid Rain Program, units could apply for and receive additional allowances by installing approved technology⁵² or by reassigning their reduction requirements among units that employed such technology.

However, the U.S. Acid Rain Program allocates a small percentage of allowances (2.8 percent) to the ***Special Allowance Reserve***. The reserve comes from allowances that the programme has already allocated to installations. These reserves are auctioned annually in both spot and advance auctions, which helps ensure the liquidity of the allowance market.⁵³

Grandfathering as an allocation method was not controversial at the time of implementation of the Acid Rain Program. Although some scholars and policy analysts have debated the welfare implications of grandfathering and auctioning methodologies,^{54,55,56} research has found that the initial allocation of allowances in the Acid Rain Program *did not affect* either the cost of reducing emissions or the rate at which they are reduced.⁵⁷

The Acid Rain Program differs from the EU ETS in that there is no target setting for each installation, only an allocation process. In contrast, the EU ETS requires each Member State to

⁵⁰ Climate Action Network Europe (2005)

⁵¹ Ibid

⁵² Technology that is demonstrated to remove at least 90% of SO₂ emissions.

⁵³ Bailey, E. (1998)

⁵⁴ Burtraw, D., K. Palmer, R. Bharvirkar, and A. Paul (2001).

⁵⁵ Ellerman, A.D., P. Joskow, R. Schmalensee, J. Montero, and E. Bailey (2000)

⁵⁶ Dinan and Rogers (2002)

⁵⁷ Ibid

compile a list of affected installations, their proposed allocations, and a justification of the methodologies used to determine the proposed allocation. Additionally, in the EU ETS, each Member State must determine how much of its own Kyoto target it intends to achieve via its EU ETS cap on CO₂ emissions. This makes the EU ETS allocation process fairly complex; suggesting that there may be a more complicated interplay between grandfathering and overall environmental effectiveness than existed under the Acid Rain Program.

TRANSPARENCY AND SIMPLICITY OF ALLOCATION METHODOLOGIES

Overly complex allocation methodologies can reduce the transparency, simplicity, and consistency of NAPs, rendering them difficult to interpret. In an assessment of the NAPs of six Member States (Germany, Spain, Italy, the Netherlands, Poland, and the UK), a 2005 study found that a number of uncertainties in the outcome of the allocation process arose from special provisions to specific sectors or installations.⁵⁸ The authors suggest that the level of transparency and simplicity of allocation methodologies depends upon eliminating as many special provisions as possible, and suggest that there is a very wide range in how successful these six countries have been in achieving understandable and consistent allocation methodologies.⁵⁹ They go on to explain the benefits of transparent, simple allocation methodologies:

“The simpler and more transparent the provisions are, the better the EU ETS can represent the cost of carbon and lead to a reduction of emissions. Transparency and simplicity enable stakeholder participation, which in turn is key to ensuring a fair and environmentally effective ETS.”⁶⁰

Respondents to our telephone interviews also recognised that there is value in keeping allocation methods as simple as possible. One respondent felt that many Member States were overly complex with their Phase I allocations: for example, Member States tried to distinguish

Many Member States got overly complex with their allocations i.e. Steel and Cement installations get different treatment for Process Emissions. It gets really complicated at individual installation level.

-Member State Government Representative

by sector and treat the steel and cement installations differently because of process emissions. As another respondent noted, it is difficult to even decide what constitutes a ‘process emission’ in the first place, much less devise proper allocation procedures separately for these installations.

⁵⁸ Matthes, F., V. Graichen and J. Repenning (2005)

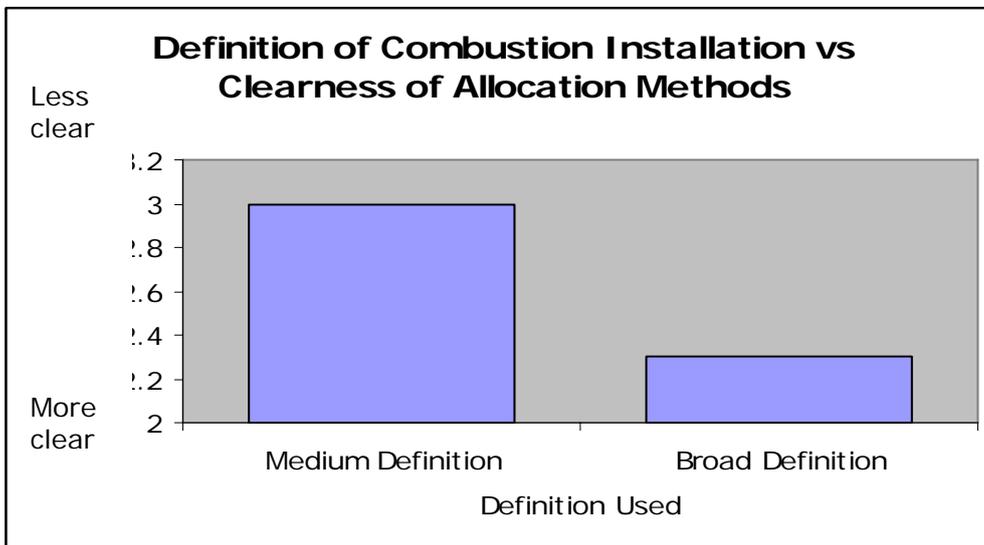
⁵⁹ Ibid

⁶⁰ Ibid: 10-11.

The survey of installations found a call for greater transparency of allocation methodologies across countries. In terms of allocation methodologies, companies operating internationally are the most critical of clearness— in *Notre Europe's* survey, they rank their perception of the clearness of Member State allocation methodologies as between somewhat and very unclear. This suggests that installations operating in multiple Member States are having difficulty with differences among allocation methodologies.

In terms of sector distinction, our survey found that 'Paper and Pulp' finds the allocation methodologies most unclear and unfair, while 'Glass manufacturers' seem most satisfied with the clearness and fairness of allocation methodologies in their respective Member States (it should be noted that glass manufacturers contained a particularly small pool of respondents). In comparing by size of installation, small installations are least satisfied with the clearness and fairness of allocation methodologies.⁶¹ Finally, those installations operating in Member States using the **broad definition of combustion installations** (which includes all combustion installations, whether used for energy production or not) find their respective Member States' allocation methodologies to be significantly clearer than those installations operating in Member States using the **medium definition** (which includes only those combustion installations used specifically for energy production) (Figure 1).

Figure 1. Clearness of Allocation Methodologies, Compared by Member States Using a Broad vs. Medium Definition of Combustion Installations



⁶¹ We have defined size by annual emissions: small installations emit <50 kilotonnes; medium installations emit between 51 and 500 kilotonnes; and large installations emit >500 kilotonnes.

NEW ENTRANTS AND CLOSURE

Rules for how new entrants and plant closures will be treated, as well as whether or not transfer of allowances is allowed between plants, are areas where NAPs are particularly rife with different approaches. In the first phase of NAPs, all Member States created some sort of **new entrant reserve** that functions to distribute allowances to new plants that enter the marketplace; however, the size of these reserves and the methods of distribution vary.⁶² Most countries use a 'first-come, first served' methodology, giving away reserved permits, as market entrants emerge, until depleted. Others, specifically Germany and Italy, guarantee free allocation to any new entrants and require the government to fill any demand that exceeds reserve capacity.

In addition to different treatment of new entrants, NAPs diverge in the way they address plant closures and the question of whether or not installations that are shutting down should be allowed to transfer allowances to new installations. For example:

- The Netherlands and Sweden allow companies to keep allowances when closing installations;
- Germany, Austria, Italy, and Poland allow for allowances to be 'transferred' from an old installation to a new one; and
- Other states cancel allowances upon closure.⁶³

The theoretical research on how closures should be handled suggests that the removal of allowances upon closure can be problematic because "restrictive plant closure provisions can...remove intended incentives from the EU ETS (e.g. regarding early replacement of old plants) and lead to further problems regarding the efficiency of the scheme."⁶⁴ However, only the Netherlands and Sweden adhere to this theoretical suggestion of allowing plants to keep allowances upon closure. In addition, some experts have concluded that the efficiency of the EU ETS has been negatively impacted by new entrant reserves in that the setting up and management of these reserves has increased complexity and increased costs.⁶⁵

In my view, allocation methodologies should be improved by using auctioning for new-entrants, and allow closures to keep their allocations, so that they have an incentive to shut-down older plants. Of course, these methods were used successfully in the SO₂ system.

-Non-governmental Organisation
Representative

⁶² Egenhoffer, C. and N. Fujiwara (2005)

⁶³ Ibid

⁶⁴ Matthes, F., V. Graichen and J. Repenning (2005): 8-9.

⁶⁵ Egenhofer, C. and N. Fujiwara (2005)

The main issues around new entrant and closure rules are debates over theoretical best practices as compared to actual plans. Divergent treatment of new entrants and closure will likely have implications upon the ease with which companies can enter and leave the marketplace, possibly giving a competitive edge to countries with more liberal entrance and exit rules. Interestingly, the results of a 2005 McKinsey & Company survey of 302 companies, governments, trade associations, and market intermediaries participating in the EU ETS showed that the vast majority of those surveyed (85%) would like for there to be an EU-wide harmonised approach to the treatment of new entrants.⁶⁶ This seemingly politically popular solution could help to alleviate some of the current concerns over discrepancies in new entrant rules.

A survey conducted by IMPEL in October 2004 of European regulatory agency representatives identified treatment of new entrants as one of four key areas requiring urgent action.⁶⁷ According to IMPEL, Member States have allocated allowances to new entrants using varying methodologies, but no matter which is used, some party is discriminated against.

There are a few alternatives to free allocation to new entrants under debate:

- **Allowance Purchase:**

IMPEL acknowledged that having new entrants purchase their allowances is considered ideal by many; from a regulatory perspective, because new entrants' reserves do exist, the adoption of a harmonised approach would at least reduce market distortions associated with varying allocation methodologies for new entrants across Member States.⁶⁸

Certain organisations in the NGO community favour the approach that mandates new entrants to buy allowances, because this creates the strongest incentive to take CO₂ emissions into consideration when planning for new investment.

- **Auctioning or benchmarking:**

CAN-Europe recommends improving the design of these reserves by incorporating **auctioning or benchmarking**.⁶⁹ According to the World Wildlife Fund, **auctioning** is again the ideal allocation methodology for provision of allowances to new entrants. In order to ensure equity in light of generous allocation to existing installations, however, WWF recommends that Member States also give new entrants generous allowances, based on **benchmarking**. This would avoid the incentive to invest in the lifetime extension of old plants instead of building

⁶⁶ McKinsey & Company (2005)

⁶⁷ European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) (2005)

⁶⁸ IMPEL (2005)

⁶⁹ Climate Action Network Europe (2005)

newer, cleaner ones. According to the Centre for European Policy Studies, subsidising new entrants is justified because existing installations are overcompensated by grandfathering.⁷⁰

- **Differentiation of Known and Unknown New Entrants**

The current methodology touted as most fair by the Centre for European Policy Studies is the Dutch system, “which differentiates between ‘*known new entrants*’ [or those new plants whose construction has already been planned at the beginning of an allocation period], and ‘*unknown new entrants*’”.⁷¹ One European NGO commented in our phone interviews that allocation to new entrants should be improved by using auctioning for new-entrants, and allowing closing installations to keep their allocations, so that they have an incentive to shut-down older plants. These are examples of methods that were used successfully in the SO₂ system.

A common trend revealed in the open-ended responses to the industry survey was a need for the provision of additional allowances for existing plants that are expanding their installations. There is a prevailing dissatisfaction with new entrant allowances being limited to new plants. According to one survey respondent that is expanding his installation:

The expansion “improves utilisation and improves carbon emissions compared to fitting new local boilers, yet we can have no new allowances - this is a disincentive that goes against the policy of carbon reduction.”

Another respondent proposed the solution to change the allocation period from four years to one year in order to better account for expansion or shrinkage of installations. According to this industry representative, the allocation period of 4 years leads to “great expense” if the particular installation expands and allowances cannot change.

HARMONISATION OF ALLOCATION METHODOLOGIES

Our research shows that similar installations in different countries can face very different allocations, and thereby costs, depending on their Member States’ respective Kyoto EU Burden Sharing commitment and allocation methodology.

A few examples best illustrate the potential implications of different allocation methodologies:

“A study by Baltrel has found that the effects of differences of allocation rules for eight Baltic Sea Member States cause differences in allocation of allowances in some cases in excess of a factor of four for the same installations depending on their location.”⁷²

⁷⁰ IMPEL (2005)

⁷¹ Matthes, F., V. Graichen and J. Repenning (2005): 8-9.

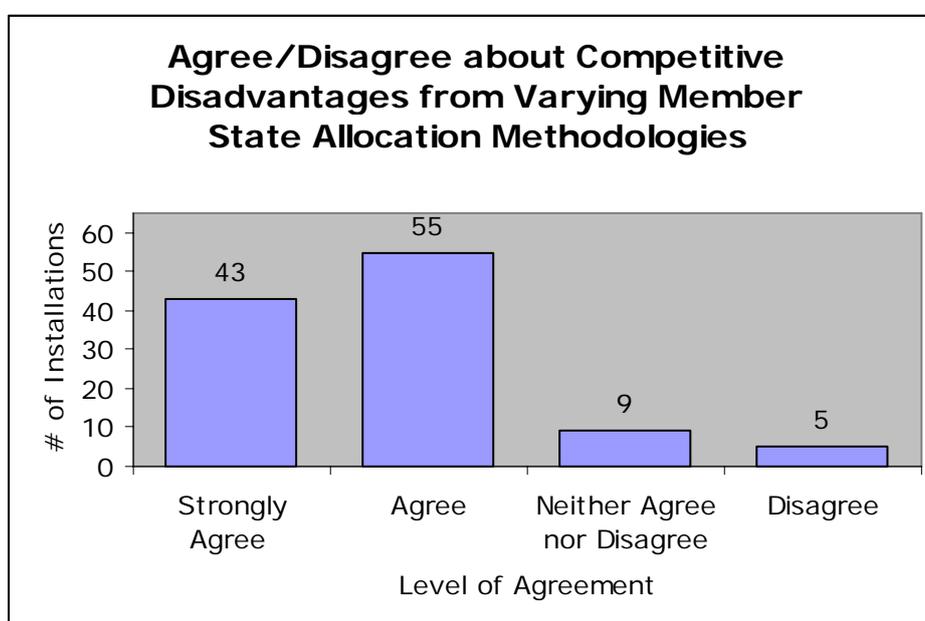
⁷² Niininen, H (2005). Quoted in Egenhoffer, C. and N. Fujiwara (2005): 25.

“The cost of compliance in Denmark is so high that no one will ever build a power plant in Denmark again, unless the discrepancies with the NAPs are sorted.”⁷³

“In some Member States they have not included small installations. In Sweden, small installations are included and this is very costly. The burden on small operators and their potential to contribute don't match. If the ETS only applied to operators > 50kT pa the small operators would still be motivated to reduce emission through pass through price increases. The extra administrative work and expenditure only diminishes their resources to conserve energy!”⁷⁴

The industry survey corroborates what these examples suggest: installations may suffer the potential for competitive disadvantages due to varying allocation methodologies across Member States (Figure 2). (34% of respondents strongly agree that this potential for competitive disadvantages exists due to varied allocation methodologies and another 44% agree.) However, respondents to our survey are, on the whole, not strongly concerned by this issue. Respondents are, on average, somewhere between “somewhat concerned” (2) and “indifferent” (3) in articulating their level of concern over competitive disadvantages arising from different allocation methodologies across Member States (mean=2.3). Large installations appear most concerned over the potential for competitive disadvantages arising from varying member state allocation methodologies (Figure 3).

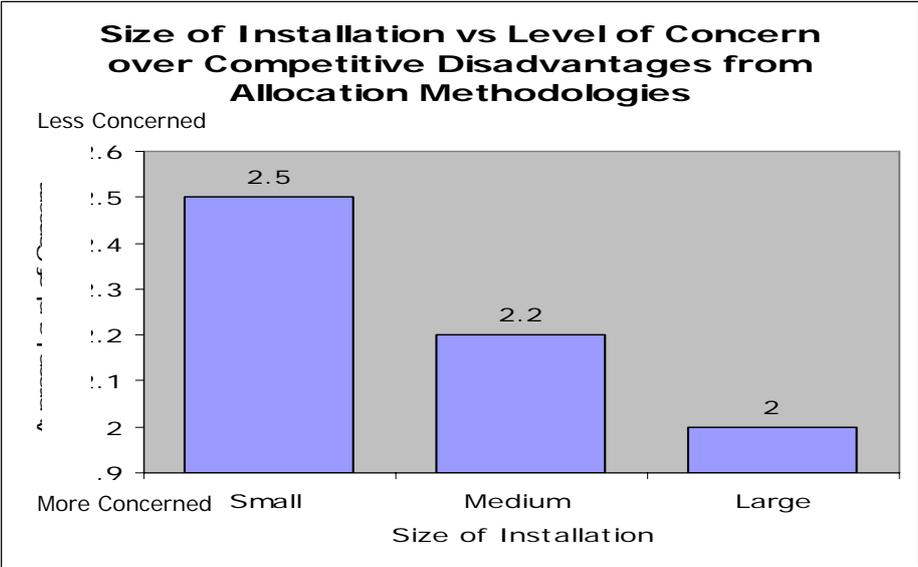
Figure 2. Installations Agreement/Disagreement over Concern of Competitive Disadvantages Arising from Varying Allocation Methodologies



⁷³ Non-governmental Organisation Representative from our telephone interviews

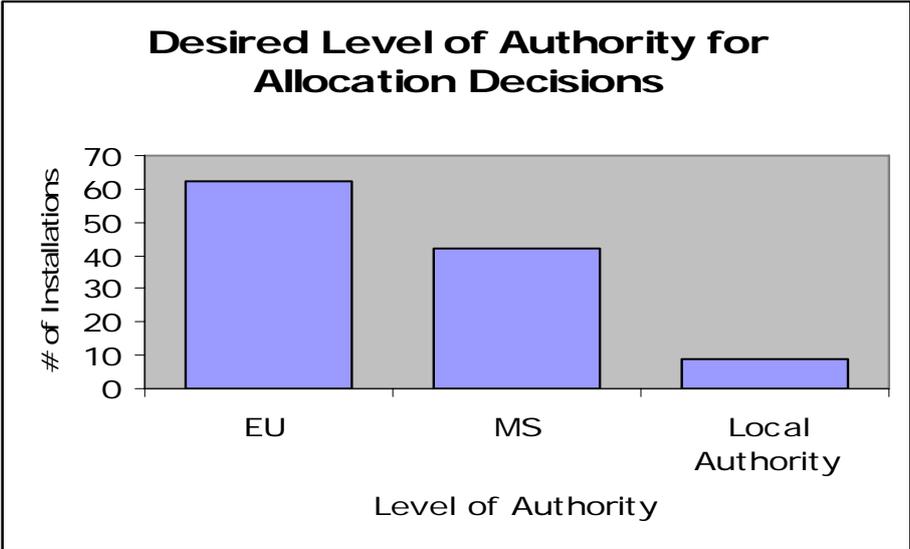
⁷⁴ Comment received to open-ended question in *Notre Europe's* survey of participating installations

Figure 3. Level of Concern Over Competitive Disadvantages Arising from Varying Member State Allocation Methodologies, by Size



In line with the perception that variations in allocation methodologies may potentially lead to competitive disadvantages, survey results also showed that a slight majority of industry respondents (54%) favour the design of allocation methodologies at the EU level. Another 37% desire that allocation methodologies continue to be designed at the Member State level. Few (8%) think that it should occur on a more local level (Figure 4). Therefore, the survey does suggest a slight proclivity, on the part of industry, for greater harmonisation of allocation methodologies.

Figure 4. Installations' Desired Level of Authority for Allocation Decisions



Support for greater harmonisation of allocation methodologies also emerged in comments made by installations participating in Notre Europe's survey. Industry respondents stated the desire for more consistent allocation rules across member countries, or the need for "more

harmonisation of NAPs.” In contrast, however, one government respondent commented on the need for a certain degree of flexibility in the calculation methods used for allocation, in order to

Non-harmonization of allocation methodologies creates regulatory competition between Member States or a “race to the bottom” where Member States compete to promise industries the most allowances into the future. This is a problem. Harmonization of allocation methodologies would ease this problem, however Member States do not like harmonization because it is hard to agree on how and what to harmonise. Ultimately though, this would take pressure away from Member States.

-Non-governmental Organisation
Representative

take into account local conditions such as “emission values/units of given fuel available in the given locality.”

Two telephone interview respondents provided valuable insight into one reason that there may be such a lack of harmonisation among allocation methodologies. Because NAPs were all presented to the EU Commission at different times, the Commission did not have a chance to evaluate the NAPs against each other and sort

through the discrepancies. Furthermore, while the Directive mandates that NAPs conform to eleven separate criterion, these respondents feel that many of the Member States did not heed them when laying out their allocation methodologies. These discrepancies, according to these respondents, suggest that the Commission should make allocation methodologies more harmonised so that situations like the one in Denmark are avoided.

Most respondents contacted during the phone interview process expressed the perception that flexibility is key to the EU ETS, but many also believe that various aspects of allocation methodologies should be more harmonised or, at least, standardised. These areas include:

- Definition of combustion installation
- Sectors included in the programme
- New entrants and closure rules (discussed further below)

One respondent likened the discrepancies between NAPs to the difficulty in reaching consensus on how to achieve a particular, shared goal among a large group of participants. This difficulty accurately reflects the problem facing the harmonisation question and highlights the dilemma over whether or not these separate means to the same end are efficient and fair or require more standardisation.

3.1.2. CONCLUSIONS

Overall, allocation appears to be perhaps the biggest concern of EU ETS administrators and participants, and thus deserves considerable attention as the scheme progresses into subsequent phases. As allocation methodologies govern the distribution of assets that are

worth billions of euros, it is understandable that this programme area is the source of much debate and contention.

While allocations may currently be less stringent than critics would like, Phase I is functioning primarily as a test-phase for the EU ETS and thus we believe that concerns over proper methodologies and resultant fair allocations are more critical than the overall level of allowances for Phase I. While acknowledging that tighter caps will be crucial in achieving overall environmental effectiveness in Phases II and III, these caps will certainly be easier to implement if a fair, transparent, and adequately standardised allocation methodology is in place.

As an initial allocation methodology, grandfathering helped reduce the costs of complying with the EU ETS and thus reduced the negative impacts the EU ETS may have on industries that compete in internationally competitive markets.⁷⁵

While auctioning and benchmarking offer theoretically appealing alternatives to grandfathering, they are not universally acceptable to the EU ETS' stakeholders at this time. The debate over allocation methodologies remains intense and we do not feel adequately positioned to draw conclusive determinations over how it should best proceed. Perhaps as more countries experiment with auctioning during upcoming phases, its practicability will be better understood. Similarly, we are undecided as to the feasibility of EU-wide benchmarks—while these may be beneficial to companies performing near the best of their class; concerns over how EU-wide benchmarks could be measured and validated leave us unable to champion this methodology at the current time.

Nevertheless, benchmarking could ultimately be an attractive alternative to grandfathering—if questions of data collection and validation could be resolved, benchmarking could be a solution acceptable to both administrators and companies. Benchmarking is particularly attractive because it rewards best performers and encourages others to strive for the same level of technological innovation. Benchmarking based on best available technology, in sectors where this is appropriate, could eliminate the need for standardised data across Member States.

Greater harmonisation of allocation methodologies appears important in order to squelch competitive disadvantages arising among installations operating in different Member States. Most notably, a harmonised definition of combustion installations seems nearly universally favoured across Member States and installations. Fortunately, this recommendation already exists in the form of Commission guidance for Phase II. Additionally, standardisation of new entrant and closure rules is highly favoured. Overall, we believe that creating more standardised allocation methodologies that translate to greater transparency and fairness at the Member State level would be beneficial to both installations and administrators of the EU ETS.

⁷⁵ Reinaud, J. (2005)

A final element of allocation that appeared repeatedly in our survey responses but does not seem to be widely addressed by the current literature is the possibility of allowing additional allowances for expanding installations, or lengthening the allocation period so as to better allow for expansion plans. This suggests an area for further inquiry.

Overall, we have found that the performance of allocation across the EU could be improved (see Table 1). A major concern arises from discrepancies among Member State allocation methodologies, creating the potential for competitive advantages and windfall profits. Allocation “caps” are expected to decrease in Phase II, but the process for establishing these could benefit from greater transparency. And while varying methodologies give rise to distributional issues but do not undermine the scheme’s effectiveness, an over-reliance on grandfathering as an allocation methodology may decrease the ETS’ efficiency in delivering emissions reductions.

Table 1. Evaluation of Allocation based on Key Criteria⁷⁶

	Effectiveness	Efficiency	Transparency	Consistency
Allocation Amounts	✗	✗	✗	✗
Allocation Methodologies	✓	✗	—	✗
Rules for New Entrants	✗	✗	—	✗
Rules for Closure	✗	—	—	✗

3.1.3. RECOMMENDATIONS

Allocation Amounts

- Member States should provide a clear demonstration that the quantity allocated to the trading sector will be sufficient to meet the country’s Burden Sharing Agreement Kyoto target, taking into account reductions from non-trading sectors and planned use of CDM and/or JI credits.

⁷⁶ We have used a green check to indicate good performance as measured against a particular criterion, a yellow dash to indicate mediocre performance or inconclusive evidence on the level of performance, and a red ‘X’ to indicate poor performance.

- The EU should move towards common policies regarding Greenhouse Gas emissions reductions in non-trading sectors.

Methodologies

- The EU ETS should increase the use of benchmarking. Through consultation with industry and national governments, sector-specific, EU-wide performance benchmarks should be established where feasible.
- The EC should encourage Member States to use auctioning to the full extent allowed (10%) for Phase II by establishing guidance for how auctions should be conducted.⁷⁷

New Entrant Reserves

- The EU should study the implications of establishing allocation provisions for those installations experiencing growth versus limiting reserves exclusively for new entrants.
- Allocation methodologies should be uniform for both new entrants and existing installations, so as to avoid providing an incentive for extending the life of aging, inefficient plants.
- The approach for identifying and allocating allowances to new entrants should be harmonised across the EU.⁷⁸

Closure Rules

- Closure rules should also be standardised at the EU level to allow for consistency across Member States.
- We concur with others' recommendations⁷⁹ that the Commission should establish an EU-wide closure provision that allows operators of closed plants be able to retain their remaining allowances within that Phase only, in order to encourage older, more inefficient plants to close sooner.

⁷⁷ Egenhoffer, C. and N. Fujiwara (2005)

⁷⁸ IMPEL (2005)

⁷⁹ World Wildlife Fund (2005)

3.2. MONITORING AND REPORTING

Monitoring and Reporting (**M&R**) is an important part of any emissions trading scheme as it measures emissions and establishes credibility in the trading market.⁸⁰ Overall, our findings suggest that Member States' M&R practices vary widely. These variations affect installations covered under the scheme differently, depending mainly upon their size. Ultimately, a lack of uniformity in M&R throughout the EU will lead to uneven reporting standards that can undermine the scheme's integrity.

In light of these differences, our research has identified three areas of concern regarding the application of the European Commission's current Monitoring and Reporting Guidelines, which may be critical for the scheme's effectiveness:

1. Ensuring that M&R processes are both accurate and cost-effective;
2. Balancing the need for consistency and flexibility in M&R; and
3. Establishing simple M&R guidelines.

3.2.1. FINDINGS

ENSURING ACCURACY AND COST EFFECTIVENESS

The EU ETS utilises an emissions calculation methodology to identify an installation's emissions. This is in contrast to the **continuous emissions monitoring system (CEMS)** used in the US Acid Rain Program. CEMS is an automated system that reports a facility's SO₂ emissions in real time to the EPA. The accuracy, consistency, reliability, and transparency of CEMS have been a cornerstone for the development of the SO₂ emissions trading market. Here, confidence in the accuracy of emissions measurements provides stability for the market but also ensures that all facilities measure their emissions in the same way, thus preventing competitive disadvantages that could arise from an inconsistent accounting of emissions.

Initial discussions concerning the design of the EU ETS settled on using a calculation-based methodology as opposed to a direct measurement system for several reasons. First, calculating CO₂ emissions from fuel use data was considered to be accurate and reliable, whereas direct measurement systems for CO₂ were, at the time, problematic and thus unreliable.⁸¹ Furthermore, the cost of direct measurement systems was burdensome and prohibitive for small installations.⁸² As such, EU ETS designers adopted the calculation

⁸⁰ EPA (2003)

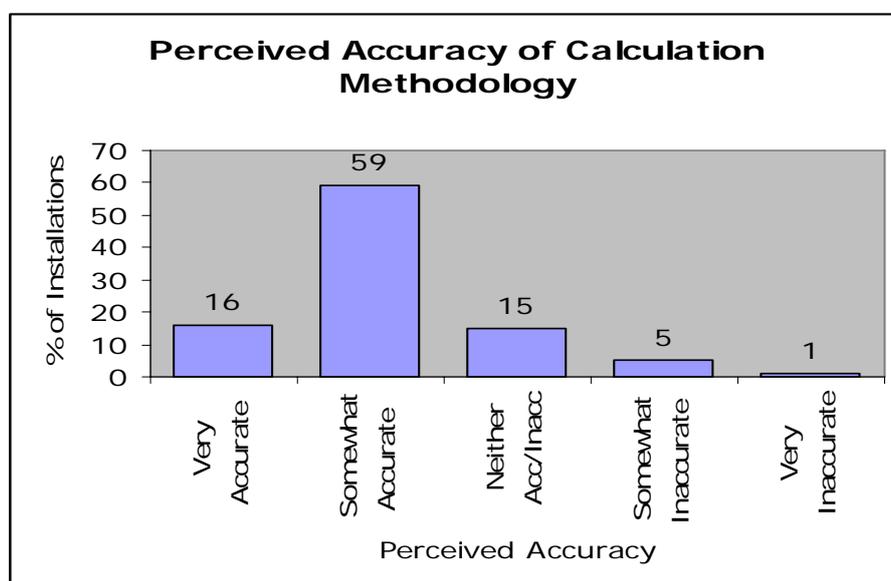
⁸¹ Center for Clean Air Policy (1999)

⁸² Ibid

methodology as the cheaper and more reliable option when compared to direct measurement of CO₂ emissions.

The survey suggests that about 75% of industry representatives find the emissions calculation method to be fairly accurate (Figure 5). Yet, in recent consultations, EU stakeholders expressed a desire for a better balance between accuracy and cost-effectiveness in monitoring and reporting.⁸³ Specifically, the cost-effectiveness of the M&R guidelines was considered poor by a stakeholder survey conducted by the EU Commission.⁸⁴ The *Notre Europe* survey of participating installations also showed that 63% of industry representatives believe that the M&R process is excessively time-consuming (Figure 6). In particular, the sixteen large installations that responded to our survey reported that the time that they spend on M&R is on average “somewhat excessive” (Figure 7).

Figure 5: Perceived Accuracy of Emissions Calculation Methodology



⁸³ DG ENV (2005)

⁸⁴ Ibid

Figure 6. Excessiveness/Sufficiency of Time Invested by Installations in M&R

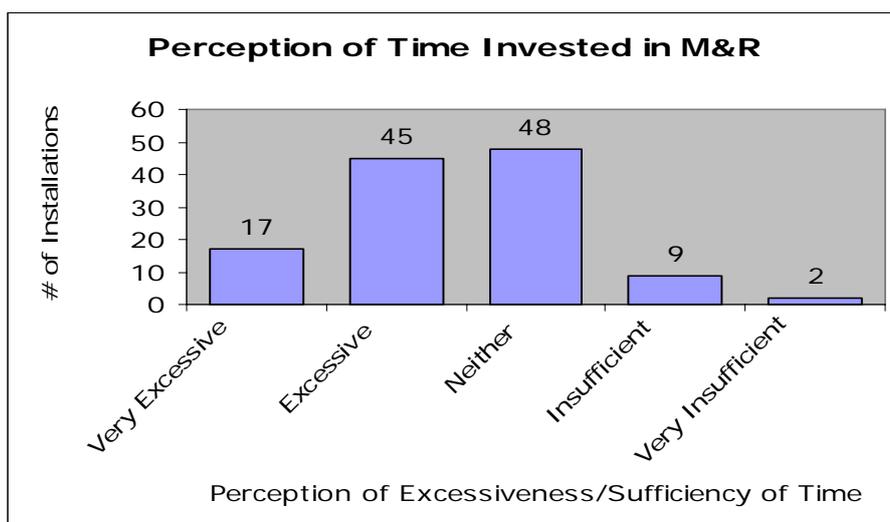
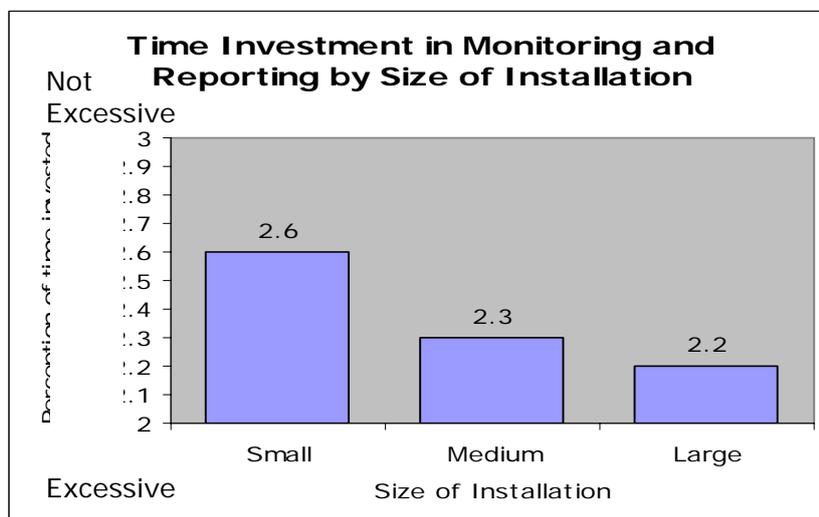


Figure 7. Sufficiency/Excessiveness of Time Invested in M&R, by Installation Size



BALANCING CONSISTENCY AND FLEXIBILITY

As mentioned above, one of the key issues related to M&R is finding the appropriate balance between consistency and flexibility. Emissions trading systems, in general, require a monitoring and reporting protocol that is consistent across the participating population. However, because a range of sectors are covered under the scheme, guidelines must be flexible enough to be applicable to the multitude of installations covered under the scheme. M&R rules must also find this balance in how they apply to installations of different sizes, and also in how they apply from one Member State to another.

The EU ETS attempts to find a balance for installations of different sizes through a tiered approach. Classifying installations into one of three tiers enables the scheme to differentiate between small, medium and large facilities. Installations adopt different emission factors depending on their tier levels. Thus, according to their size, the EU ETS requires a different

The M&R guidelines are seen as too complex because they have been written for regulators. Ultimately, they need to be more accurate and detailed. Specifically, they need to be written for industries and better explain how they should be applied. They need to be more prescriptive, easier and clear in how installations should conduct calculations and measure their emissions. Basically, a manual is needed rather than guidelines.

-Non-governmental Organisation
Representative

level of accuracy and specificity in monitoring and reporting. The purpose of this is to establish monitoring requirements that are not overly stringent for small installations and thus to avoid compliance burdens that are out of proportion for the scale of the installation covered.⁸⁵ Further, the tiered approach attempts to minimise the costs of M&R on smaller firms that have less capacity to undertake such work.

Another key consideration in flexibility of M&R is the relative independence accorded to each Member State to determine the specific requirements for monitoring and reporting. While the EU Directive provides guidelines and attempts to be prescriptive, Member States require some flexibility in order to adapt the EU ETS to their respective administrative structures. However, in attempting to achieve this flexibility, we have found that the M&R guidelines, as applied in the EU ETS' inaugural year, have allowed Member States to place different burdens on the same types of facilities. This can cause competitive distortions between similar firms operating in different countries.

In practice, the current M&R guidelines allow Member States to adopt different approaches to M&R, which result in difficulties for the system. Many of our interviewees and the respondents to *Notre Europe's* survey expressed concern that Member States implement the M&R guidelines to varying degrees of stringency, which ultimately undermines the market by benefit certain firms at the expense of others. This concern has been highlighted in our telephone interviews wherein a majority of respondents preferred a greater degree of harmonisation in M&R across the EU. EU stakeholder consultations⁸⁶ also identified that, in spite of the current reporting format being satisfactory for most stakeholders, there is a need for a uniform reporting format throughout the EU. This matter was suggested in the IMPEL study as well.⁸⁷ In terms of industry preferences, the results of our survey of installations suggests that industry representatives are divided between a desire to have M&R rules harmonised across the EU, or left to individual Member States.

⁸⁵ Egenhofer, C. (2005)

⁸⁶ DG ENV (2005)

⁸⁷ IMPEL (2005)

The IMPEL report suggests that the European Commission develop various tools to assist Member States such as templates, frequently asked question documents, and help lines. Additionally, consultation amongst the key players, conducting surveys and using feedback to improve the system further, adopting a standardised approach to monitoring and reporting forms and providing additional explanatory guidance to the legislation are some of the other solutions that have been proposed.⁸⁸

One way to attain consistency across the 25 member states is to adopt benchmarks for monitoring and reporting.^{89,90} This will be especially useful if and when a more global emissions market emerges. To facilitate this, various standards are being developed internationally, such as the GHG Protocol by the World Resources Institute and the World Business Council on Sustainable Development,⁹¹ and the Global GHG Registry by the World Economic Forum,⁹² which could be of great use to the EU ETS.

PROVIDING CLEAR AND SIMPLE RULES

Notre Europe's survey of installations suggests that most respondents found the guidelines sufficiently clear (Figure 8). This finding, however, is contradicted by a 2005 report on M&R, which found that M&R guidelines are extremely complex and that emphasis needs to be placed on making the reporting process simpler.⁹³ Many of our interviewees also commented that these guidelines could be further improved to provide for greater consistency of interpretation.

⁸⁸ Ibid

⁸⁹ Pew Center on Global Climate Change (2005)

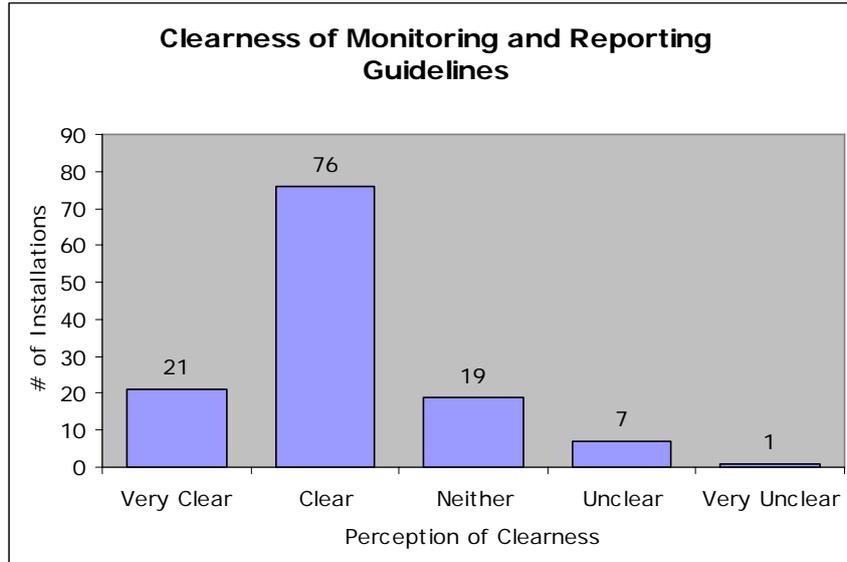
⁹⁰ Egenhoffer, C. and N. Fujiwara (2005)

⁹¹ GHG Protocol Initiative (2006)

⁹² World Economic Forum (2006)

⁹³ IMPEL (2005)

Figure 8. Installation's Ratings of M&R Guidelines' Clarity



The importance of clearly articulated monitoring and reporting guidelines is further emphasised by the study conducted by McKinsey and Ecofys.⁹⁴ This study highlighted that for both governments and companies, clear monitoring and reporting guidelines ranked within the top five most essential components of successful EU ETS implementation. This study further found that the current Monitoring and Reporting guidelines are perceived to be sufficiently clear, but with the caveat that there needs to be more simplicity and flexibility.

The EU ETS is very complex system, especially monitoring and reporting. The guidelines issued by EU commission regarding monitoring and reporting are very complex and difficult to follow. The programme was implemented very quickly (within 14 months). Thus, operators had to learn about the scheme very quickly. It is amazing that operators have managed to follow the overall scheme...this is because the government has provided enough support for operators.

-Member State Government Representative

3.2.2. CONCLUSIONS

In sum, it appears that the M&R system in place for the EU ETS does provide adequate accuracy but, at least from an industry standpoint, could be improved the realms of cost-effectiveness and efficiency. Having clearer and simpler guidelines with uniform rules and definitions ultimately could lower the various administrative costs associated with M&R.⁹⁵ Considering that these rules must apply to a multitude of processes across the thousands of installations within 25 Member States, the standard is difficult to achieve, as the experience of the EU ETS in its inaugural year has shown. Nevertheless, establishing a credible and

⁹⁴ McKinsey & Company (2005)

⁹⁵ INECE Conference (2005)

consistent standard for the monitoring and reporting of emissions throughout the EU is essential for building trust in the integrity of the ETS.

Table 2 below depicts our assessment of the performance of M&R in the ETS' first year of operation. Overall, we found that the calculation method employed by the ETS effectively measures carbon dioxide emissions from covered installations. However, M&R needs to improve its efficiency and consistency, as these shortcomings, respectively, create additional costs and may result in competitive disadvantages for some firms. The transparency of the scheme is considered adequate, although installation-level emissions reports could be more widely available.

Table 2. Evaluation of M&R based on Key Criteria

	Effectiveness	Efficiency	Transparency	Consistency
Monitoring and Reporting	✓	✗	—	✗

The problem with standardising rules is that different firms have different production processes, and their different technologies require flexibility. Therefore it is not likely that M&R can be fully harmonised across the EU. However greater precision and clarity in rules, as noted, is feasible. As the EU ETS has only been in operation for little over a year, it is premature to identify best practices in relation to monitoring and reporting. Likewise, our study did not focus on the technical aspects of M&R so we are unable to make specific recommendations for how to improve this important part of the scheme. Yet, we can offer some specific suggestions for improving the M&R guidelines.

3.2.3. RECOMMENDATIONS

- Make EU-level guidelines for M&R more prescriptive, thereby helping to ensure that guidelines are implemented more consistently across Member States.
- The EC should actively participate in the development of international standards for the monitoring and reporting of greenhouse gas emissions.
- The EC and Member States should automate M&R by developing emissions reporting software and utilizing other electronic means to standardise and streamline emissions reporting.

3.3. VERIFICATION

In general, our analyses of research and survey data show that the flexibility given to each Member State in verification processes and accreditation of verifiers has led to some problems with cost-efficiency and transparency of the EU ETS. These issues can be particularly acute for companies managing installations in multiple Member States. As with M&R, for the scheme to establish credibility, it is important that standards for verification are consistently stringent throughout the EU. In this section, we examine:

1. Discrepancies that exist in the accreditation of verifiers and the verification of emissions reports; and
2. The potential for harmonising some aspects of verification.

3.3.1. FINDINGS

DISCREPANCIES IN VERIFICATION PROCESSES AND ACCREDITATION

Although every installation is required to have a third-party verifier certify their emissions reports prior to their submission to the competent authority, currently there is no standardised verification procedure at the EU level and the Directive 2003/87/EC only provides minimum guidance regarding criteria for verifiers. Member States are creating verification standards on different bases – national legislation interpreting the Directive, the International Emissions Trading Association (IETA) protocol, European Accreditation guidance, or environmental ministry standard.⁹⁶ We have identified two major consequences of discrepancies in the verification process: competitive disadvantages and delays in the process. Ultimately, discrepancies in the verification process may ultimately undermine the scheme's credibility and impair the functioning of the market.

VERIFICATION AND COMPETITIVE DISADVANTAGE

The *Notre Europe* survey of installations highlighted that respondents have concerns over the discrepancies in verification processes leading to competitive disadvantages. In particular, trans-national installations feel concerned about the potential for competitive disadvantages arising from the different accreditation procedures across the EU. This is because varied accreditation processes for each Member State could require additional time and human resources to certify verifiers. Furthermore, differently-certified verifiers vary in their required documentation from installations and the stringency of their auditing procedures. In order to

⁹⁶ IMPEL (2005)

comply with these divergent verification requirements, installations operating across Member States often incur additional costs.

Over 80 % of installations responding to the survey also felt that there was a potential for competitive disadvantage to participating installations arising from differences in the accreditation process. A majority of respondents from multiple Member States concurred on the potential for competitive disadvantages arising from divergent verification processes, including:

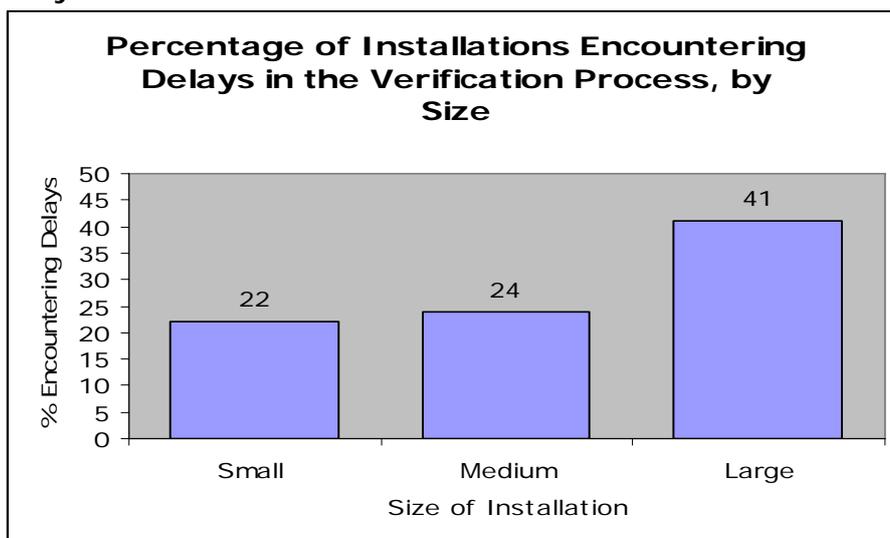
- 65% in the U.K,
- 50% in the Netherlands, and
- 56% of installations in both Sweden and Belgium.

On the other hand, there appears to be less concern from Denmark (33%) and Germany (40%).

DELAYS IN THE VERIFICATION PROCESS

The lack of standardisation in the verification process also contributes to delays in the process. According to the survey of installations, one-fourth of installations operating in multiple Member States are experiencing delays in the verification process. The majority of these delays are being experienced by larger installations—41% of responding large installations report experiencing delays in the verification process (Figure 8).

Figure 9. Delays in the Verification Process



Assuming that the time and human resources needed to complete the paperwork for verification are the major components contributing to verification costs, one telephone

interviewee suggested that improving the training of verifiers, simplifying guidance documents, and providing more information on the internet would help improve verification. Furthermore, another respondent stated that access to verifiers may be difficult based on the time to review each individual site in the future.

According to another telephone interview respondent, compliance with verification procedures is imposing burdens on some sectors such as Paper and Pulp and Cement and Lime, as they feel they have a disadvantage because of their relatively small scale. The official also mentioned that compliance procedures need more harmonisation in general. Yet another official emphasised that more harmonisation is needed in verification in order to avoid the overall complexity of compliance with the EU ETS. Furthermore, the official mentioned that small installations are facing disadvantages in meeting verification requirements since it requires a great amount of paperwork, making administrative costs burdensome.

Several experts on the EU ETS that we interviewed also stated that the accreditation of verifiers is an area where there is great need for common rules. For instance, one respondent reported that poor verification procedures in some Member States might pose a problem for including new sectors in the future.

POTENTIAL FOR HARMONISATION

While some national guidelines are being developed that may help address these issues, our research indicates that many stakeholders would welcome more guidance and harmonisation of verification procedures and mutual recognition of accreditation of verifying agencies across the EU.⁹⁷

In order to create a more fluid and transparent trading system, several harmonised verification systems at the EU level have been discussed:

- The Eco-Management and Audit Scheme (EMAS) is a voluntary programme that relies on an external and independent verification process.⁹⁸ This is designed to be a system that can be adopted by companies to ensure environmental performance in accomplishing EU legislative goals.
- The European Co-operation for Accreditation's Guidance for Recognition of Verification Bodies under EU ETS Directive provides some degree of harmonisation. Many Member States are looking to use this document as the basis for setting up an accreditation scheme for verification bodies.⁹⁹

⁹⁷ Ibid

⁹⁸ European Commission (2006)

⁹⁹ Egenhoffer, C. and N. Fujiwara (2005)

- The association of European Accreditation Bodies has attempted to create the basis for mutual recognition between some Member States. However, this has so far failed due to the inclusion of non-essential additional requirements by most Member States.¹⁰⁰

Although harmonisation of verification processes has clearly been a concern for the EU ETS, the *Notre Europe* survey found that most installations (58.9%) prefer that the accreditation of verifiers occur on a Member State level. Only 19.6% of installations would like accreditation to be done at the EU level; an equal percentage, however, would like for accreditation to occur at a more local level than the Member State level. This result suggests a tendency on the part of installations towards keeping verification at the current level of harmonisation.

Currently, there are no common accreditation rules. This is an area where there is great need for common rules.

-Non-governmental Organisation Representative

In general, most of governmental officials we interviewed stated that it is too early to define appropriate verification processes since the emissions reports were just submitted in March 2006. For instance, one official responded that the rules governing the accreditation of verifiers are set by the national government and a large number of countries have yet to accredit verifiers.

3.3.2. CONCLUSIONS

Verification is vital to the success of the EU ETS as it is the primary mechanism to ensure compliance with the scheme. To this end, it is necessary for emissions reports to be verified with the same degree of stringency from one Member State to another. Failure to establish uniform standards for verification will lead to credibility concerns that will have the effect of undermining the scheme's integrity.

Two issues that stand out as needing immediate solutions are: 1. Agreeing on a standard verification procedure and, 2. Agreeing on how verifiers are to be accredited. Our telephone interviews showed near consensus on these issues. While *Notre Europe's* survey confirmed that harmonisation of rules for verification and the accreditation of verifiers at the EU level are not universally desirable, accreditation bodies in all Member States could at least establish similar rules for accreditation to reduce transaction costs. In particular, more harmonisation is needed in order to mitigate the competitive disadvantages that trans-national installations are facing. This issue is crucial since it will directly impact the competitiveness of EU companies compared with non-EU companies.

In this respect, agencies, such as IMPEL, are contributing to the harmonisation of verification procedures by evaluating the verification reports.¹⁰¹ The International Emissions Trading

¹⁰⁰ Ibid

Association (IETA) also has developed a Verification Protocol for the EU ETS to facilitate the uniform, transparent, and cost effective verification of emissions reports under the EU ETS.¹⁰² This protocol's purpose is to enable verification methods to be standardised as much as possible, so that emissions report verification carried out by different verifiers will produce comparable results.¹⁰³ Another way to ensure that facility-level emissions reports are held to the same objective standards throughout the EU is through more automatisation in the process of verification.¹⁰⁴ This could be achieved by greater reliance on information technology.¹⁰⁵ In addition, regulatory oversight control measures – in the form of spot audits – could provide the impetus to compel compliance and otherwise ensure that minimum standards are being upheld throughout the EU.

It is too early to assess the efficiency and effectiveness of verification in the ETS. However, our assessment has found that there is room for improvement in the transparency and consistency of the ETS' verification process (see Table 3).

Table 3. Evaluation of Verification based on Key Criteria

	Effectiveness	Efficiency	Transparency	Consistency
Verification	—	—	✗	✗

3.3.3. RECOMMENDATIONS

- The EU should standardise protocol for the accreditation of verifiers, requiring common standards for verifiers operating throughout the EU.
- Member States should solicit industry commentary on their experiences with the verification process and use this feedback to improve the process.
- The EC should conduct spot audits of verified emissions reports, with an eye towards ensuring that M&R and Verification meets minimum standards throughout the EU.

¹⁰¹ IMPEL (2005)

¹⁰² International Emission Trading Association (2005)

¹⁰³ Ibid

¹⁰⁴ McMahon, M. (2005)

¹⁰⁵ Ibid

3.4. BANKING

Most countries do not explicitly mention banking in their NAPs. A few allow minimal banking:

- Denmark allows installations to use “next year” allowances for current year compliance due to the fact that allowances are issued for the next calendar year two months before installations are required to submit allowances to cover their emissions from the previous year;
- France allows banking from the first trading period to the second, when installations are allowed to bank a number of allowances equivalent to the difference between the allocation’s total allowances and total emissions; and
- Poland allows banking from 2005 to 2007 only for domestic, proven emissions reductions.¹⁰⁶

The European Commission has given jurisdiction of decisions regarding banking to the Member States, as to whether they want to adopt banking within phases, between phases, or not at all. It is important to note that though the EC has allowed Member States to decide upon banking in the first two phases (Phase I and Phase II) of the EU ETS, in Phase III, banking becomes a mandatory provision of the EU ETS, meaning that banking provisions will ultimately be harmonised.¹⁰⁷

3.4.1. FINDINGS

Banking is hailed by some as a cost-effective mechanism to encourage investment in Best Available Technologies to reduce emissions earlier so as to save allowances for future compliance periods or to sell those banked allowances to other installations when the price of allowances increase as a result of stricter compliance provisions.¹⁰⁸ Our survey of installations indicates that most respondents seem to be either “somewhat satisfied” or “neither satisfied nor dissatisfied” with the current level of banking, but naturally these sentiments varied among Member States. As the vast majority of countries do not allow banking, this response implies that most respondents do not consider banking as a key to their satisfaction in the EU ETS.

Banking is not without opponents. These critics believe that banking could potentially allow installations to delay investment in emissions reduction technologies, as an accumulation of allowances can serve as a buffer for the industry should it undergo a period of rapid growth

¹⁰⁶ Mullins, Fiona and Jacqueline Karas (2003)

¹⁰⁷ PEW Center on Global Climate Change (2005)

¹⁰⁸ Boemare, C. and P. Quirion. (2002)

and thus subsequent increases in emissions.¹⁰⁹ In terms of environmental effectiveness, banking can possibly cause the emergence of “temporal hot spots”, which are basically the occurrence of concentrated emissions outputs resulting from the ability of an installation that has been saving allowances through the banking mechanism to release more emissions than would be allowed if no banking provisions were in place.¹¹⁰

The incongruence of banking provisions across Member States has the potential to create market distortions.¹¹¹ Banking can have a significant distortionary effect on allowances, as those countries that allow banking provide provisions for the continuation of credits earned through emission reductions, but those Member States that do not allow banking of allowances, simply lose their allowances at the end of the trading periods.¹¹² Because allowances are expected to rise in price, companies in countries where banking is allowed for purchased

...a distortion could occur if today's allowances are banked to a later period. These allowances are expected to rise in price; therefore it could create an economic benefit for companies established in countries where banking is allowed for purchased allowances.

-Non-Governmental Organisation
Representative

allowances will enjoy an economic benefit that creates a competitive distortion across the EU. More pointedly, a leading emissions trading academic expressed concern about the possibility that banked Phase I allowances cannot be carried over in to Phase II. If Phase I allowances are not recognised beyond 2007, this could lead to a dramatic fall or increase in credit prices. That is to say that if most installations have “left-over” allowances that cannot be banked across to Phase II, installations will try to sell them off at the end of Phase I, consequently flooding the market and driving down the price. If on the other hand, installations have a shortfall of allowances, there could be a scramble to purchase allowances, consequently driving-up prices until they match the non-compliance fee (i.e. 40 euros per tonne of CO₂). Admittedly Phase I has been a trial period and perhaps it was wise to build-in control mechanisms to avoid having potential surpluses of allowances flow unabated into Phase II. However, as a result of this inability to bank allowances from one phase to another, Phase I allowance prices will remain volatile as they lack stability that can result from long-term forecasts.

Banking rules will improve the operation of the system, but very different rules will create arbitrage opportunities.

-Market Intermediary
Representative

Our telephone interviewees had divided opinions on the desirability of banking. One respondent believed that banking will improve the operation of the EU ETS; another worried about the fact that banking allows the problem of

¹⁰⁹ Ibid

¹¹⁰ Ibid

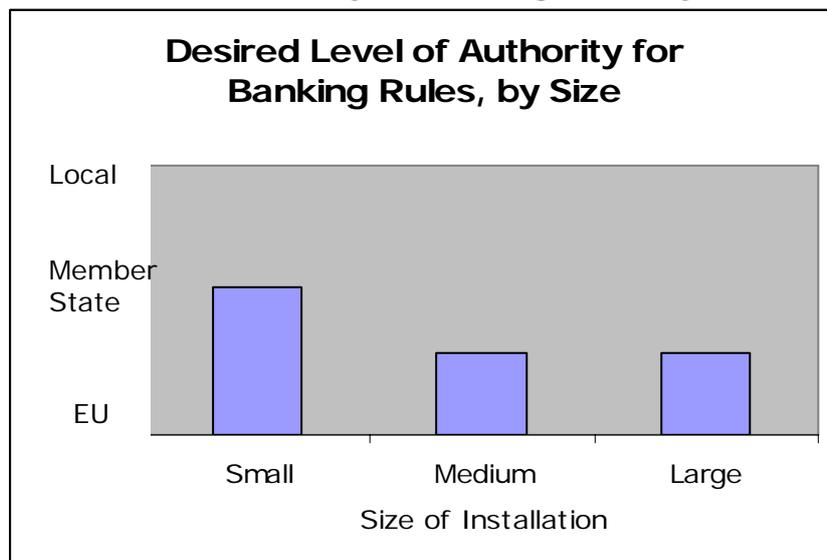
¹¹¹ Mullins, F. and J. Karas. (2003)

¹¹² Ibid

emissions abatement to be delayed until the future. Irrespective of this debate, both of these respondents agreed that there is currently only minimal market distortion from banking.

In terms of the most appropriate level of authority for banking within the EU ETS, 47.6% of our respondents think that banking provisions should remain under the jurisdiction of EU Member States, whereas 35% of the installations thinking that banking provisions should be decided upon at the EU level. Medium and large installations are particularly in favour of banking rules being established at the EU-level (Figure 10). These results indicate that for installations that operate across Member States, the degree to which banking rules are harmonised is obviously of more concern and may affect their EU ETS compliance strategies.

Figure 10. Desired Level of Authority for Banking Rules, by Size of Installation



Comparative Analysis: US Acid Rain Program Banking

Banking is a key element in the successful design of the Acid Rain Program. The ability for sources to abate while abatement costs are lower and bank their allowances until a time when abatement costs are high has been hailed as one of the key reasons of over-compliance in the programme. The banking feature has provided firms with the ability to plan their investment activities thus reducing compliance costs.¹¹³

Banking under this programme resulted in firms abating more in Phase 1 of the programme and making use of the the “inter temporal trading” or banking their allowances to be used in Phase 2. Banking not only encouraged early reductions in sulphur dioxide emissions, but by providing a “cushion,” it prevented spikes in price and hedged uncertainty.¹¹⁴ It allows firms the flexibility to buy allowances when the prices are low and using them in the future. In general, early investments are encouraged by banking because emissions reductions beyond

¹¹³ Burtraw, D (2000)

¹¹⁴ Kruger, J. and W.A. Pizer (2004)

the allocated level may be banked for future use.¹¹⁵ Thus, banking mitigates the consequences of “overinvesting”.¹¹⁶ It is estimated that during the first thirteen years of the Acid Rain Program, banking achieved a \$20 billion savings due to the ability of the sources to trade not only nationwide but also through time.¹¹⁷

3.4.2. CONCLUSIONS

Decisions over banking in the EU ETS are important because banking has direct implications on the economic and environmental effectiveness of the scheme. Banking provisions impact installations’ bottom-line costs-of-compliance calculations, as banking gives installations the flexibility to determine when they will adopt emissions reduction technologies and strategies and also allows them to reserve a certain amount of allocations in case of future spikes in prices of allowances.¹¹⁸ By building in this inter-temporal flexibility, installations are also better positioned to work on long-term emissions reduction strategies, especially in the event that an installation experiences a growth in their economic output.¹¹⁹

The Acid Rain Program is a clear illustration of how banking can be a key component of an environmentally effective and economically efficient program. However, as long as Member States implement banking to different degrees, there is a potential that arbitrage opportunities and competitive disadvantages may occur across Member States. Thus, the European Commission seems like the most appropriate level of authority over banking, as EU-wide banking rules will avoid these competitive distortions while still allowing for some flexibility. While unlimited banking will be permitted as of Phase III, it is important that EC officials prepare for a potentially difficult time at the end of 2007 when the market will have to rectify the fact that allowances cannot be carried over into Phase II.

We do not have a conclusive response to the critics of banking over whether or not banking speeds up or delays the installation of best available technologies. Further research into this area could be very helpful in illuminating the actual responses of installations that have utilised banking in the first year of implementation.

As this report focuses primarily on issues of administration, we feel the need to emphasise here that most installations, governments, and academics have stressed the need for simplicity in the EU ETS’ design during Phase I. Thus, it is understandable that, as one telephone interviewee informed us, the Commission chose not to approve many of the original NAP submissions containing banking provisions. While banking could ultimately improve the

¹¹⁵ Boemare, C. and P. Quirion (2002)

¹¹⁶ Kruger, J. and W.A. Pizer (2004)

¹¹⁷ Ellerman A.D., P.L. Joskow and D. Harrison (2003)

¹¹⁸ Kruger, J. and W. Pizer (2004)

¹¹⁹ EPA (2003)

flexibility of the EU ETS, we recommend that promotion of banking not be a priority until more pressing concerns over fair allocation methodologies and simple, effecting monitoring, reporting, and verification processes are fully addressed. Banking is an added component that will be most effective if these more basic programme areas are functioning smoothly.

Overall, Member State banking rules are clear and transparent. However, there is a need for more consistency in banking rules; this in turn will help banking to be effective in encouraging more flexibility in meeting emissions reduction targets.

Table 4. Evaluation of Banking Based on Key Criteria

	Effectiveness	Efficiency	Transparency	Consistency
Banking				

3.4.3. RECOMMENDATIONS

- The EU should sponsor research into the effects of banking on the abatement behaviour of installations: specifically, identify whether installations participating in banking tend to invest in *more* or *less* abatement technology.
- Before banking is adopted on the EU level, ensure that the registries of each Member State are equipped to monitor and track banked allowances.
- The EU must carefully consider the potentially difficult situation that may arise at the end of Phase I, as inter-phase banking is not currently permitted.

3.5. REGISTRIES

To facilitate allowance trading, the EU ETS has adopted a “hub and spoke system” for its registries, with a central European hub and the 25 Member States, each with its own registry, as the ‘spokes’.¹²⁰ The overall integrity of this system is vital to EU ETS success, as registries are a precondition for trading.¹²¹

3.5.1. FINDINGS

Despite their importance in allowing installations to participate in the market, four out of twenty-five Member States still do not have functional registries (Cyprus, Luxembourg, Poland and Malta).¹²² [Poland has reported that their registry will be up and running within the month of April 2006.¹²³] The lack of registries in these countries affects the supply of allowances from these Member States and thereby impacts the liquidity and efficiency of the market¹²⁴, and puts the Member States in a position of non-compliance with the Directive and subject to legal action by the EC. Additionally, the non-existence of the International Transaction Log (ITL) and the CDM registry of the Kyoto Protocol can further hamper the liquidity of the market. The 2005 survey conducted by McKinsey and Ecofys found that companies rated registries as the second most important reason that they were unable to conduct trade smoothly.¹²⁵

[Setting up my country's registry] has been a lot of hard work because there is currently only 1 person working full time on implementation.

-Member State Government Representative

In terms of the structure of the ‘hub-and-spoke’ registry system, one concern is the duplication of effort on the part of each of the Member States to set up their own individual registries.¹²⁶ While each Member State must develop its own registry, several Member States have purchased registries from other countries in order to avoid duplication of effort. For example, Ireland purchased its registry from the UK. In retrospect, Member States observe that developing the registry at the central EU level would have saved a lot of time and effort.

According to previous surveys, Member States can address this issue by collaboratively building one electronic interface for registries. In doing so communication within the registries improved, especially for those installations with large transactions, multiple accounts and for

¹²⁰ Pew Center on Global Climate Change (2005)

¹²¹ Egenhoffer, C. and N. Fujiwara (2005)

¹²² European Union (2006)

¹²³ Point Carbon (2006)

¹²⁴ Egenhoffer, C. and N. Fujiwara (2005)

¹²⁵ McKinsey & Company (2005)

¹²⁶ Pew Center on Global Climate Change (2005)

trading platforms.^{127,128} Twelve states, by means of a memorandum of understanding, have licensed the GRETA registry software and the experiences of each of the Member States are used to enhance the functioning of the software further. Another group of eleven Member States have taken advantage of France's experience and bought the license to the French trading platform, Seringas.¹²⁹ UK and France have further collaborated to develop software that provides automatic communication within accounting systems and trading platforms.¹³⁰

Notably, *Notre Europe's* survey of installations found that most respondents consider their

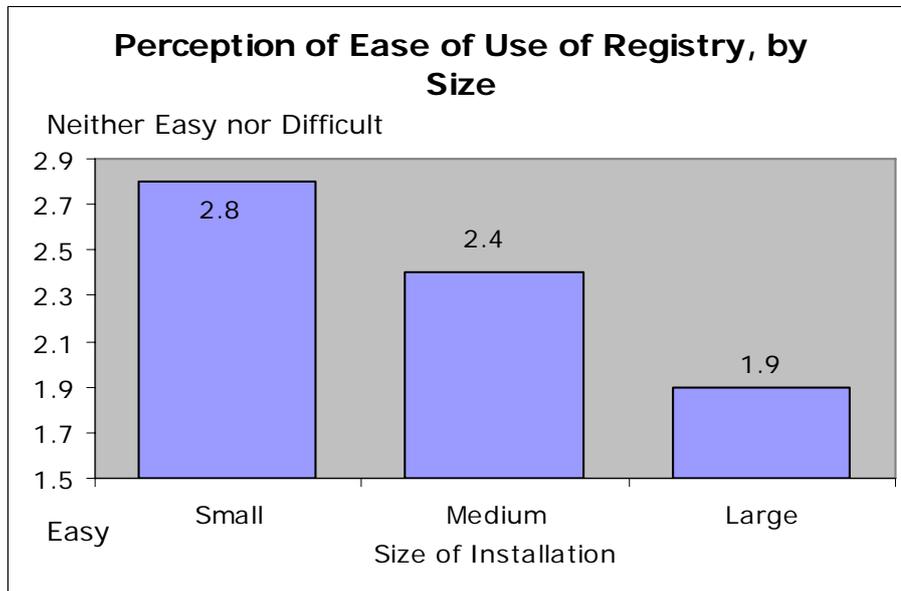
[My country] has been very successful because we have been on time with setting up the Registry.

-Member State Government Representative

respective Member State's registry either 'easy to use' or 'difficult to use.' This dichotomy is likely due to differences in the registry systems established by each Member State. As expected, the respondents from smaller installations consider the registries more difficult to use as compared to the larger installations, indicating

that participating in the registries does place a time burden on smaller installations (Figure 11). Overall, our survey indicates that registries on the whole have not added a burden of resources on the Member States. This may be a premature finding, however, as not all registries are established and the Member States have not yet conducted the full monitoring, reporting, and verification process.

Figure 11. Installations' Perceptions of Ease of Use of Registries



¹²⁷ IMPEL (2005)

¹²⁸ Egenhoffer, C. and N. Fujiwara (2005)

¹²⁹ Pers. Comm. Seringas personnel at the Caisse des depots, Paris, France, May 5, 2006

¹³⁰ Ibid

A complicated issue related to the functioning of the registries is the fact that according to the Marrakech Accords, a registry must shut down if it is unable to maintain an allowance reserve of at least 90% of its emission reduction targets or 100% of five times its most recently reviewed inventory, whichever one is lower. This can result in an installation that abides by the EU ETS regulations, being unable to trade because of the non-compliance of the Member State.¹³¹ According to the Article 50(2) of the Commission Registries Regulation, Member States must be alerted by the Commission in the event that they are close to breaching this regulation, however there is no clarity as to what the consequences are in the case that it does happen.¹³²

The extent to which data is accurate and up to date in each registry will influence how much trust can be put in transactions made through the registries. As IMPEL's 2005 report on good regulatory practice in the EU ETS pointed out, it is essential that amendments made to the permits issued to installations be reflected within the registry.¹³³ If some Member States are less rigorous than others in keeping their registries updated, this could potentially create market distortions caused by incomplete or inaccurate information and ultimately lead to some unwillingness to trade through registries that are less accurate, thereby disadvantaging installations in these countries.

Finally, there are a number of liabilities related to the registry in relation to data security and accuracy.¹³⁴ Member States have addressed this issue in various forms: most Member States have adopted a username and password system to access the registry. Others have planned to introduce smartcards (Netherlands) or other more solid authentication based banking software (Sweden and Finland). Considering the fact that the registries are in an early stage of implementation, it is too premature to make any judgments about whether or not security will be a major concern, but this should be tracked to ensure that breaches are not occurring.

3.5.2.CONCLUSIONS

On the whole, our analysis highlights that, where implemented, registries have been fairly successful in achieving their goal or tracking allowances. The primary issue is the implementation of registries in Member States that have not done so as yet. The obvious solution to this problem is to assist the Member States without registries and speed up the process of establishing the same. In the case of the ITL and the CDM registry, the EU can exert

¹³¹ Ibid

¹³² Ibid

¹³³ IMPEL (2005)

¹³⁴ Ibid

political pressure during international negotiations to ensure that these are set up at the earliest possible time.¹³⁵

Knowledge sharing has been and will continue to be an important aspect in the establishment and smooth functioning of registries. The literature recommends key stakeholder discussions to share experiences and practices and a structured consultation process for further development of registries.¹³⁶ While some Member States are undertaking bilateral or multilateral collaboration on their own, a more centralised, coordinated effort to benchmark best practices for registries and assist those countries lagging behind in implementation or smooth functioning could be very beneficial to the registry system and the market as a whole.

The concerns of potential registry shutdown due to lowered allowance reserves and the security of registries are issues requiring further investigation as the market progresses. Neither of these considerations appears to be hampering the EU ETS to date, but our analysis occurs too early in the EU ETS' implementation to conclusively state whether or not we believe these to be major issues.

When operating, registries provide an efficient and transparent way of communicating information regarding ownership of allowances. However, the system's effectiveness depends on the uniform functioning of each Member State's registry, and this is an area needing immediate improvement.

Table 5. Evaluation of Registries based on Key Criteria

	Effectiveness	Efficiency	Transparency	Consistency
Registries				

3.5.3. RECOMMENDATIONS

- The EC should provide technical assistance to those Member States that do not yet have registries.
- The EU should anticipate linking the EU ETS registry system to other international schemes to allow for the seamless integration of accounting systems, trading platforms, and registries including software related to data accuracy and security.

¹³⁵ Egenhoffer, C. and N. Fujiwara (2005)

¹³⁶ Ibid

3.6. TAXATION AND ACCOUNTING OF ALLOWANCES

As the EU ETS has been implemented, new taxation, financial treatment, and reporting mechanisms are needed to track and report allowance traded. However, how allowances are recorded, reported, and taxed could depend largely on national financial and legal classification of allowances, since the Directive does not propose clear guidelines to address these uncertainties.¹³⁷

This ambiguity makes it difficult for installations to track the financial implications of allowance allocation and trading, and ultimately limits their ability to formulate an emissions strategy (i.e. to reduce emissions or buy additional allowances).¹³⁸ This can be particularly challenging for companies operating in several Member States and needing to comply with different regulations. Considering that this scheme is predicted to develop into a multi-million dollar market, the importance of clear financial treatment and taxation guidelines cannot be ignored.¹³⁹

3.6.1. FINDINGS

Under the EU ETS scheme, financial and tax treatments of the following three programme components must be defined:

- An allowance
- A government grant
- A liability to meet the cap

Accounting of allowances has been dealt with primarily by the International Accounting Standards Board, through the International Financial Reporting Interpretations Committee (IFRIC), which has observed that many companies are, or will be, subject to taxation and accounting schemes for allowances.¹⁴⁰ As there was a risk of divergent practices developing, IFRIC concluded that it should develop an interpretation, which set out to explain how IFRIC should be applied in the context of the EU ETS schemes.¹⁴¹

Several consultation processes have taken place since 2003 to discuss the following matters:

¹³⁷ Mullins, F., J. Karas (2003)

¹³⁸ Casamento, R., (2004)

¹³⁹ *Ibíd.*

¹⁴⁰ *Ibíd.*

¹⁴¹ *Ibíd.*

- Does an emissions allowance scheme give rise to 1. A net asset or liability or 2. An asset (for allowances held) and a liability, deferred income and/or income?
- If a separate liability, deferred income and/or income is recognised, what is the nature of that item and how is it measured? ¹⁴²

IFRIC initially recommended allowances be recorded as gains in the value of emission rights to equity, but that the loss related to revaluing the liability should be recorded in profit or loss. Similarly, a loss in the value of emission rights should be recorded against previous gains recognised in equity, but the gain related to revaluing the liability should be recorded in profit or loss.

IFRIC conducted a consultation period to assess the opinions of various stakeholders on how allowance should be accounted for. During the consultation period, the following comments were received by IFRIC from various stakeholders:

- Many respondents commented on the lack of symmetry in measuring and reporting allowances, liability for emissions to date, and the government grant. ¹⁴³
- Some respondents proposed alternative accounting solutions or amendments to IFRIC's proposals. These included: a net model, under which an entity does not recognise allocated allowances, and accounts for actual emissions only when it holds insufficient allowances to cover those emissions; an amortising model, under which an entity recognises allocated allowances as an asset, but then amortises the allowances as it pollutes. ¹⁴⁴

Following these consultations, IFRIC issued a guidance document on emissions trading (IFRIC 3).¹⁴⁵ This document, finalised in December 2004, defines allowances as intangible assets.¹⁴⁶ Moreover, IFRIC decided to treat assets (i.e. allowances) independently from liabilities (i.e. obligations). Accordingly, netting off (i.e. offsetting) of the asset and liability is not permitted.¹⁴⁷ According to IFRIC3, companies must treat allowances as intangible assets, the difference between the amount paid and the market values of allocated allowance as a government grant, and recognise a provision for its emission reduction obligation as liability.¹⁴⁸

Taxation of allowances is a related, complex question. Although allowances are taxable, there may be many different tax treatments depending on who is the potential taxpayer (e.g. individuals, companies, charities) and the purpose for which they hold the allowance (e.g. trading stock, investments, or fixed assets of a business).¹⁴⁹ As such, no one ruling will apply -

¹⁴² Ibid.

¹⁴³ Ibid

¹⁴⁴ Ibid

¹⁴⁵ King, B. (2005)

¹⁴⁶ PricewaterhouseCoopers (2005)

¹⁴⁷ Ibid

¹⁴⁸ Ibid

¹⁴⁹ Casamento, R. (2004)

instead it is probable that normal tax of each individual country law will be applicable.¹⁵⁰ One government official pointed out that there is a robust tax and accounting framework in place in Europe and Member States and installations must simply fit allowances into this framework. The official also postulated that concern over financial treatment of allowances was an argument put forward in an attempt to delay the implementation of the ETS and may not be as pressing as originally perceived.

The *Notre Europe* survey asked companies about the sufficiency of the rules and guidelines on taxation and accounting of allowances in their respective Member States. Respondents rated these rules and guidelines, on average, as 'neither sufficient nor insufficient.' With regards to what level of authority installations prefer these guidelines to come from, 38.7 % of installations would for the EU to standardise tax and accounting guidelines whereas, 51.9 % of installations are content to have authority continue at the Member State level. Respondents from small installations tended to favour having the authority at the Member State level, while the large installations tended to favour authority at the EU level in comparison to the smaller-sized installations. It can be assumed that this is because large installations which are tend to operate across several Member States prefer to have more harmonised tax and accounting rules than small installations.

3.6.2. CONCLUSIONS

Although taxation and accounting of allowances is, administratively, an important consideration, we were able to obtain very little empirical evidence on how these should best proceed or the extent to which installations and Member States are facing challenges in this area.

We believe that for the sake of eliminating comparative disadvantages and divergent treatment of allowances across Member States, EU-wide tax and accounting standards for allowances should be developed. These could be the standardised procedures recommended by IFRIC or could be developed separately by the European Commission through consultation with Member State governments and installations in order to better understand the major issues they have faced in year one in terms of tax and accounting confusion.

Ultimately, rules governing the taxation and accounting of allowances do not undermine the effectiveness or efficiency of the ETS. However, we found that there is a need for more consistency in rules from one Member State to another, and a greater need for the rules to be more clear and transparent.

¹⁵⁰ Ibid

Table 6. Evaluation of Tax and Accounting based on Key Criteria

	Effectiveness	Efficiency	Transparency	Consistency
Tax and Accounting	—	—	✗	—

3.6.3. RECOMMENDATIONS

- The Commission or Member States should contact Member State auditing boards to hear and address any concerns that accountants found during the financial audit of the fiscal year starting in January 2005.
- The EU and Member States should jointly decide upon an allowance accounting and taxation methodology to be implemented consistently across Member States, putting the EU in a position, as the international market grows, to ensure that the same tax and accounting standards are adopted worldwide.
- Member States should actively seek input from installations on whether or not they are experiencing confusion in taxation and accounting of allowances. Use this input in developing an EU-wide accounting and taxation methodology, and also in identifying where EU-wide guidelines may need to be enhanced to function on an individual Member-state level.

3.7. EXPANSION

Expanding the EU ETS to cover new industrial sectors and/or additional greenhouse gases has the potential to enhance the scheme’s environmental effectiveness and economic efficiency. By including a larger universe of emissions, the scheme would be responsible for reducing a larger share of European greenhouse gases. The enhanced coverage of the scheme, represented by a higher overall volume of allowances, could help promote greater liquidity within the market and reduce compliance costs for participating industries. However, there are challenging obstacles that must be overcome in order for these benefits to be realised.

3.7.1. FINDINGS

As a general rule, the EU ETS should cover only the sectors and gases where it enables emissions reductions in the most efficient manner possible. The ultimate test as to whether the scheme should be expanded depends on a specific evaluation of the sector and/or gas being considered for inclusion. The EU ETS should be expanded into areas specifically where the administrative costs (associated with allocation, monitoring, reporting, and verification) as

well as the compliance costs (associated with achieving the emissions reductions or purchasing allowances), are lower than the costs of achieving the reductions with another possible strategy. Without sufficient administrative capacity and a requisite ability to monitor, report, and verify emissions in the given sector, expansion would cause problems for the scheme by driving up the costs of compliance and increasing uncertainty within the market.¹⁵¹

Limited expansion of the scheme is planned in some countries: based on the Guidance on Phase II National Allocation Plans (2008-2012), some countries, such as the UK in tandem with other Member States, are including mineral wool, petrochemical (crackers), glass, flaring from offshore gas and oil production, integrated steelworks, and carbon black, so as to harmonise the installations covered in the EU ETS and prevent competitive disadvantages across the EU ETS.¹⁵²

We have found no consensus of opinions regarding whether the EU ETS should be expanded to include new sectors and/or gases. *Notre Europe's* survey suggests that most

In my opinion, the scheme should reduce the amount of sectors it covers. Specifically, some processes should be left out. The ones that should be left out are the sectors and processes where there is a low-value-added of CO2 emissions reductions. Steel, limestone, and I think cement industries already are at low thresholds, and the amount of reductions that can be gained from these sectors is scant.

-Non-governmental Organisation
Representative

industry representatives are not in favour of expanding the EU ETS to cover new sectors, with the notable exception of respondents from the Chemical and Ceramics sectors. However, a majority of industrial representatives indicated that they do not favour expanding the scheme to cover additional greenhouse gases. However, some industry comments suggested a willingness to expand the scheme, provided that expansion was technically and economically feasible.

Our focused interviews provided a variety of additional opinions regarding EU ETS expansion. Among these varied opinions were:

- *The inclusion of other sectors and gases is possible and not complicated since monitoring techniques are already available and are presently being utilised. However process emissions are far more complicated to monitor, and this problem is not likely to be resolved in the near future.*
- There is currently no interest within the European Commission to expand the EU ETS to include other gases. This is due to the difficulties encountered during the scheme's initial phase in managing CO₂ emissions from a limited number of industrial sectors. There is more interest in adding new CO₂-emitting sectors (e.g. chemical and aluminium manufacturers), but surface transportation as a new sector is believed to be too complex.

¹⁵¹ Egenhoffer, C. and N. Fujiwara (2005)

¹⁵² Department for Environment, Food and Rural Affairs (DEFRA) (2006)

In general, however, adding new sectors will not necessarily improve the system, as some sectors have few reduction options.

- The scheme should reduce the amount of sectors it covers. Specifically, some processes should be left out where there is low value from their added CO₂ emissions reductions. Steel, limestone, and cement industries already are at low emissions thresholds, and the amount of reductions that can be gained from these sectors is scant. Yet, the EU ETS should be expanded to include all GHGs. Including the full universe of GHGs would provide greater certainty to market participants and would exploit the potential for lower cost emissions reductions opportunities.
- In theory, inclusion of more sectors would be a good thing. However, there might be problems with including widely different sectors, especially where monitoring and verification systems are inadequate. It would be better to begin expansion a few key sectors at a time.
- Aviation should be included in future phases as this sector would be easier to incorporate than surface transportation or waste incineration.
- The EU was sensible not to include other GHGs in the second phase as companies were still trying to get used to the CO₂ trading market.
- The EU ETS would benefit greatly from being linked to the schemes of other countries in the future, such as Canada.

CEPS suggests that in principle, in order to maximise both the economic efficiency and environmental effectiveness of the EU ETS, the burden of emissions reductions should be distributed fairly among both trading and non-trading sectors, so that abatement costs for all sectors by and large are the same.¹⁵³ This would ensure that the lowest cost reductions are achieved, and result in minimal adverse impact to

I think that the ETS should be expanded to include all GHGs. This would provide greater predictability and most people believe there are lower cost possibilities of reducing these emissions than from reducing carbon.

-Non-governmental Organisation Representative

European industries. In order to realise this ideal, it is important to understand what reductions are realistically achievable in each sector, and accordingly, to utilise the specific policy mechanism that will be most effective at realising that potential. The survey conducted by McKinsey & Company and Ecofys on behalf of the European Commission suggests that the most likely sectors to be included are the chemical, aluminium, and aviation sectors.¹⁵⁴ However, CEPS has identified a number of administrative and technical issues that would complicate any decision to include aviation in the EU ETS.¹⁵⁵ Interview respondents indicated

¹⁵³ Egenhoffer, C. and N. Fujiwara (2006)

¹⁵⁴ McKinsey & Company (2005)

¹⁵⁵ Egenhoffer, C. and N. Fujiwara (2006)

that feasibility studies for including other sectors and gases in Phase III are in the process of being conducted.

3.7.2. CONCLUSIONS

Although our findings reflect a certain degree of discomfort with the prospect of including additional sectors and gases under the EU ETS, the scheme was developed with the potential for expansion in mind and it may be necessary or advantageous to integrate more sectors and gases into the EU ETS. In anticipation of this possibility, it is important to consider what sectors are best suited to be included in the scheme.

Some interviewees implied that expansion of gases would be more politically feasible, but again the practicality of this expansion is the key question. If proper monitoring, reporting, and verification procedures can be developed for GHGs other than CO₂, then expansion into other GHGs could prove advantageous to the effectiveness of the scheme and expand installations' range of emissions reductions options.

Beyond expanding the EU ETS into other gases and sectors, the EU should work actively to create linkages with emission trading schemes being developed in countries around the world. Since EU has already gone through the initial steps of setting up an emissions trading scheme, the EU is well positioned to provide technical advice to other schemes being implemented. The EU is currently at the forefront of trans-national emissions trading schemes and as such should work with new schemes to ensure their compatibility and facilitate worldwide emissions trading.

3.7.3. RECOMMENDATIONS

- Taking into account the full universe of greenhouse gas emissions, the EU should consider establishing a comprehensive sector-based, EU-wide emissions reduction strategy, utilizing the ETS and other policy mechanisms. Such a harmonised approach would prevent competitive distortions and help focus investment in new technologies.
- Expansion of the EU ETS must be based on a careful examination of the costs and benefits of including new sectors and/or gases. As a general rule, expansion should only be considered for new sectors if the scheme can result in emissions reductions at a lower cost than alternative policy mechanisms.
- The EU should collaborate in the development of new regional emissions trading schemes, in order to ensure that they are compatible with established EU ETS architecture and ultimately will enable international emissions trading.

4. Overall Conclusions

Given the obvious threat that climate change poses to human society, success of the EU ETS is not just essential in terms of European countries meeting their Kyoto targets but, it is important that the EU ETS illustrates that carbon trading can play a pivotal, cost effective role in the abatement of greenhouse gas emissions.

This report has aimed to provide an up-to-date examination of how the implementation of the EU ETS is proceeding; we hope that our findings and recommendations might prove useful as the scheme progresses through its initial learning phase and into its role as a concrete strategy to achieve Kyoto Protocol targets and mitigate global climate change. Our report has shown that, while the basic design of the EU ETS is functioning well, there are some specific areas where the programme could be improved. We have identified allocation as the most important area of concern, and recommend that improving allocation methodologies be a priority of EU ETS administrators. In addition to concerns over allocation methodologies, we have highlighted monitoring, reporting, and verification as key elements of the programme that will ensure that

The ETS is clearly functioning. It is clearly successful. Companies are starting to deal with the issue of Climate Change.

Companies are incorporating issues of Climate Change into their strategies.

-Member State Government Representative

the scheme's implementation is effective and efficient.

When examining the totality of the EU ETS through the four criteria outlined in 'Key Criteria for Evaluating the EU ETS,' we believe that the greatest gains to be

made lie in making the scheme more consistent (Table 7). While recognising that flexibility is an intentional design aspect of the scheme, standardising some aspects of implementation, especially allocation methodologies and accreditation of verifiers, could help make the scheme both more effective and more fairly administered across all participating sectors, countries, and installations. On the whole, the EU ETS is performing well in terms of transparency, although simplification of monitoring and reporting guidelines could further aid the scheme's transparency. Finally, we expect both efficiency and effectiveness to improve as the scheme progresses, installations and administrators gain experience with the process, and Phase II targets are set at levels that will help achieve Kyoto Protocol compliance. Furthermore, the Commission is currently undertaking an in-depth analysis of the scheme that will culminate in a report this June. This report should certainly provide guidance on how to improve the scheme across these four criteria.

Overall, we find the EU ETS to be a well-designed programme that, despite initial 'teething' problems, is enjoying success as illustrated by the fact carbon trading in Europe is active. Looking to the future, we recommend that the European Commission take greater steps to achieve consistency in the EU ETS' implementation, with an end goal of demonstrating to the international community that carbon trading is indeed a successful policy approach to tackling the issue of global climate change.

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