



Streamlining climate change and air pollution reporting - Final Report

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Work undertaken

The technical annex of tender ENV/C.1/SER/2007/0018 'Streamlining climate change and air pollution reporting' lists a number of tasks: tasks 1 and 2 are to identify the problems stakeholders encounter when reporting their emissions of GHG and AP; tasks 3 and 4 are to define the objectives for reporting emissions and develop options for achieving them: tasks 5 to 8 variously involve consulting with Member States (MS) and other stakeholders to fine tune and facilitate the implementation of the options.

Task 1 – Reviewed the Monitoring Mechanism Decision (MM), its implementing provisions, the National Emission Ceilings Directive (NECD) and a number of other emissions reporting instruments, by:

- (a) Detailing the operation of the current reporting system for emission inventories, policies and measures (PAMs), and projections, as they relate to climate change, air pollution, and other relevant policies;
- (b) Identifying the reporting obligations, the resulting burden and administrative costs for industry (including small and medium sized enterprises), MS, the Commission, its agencies, and other stakeholders.

A background report was prepared that critically reviewed a number of instruments¹ that had reporting requirements or that could be used to improve the effectiveness of reporting. The study looked, in particular, for any actual or potential conflicts and synergies between them, taking into account:

- The rationale/stimulus for each instrument;
- Data reporting requirements - such as the pollutants specified, emitting processes, temporal and geographical resolution of data, and the nomenclature to be used; whether projections and/or policies and measures are reported; and whether quality criteria such as uncertainty analysis are required;
- Their compatibility with INSPIRE and SEIS initiatives;
- The scheduling of reports;
- Reporting guidance and/or tools available – such as reporting templates and electronic data delivery systems;
- Linkages between instruments, identifying those covering the same pollutants, sectors etc;
- Strengths, weaknesses and problems identified with each instrument, reflecting the findings of other review process/working groups²;
- Any existing information relating to the administrative burden of using them.

Task 2 – Investigated the progress MS had made with streamlining their reporting of emissions, policies and measures, and projections. A questionnaire was used to contact all MS and then visits were made to twelve of them to explore, first hand, the influence of operational and logistical factors. Two workshops (under Task 5) were then held to determine:

- How MS inventory systems are organised and how data is collected, managed, and used;
- What initiatives the MS employ in their National systems and their associated benefits;
- What aspects of reporting are not working well and the streamlining issues/barriers to be addressed;
- Current costs of reporting;
- MS suggestions for streamlining.

¹ Monitoring Mechanism (MM) Decision No 280/2004/EC & Implementing Provision (Commission Decision of 10 February 2005); National Emission Ceiling Directive (NECD) Directive 2001/81/EC; Reporting under the United Nations Framework Convention on Climate Change; Convention on Long-range Transboundary Air Pollution; EU Emissions Trading Scheme Directive 2003/87/EC; Proposal for a Directive of the European Parliament and of the Council on industrial emissions - incorporating: Integrated pollution prevention and control (IPPC) Directive 96/61/EC, Large combustion plant (LCPD) Directive 2001/80/EC, Waste Incineration Directive 94/67/EC (WID) and VOC Solvents Directive 1999/13/EC; European Pollutant Release and Transfer Register Regulation No. 166/2006; Fluorinated gases: Regulation 842/2006; CO2 from new cars: Decision No 1753/2000/EC; Fuel quality directive 98/70/EC, petrol and diesel fuels; Sulphur content of fuels, Directive 1999/32/EC; EU Directives adopting Aarhus Convention's requirements: 2003/4/EC, 2003/35/EC.

² Including work previously performed by the EEA.

A report 'Streamlining climate change and air pollution reporting - Country Enquiry' was prepared that contains country specific descriptions (Country Briefs) of how the current reporting procedures work in MS.

Task 3 - Developed options for the revision of the MM and its implementing provisions that would overcome the reporting problems found. Detailed proposals were made to amend the MM to resolve the problems and, in addition, to align the reporting requirements of the MM and NECD; the possible impacts of the actions (and associated costs to stakeholders) were then evaluated.

Task 4 - proposed an action plan/roadmap to harmonise reporting more widely - and capture any synergies available from the alignment of emissions reporting legislation - highlighting where there would be advantages in revising instruments and the likely impacts if they were. A number of alternative solutions were identified and a set of concrete options for the better alignment of reporting instruments were recommended. The detailed proposals of *Tasks 3* and *4* were presented to MS at the workshops organised under *Tasks 5* for comments and suggestions and revised to reflect detailed feedback.

The *Task 5* workshops were held in May 2008 and January 2009. These played an important part in clarifying how national systems operate, identifying reporting problems, specifying the solutions needed, refining problem solving options, and enabling the spread of best practice. They were also invaluable for informing MS of the progress of the work, collecting information, confirming or correcting the information collected, and consulting on streamlining proposals.

Under *Tasks 6 to 8* the project team attended a number of meetings to explain the project, present the streamlining options for emissions reporting, and take advantage of the opportunity to seek further information from MS. Meetings have been held with IPCC WG I, II, and III, and the UNECE CLRTAP Task Force on Emission Inventories and Projections; several meetings have been held with the Commission. In addition a comprehensive stakeholder enquiry was undertaken to determine the interests and activities of other groups working with instruments that require the reporting of environmental information.

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- Annex A.6 - Proposals for New Emissions Reporting Instrument
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Annex B: CD of associated reports - including:

- a) Streamlining climate change and air pollution reporting - Country Enquiry
- b) Background Report
- c) Interim Report

Executive Summary

The environmental policies currently being negotiated are likely to require Member State (MS) to control and report their emission of greenhouse gases (GHG) and air pollutants (AP) more precisely. While there are likely to be associated costs, it is also likely that the cost of timely and targeted action will be less than the longer term cost of inaction. A number of European Union (EU) legal instruments are used to regulate emissions - several of these are under review. The review not only needs to anticipate future policy needs but also assess the alignment of the various instruments and whether the burden on users can be further minimised. Options are presented for revising and streamlining their data reporting requirements that, if adopted, would benefit the EU, MS, industry and the Commission by:

- ▶ Minimising the administrative burden of reporting by;
 - Introducing clear and simple procedures and tools that reduce the time and effort needed for:
 - ▶ inventory experts to compile and report national emissions,
 - ▶ operators to report to Competent Authorities;
 - Ensuring that the minimum data requirements provide the quality and transparency criteria needed to avoid (or reduce) the burden arising from supplementary, ad-hoc, data gathering (by the Commission or International bodies).
 - Avoiding duplication by ensuring that emissions data and related statistics are reported to a minimum standard, based on SEIS principals, so that once collected, they can be used for several applications;
- Assisting MS to develop the national inventories/national systems needed to ensure that multipollutant/multieffect policies can be introduced and that any measures adopted reduce emissions of GHG and AP cost effectively. The options propose aligning reporting requirements with a view to:
 - Encouraging the development and sharing of emissions compilation and reporting guidance, tools and data services between instruments;
 - Minimising the investment needed to develop and maintain an integrated emission inventory that is complete, has time-series consistency, appropriate QA/QC and which uses comparable methods for all data sources;
 - Minimising the additional requirements needed to relate emissions reported from regulated industrial processes with national emissions and vice versa.
- ▶ Adjusting the industrial reporting requirements so that the core emissions related datasets needed for the different instruments (EU ETS, E-PRTR, LCPD etc) can be combined within a single reporting interface for operators, by:
 - Enabling the use, while protecting the confidentiality, of data needed for national inventories and verification.
 - Improving the alignment of the reporting of EU ETS and non EU ETS sources to enable improved regulation;
 - Improving the quality and usefulness of non EU ETS industrial facility level data.

The proposed roadmap of progressive alignment of linked reporting instruments has the benefit of enabling MS to 'future-proof' investment in their existing systems by providing them with confidence that new reporting requirements can be accommodated. Good quality data leads to better informed policy and the minimisation of both administrative costs and costs to industry. Robust emission data enable MS to gain a better understanding and negotiate efficient policies for reducing emissions whilst protecting investment and enabling growth.

Key findings

This study has critically analysed the EU legal instruments that contain emissions reporting requirements and, drawing on MS experience of reporting, we have proposed a set of options for making them work more effectively together to better meet the needs of the future. The strategy has been to identify opportunities to align National level reporting and then use facility level emissions reporting to more fully integrate CC and AP emissions. The study's key findings are outlined below:

Reporting problems

The problems stakeholders encounter when reporting emissions of GHG and AP arise from some of the specific requirements of individual instruments and logistical barriers to fulfilling them.

The key problems identified are:

- Duplicated reporting;
- A lack of clarity in - and interoperability - between datasets reported;
- Missing and inaccurate data.

MS reported that improvements in the following areas would help:

- Clearer terminology and definitions across instruments;
- Stronger co-ordination of the QA/QC activities across instruments;
- Less points of reporting (places and people to report to);
- Changes to instruments that would allow greater integration of reporting (e.g. one database);
- Guidance to support national level reporting and data gathering (especially for Operator reporting);
- Improved review and verification activities for some datasets.

a) The strengths and weaknesses of the instruments themselves

Several legal instruments require the monitoring and reporting of emissions data but, when taken together, the pooled body of information these provide is not sufficiently complete or homogeneous for some purposes. The instrument review found a number of areas where reporting under the MM and the NECD, the EU Emissions Trading Scheme (ETS), and the European Pollutant Release & Transfer Register (E-PRTR) could be made more coherent and complimentary; the totals of GHG reported under the MM and EU ETS, for example, cannot easily be compared.

The MM provides a good mechanism for tracking trends in historic and projected GHG emissions and, through strong links to the UNFCCC reporting and national system requirements, has provided MS with an additional means of ensuring high quality submissions. The ETS and the MM are potentially complementary but the relationship between the data on ETS registries and national total emissions at a sector and subsector level is not clear. The MM compilation and reporting provisions are less well defined for policies and measures (PAMs) and Projections - there is an overlap but lack of consistency with NECD reporting of PAMs. The MM requires reporting of NO_x, SO₂, CO and NMVOC as indirect GHG to complete the reporting requirements for the UNFCCC but reporting of these pollutants overlaps with reporting under the Convention on Long-Range Transboundary Air Pollution (CLRTAP). There are some differences in reporting boundaries (for the sectors to be included and the territory covered) and the reporting formats that make it difficult for MS to use the datasets for MM/UNFCCC and CLRTAP. There is duplication with the F-Gas regulations and there is no requirement to use the data collected there or the facility level data collected under the EU ETS, E-PRTR or other industrial emission control legislation, to improve the completeness and consistency of national inventories or for the verification of emission totals.

The NECD focuses on the pollutants NO_x, SO₂, NMVOC and NH₃ and uses the reporting category definitions and reporting format of the CLRTAP. The current reporting and compilation procedures place a relatively low additional administrative burden on MS; the NECD, unlike the MM, does not

require specified time-series reporting or revisions - neither does it require related activity data or a report of the methodology used (e.g. as in an informative inventory report) that would enable an independent review and validation of the data.

MS are required to report the emissions from industries regulated under E-PRTR/EPER, the Large Combustion Plant Directive (LCPD) and the EU ETS, but neither the NECD or MM explicitly encourage MS to use facility or installation level data to improve their estimates of national emissions – a number of MS now do this as a matter of course.

The EU ETS has detailed monitoring and reporting procedures, which, together with independent verification requirements, ensure data accuracy, limit uncertainty and drive overall data quality. These emissions and activity data are not, unfortunately, comparable with those reported under the E-PRTR or LCPD; data for similar activities may be reported differently under the E-PRTR and the EU ETS. Emissions and activity data compiled by the facility operators into Annual Emission Reports (AERs) are used by some MS - but not all - to improve their national inventories.

The E-PRTR is designed to provide information to the public on emissions of a large number of GHG and pollutants from a wide range of sectors. Data reported by operators do not have to be verified by third parties (as under the EU ETS) but before their transmission to the Commission, competent authorities should review it according to the requirements of the E-PRTR; should the data reported later be found to contain errors these can be corrected through re-submissions. There are overlaps between the reporting of emissions and activity data (which is provided under E-PRTR only on a voluntary basis) with the EU ETS. The E-PRTR reporting systems require aggregation of emissions at facility level, thereby combining emissions from different installations and activities/categories/fuels, this makes reconciliation with national statistics and integration or meaningful comparison of the data with national inventories and EU ETS difficult or impossible.

The industrial Directives to be covered by the RECAST³ regulate some 50,000 installations across the EU. The RECAST will cover the largest industrial installations, but also many small or medium sized enterprises with the latter groups generally make up a small percentage of emissions. All EU ETS regulated installations (except combustion installations between 20 and 50 mw) and most E-PRTR regulated facilities are covered. While it is not envisaged that the RECAST will require detailed emissions reporting to the Commission (other than through the LCPD provisions) National Competent Authorities are to be encouraged to collect appropriate emissions data as part of the permit at their own discretion.

b) The administrative and logistical issues of using them.

The study found a number of administrative and logistical issues that MS had encountered and overcome, within their existing systems and resources, by such measures as integrating their data flows and data structures. While no country yet has a fully integrated system some MS are close to having one. Consequently countries are in favour of greater streamlining action. The analysis of MS systems and plans for improvement it would appear to be technically feasible to move to a more fully integrated EU reporting system in the future.

³ Proposals have been made for a Directive on industrial emissions that would incorporate the: Integrated pollution prevention and control (IPPC) Directive 96/61/EC, Large combustion plant (LCPD) Directive 2001/80/EC, Waste Incineration Directive 94/67/EC (WID) and VOC Solvents Directive 1999/13/EC.

Box 1 – MS Practice

Most, if not all, MS already use national statistical data to ensure emissions reported under the MM are consistent with emissions reported under the NECD; ~50% store all GHG and AP emissions data within one system; ~60 % use non-emissions reporting instruments to generate (or improve the quality) of their data and ~65% use some industrial facility data in reporting under NECD and/or CLRTAP. More than 80% report principally the same emissions data under NECD and CLRTAP. Over 90% use emission data collected under the LCPD in reporting under other instruments and/or to verify other data in the NECD/CLRTAP inventories, approximately 40% use data collected under E-PRTR reporting in their national GHG (MM) and/or AP (NECD/CLRTAP) inventories; <40% are able to assign other facility level data to Common Reporting Format (CRF) and/or Nomenclature for Reporting (NFR) source categories.

Countries reported a number of problems with using the instruments that would frustrate further integration. These range from differences in definitions through to technical and institutional difficulties with accessing the statistical data needed to reconcile information reported under different instruments; a number of countries pointed out that it is not necessarily possible to fully merge inventory data systems when a number of institutions are involved.

Reporting objectives, streamlining options, and their impact

The actions needed to address the reporting issues identified and to align procedures, guidance, and the available tools so that they can be used for all the reporting instruments, must: in order of importance: address known problems, encourage the better use of existing data, and remove unnecessary differences between instruments. They should aim to assist countries set up their national inventory systems, in a way that best suits them to meet their reporting responsibilities, in a transparent and equitable way. This can be achieved through:

1. Making quick and cost effective wins by streamlining the instruments that are already relatively close in scope - the MM (the main vehicle for facilitating EU reporting to the UNFCCC and Kyoto Protocol) and the NECD (the vehicle used for CLRTAP reporting) – by making text amendments to each that would ensure that the emissions estimates for APs and GHGs are compiled on the same basis, using, where appropriate, the same underlying national statistics and projections and where not appropriate clearly identifying the differences.
2. Making industrial facility level data more usable by national inventories by: aligning installation/facility referencing so that it is clear which EU ETS installations belong to which E-PRTR facilities and Integrated Pollution Prevention and Control Directive (IPPC) permits, and ensuring the use of common activity definitions which enable emissions and activity for each installation and facility to be linked. Currently aligning the “*activities*” dimension presents technical difficulties, ‘facility’ level emission reporting is allocated to an economic entity (according to who owns the facility or what legal entity holds a permit to operate).
3. Integrating National level reporting and facility level reporting so that regulated facility/installation level reporting is by definition one of the subset of national level emissions; future streamlining would therefore focus on ensuring that facility level data are appropriately used and embedded within the national inventory compilation process.

The four options presented in table 1 below would improve emissions reporting in both the short and long term. While they are independent and self-standing they are based on a feasibility assessment that takes account of the anticipated schedule for the review of instruments, relative complexity and costs. They may be adopted individually or, stepwise, in combination. The costs stated are estimates of additional administrative activities arising from proposed changes to the way emissions are accounted and reported.

Table 1: Options with costs and benefits

Proposed Options	Costs €Million - for all EU MS unless otherwise stated	Benefits
<p>1: Revise the MM to address known problems, improve clarity, make better use of available data and ensure consistency with the NECD.</p> <p>(Earliest introduction date 2009)</p>	<ul style="list-style-type: none"> ○ Development cost: €0.6M (spread over the initial 2 years) ○ Ongoing pro-rata⁴ annual Maintenance cost for the duration of the instruments: €1.3M/yr annually <p>(The costs above relate mostly to the inventory compilers and competent authority for the collection and integration of facility level data)</p>	<ul style="list-style-type: none"> ○ Will deliver national GHG estimates and projections that are more accurate, consistent and comparable with other emissions reporting. ○ Will improve transparency for GHG and ensure it draws on EU ETS, E-PRTR, F-Gases and CO₂ from Cars Data.
<p>2: Revise both the MM and the NECD to address known problems, improve clarity, make better use of available data and ensure mutual consistency.</p> <p>(Earliest introduction date 2010)</p>	<ul style="list-style-type: none"> ○ Development cost: €1.0M (spread over the initial 2 years) ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €2.2M/yr <p>Significant costs to MS in collecting facility level data (Includes a year on year annual saving of €0.3M/yr for national reporting)</p>	<ul style="list-style-type: none"> ○ Will deliver national GHG and Air Pollutant estimates and projections that are more accurate and use the same underlying data and assumptions. Stronger linkages will provide better data for multi-pollutant multi-effect policy making. ○ Will improve transparency for GHGs and APs with EU ETS, E-PRTR, F-Gases and CO₂ from Cars.
<p>Alternative 3a: Revise the MM as indicated in Option 1 and amend the EU ETS to enable a better flow of usable facility level data into National GHG Inventories</p> <p>(Earliest introduction 2010/13 and on)</p>	<ul style="list-style-type: none"> ○ Development cost: €3.5M (spread over the initial 2 years) includes €3m costs to the Competent Authority and the Inventory Agency for improved systems to integrate EU ETS data into the national GHG inventory and €0.5m to industry for adapting to the new reporting systems. ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €0.03M/yr are for the Inventory Agency collating data from EU ETS systems (Full costs are off-set by an annual €0.3M/yr savings to MS from improved management of EU ETS data compared to current estimated costs of manual data gathering systems) 	<ul style="list-style-type: none"> ○ Will deliver national estimates that integrate EU ETS and GHG emissions to provide more accurate national emissions data, show clearly the contributions of non EU ETS sources and provide better support Climate Change policy making. ○ Significant indirect savings to industry may result from their improved awareness of resource use and emissions.
<p>Option 3b: Introduce additional guidance to enable streamlined Industrial Installation reporting and greater availability of facility level data in National GHG and air pollutant Inventories</p> <p>(Earliest introduction 2010/14 and on)</p>	<ul style="list-style-type: none"> ○ €6.2M Development cost (spread over the initial 2 years) (Including €3M to MS Competent Authorities in developing EU ETS AER and E-PRTR systems and €2.6M costs to Industry for adapting to the for more detailed reporting under E-PRTR). ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €2.1M/yr (for industry to resource more detailed reporting). 	<ul style="list-style-type: none"> ○ Improved transparency for GHGs and APs between EU ETS, E-PRTR, and IPPC; enabling analysis of overall performance of industry and trade-offs and co-benefits of environmental action to assist better regulation and policy making. ○ Provides more accurate AP and GHG data for national inventories that use facility/installation specific data to support policy making and messaging to the public. ○ Significant indirect savings to industry may result from their improved awareness of resource use and emissions.

⁴ Some reporting activities may be biannual; costs have been annualised (e.g. 500,000 over 2 years = 250,000 per year)

<p>4: Following on from Option 2 and 3b to harmonise emission data flows to deliver national and facility level data suitable for use with a single information reporting tool/platform.</p>	<ul style="list-style-type: none"> ○ Development cost: €9.9M (spread over the initial 2 years) (Including €4.3M for MS developing EU ETS/E-PRTR AER systems and €2.6M for E-PRTR industries gearing up for detailed reporting, and €1M for national inventory systems and €2M for developing better national methods). 	<ul style="list-style-type: none"> ○ Significantly improved data flow into national inventories and from facility/installations. ○ Provide platforms that will provide easy access to data for analysis of the overall trade-offs and co benefits of environmental action, further better regulation and policy making, and enable more effective messaging to the public.
<p>(Earliest introduction 2012/14 and on)</p>	<ul style="list-style-type: none"> ○ Maintenance cost of €2.4M/yr (Including €2M/yr costs to Industry for more detailed reporting under E-PRTR and IPPC and €0.25M/yr for national projections integration). (Includes annual €0.9M/yr saving for improved national reporting and facility/installation level data management.) 	<ul style="list-style-type: none"> ○ Specific benefits include improved data quality, speed of compilation, and accessibility through integrated data flows.

Detailed proposals by instrument

The options listed in Table 1 are sets of actions drawn from a pool of recommendations that address the reporting problems and issues identified. The actions, tailored to particular instruments, include the amendment of specific articles and the introduction of additional guidance; new requirements have been recommended where they will improve policy cost effectiveness. These are:

Monitoring Mechanism Decision:

- Improve the detail of instructions given for compilation and reporting of PAMs and projections to ensure that compilation and reporting is consistent with PAMs and projections compilation and reporting under the NECD by ensuring similar reporting deadlines and the same use of scenario definitions, years to report and underlying economic and demographic models;
- Remove redundant reporting requirements for data that is not used or indicators that are difficult to calculate;
- Provide methodology guidelines for reporting - building on existing initiatives (EMEP/EEA Guidebook, MM Working Group II and CAFE WGI recommendations (CAFE 2006));
- Introduce revised templates/tools and reporting/publishing systems for projections and PAMs reporting that can also be used by the NECD;
- Strengthen the requirement to use industrial facility/installation data in the completion of national inventories (e.g. from EU ETS/E-PRTR/LCPD/RECAST) as the basis for estimating (or as a minimum to verify) emissions for key energy and industrial process sectors;
- Strengthen requirements for the use of national statistics and statistical techniques in inventory compilation;
- Ensure that (where feasible and where it does not compromise quality) the same underlying activity data is used for MM and NECD reporting;
- Reinforce clarity and link terminology and nomenclature across instruments by explicitly referring, in the MM, to the EMEP/EEA Guidebook for particular methods and good practice in inventory compilation for indirect GHG⁵ needed to ensure the alignment of definitions, procedures, and tools used;
- Harmonize the templates/tools and reporting/publishing systems to be used with the NECD (Historic Emissions, PAMs & Projections);
- Enable once only reporting of indirect GHGs (SO₂, NO_x and NMVOC) – either under the CLRTAP or NECD.

NECD:

⁵ Although the MM refers to the IPCC and the IPCC refers to EMEP/CORINAIR already, it is recommended that the link is reinforced with a direct reference.

- Improve the detail of instructions for compilation and reporting of PAMs and projections. Develop guidelines and methodologies for transparent, complete, comparable, consistent and accurate reporting of projections and PAMs - building on existing initiatives (EMEP/EEA Guidebook, MM Working Group II and CAFE WGI recommendations (CAFE 2006)). To ensure that compilation and reporting is consistent with PAMs and projections compilation and reporting under the MM by ensuring similar reporting deadlines and the same use of scenario definitions, years to report and underlying economic and demographic models;
- Harmonize the templates/tools and reporting/publishing systems with those of the MM.
- Strengthen the requirement for the use of industrial facility/installation data in the compilation of national inventories (e.g. from EU ETS/E-PRTR/LCPD/RECAST) as the basis for estimating (or as a minimum to verify) emissions for key energy and industrial process sectors.
- Strengthen requirements for the use of national statistics and statistical techniques in inventory compilation.
- Ensure that (where feasible and where it does not compromise quality) the same underlying activity and facility/installation level data is used for MM and NECD reporting;

EU ETS:

- Improve the centralisation of non-confidential data from EU ETS Annual Emissions Reports for use in national inventories, development of indicators and to compliment data on other environmental impacts for the same installations (e.g. non GHG emissions reported under E-PRTR).
- Require unique identification of installations so that they can be linked to other reporting and regulatory systems (e.g. IPPC/RECAST & E-PRTR) as well as owning companies.
- Include additional activity definition detail in AER reports so that process and fuel combustion emissions can be separated according to IPCC categories and aligned with national inventories.
- Harmonise operator reporting formats and tools between EU ETS, E-PRTR and RECAST.

E-PRTR:

- Additional guidance and good practice could be developed to stimulate Member States to:
 - Provide clearer and unique identification of facilities (by sub installation where possible) so that they can be linked to other reporting and regulatory systems (e.g. IPPC/RECAST & EU ETS) as well as owning companies.
 - Include additional activity definition detail in E-PRTR reports so that process and fuel combustion emissions can be separated according to IPCC CRF categories, aligned with national inventories and cross-compared with relevant EU ETS based activity data.
 - Strengthen the gathering of activity data for installations not included under EU ETS.
 - Include provisions to enable the handling of confidential data by the Statistical Agencies to enable improved checking, verification and integration of E-PRTR data into national inventories.
 - Harmonise Operator Reporting formats and tools between EU ETS, E-PRTR and where necessary RECAST/IPPC national reporting.

IPPC/RECAST

- Additional guidance and good practice could be developed to stimulate Member States to:
 - Use permitting by competent authorities to collect annual emissions data for installations and pollutants not included under E-PRTR or EU ETS which could be used in national inventories.
 - Improve the flow of information required in permit conditions or as a result of monitoring of emissions for use to derive country specific emissions factors for national inventories and to underpin projections (e.g. plans on improvement programmes and uptake of BAT by installations).
 - to lay down in IPPC permits Reporting formats and tools which allows for the harmonization and streamlining of data from sites within EU ETS and E-PRTR.

The recommendations also include an option to develop a new Reporting Instrument for Air and Climate Emissions. The Instrument could, as a minimum, specify the reporting requirements for emissions related datasets managed by MS and needed by the EU and MS for policy development and reporting to the UN. While it is not envisaged that a reporting instrument would replace all of the requirements of the MM, NECD, EU ETS, E-PRTR or IPPC, the relevant emissions reporting requirements (and permissible methodologies) could be grouped together in an instrument with requirements governing data flows, data quality, temporal and spatial information, and allowing for maximum re-use of data. In the absence of such a single instrument which would require significant legislative changes and further assessment, other options (see above) have been explored to deliver the streamlining of data and information reporting under the various pieces of legislation considered in this project.

Costs of reporting and the impact of the proposed options

Published information on the current costs of emissions reporting is poor so the country enquiry was used to estimate the current costs of those elements of reporting that are affected by the proposed streamlining actions. This 'base case' was then used to assess the cost impact of the streamlining options. The base case included only the direct costs of the compilation and reporting of emissions data and excluded the costs of gathering and preparing any background statistics, industrial measurement programmes and/or installation monitoring used for country specific emission factors, and IT systems. Based on this sparse information a conservative estimate of the current annual cost for the EU 27 MS, industry, and the European Commission/EEA of reporting to the MM, NECD, E-PRTR, EU ETS and the LCPD is of the order of €180M; the most substantial component of this being the cost to industry of reporting to the EU ETS and E-PRTR.

The evidence of: the Country Enquiry Questionnaire⁶ reports of the days spent by MS (excluding facility operators) for LCPD, MM and NECD; information from EU ETS studies; and an expert estimate for E-PRTR; suggests that each MS employs on average ~10 person/years to compile and report under all instruments. Based on this reference, the costs to the European Community (as a whole) of the additional actions needed to enable the better integration of national inventory systems could vary from €0.6M – €9.8M to implement (a maximum investment of 6% of current costs) and €0.03M - €2.4M/year to operate (a maximum additional annual burden of 1.5% of current costs). These are the estimated additional costs of revised requirements related to monitoring, reporting and verification - not the overall burden of reporting regulations overall. The direct savings are difficult to estimate since some countries have already introduced some of the streamlining measures proposed.

⁶ In view of the very limited number of responses to the questionnaire, the estimations made in this section should be used with caution. Further investigations would be necessary to better estimate the costs to MS and industry due to the implementation of the reporting requirements considered.

1 Project Background and Methodology

1.1 Context

The concentrations of greenhouse gases (GHG) in the atmosphere are increasing due to human influence; GHG are probably contributing to climatic change (CC) and extreme weather events with a significant economic impact. At the same time air pollution (AP) is damaging the health of hundreds of thousands of Europeans every year. In the longer term the environmental and social cost of inaction is likely to exceed that of timely and targeted action.

The United Nations is looking to enhance the implementation of the Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. A number of other important environmental policy instruments are also in the process of revision; these include the United Nations Economic Commission for Europe (UNECE) Gothenburg Protocol and the European Union (EU) National Emission Ceilings Directive (NECD). The adoption of aligned multi-pollutant multi-effect policies should ensure, in future, that these instruments work more effectively together. The need for such policies follows from the fact that many sources emit both GHG and AP, and that some substances act in both fields at once, CO and CH₄ for example, contribute to the formation of tropospheric ozone and fine particulate matter - which can have a cooling or heating effect depending of its nature. Tough decisions and significant investments are needed to reduce emissions of both GHG and AP in way that achieves environmental protection goals at minimal costs.

The current EU suite of legal instruments used to regulate GHG and AP emissions have a variety of complex monitoring and reporting requirements that were not specifically designed to be used together and which are becoming increasingly less well suited for future needs - consequently several are scheduled for review. Any revision, however, would have to follow the guiding principles of the Sixth Community Environment Action Programme (6th EAP) and the EU Sustainable Development Strategy. One of the main requirements is to ensure the achievement of environmental improvements while, at the same time, ensuring cost-effectiveness and encouraging technical innovation within the context of the 'Better Regulation' framework.

1.2 General Approach

The project had a number of tasks that, in accordance with the European Commissions Impact Assessment Guidelines⁷ (IAG), identified the problems stakeholders encounter when reporting emissions of GHG and AP, set out the objectives to be achieved when solving them, generated the policy options available to streamline reporting, collected the preliminary information needed to indicate their likely impact and made recommendations. These stages are illustrated in Table 1.1.

Table 1.1: Key analytical steps in impact assessment

IAG step	Interpretation in the context of the streamlining project	Report section
1. Identify the reporting problems.	These include, for example, inconsistencies/differences at various levels, timeliness and completeness of reporting, and data quality etc.	Section 1.3, 2, 3, 5.1
2. Define the	The objectives of the streamlining study include:	Section 5.2

⁷ IAG – the Commission Impact Assessment Guidelines, SEC (2005) 791, 15 June 2005. The IAG should be used for all proposals for any major revisions to instruments that are likely to incur a cost.

objectives.	<ul style="list-style-type: none"> ▪ Ensuring that data of adequate quality (Transparent, Complete, Consistent, Comparable and Accurate) is reported to enable policy development, implementation, and monitoring ▪ maximising efficiency so as to reduce the administrative burden on MS, the Commission and Industry 	
3. Develop streamlining options.	Streamlining policy options include amending the provisions of the Monitoring Mechanism Decision No 280/2004/EC (the MM), the National Emission Ceilings Directive (NECD) 2001/81/EC and other linked instruments.	Section 6 – drawing on section 3.2, 4.3 and 5.3
4. Analyse their impacts.	Estimate associated costs and other implications for industry, MS and the Commission	Section 6.1 – drawing on section 4.1
5. Compare the options.	On the basis of the costs information available ⁸ .	Section 6
6. Outline policy monitoring and evaluation	Not part of the project scope	

The proposals, in addition to following the IAG were designed to be consistent with the Information for Spatial Information in Europe (INSPIRE) Directive and the Shared Environmental Information Systems (SEIS) initiative – see Appendix 1.

The work was divided into 6 tasks:

A – To identify the problems

Task 1 – Review the existing emissions reporting instruments⁹ listed in Appendix 2 – Table A.2.1 by:

- a) Detailing the operation of the current reporting system for emission inventories, policies and measures (PAMs), and projections, as they relate to CC, AP, and other relevant policies - including the INSPIRE and SEIS initiatives;
- b) Identifying the reporting obligations, the resulting burden and administrative costs for industry (including small and medium sized enterprises), MS, the Commission, its agencies, and other stakeholders.

A background report (see Annex B) was prepared that explored synergies and highlighted major differences between the various pieces of legislation while taking into account other relevant work (e.g. European Environment Agency (EEA) work on streamlining, revision of National Emission Ceilings Directive 2001/81/EC, Integrated Pollution Prevention and Control Directive 2008/01/EC (IPPC) and EU Emissions Trading Scheme (EU ETS) directives) – extracts from the background document are included in this report.

⁸ The streamlining options derived during the project include proposals to amend existing instruments and to develop new instruments; a full impact assessment of proposals was beyond the scope of the work.

⁹ Monitoring Mechanism (MM) Decision No 280/2004/EC & Implementing Provision (Commission Decision of 10 February 2005); National Emission Ceiling Directive (NECD) Directive 2001/81/EC; Reporting under the United Nations Framework Convention on Climate Change; Convention on Long-range Transboundary Air Pollution; EU Emissions Trading Scheme Directive 2003/87/EC; Proposal for a Directive of the European Parliament and of the Council on industrial emissions - incorporating: Integrated pollution prevention and control (IPPC) Directive 96/61/EC, Large combustion plant (LCPD) Directive 2001/80/EC, Waste Incineration Directive 94/67/EC (WID) and VOC Solvents Directive 1999/13/EC; European Pollutant Release and Transfer Register Regulation No. 166/2006; Fluorinated gases: Regulation 842/2006; CO2 from new cars: Decision No 1753/2000/EC; Fuel quality directive 98/70/EC, petrol and diesel fuels; Sulphur content of fuels, Directive 1999/32/EC; EU Directives adopting Aarhus Convention's requirements: 2003/4/EC, 2003/35/EC.

Task 2 – An investigation should be undertaken of MS to determine their progress with streamlining their emissions, PAMs, and projections reporting. This is to be undertaken by visiting at least 12 MS and by questionnaire for the rest. This enquiry should be used to explore how reporting is undertaken, the databases and tools used. Best practices and reporting problems should be noted and suggestions made to assist countries further develop and improve their reporting practice. Following the work a report should be produced with recommendations for each country (see Annex B).

A questionnaire, sent to all MS, visits to 12 countries, and two workshops (held under Task 5) were used to explore (see Appendix 3 and 4):

- How MS inventory system are organised and how data is used;
- The initiatives MS have introduced to make the process work most effectively;
- What is not working well and any streamlining issues/barriers;
- MS suggestions for streamlining; and
- Current best practice.

B – To propose solution

Task 3 – Develop recommendations for the revision of the MM and its implementing provisions and examine the range of options (and associated costs) for integrating the monitoring and reporting obligations of the MM and the NECD. Our approach to this work was to conduct a detailed analysis of the problems encountered by users of the MM, its implementing provisions, and related instruments, the findings for the MM and NECD were used in the first workshop to develop a list of problems and potential solutions that was then translated into options for amending specific articles in the MM. These proposals were presented to MS in the second workshop and refined in the light of discussion and feedback.

Task 4 – On the basis of Task 1 and 2 propose an action plan/roadmap of suggestions and actions to improve and harmonise reporting under other emissions reporting legislation, if necessary highlighting where there would be advantages in revising instruments and the likely impacts if they were.

A Strategy Paper was prepared for the May 2008 Workshop, which introduced the concept of streamlining, an analysis of the known problems with the reporting instruments and the processes by which they might be amended. A Discussion Paper was prepared for the January 2009 that set out streamlining options and an action plan (with an associated roadmap) for their adoption. The Discussion Paper forms sections 5 and 6 of this report.

C – To implement actions

Task 5 – Workshops held in May 2008 and January 2009 played an important part in identifying reporting problems, clarifying our understanding of national systems, specifying the solutions needed, refining problem solving options, and enabling the spread of best practice (see Appendix 4). They were also invaluable for informing MS of the progress of the work, collecting information, confirming or correcting the information collected, and consulting on streamlining proposals – reports of the meetings are included in this report.

Task¹⁰ 6 – The project team attended a number of meetings to explain the project, present the streamlining options for emissions reporting, and to seek further information from MS. Meetings have been held with WG I, II, and III, and the United Nations Economic Commission for Europe (UNECE) Task Force on Emission Inventories and Projections; several meetings have been held with the Commission. In addition a comprehensive stakeholder enquiry was undertaken to

¹⁰ Note Task 6 comprises Task 6, 7 and 8 of the ITT Technical Specification

determine the interests and activities of other groups working with instruments that require the reporting of environmental information.

1.3 Problem Identification

Instrument review and reporting problems

Instrument review

In Task 1 an initial, paper-based comparison was used to identify the linkages between the legal instruments, listed in Appendix 2 – Table A.1.2, that require the monitoring and reporting of emission data. The review took into account:

- The rationale/stimulus for the instrument and its objectives;
- Key data sets and associated reporting requirements - such as the pollutants, the emitting sectors, the spatial and temporal resolution of data, the nomenclature to be used, whether projections and/or policies and measures are to be reported, and whether quality criteria such as uncertainty analysis have been specified;
- SEIS and INSPIRE compatibility;
- The scheduling of reporting;
- How the reported data is processed and used (e.g. published) by the recipient/s i.e. the Commission and others;
- Reporting guidelines and associated tools and aids - such as reporting templates and electronic data delivery;
- Linkages with other instruments, to identify those covering the same pollutants, sectors etc;
- Strengths, weaknesses and problems identified with the instruments, including the findings of any review process/working groups¹¹;
- Any existing data on administrative burden;
- The stakeholders involved in reporting and improving the instruments, including working groups, national contact points etc., who should be considered in the streamlining strategy;
- The existing timetable and process for instrument revision.

Each instrument was examined to see what works well and scores highly against a vision of streamlined reporting that we have named 'Utopia' (see Appendix 3 Figure A.3.1) and what does not work well or scores badly against our reference.

Analysis of instrument linkages

A further feature of the analysis was the identification, for each reporting 'article' of the MM and NECD, of the actual and potential linkages to other reporting instruments. In the stakeholder enquiry (Task 2) an estimate was also made of the benefits and costs, or other penalties, of attempting to fully reconcile reporting requirements between the 'linked' instruments to the point where one or other of the requirements would become redundant and could be repealed, or introducing changes to enable the use of data generated under one scheme (e.g. under the EU ETS) in another (e.g. MM).

The stages of reporting under each instrument are:

- Data collection - this involves recording activity data and developing emission factors, or recording emission data reported by facilities;
- Data compilation and Quality Assurance (QA)/Quality Control (QC) - bringing together data, checking and verifying it (QA/QC);
- Data transmission - preparing and submitting data and written reports to the Commission or to UN Framework Convention on Climate Change (UNFCCC)/UNECE.

¹¹ Including the work of the EEA.

We mapped, for each instrument, the flow of data (activity data, historical spatial inventories, information on policies and measures, and projected emissions), starting from the requirements of each instrument through to the reporting, by the competent authority, to the Commission. The maps – shown in Section 2 to this report - identify the processes, the functional responsibilities (both in practice and in terms of the functions referred to in instruments), and the technical means used (such as the emission factors, IT tools, models, and database requirements).

The data flow maps indicate the ways the information needed for a particular reporting requirement are most easily collected, processed, and reported. The commonalities between instruments in how data is managed offer streamlining opportunities.

Stakeholder enquiry

A large number of stakeholders have responsibilities under the reporting instruments and would be affected by any recommendations we might make. The stakeholders we consulted directly were: the EU MS - on the various aspects of producing, collating and managing the information to be reported; the Commission divisions responsible for each instrument; the EEA¹² - on aspects related to the collection, analysis and dissemination of information; and the Joint Research Centre (JRC) - on how the SEIS principles should be reflected in our streamlining recommendations.

The MS Questionnaire (see Appendix 3) consisted of three parts:

Part A: Explored How the MS inventory system is organised and handles data; the data flows, identified the responsible bodies, and assessed the administrative burden of the 'core' emissions reporting instruments: MM and UNFCCC, NECD and Convention on Long-range Transboundary Air Pollution (CLRTAP), EU ETS, European Pollutant Release and Transfer Register (E-PRTR), and Large Combustion Plant Directive (LCPD). This also involved investigating how the reporting for the instruments link up (see section 2.2 for details¹³).

1. Data flows, responsible bodies, and administrative burden.

The purpose of the first question relating to the data flow diagrams was to understand which data inputs MS use, and how this data is manipulated in order to fulfil the reporting requirements under each instrument. The second part aimed to find out about data management and the administrative burden of reporting under each instrument (in terms of time and costs if such information is available). It was important to distinguish between data collection, compilation, and reporting.

2. Links with other instruments.

The objective was to understand how (well) national systems operate to meet particular reporting requirements under the different instruments. This section asked a series of questions relating to the links between reporting obligations in different instruments. The focus there was on where there are - or could be streamlining opportunities, for example, where there are overlaps or where data collected under one instrument could be used in reporting under another instrument.

Part B: enquired into MS' use of non-emissions reporting instruments; i.e. those instruments that do not generate emissions data sets but which may produce high quality data that may feed into the national emissions datasets.

Finally **Part C:** Streamlining Opportunities asked for countries' experiences of reporting under the various instruments and asked for their views on what could potentially be streamlined and how,

¹² The EEA aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy making agents and the public.

¹³ Data collection, compilation and reporting practice differ between MS. In practice the responsibilities to report emissions under air pollution and climate change can fall to a variety of stakeholders. We developed idealised data flows, between functional entities, for each of the reporting instruments, as a tool for assessing the practice adopted in Member States.

and what, ideally, streamlining should aim for. The project team also asked about MS what works well, streamlining issues and barriers as well as opinions and suggestion for further streamlining.

The list of questions included in the questionnaire is presented in Appendix 3.1.

The **Country visits** to 12 MS explored, first hand, the nature of the collection, processing and reporting of data across the broad range of potential linking instruments. The countries were chosen as representatives of different reporting procedures, and different problems, barriers and opinions. During each visit a representative sample of the competent authorities involved in the reporting process was interviewed on the issues explored using the questionnaire.

The questionnaires and visits were used as the basis of country specific briefs, which were then summarized in the Country Enquiry (see Annex B).

Table 1.2: Member State Enquiry

Member State	Questions answered (out of 18)	Visited
Austria	18	Y
Belgium	18	Y
Bulgaria	-	-
Cyprus	18	-
Czech Republic	9	-
Denmark	15	-
Estonia	18	Y
Finland	18	-
France	15	Y
Germany	18	-
Greece	-	-
Hungary	14	Y
Ireland	13	Y
Italy	18	Y
Latvia	18	-
Lithuania	13	-
Luxemburg	17	-
Malta	18	Y
Poland	18	Y
Portugal	16	-
Romania	16	-
The Netherlands	18	Y
Slovakia	18	Y
Slovenia	18	-
Spain	18	-
Sweden	18	-
United Kingdom	18	Y

Note: Bulgaria and Greece provided no answers to the questionnaires.

Other stakeholders

The European Commission: Responsibility for the legislation listed in Appendix 2, Table A2.1 spans several units. While policies for developing and revising reporting obligations as part of the on-going maintenance of European legislation may vary for specific instruments, the objectives of the Commission in general, are:

- Ensuring the availability of high quality data across all MS, all themes and policy areas, related to emissions to the atmosphere;
- Ensuring consistency between the different datasets delivered to the Commission for each MS separately;
- Ensuring comparability between the different MS for each of the reporting schemes separately;
- Reducing the burden on both the Commission and the MS, both during compilation and reporting of these data on the one hand and during the acceptance (and possibly review) and reporting phases for each reporting instrument.

The European Environment Agency (EEA) has a number of responsibilities and functions directly related to reporting and so have an interest in promoting streamlining:

- The EEA maintains a database of all the environmental reporting obligations of the EU MS (EEA (2007) - EIONET Reporting Obligations Database).
- Data from the MM returns and other instruments is freely available from: <http://dataservice.eea.europa.eu/dataservice/viewdata/viewpvt.asp?id=418> and the Central Data Repository <http://cdr.eionet.europa.eu/>. The EEA GHG data viewers are user-friendly tools that allow visualising and downloading emissions data and graphs related to EU27 countries, for years from 1990. Data viewers are also available for a range of other

instruments such as NECD/LRTAP, EPER, E-PRTR, LCPD datasets. The EEA also prepares an annual report on Trends and Projections.

- The EEA provides conformity and data consistency check services
- The EEA and its Topic Centre on Air and Climate Change, has undertaken a number of activities on streamlining that are relevant to this current study (See References).

DG ENV, the EEA, DG ESTAT and DG JRC have been active in building the INSPIRE and SEIS initiatives. ESTAT – is responsible for the compilation and management of statistical information necessary for the calculation of emissions and projections.

Industry - Information on industrial data and administrative burden was collected from work being carried out by the Commission and in particular the Commission study on EU ETS verification and associated costs.

1.4 Formulating solutions and assessing their impact

The determination of current administrative burden and that of potential changes

In order to prepare a base case against which to assess the impact of streamlining options, the questionnaire and visits were used to estimate the number of mandays and other costs MS currently incur complying with the requirements of reporting instruments. During the country visits a representative sample of the competent authorities involved in the reporting process were interviewed on the nature of the costs currently incurred and the impact of possible streamlining actions.

The streamlining actions explored were changes to the way emissions are accounted for and reported - so the costs taken into account were solely for the additional administrative burden created or saved. The types of activities that were considered included (see section 4):

- Updating inventories;
- Reporting additional pollutants;
- Reporting to different timescales;
- Recalculating historical emissions;
- Adapting to new reporting methodologies;
- Using new reporting tools.

The costs of developing IT systems or other infrastructure etc. that stakeholders might choose to use to implement changes was not evaluated.

Several MS have already developed measures that have reduced the administrative burden of reporting. Initiatives include such things as: integrating systems for data collection, improving compilation and data quality management, inventory improvement programmes, stricter enforcement of standards, better regulatory reporting, and the collection of integrated activity data & emissions data. Some of these actions either already provided streamlining possibilities or would enable them at little or no additional cost.

The streamlining possibilities explored principally concern establishing and maintaining the flow of data between industry (generally regulated industry), MS (including their statistical agencies, Competent Authorities (CA) and national inventory agencies) and the Commission. Costs have been attributed to one or a combination of these three groups. Costs/savings have been separated into the development (D) of data flows and reporting and the annual cost for maintaining maintenance (M) of data flows and reporting activities.

Option impact assessment

Having identified problems and base case costs in Task 1 and 2 it was then possible, in Tasks 3 & 4 to formulate combinations of options to solve the problems that had been identified (see section 6). The likely impacts of the options were compared on the basis of any additional costs incurred, benefits gained or costs reduced.

The nature and the cost of the current and possible future burden of emissions reporting were estimated from studies of costs of the operation of the EU ETS, and the responses to the MS Questionnaire.

1.5 Streamlining Options

The workshops, held in May 2008 and January 2009 under Task 5 (see Appendix 4), played an important part in identifying reporting problems specifying the solutions needed, refining problem solving options, and enabling the spread of best practice. They were also invaluable for informing MS of the progress of the work, collecting information, confirming or correcting the information already collected, and consulting on streamlining proposals.

The main output from the May workshop was a list of the problems MS had experienced in reporting under the instruments and possible solutions. These were developed in structured breakout sessions where the MS were able to draw on the review of the legislation (Task 1), an initial analysis of the reporting problems (described in a Strategy Paper distributed prior to the Workshop), and their own direct experience – see Appendix 4). This analysis provided the material from which the project team developed draft solutions and proposals under Tasks 3 and 4. In addition the initial results of the Stakeholder Enquiry (Task 2) were discussed and countries were able to describe the progress that they had already made with streamlining and learn from each other's experience.

At the January Workshop the project team presented a number of options for using the MM, linked with other reporting instruments, as a tool to assist countries maximize the quality of the national emissions data and the efficiency with which they report them. The workshop provided countries with the opportunity to learn from each other's experience of the streamlining and use their pooled experience to provide advice on fine-tuning the options to minimise the costs and maximise the benefits. Prior to the meeting the attendees had received a Discussion Paper (which described the Options and associated actions) and the Summary Report of the Country briefs. A report of the meeting is included as Appendix 4.

During the course of the work a variety of opportunities have been taken, by the project team, to meet with WG's I, II, and III, and the UNECE Task Force on Emission Inventories and Projections; several meetings have been held with the Commission.

2 Analysis of the reporting Instruments

2.1 Reporting Problems

Background

Several legal instruments require the monitoring and reporting of emission data - see Appendix 2, Table A2.1 -and emission reporting schemes have been developed for:

- Annual reporting of national total emissions of GHGs and several APs; these emissions reporting systems are geared towards showing compliance with internationally agreed emission reduction targets.
- Regular emission reporting by individual industrial facilities and installations¹⁴ in response to legal obligations, either within the framework of compliance with permit conditions and EU sector requirements or as part of EU citizens' access to information or right to know principles.

Two types of emission inventories result - these are based on different principles and perspectives (bottom-up and top-down) and therefore are not always easy to reconcile or compare¹⁵. This arises, in part, as a consequence of the separate developments of CC and AP policies under various Multilateral Environmental Agreements. The various reporting obligations ask for different data at different times and to different specifications and formats, responses are not equally well co-ordinated at country level.

Observations of Similarities and differences between the instruments.

The variety of reporting obligations on industry and MS is illustrated in the EEA reporting obligations database (ROD) and the EEA GHG data viewer¹⁶. The instrument review, as shown in Tables 2.1 and 2.2 below, found numerous similarities and differences - and hence the potential for mismatches - between the MM and the NECD, EU ETS, and the E-PRTR; the various reporting obligations ask for different data at different times and to different specifications and formats.

Potential mismatches exist in their:

- Contents: including "Why"¹⁷ - the chemical and/or physical identity of the pollutant that is emitted; "What" - the (economic and/or societal) activity or sector and fuels that causes the emission; "When" the time dependence of the emission; and "Where" the (geographic) location of the emission;
- Procedures used to calculate emissions and projections, manage information, and collate PAMs.
- Tools, reporting formats, standards and technical IT used to facilitate a smooth data flow between MS and from MS to the Commission.

Despite the differing objectives of the instruments there are sufficient similarities between the instruments that it is likely that correlated information is being requested in different forms, to different time schedules, different spatial scale etc, which may result in interference (noise) and unnecessary administrative burden.

¹⁴ N.B. The terms Installation and facility may not be synonymous. Problems can arise at EU level when we attempt to aggregate installation emission data to facility level. In part this is due to two reasons. Firstly the definitions of installation differ between instruments (i.e. ETS IPPC, and LCP). Secondly there is no traceability of emission point sources across different databases/inventories; these are often hosted at different local/regional/national and EU level (there is no facility/installation/activity European unique identification code).

¹⁵ T. Pulles (2008), Quality of emission data: Community right to know and national reporting, Environmental Sciences, Volume 5, Issue 3, pp 151 – 160

¹⁶ <http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=455>

¹⁷ The substance to be controlled because of its environmental impact.

a) Contents

Pollutants

Most pollutants feature in several reporting instrument, albeit for slightly different purposes or spatial/temporal resolution - See Tables 2.1 and 2.2.

The E-PRTR Regulation requires reporting of the greatest number of air pollutants (Annex II requires reporting of up to 60 if their emission is likely to be above a critical threshold amount), as well as many other pollutants discharged to water and land. The pollutants to be reported under the other instruments are a subset of these 60 air pollutants.

The air pollutants NO_x, SO₂ and NMVOCs are reported under the MM as well as under NECD and CLRTAP (and some or all of these pollutants under IPPC, LCPD, Waste Incineration Directive (WID), or the Volatile Organic Compounds (VOC) Directive).

More specifically:

- **CO₂** emissions are reported under the MM as well as under the E-PRTR and the EU ETS. The EU ETS reported emissions are a sectoral (large industrial/energy user emissions) subset of the MM reported emissions. The E-PRTR reported emissions are also a sectoral subset of national emissions that partially overlaps with EU ETS (for CO₂ emissions from industrial combustion and large EU ETS processes but excluding the 20 MW – 50 MW small EU ETS combustion processes).
- **NO_x** emissions are reported in multiple schemes: MM, NECD, LRTAP, E-PRTR, IPPC and LCPD. The scope of the reported NO_x emissions is not the same for all directives, e.g. the Sectoral boundaries for NO_x emissions are not the same for the NECD as for the IPPC and E-PRTR (which are both an implicit sub-set of national NECD emissions). Also the emissions are not reported in the same registries and inventories.
- **VOC** emissions are reported under multiple schemes: MM, NECD, LRTAP and IPPC.
- **SO₂** emissions are reported under multiple schemes: NECD, LRTAP, E-PRTR, IPPC, LCPD, and WID.
- **NH₃** is required under the NECD, LRTAP, and E-PRTR.

Table 2.1: Comparison of reporting requirements under instruments and their associated guidance documents

	Revision date	Pollutants	Guidelines	Sectoral Nomenclature	Reporting format/template/delivery software	Reporting frequency & deadline	Emission Inventory reports / Registry	Spatial resolution	Activity data	Projections	Describe & quantify PAMs	Data quality (QA/QC, assumptions, uncertainty)
MM ¹⁸	2008	H: 6 GHG + CO, SO ₂ , NO _x , VOC. Pr: 6 GHG	IP; IPCC for inventories + good practice; UNFCCC Reporting Guidelines for National Comms.	H: CRF Pr: UNFCCC 6 sectors	CRF template. Art 3(2) Excel template.	H: annual, 15 Jan. GHG Y-2, AQ Y-2/ Y-3(final). Pr, PAMs: biennial, 15 Mar.	I: National Inventory Report (NIR) R: including ETS Registry	National	Yes, inventories include emissions, activity data & emission factors.	2005, 2010, 2015, 2020 WM, WAM (WOM optional) Projection assumptions & indicators.	By gas & sector; Quantif. 2005, 2010, 2015.	Details of QA/QC, completeness, uncertainty analysis, assumptions.
NECD	2008	SO ₂ , NO _x , NH ₃ , VOCs	For emissions: as for CLRTAP. Nat Prog's: CAFE WG1 Recomm's.	NFR - requested	X, but NFR requested, MS often use CLRTAP template	H & Pr: Annual, 31 December. H: Y-1 (prelim.)/Y-2 (final).	I: X, but most MS submit modified CLRTAP data. R: X	National	X	2010 CAFE Recomm's: WOM, WM, WAM	Adopted, envisaged. Quantif 2010.	EEA 'Status report' on quality of submissions
CLRTAP	- (EMEP Guidelines review 2007-8)	NECD + CO, PM, POPs, HM	EMEP/CORINAIR guidebook (2006) + EMEP (2007) + UNECE (2003) guidelines.	NFR (EMEP reporting template)	NFR reporting template (in UNECE Reporting Guidelines)	H: Annual, 15 Feb; 1980 or 1990 to Y-2.IIR: 15 March.Gridded data: every 5 years (next 2010), 1 Mar.	I: Optional. Proposed to be mandatory under Revised UNECE Rep. Guidel's.	National + Facility (large point sources, every 5 yrs).	Large point sources; energy use; livestock.	2010, 15, 20: Projected activity data & National totals SO ₂ , NO _x , NH ₃ , VOCs.	X	RepDab checking tool & EMEP checks. EMEP/CORINAIR TCCCA. Optional: IIR methodology.
EU ETS	2012 for 2013	1 GHG - CO ₂ (subset of MM)	Monitoring & Reporting Guidance (updated 2007).	ETS-specific - by type of industry/energy generation	Some required formats (Facility level), optional e-template and automated delivery (MS).	H: Annual, 31 March/30 Apr/30 June, Y-1. NAPs: 2004, 2007, 2012.	Registry of CO ₂ emissions per Facility (subset of MM registry)	Facility, per source stream	Related to source streams (emissions), not point sources. Not stored in Registry.	In NAPs, for 2008-2012. Mandatory parameters for NAP.	X	Independent verification of facility-level annual reports. Uncertainty analysis.

¹⁸ NOTE: the reporting under UNFCCC is subset of the MM except for the additional requirement to report Pr and policies and measures annually

E-PRTR	New, no revision specified	60, incl all those under other instr's (6 GHG + air pollutants)	EC E-PRTR Guidance Document (2006)	Facility: E-PRTR-specific, Annex 1. Diffuse sources, e.g. transport: not determined	E-PRTR Annex III format. Electronic reporting of facility level data	H & Pr: Annual, 31 March, H: Y-2 (1st reports 2009, with 2007 data)	X	Facility (large point sources) + diffuse sources at "adequate geographical resolution"	X	X	X	X (No QA/QC, assumptions, uncertainty)
LCPD	Under revision, date not specified.	NOx, SO2, PM	LCPD Annex VIII	LCPD-specific (size/type of combustion plant)	LCPD Annex VIII/B excel template	Every 3 years, 31 Dec. Y-1, Y-2, Y-3.	MS maintain an inventory but only report aggregated summary.	Facility in MS inventory (but National in MS reporting)	X	X	X	

* EU ETS: AER to CA: 31 March. CA to EC: 30 April (booked in registry), 30 June (Art. 21).

KEY (see also Glossary):

Blue font: Specified in the instrument itself, either legal requirements or optional/encouraged.

Orange font: Not specified in the instrument, e.g. only in guidance documents, and/or not legal requirements of the instrument.

H: Historical data

I: Inventory

Pr: Projections

WM: 'with measures' projection

WAM: 'with additional measures' projection

WOM: 'without measures' projection.

X: not required in the instrument

Y: year. Y-1: previous year.

Table 2.2: Pollutants covered by each reporting instrument

F gases = HFC, PFC, SF₆
O₃ depleters = CFCs, Halons, HCFC

	Greenhouse gases				Air pollutants											
	CO2	CH4	N2O	F gases	NOX	VOC	CO	NH3	SO2	PM	Ozone depleters	POPs	Heavy metals	Other EPRTTR substances	Other IPPC substances	
Emissions Reporting Instruments																
Monitoring Mechanism (MM) UNFCCC/Kyoto Protocol	x	x	x	x	x	x	x		x							
NECD CLRTAP					x	x	x	x	x	x		x	x			
EUETS	x															
Regulation 2216/2004 on a standardised and secured system of registries	x	x	x	x												
E-PRTR	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
LCPD WID					x				x	x					x	
Council Directive 1999/13/EC Volatile Organic Compounds						x										
Non-Emissions Reporting Instruments																
F-gases regulation				x												
Ozone depleters											x					
IPPC				x	x	x	x		x	x			x		x	
CO2-emissions of new cars	x															
Fuel quality directives									x							

N.B – the reference to IPPC refers to the RECAST

Sectoral nomenclature

There are two main 'standardised' nomenclatures and ways of categorising sectoral data:

- The UNFCCC's Common Reporting Format (CRF) used for MM and the related Nomenclature for Reporting (NFR), which used for NECD and CLRTAP, form the basis for sectoral categorisation for national inventories, both draw a strong distinction between emissions from the energy use of fuels (sector 1A) and process emissions (sector 2). In addition emissions for agriculture and waste (sectors 4 & 6) explicitly exclude energy related emissions.
- The facility/installation instruments generally aggregate into sectors according to instrument-specific nomenclature based around IPPC, which relates to standard industrial classifications (e.g. ISIC) focussing on the main activity of the reporting facility/installation. Importantly this nomenclature does not explicitly split emissions between energy (e.g. 1A) and process (e.g. 2), resulting in more aggregated estimates and limited comparability with national inventories.

In addition there are a number of other classification systems used to define activities and production/consumption and economic value. These include the NACE/ISIC sector classifications often used for national statistical reporting. These classifications attribute economic value and production/consumption statistics to different sectors. These, sectors are again different from those used for emissions reporting (although there are close similarities to IPPC) and transportation is a key activity that is treated very differently between IPCC/NFR and NACE/ISIC.

Spatial resolution

The spatial detail to be reported varies between instruments. The national inventory instruments (MM, NECD, CLRTAP) focus on sectoral totals for the national areas (although the definitions of these can be different for the different instruments) with the CLRTAP also requiring spatial data on a 50x50km EMEP grid and reporting of Large Point Sources every 5 years. The facility/installation instruments (E-PRTR, EU ETS) focus on reporting of individual facility/installation emissions with similar (but not the same) data collected on the owner/location of the plant.

Activity data

Activity data are required under the MM/UNFCCC, CLRTAP, and EU ETS. The CLRTAP and MM/UNFCCC activity data are for national emissions and includes energy consumption and related variables, transport statistics, livestock numbers, land use data and waste statistics. In addition, and in order to provide transparency, MS national inventory reports (NIR) to the commission and to the UNFCCC invariably include more detail on specific statistics and variables used to estimate the national emissions. EU ETS activity data is provided for the Annual Emission Reports (AER) and are verified by independent verifiers operating under confidentiality clauses for the operators. This data is not made widely available by the operators and often not collected together by Competent Authorities - therefore it has often been difficult for MS to incorporate it into national inventories. There is also a voluntary requirement for E-PRTR reporting to include some facility level employment and general activity data. Theoretically activity data compiled under EU ETS, LCPD and E-PRTR partially overlap (sometimes covering the same operators and activities). However, there is not a complete set of activity data compiled or collated for all installations/facilities reported to the Commission. The voluntary E-PRTR activity data reporting is often at an aggregated facility level without definitions that would allow it to be used to supplement national emissions inventories and improve calculations. The LCPD activity data only covers a limited number of plant and is not reported by all MS. If there was a more consistent flow of activity data to the National Statistical Agencies/Competent Authorities and/or inventory Agencies it would enable much wider use for verifying operator data and improving national inventories

Projections and PAMs

Both the MM and NECD require reporting on PAMs and projections. Similar data is required although the years to report and the reporting timetables are different and the reporting guidelines are not specified. There are currently different timelines for projected emissions under MM and NECD, which results in the underlying projections data not being consistent for each. Fixing (and aligning) these reporting dates would help to ensure that data reported under MM and NECD are comparable and based on the same underlying economic and demographic assumptions. Emissions projections must be reported under the MM and NECD, CLRTAP (every 5 years) and (to

a lesser extent for periodic National Communications under the UNFCCC). No reporting of future emissions or future policies/measures is required under the EU ETS, IPPC or E-PRTR.

b) Procedures

Reporting frequency and deadlines

Across the instruments there are different:

- reporting frequencies, from annual to five-yearly for different parameters; most require annual reporting of historic data;
- timeliness requirements for reporting of final data, from X-1 (previous year) to X-3; and some instruments require reporting of provisional data;
- deadlines for reporting, which are scattered throughout the year.

Institutional Arrangements:

The UNFCCC Kyoto Protocol requires signatories to establish a formal GHG national inventory system. This must specify the legal and formal institutional arrangements for the planning, preparation and management of the GHG inventory. Within these requirements there are minimum standards for methodologies, QA/QC and peer review; these are reviewed at different stages of the Kyoto commitment period.

Emissions estimation methods:

Reporting methodologies for CLRTAP, NECD, and MM encourage the use of similar methods and statistical information (activity data on energy, transport, and livestock numbers) as well as the use of “appropriate” installation/facility level data to improve accuracy and form the basis of country specific emission factors. The IPCC and the EMEP/EEA guidelines/Guidebooks are converging, where possible, on complementary methods for national inventories. Both are based on a set of guiding “good practice” principals that encompass Transparency, Consistency, Completeness, Comparability, and Accuracy (TCCCA) criteria of data quality. In some cases the methodologies require more detail/ or different focus for different pollutants (e.g. NO_x from combustion is much more dependent on combustion conditions than CO₂ and therefore needs to be estimated with more care and be more reliant on measurement data for different types of combustion plant or driving conditions). MS methods for national inventories are expected to adhere to “Good Practice” as defined in the respective IPCC and EMEP/EEA guidelines/guidebooks. Formal reviews under UNFCCC (and checks under the UNECE) verify the compliance of countries with these good practice principles and determine if the data is fit for purpose under the different conventions. For the EU ETS the emphasis is on deriving plant specific emissions using fuel analysis or continuous measurement so that the quality is up to that needed for national and international trading. Reports (AERs) for EU ETS are verified by auditors and detailed methodologies presented in the Monitoring and Reporting Guidelines. E-PRTR requires less stringent methodologies (which are described in the E-PRTR guidelines) – data reported by operators does not have to be verified by third parties. Quality checking is the responsibility of the competent authority in each MS; a second conformity and data consistency check is carried on by the EEA and a validation tool is available for MS's; data quality is considered to be low compared to that from EU ETS and national inventories. Under IPPC MS are left to determine their reporting requirements and standards for emission estimation.

A difficult issue for national methodologies is the inconsistency of emphasis put on the use of facility/installation level data in national emissions inventories. Different MS hold and manage different levels of data collected as a result of their implementation of the EU ETS, WID, IPPC, LCPD and E-PRTR instruments. The current reporting requirements on MS with regard to EU ETS, E-PRTR and LCPD do not provide the detail necessary to set a minimum standard for this data to be used in national inventories. In principle detailed knowledge of site specific emissions will help improve the accuracy of national inventories and provide a valuable source of country specific emission factors. Data associated with EU ETS, WID, IPPC, LCPD and E-PRTR instruments is used to some degree in many MS and its use is facilitated via additional reporting measures imposed by national laws or specific activities in national inventory compilation. In practice, fitting all of the data that exists on registers and in individually agreed monitoring reports consistently into a national emissions inventory is time consuming and fraught with difficulty. Problems arise due to

different sectoral definitions and aggregation of emissions at a facility/installation level, the inability to access and/or reconcile facility/installation activity data with national statistics.

Both the MM and NECD require reporting on PAMs using similar approaches for the quantification of emission reductions (effectiveness) and costs. Currently there are no formal common methodologies and guidance on PAMs for NECD and MM. The EMEP/EEA Guidebook (2009 revision) includes more details on calculating projections of air pollutants; WGII are refining MM PAMs and projections methods and templates. In addition the CAFE recommendations (CAFÉ, 2006) used for NECD reporting form a good additional starting point for guidance on projections. Future refinement and consolidation of methodology and reporting instructions on PAMs and projections for NECD and MM would ensure that PAMs could be developed and used consistently across both instruments.

c) Reporting Formats and tools

Reporting Guidelines

Most instruments have specific reporting guidance/instructions. The MM refers to the UNFCCC requirements with the addition of data for projections and PAMs and indicators. The NECD refers to the CLRTAP reporting guidelines (currently under revision) all the detailed obligations are contained in associated reporting guidelines (these are marked in orange font in Table 4.1 and the instrument reviews); consequently streamlining needs to take account of the possible need to means of revising guidelines as well as instruments.

Reporting format/template/delivery software

Standardised reporting templates and delivery software have been developed for some instruments but in most cases their use is optional. Electronic submission of data is mandatory under the UNFCCC (CRF Reporter), CLRTAP (Repdab checking then submission to Webdab) and E-PRTR (electronic reporting of facility level data). Generic file formats and data structures have been produced that facilitate data exchange but that does not constrain Parties to use a particular tool or service. The CRF reporter (for UNFCCC reporting of annual inventories) has however been developed as a means for supporting the reporting of the detailed data requirements under the UNFCCC (it includes basic data and completeness checks and facilitates upload of the structured datasets). This is also used for MM submissions although the excel spreadsheet outputs are used rather than the xml files by the EU. The important element of this tool is the output xml file and spreadsheets, which could also be replicated using other tools. The UNECE templates are simpler matrices built in excel spreadsheets. These help to illustrate the scope of variables required. Optional alternative flat file formats can also be used for submitting the data as CSV files with a simple "long file" format. Both the EU ETS (MRG 14) and E-PRTR (Annex III) specify reporting formats. Currently the EU ETS does not prescribe a tool or database structure for the collection of this data as the formally required by the EU. The E-PRTR format is replicated into an access database structure which MS are required to complete and a conversion and validation tool that transform data into XML files.

Inventory reports/registries

The MM and EU ETS require MS to keep emission inventories/registries and submit inventory reports. Inventory reports are optional under the NECD and CLRTAP (but proposed to be mandatory under the revised UNECE reporting guidelines). Under the LCPD, MS maintain a plant-by-plant inventory but only report a summary to the EC. In the most recent submissions to the Commission MS reported the results of their plant-by-plant-inventories¹⁹. The Commission may also request yearly plant-by-plant data (for each plant the total amount of energy input by fuel type).

¹⁹ N.B. Reporting is required at different levels: facility, installation, plant, technical unit with specific components (e.g. boilers) and so on; the terminology is specifically defined in the legal text. Unfortunately not all the definitions are full harmonized. Further more in some languages, like French, the words installation and plant will be translated with the same word causing confusion.

Instrument data flow mapping

Several instruments may share the same (or related) generic data; for example, in developing the EU ETS National Allocation Plans (NAPs), MS tend to use information from national statistical offices (projections, trends, new entrants, etc.) as well as facilities' own estimations of future projections and so in the following diagrams these are indicated in the data flow with an arrow into the NAP – even though none of these sources is specified in the ETS Directive.

Table 2.3 provides a summary of generic input data types. Where several instruments use the same data inputs there are opportunities to integrate processes and report under several instruments from a common data pool. The exercise shows the importance of ensuring that Regulated Processes (industrial facility) data is in a form that can be readily used by the other instruments – MM, NECD, and CLRTAP. It also demonstrates the large breadth of data types and large number of source entities involved in fulfilling the reporting requirements of the instruments.

Table 2.3: Description of the generic data inputs shown in the data flow maps

Generic data inputs	Details of the data	Source entities
National statistics – (historical) activity data	Activity data for energy, transport, agriculture, waste sectors; e.g. energy consumed, number of head of livestock.	National Statistical Authority
International Emission Factors (EFs)	Emissions factors derived from IPPC / EMEP/CORINAIR guidance. These are the “default” values; more accurate national EFs may be determined.	Inventory Agency (derived from IPPC / EMEP/CORINAIR guidance)
National EFs	Optional: EFs derived from Regulated Process data, or EFs provided directly by industry. MS may also fine-tune National EFs using data from the non-reporting (facilitating) instruments.	Inventory Agency and Regulated industrial facilities
Regulated Processes data	Facility level emissions and/or activity data, reported under EU ETS, E-PRTR, LCPD (and IPPC in some MS)	Regulated industrial facilities
National plans/programmes	National strategies / policies and measures to reduce emissions of GHG and/or air pollutants	Environment Ministry or similar
National statistics – projections	Projected socio-economic data and activity data (energy consumption etc)	National Statistical Authority

The idealized, reference, data flow maps developed for discussion with MS are shown in Figures 2.1 to 2.6 below. These are based on the linkages identified in the instrument review and from the experience of the project team. Data flows are not prescribed by the instruments and so may vary from country to country depending on the systems they have chosen to use. Nevertheless they represent the essential elements needed to fulfil the reporting requirements of each instrument. Through the questionnaire responses, countries confirmed that the data flow maps are sufficiently representative of the way that data is managed to act as a baseline 'model' for developing streamlining options and as 'tools' to assist countries to deal with all these different obligations and make an analysis of the best way to collect, process and transmit data.

The Key common to all the data flow maps is presented below:

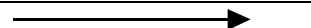


KEY	
	Generic data flow, done by all MS
	Done by some MS / MS could do
Blue font	Who
Orange font	Guidelines/format
EF	Emission Factors
	data not used

Figure 2.1: Monitoring Mechanism

Monitoring Mechanism and UNFCCC National Communications (differences between MM and UNFCCC are noted)

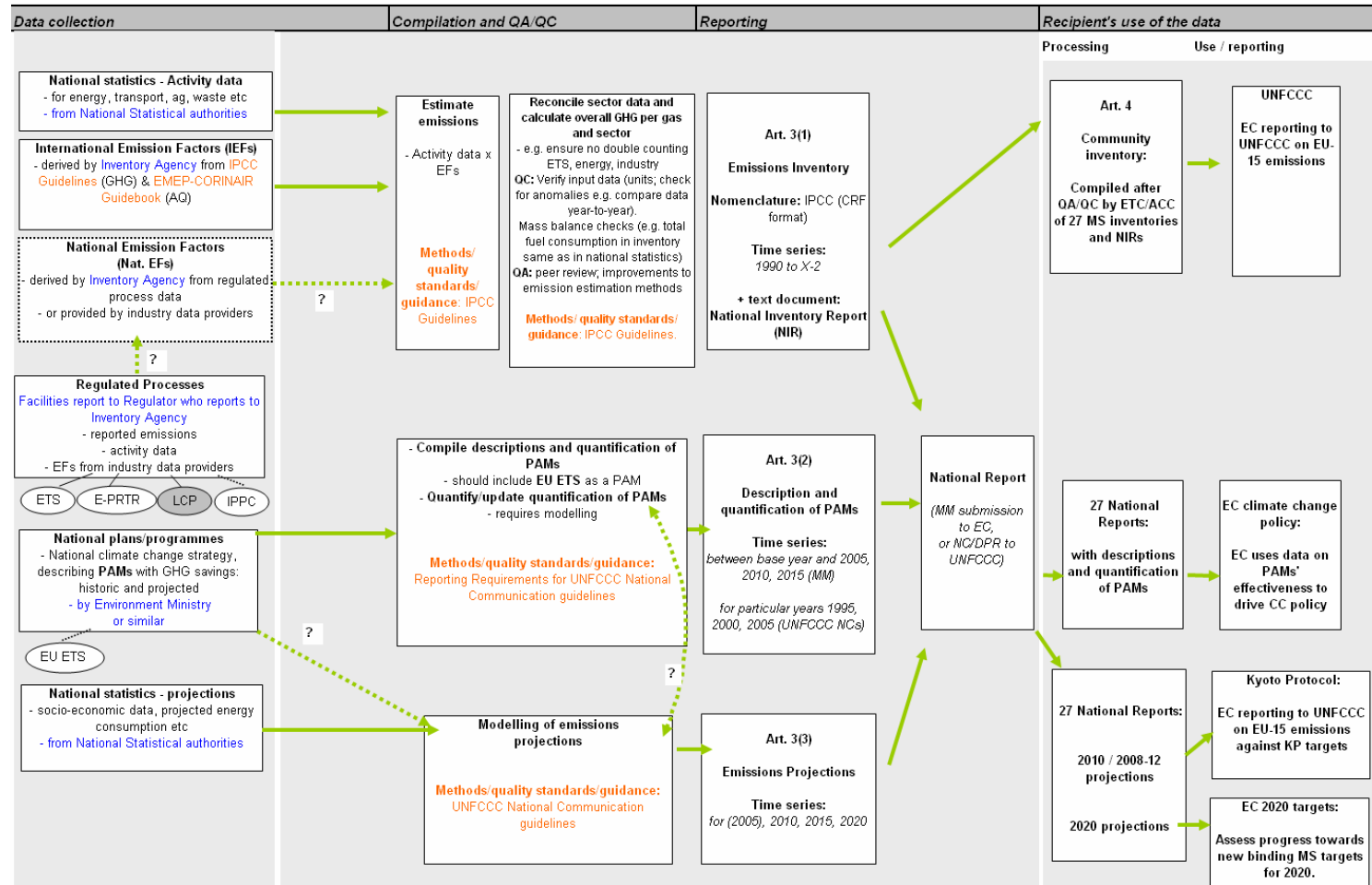


Figure 2.2: NECD

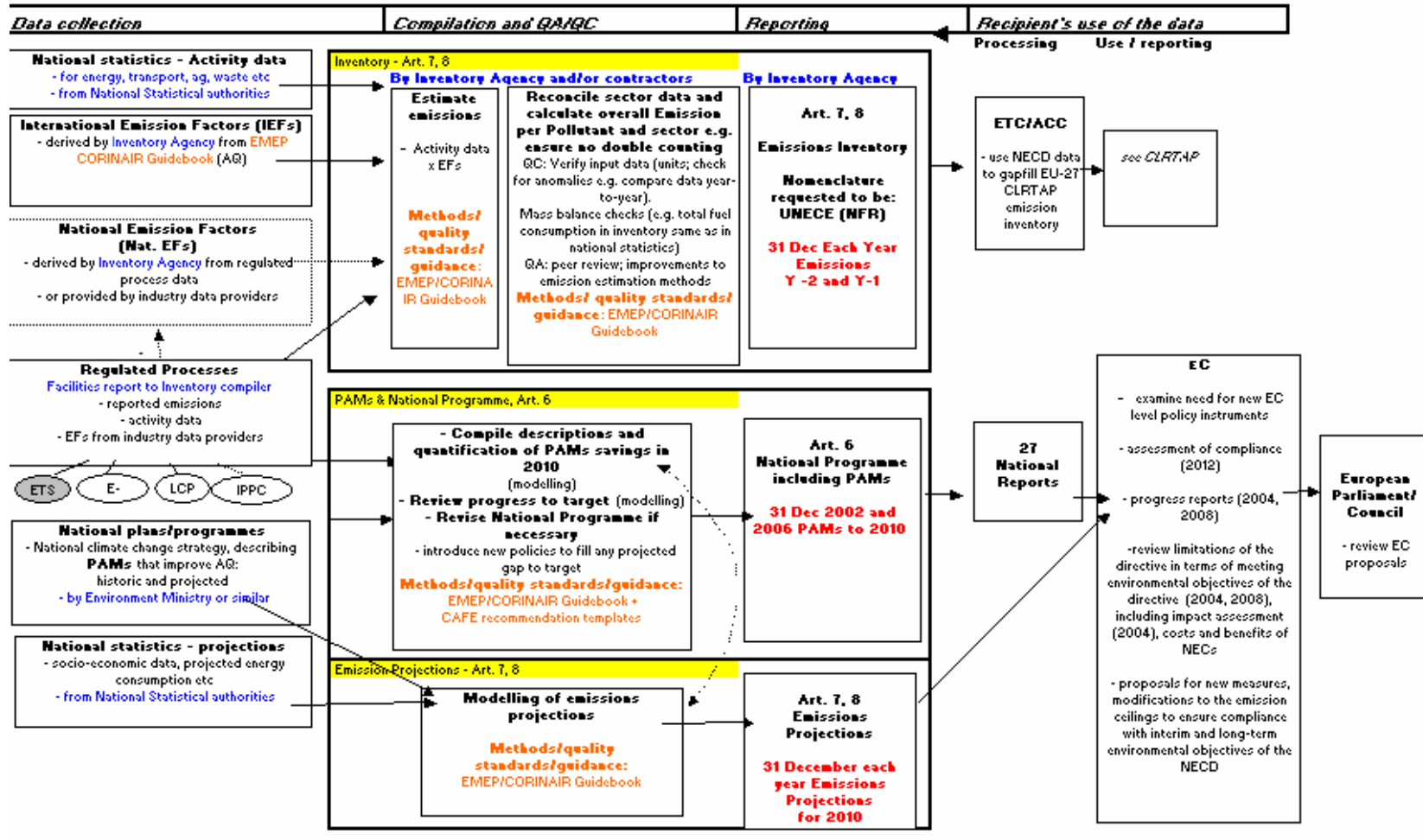


Figure 2.3: CLTRAP

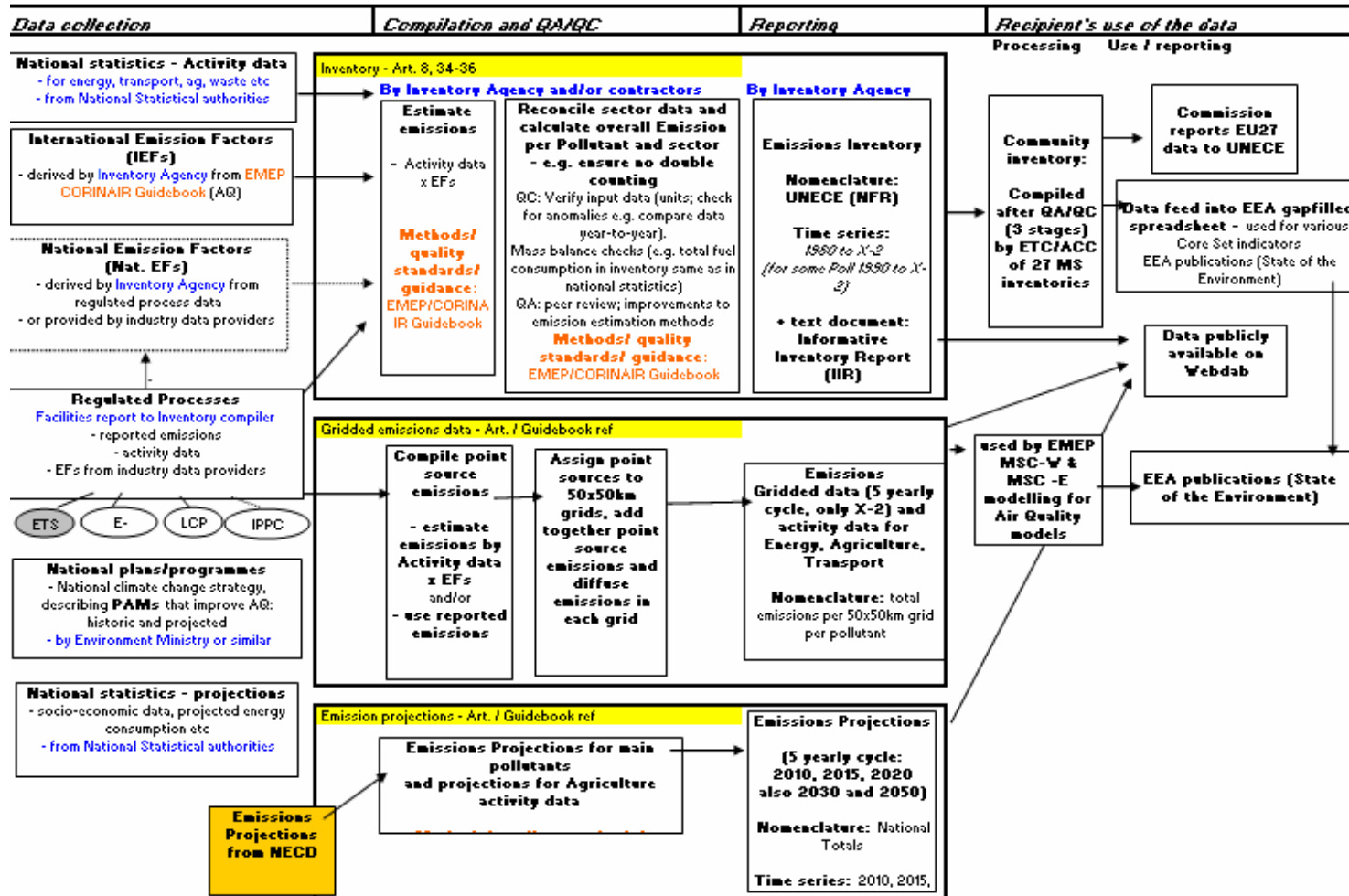


Figure 2.4: EU ETS

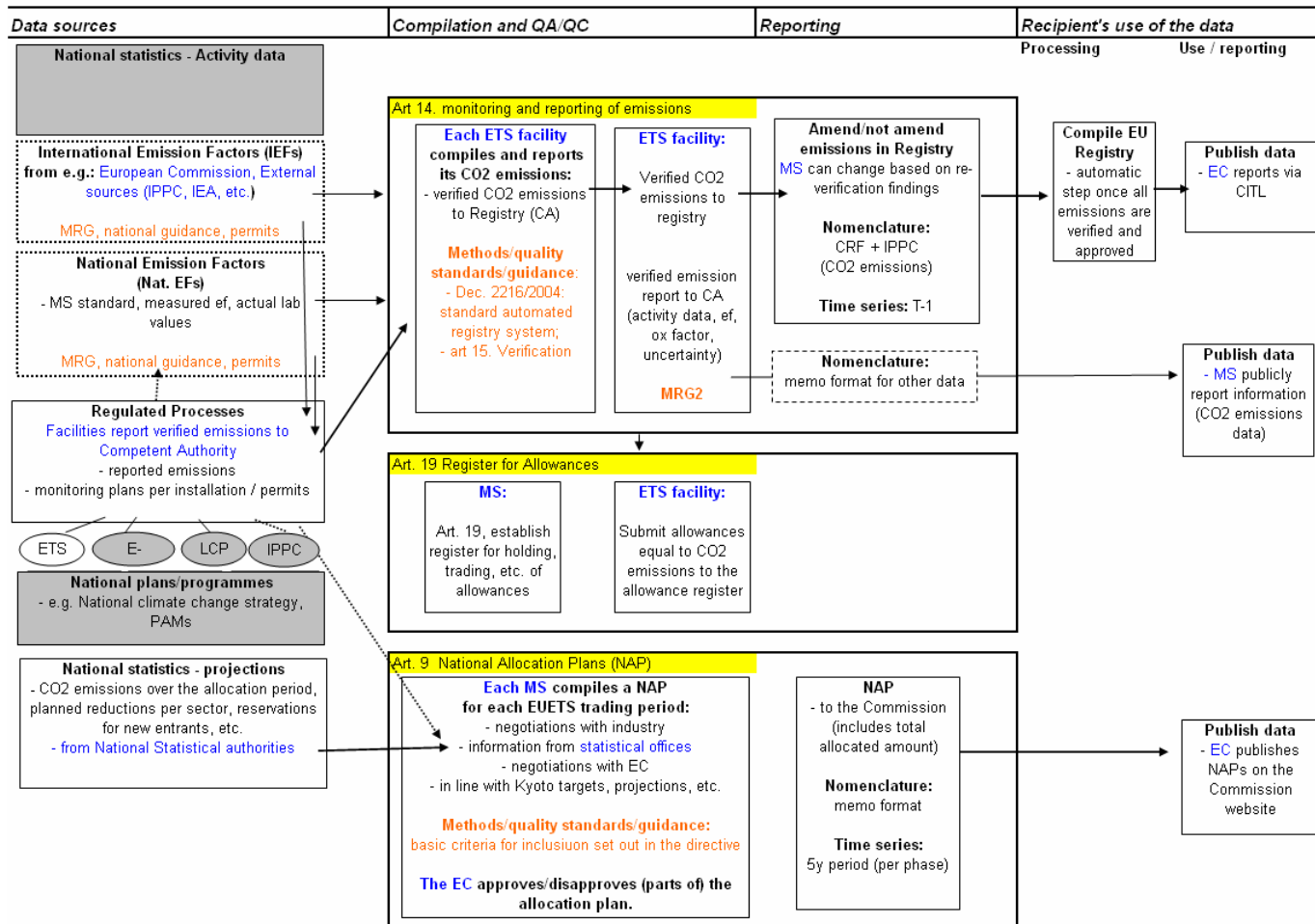


Figure 2.5: E-PRTR

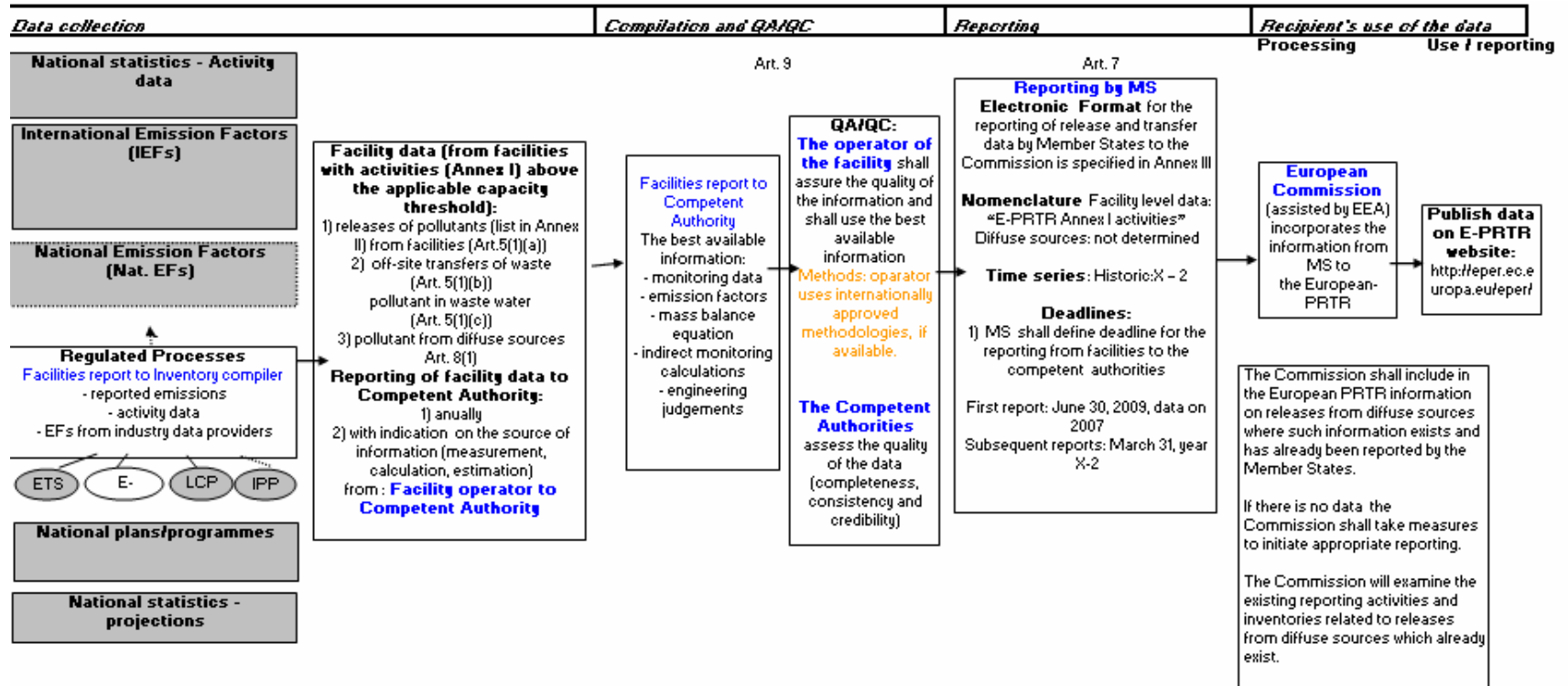
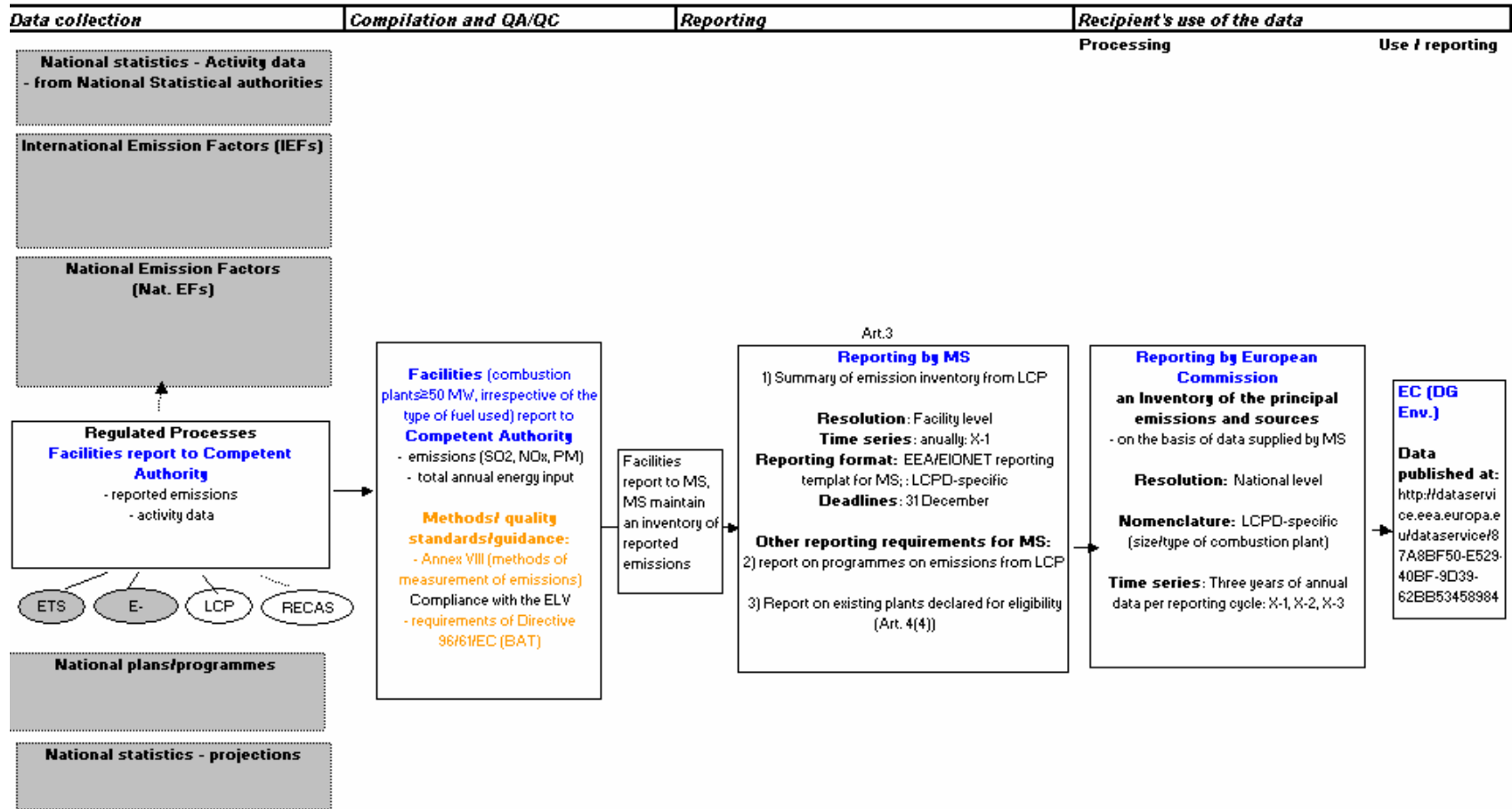


Figure 2.6: LCPD



2.2 Lessons Learned

The review highlights problems of duplicated reporting; a lack of clarity in - and interoperability - between datasets reported; and missing and inaccurate data. A number of lessons can be learned from the review and from the MS feedback; these include the need to:

Develop a common vocabulary: terminology and nomenclature can vary between instruments; the use of standardised vocabulary/definitions for activities/sectors/categories, facilities/installations/sites, pollutants and methodology descriptions should be encouraged where possible²⁰. Improvements should focus on editing reporting guidance and reporting frameworks/forms to ensure the use terminology and nomenclature that is common to all the instruments.

Encourage continuous improvement in data quality and minimisation of overall uncertainties: While data collected for different instruments will have different levels of rigour in its compilation, a common understanding of the quality of datasets is important if pooled data is then used as the basis for policy analysis or public information. More should be done to establish a common approach to developing and maintaining a basic level of data quality and checking - for all reported data - that enables the comparability and consistency of the datasets to be assessed. Closer links between MM and NECD would encourage greater cross checking/verification, and management of national systems would help to facilitate it. Stronger links between the MM and EU ETS that encourage assessment of the EU ETS sectoral contributions to the national MM totals would help to improve the usefulness of EU ETS data, improving cross checking between EU ETS and E-PRTR would improve the compatibility of these two datasets.

Because of the value in providing the appropriate transparency to the data, assessment and reporting of uncertainties is recognised as good practice and should be a requirement of all the reporting instruments – it is for the MM and UNFCCC but not for the NECD and is ‘additional’ (i.e. optional) reporting to the CLRTAP.

MS that generally had the best data quality reports were also those that had greater levels of centralised co-ordination between different instrument reporting requirements

Action is required that will harmonise national reports covering methodologies and ensure the reporting of the assumptions that underpin emissions data reporting.

National Inventory Review is an effective method for ensuring that national inventories make best use of the data available within the constraints of national circumstances. UNFCCC experience has shown that the review needs to focus on key methodological elements that will assure high quality submissions - especially the appropriate use of national statistics and facility/installation level reported data for all pollutant emissions.

Action is required to introduce a process of review, under the NECD, that is comparable to that of the UNFCCC

Strengthen National systems: Data and reporting practice differs widely across the EU. Countries compile and manage data collected under the EU ETS, WID, IPPC, LCPD and E-PRTR instruments at different levels and the responsibilities to report emissions under AP and CC can fall to a variety of stakeholders. The organisational arrangements of a country can impact its ability to present data that is consistent and comparable across instruments; it also affects its ability, in developing its national inventory, to make best use of all available national datasets.

²⁰ Some difficulties and ambiguities were encountered while completing the instrument reviews. For example, it was found that the experts filling in the templates interpreted technical terms (such as “nomenclature” and “indicators” etc) in different ways, even though explanations and prompts were provided in the template. This is indicative of different reporting communities using the terms in different ways.

In the survey most countries agreed that site specific industrial emissions data can help improve the accuracy of national inventories and provide a valuable source of country specific emission factors. While data associated with EU ETS, WID, IPPC, LCPD and E-PRTR instruments is used to some degree in many MS its use is facilitated through additional reporting measures they have imposed by national laws or specific activities in national inventory compilation.

In practice, fitting data that exists on registers and in individually agreed monitoring reports consistently into a national emissions inventory is time consuming and difficult. Problems arise due to different sectoral definitions and aggregation of emissions at a facility/installation level, the inability to access and/or reconcile facility/installation activity data with national statistics.

Action is required that strengthens nations systems by promoting overarching data quality principals, encouraging greater cross checking, and improving the management of national emissions compilation and reporting systems.

Instrument specific lessons and issues to address:

The instrument review exercise identified user's views of the strengths and weaknesses of the reporting instruments (and the MM and the NECD in particular). The outcome of this exercise is shown in Appendix 2, with the initial and detailed findings on the strengths, weaknesses, opportunities and threats focussing on the MM and the NECD in tables A2.2 and A2.3, respectively. These tables have informed the summary of findings in Table 2.4 below and form the basis of our recommendations in Sections 5 and 6 of this report.

Table 2.4: Lessons learnt for streamlining by Instrument

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
<p>MM</p>	<p>MM is a single instrument covering all GHG and all processes including inventories, PAMs and projections (including monitoring of progress to targets). Collated data provides a good overview of emissions trends and important emission categories nationally and at an EU level.</p> <p>MM ensures quality submissions to the UNFCCC.</p> <p>Good methodology documentation from the IPCC, the requirement for a clear methodology and the related UNFCCC review processes ensure that the quality of the data is known and continually improved.</p> <p>Established data flow for reporting.</p> <p>Broadly unified category definitions with NECD and CLRTAP.</p>	<p>Duplication with NECD PAMS and absence of link between data compilation methods and reporting activities between MM and NECD.</p> <p>Inconsistent reporting of PAMs and projections due to lack of guidance and agreed definitions savings calculations, on scenarios, costs base and underlying activity data assumptions.</p> <p>There is no requirement to use detailed EU ETS data and any relevant other facility level data (E-PRTR or annual emissions reports under IPPC/RECAST) in national inventory compilation or verification.</p> <p>It is not possible to drill into the Energy (1A1 & 1A2), Industry (2) Agriculture (4) and Waste (6) categories in the MM to understand the contributions to emissions and trends from permitted / regulated/trading activities (EU ETS and or E-PRTR). Activity/emission category definitions are different between MM and EU ETS/E-PRTR.</p> <p>Different boundaries for some of the same pollutants between MM & NECD/CLRTAP.</p> <p>Overlapping emissions reporting for indirect gases with NECD and CLRTAP (NO_x, CO, SO₂, NMVOC) however national boundary definitions and therefore national totals can be different.</p> <p>Overlapping emissions reporting with F-Gas</p>	<p>Projections and PAMs</p> <ul style="list-style-type: none"> • Estimation and reporting for PAMs and Projections of MM to be made consistent with NECD. Where possible ensuring that the same underlying data is used for projected years for the MM and the NECD and that scenarios are complimentary. • Removing redundant reporting requirements for data that is not used or indicators that are difficult to calculate. • Clearer guidelines for methods and reporting required building on existing initiatives (EMEP/EEA Guidebook, MM Working Group II and CAFE WG1 recommendations (CAFE 2006)). • Streamline MM and NECD (Projections and PAMs) reporting (using common templates/tools and reporting/publishing systems) <p>Methods</p> <ul style="list-style-type: none"> • Use the facility/installation data (e.g. EU ETS/E-PRTR/LCPD/IPPC/RECAST) as the basis for estimating (or at least to verify) emissions for key energy and industrial process sectors. • Improve the integration on national statistics and consistency with NECD. • Use of the EMEP/EEA Guidebook for methods and good practice in inventory compilation for indirect GHGs. <p>Overlapping Reporting</p> <ul style="list-style-type: none"> • Enable once -only reporting for indirect GHGs – these are reported under both the UNECE and NECD (SO₂, NO_x and NMVOC). <p>National Systems</p> <ul style="list-style-type: none"> • Connect and co-ordinate the compilation and reporting of emissions under NECD and MM so consistency and comparability between the reported datasets can be assured and that allowable differences in methodologies/data sources/assumptions for the same sectors are highlighted to policy makers. • Streamline MM and NECD (National Inventory) reporting (using common templates/tools and reporting/publishing systems).

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
	<p>Strong and detailed reporting of complimentary activity data and indicators for historic and projected estimates enabling robust policy analysis at national levels and detailed verification.</p>	<p>regulation and activities under EU ETS and E-PRTR.</p> <p>Process of reporting to the Commission and then the UNFCCC can be confusing, cumbersome and the reporting demands too frequent.</p>	
<p>NECD</p>	<p>It has relatively low administrative burden for MS as the Directive does not require MS to provide a lot of detail.</p> <p>Broadly unified reporting category definitions with MM and CLRTAP.</p>	<p>Duplication with MM PAMS and absence of link between data compilation methods and reporting activities.</p> <p>Inconsistent reporting of PAMs and projections due to lack of guidance and agreed definitions savings calculations, on scenarios, costs base and underlying activity data assumptions. (Although CAFE Recommendations (CAFÉ 2006) go some way to providing guidance).</p> <p>There is no requirement to use detailed EU ETS data and any relevant other facility level data (E-PRTR or annual emissions reports under IPPC/RECAST) in national inventory compilation or verification to ensure consistency and accuracy in emissions estimates.</p> <p>It is not possible to drill into the Energy (1A1 & 1A2), Industry (2), Solvents (3), Agriculture (4) and Waste (6) categories in the MM to understand the contributions to emissions and trends from permitted / regulated/trading activities (EU ETS and or E-PRTR).</p> <p>Different boundaries for some of the same pollutants between MM & NECD/CLRTAP (SO₂, NO_x, CO and NMVOC) as some</p>	<p>Projections and PAMs</p> <ul style="list-style-type: none"> • Estimation and reporting for PAMs and Projections of NECD to be consistent with MM. Where possible ensuring that the same underlying data is used for projected years for the MM and the NECD and that scenarios are complimentary. • Clearer guidelines for methods and reporting required building on existing initiatives (EMEP/EEA Guidebook, MM WGII or CAFE WG1 recommendations (CAFÉ 2006)). • Streamline MM and NECD (Projections and PAMs) reporting (using common templates/tools and reporting/publishing systems) <p>Methods</p> <ul style="list-style-type: none"> • Use the facility/installation data (e.g. EU ETS/E-PRTR/LCPD/IPPC/RECAST) as the basis for estimating (or at least to verify) emissions for key energy and industrial process sectors. • Improve the integration on national statistics and consistency with MM. • Use of the EMEP/EEA Guidebook for methods and good practice in inventory compilation. <p>Overlapping Reporting</p> <ul style="list-style-type: none"> • Enable once -only reporting for indirect GHGs – these are reported under both the UNECE and NECD (SO₂, NO_x and NMVOC). <p>National Systems</p> <ul style="list-style-type: none"> • Connect and co-ordinate the compilation and reporting of emissions under NECD and MM so consistency and comparability between the reported datasets can be assured and differences in methodologies/data sources/assumptions for the same sectors are highlighted making it transparent to policy makers.

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
		<p>territorial restrictions have been applied for NECD.</p> <p>NECD scope (e.g. years to report) for reporting are unclear and can lead to ambiguous reports by MS.</p> <p>Activity data is not required with emissions reporting. However, MS that use their CLRTAP reports for NECD reporting may include relevant activity data.</p> <p>Uncertainties are not assessed or reported under NECD.</p> <p>No provision for a National Inventory Report to be submitted providing transparency to the methods, assumptions and data sources used.</p> <p>NECD inventories are not reviewed annually and the quality of the data cannot be assured. This is currently being addressed through the European Topic Centre on Air and Climate Change.</p>	<ul style="list-style-type: none"> Streamline MM and NECD (National Inventory) reporting (using common templates/tools and reporting/publishing systems)
CLRTAP	<p>Well-established electronic submission process and QA/QC procedures (Repdab).</p> <p>CLRTAP data has a developing review process which provides some assurance on data quality.</p> <p>Detailed reporting Guidelines including templates and underpinning Guidebook</p>	<p>Some variations in categorization of sectors and different boundaries and timescales for reporting compared to NECD.</p> <p>Difficulties with the mandate for reporting and confusion about what “Should” and what “Shall” be reported. Most requirements are met through voluntary reporting (e.g. detailed sectoral emissions).</p>	<ul style="list-style-type: none"> Align the template formats, methodologies etc... of reporting of the NECD and CLRTAP. Allow flexibility for differences in country definitions in reporting. Continue refinement of the EMEP/EEA Guidebook to underpin good practice in inventory compilation. Build on the established CLRTAP review process.

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
EU ETS	<p>for emissions compilation.</p> <p>Detailed monitoring and reporting requirements help to limit uncertainty in data. Monitoring and reporting guidance (MRG) sets a standard for industrial process emissions assessment.</p> <p>Data is generally of high quality due to independent verification.</p> <p>Detailed emissions parameters and activity data are compiled into AERs.</p> <p>Many MS make good use of the background (AER) EU ETS data to improve their national inventories.</p>	<p>There is an overlap between the reporting of emissions and activity data for EU ETS and E-PRTR. Data for some of the same activities is reported into different systems for E-PRTR and EU ETS.</p> <p>The EU ETS systems (which are not always well linked to E-PRTR) require a greater level of reporting detail, however this detail reported in AERs, for some MS, are difficult to get hold of and use for national inventories (due to lack of data centralisation).</p> <p>There is currently a limited involvement of National Statistical Agencies in reviewing and managing EU ETS activity data.</p> <p>EU ETS activities do not separate energy and process emissions within an installations reporting. This makes it difficult to reconcile EU ETS emissions with national emissions at a sectoral level. A number of MS have addressed this through requiring more detailed reporting of emissions and activity data so that the consumption and production of EU ETS installations can be compared with national statistics.</p> <p>There is also limited installation to installation/facility connection between EU ETS emissions and other reported emissions (e.g. IPPC & E-PRTR). This limits the ability of policy makers to assess the Air Pollutant emissions performance of EU ETS installations.</p>	<p>National Systems (Data Quality)</p> <ul style="list-style-type: none"> Review the compliance (strictness of verification, monitoring) requirements. Develop of AER (Detailed) associated emissions parameter systems for EU ETS (which could also be used for E-PRTR). <p>Definitions</p> <ul style="list-style-type: none"> Align the sectoral/activity definitions of the IPCC categories with those used for EU ETS so EU ETS data can be used across different instruments. <p>Methods</p> <ul style="list-style-type: none"> Make the AER data available (including activity data) to national inventory compilers (NECD and MM) Link EU ETS emissions and activity data reports to relevant E-PRTR facilities to help compliment EU ETS GHG data with Air Pollutant emissions.

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
<p>E-PRTR</p>	<p>E-PRTR data is highly visible. The simple procedure (aimed at "publish what you have as soon as you have it") allows very fast publication after the data have been submitted.</p>	<p>There is an overlap between the reporting of CO₂ emissions and (voluntary for E-PRTR) activity data for EU ETS and E-PRTR (Although there are differences in the thresholds requiring reporting). Data for some of the same activities is reported into different systems for E-PRTR and EU ETS causing duplicative effort and potential for confusion about the emissions from an installation /facility.</p> <p>The E-PRTR reporting systems require aggregation of emissions at facility level which combines emissions from different installations and activities/categories/fuels inputs. This makes reconciliation with national statistics and integration or meaningful comparison of the data with national inventories and EU ETS difficult or impossible. It also would prevent any form of future verification for the data.</p> <p>There is currently a limited involvement of National Statistical Agencies in reviewing and managing E-PRTR activity data and only a voluntary requirement for reporting of activity data at an aggregated level. Therefore there is limited scope to verify/check emissions and provide a robust dataset for policy analysis.</p> <p>E-PRTR activities do not separate energy and process emissions within a facility reporting. This makes it difficult to reconcile E-PRTR emissions with national emissions at a sectoral level. A number of MS have addressed this through requiring more detailed reporting of emissions and activity</p>	<p>National Systems (Data Quality)</p> <ul style="list-style-type: none"> Improve data checking and quality of E-PRTR data through better links and access to relevant activity data for E-PRTR facilities (from EU ETS and direct E-PRTR activity data reporting). <p>Definitions</p> <ul style="list-style-type: none"> Align the sectoral/activity definitions of the IPCC categories and those used for E-PRTR. Encourage improved standardised site referencing for E-PRTR facilities and IPCC/RECAST and EU ETS installations so that data can be cross compared on a site by site basis. <p>Methods (Facility level data)</p> <ul style="list-style-type: none"> Collect and make E-PRTR related activity data more available to national inventory compilers (NECD and MM) and able to be aligned with national statistics and EU ETS facilities that are or contain E-PRTR facilities. Confidential data should be reported to the regulator and the Statistical Agencies to enable improved checking, verification and integration of E-PRTR data into national inventories.

Instrument	What works well (Strengths)	Problems (Weaknesses)	Targets for streamlining actions (Opportunities)
		<p>data so that the consumption and production of E-PRTR installations can be compared with national statistics.</p> <p>There is also limited possibility to identify E-PRTR installation/facility releasing beside E-PRTR emissions, other reported emissions (e.g. IPPC & EU ETS). This limits the ability of policy makers to assess the Air Pollutant emissions performance of E-PRTR Facilities.</p> <p>Confidentiality is a barrier to the reporting and exchange of activity data associated with facility and installation emissions.</p>	
RECAST/IPPC	<p>RECAST/IPPC sets the frame for identifying and regulating polluting sources. There are provisions for monitoring and reporting of emissions but much of these are at the regulators discretion.</p>	<p>The role regulation and permitting plays in collecting and delivering better emissions data for important industrial activities is not maximised.</p>	<p>National Systems (Data Quality)</p> <ul style="list-style-type: none"> • Encourage a greater role of emission and activity data from IPPC/RECAST installations in the development of country specific emission factors. • Provide guidance on how to use projected estimates of emissions (through data from permit applications and reconsideration) for national inventory projections. <p>Definitions</p> <ul style="list-style-type: none"> • Align and make more compatible sectoral/activity definitions • Encourage greater linkages for site/facility definitions between RECAST/IPPC permitted installations, E-PRTR facilities and EU ETS installations. <p>Methods (Facility level data)</p> <ul style="list-style-type: none"> • Facilitate harmonisation of data flows and formats for emissions related data for installations/facilities not reporting under E-PRTR or within EU ETS so that different datasets could be compiled and or compared.

3 Stakeholder Consultation – Streamlining issues

3.1 Current levels of streamlining

The level of streamlining achieved (or potentially achievable) in MS and the current level of administrative burden was assessed through the questionnaires, country visits, and the two workshops. This section provides an overview of the current status of emissions reporting in the MS, how it is undertaken, the problems encountered, any actions taken to streamline national systems, and the opportunities seen for further streamlining; a more comprehensive description is given in the report 'Streamlining climate change and air pollution reporting - Country Enquiry'²¹ – see Annex B. The current costs of reporting are more fully described in section 4 of this report.

The questionnaires and country visits showed that:

- All MS use their national statistical data (e.g. national energy statistics) to develop emissions inventories, as a result the emissions reported under the MM are consistent with emissions reported under the NECD;
- Half (~52%) of MS store their emissions data for CC and AP within one system;
- More than half (~60 %) of MS use non-emissions reporting instruments (particularly the F-Gases Regulation) to generate or improve the quality of data relevant for national reporting under the emissions reporting instruments;
- Around 65% of MS use or partly use facility data from other instruments (e.g. E-PRTR, LCPD etc) in reporting under NECD and/or CLRTAP;
- More than 80% of MS report principally the same emissions data under NECD and CLRTAP.
- Around 40% of MS use data or part of the data collected for E-PRTR reporting in the national GHG (MM) and/or AP (NECD/CLRTAP) inventories;
- Less than 40% of MS are able to assign facility level data to the CRF and/or NFR source categories;
- Most (~90%) MS use emission data collected under the LCPD in reporting under other instruments and/or to verify other data in the NECD/CLRTAP inventories.

Most MS use at least some of the data reported under other instruments to compile their NECD submissions including data on boilers, LCPD data, voluntary emissions declarations from industry, E-PRTR, national environmental regulation, IPPC, verified EU ETS data of fuel consumption in power plants. Data is complemented with default emission factors where needed to calculate emissions, replaced by plant specific factors when they become available.

The degree of instrument integration also differs between MS. Figures 3.1 and 3.2 illustrate the level to which specific instrument are integrated into one common data flow - both by country and as an EU average. The results showed LCPD to be the best integrated instrument; the EU ETS and E-PRTR had relatively weak links with other instruments.

²¹ The Country Enquiry report contains country specific descriptions (Country Briefs) of how the current reporting procedures work in MS. More specifically it documents the organisation and tools and databases used within each of the MS to report the required emissions, policies and measures (PAMs), and projections under the different AP and CC reporting instruments. It also identifies the current efforts (or lack of them) by MS to streamline their reporting which have been used to highlight best practice and to identify problems.

Figure 3.1 - Assessment of instrument integration by Member States

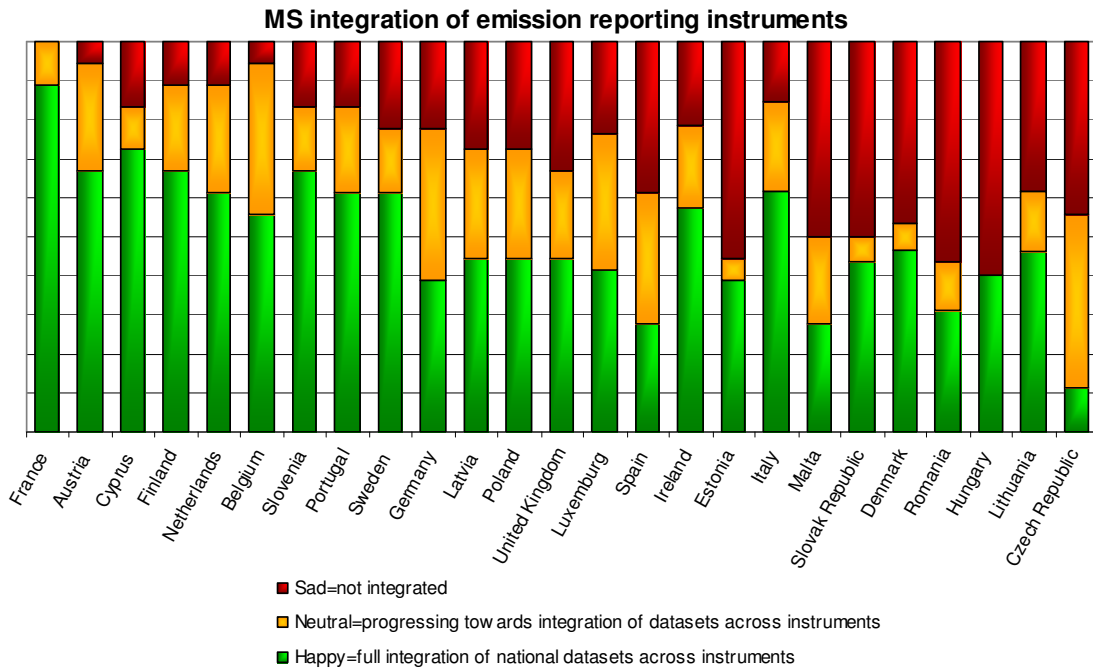
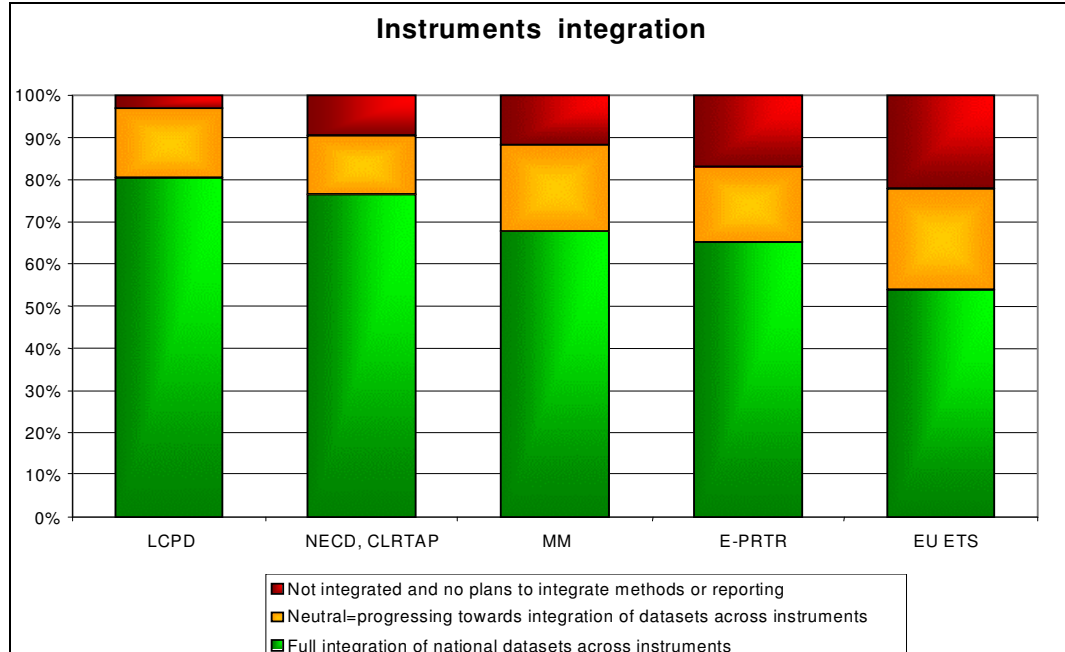


Figure 3.2 - Assessment of instrument integration in the EU



Overall, across all MS and with all instruments considered, a relatively high level of integration of the data flows has already been achieved. For all countries and all instruments more than half of the data collected in one instrument is linked to or re-used in other instruments reporting.

A number of MS are undertaking further actions towards better integration between the data flows for the different instruments. The highest level of linkage between the instruments occurs for the LCPD data flow with almost all countries indicating some re-use of these data in their national level inventories. The lowest level of integration occurs for data collected under EU ETS, although also in this case more than 50 % of the MS re-use these data and another 20 % are making progress towards such integration.

Country practice

a) Data flow integration in EU MS

Many MS have recognised the need for linking data collection and data reporting for the various instruments and many have, in some way or another, connected or even integrated the necessary data flows for several instruments – see Box 1, Table 3.1 and Figures 3.1 and 3.2.

NOTE: Practical details of how MS undertake these activities are given in the Country Enquiry report.

Box 1 – Data Collation and Use

Question	Countries response "YES"	Comments
Do you store all emissions data for GHGs and air pollutants in the one system, or in parallel, interoperable systems	AT, BE, DK, FR, DE, IE, LU, NL, PT, SI, ES, SE, UK	
Do you use data from other instruments (e.g. E-PRTR, LCPD etc) in reporting under NECD and/or CLRTAP?	AT, CY, EE, FI, FR, IT, LT, NL, PT, RO, SI, SE, UK	
Are facility level data collected for E-PRTR reporting used in the national GHG (MM) and/or AP (NECD/CLRTAP) inventories?	CY, FI, FR, NL, SE, EE	PARTLY: AT, BE, IT, LT,
Do you use emissions data collected under the LCPD in reporting under other instruments? e.g. are LCPD facility level emissions data used in the national SO _x and NO _x inventories under NECD/CLRTAP? Do you use LCPD data to verify other data in the NECD/CLRTAP inventories?	AT, BE, CY, EE, FI, FR, IE, IT, LV, LT, NL, PT, RO, SK, SI, SE, UK	
Do you use information from EU ETS returns and monitoring (e.g. plant emission estimates, carbon content factors and stack monitoring data) to improve your national emissions estimates for MM reporting	AT, CY, DK, FI, FR, HU, IE, LV, LU, PL, SI,	

We observed the following:

- Across all MS and all instruments considered, a relatively high level of integration of the data flows has been achieved. For all countries and all instruments more than half of the data collected in one instrument is linked to or re-used in other instruments reporting.
- Most MS use at least some of the data reported under other instruments to compile their NECD submissions including data on boilers, LCPD data, voluntary emissions declarations from industry, E-PRTR, national environmental regulation, IPPC, verified EU ETS data of fuel consumption in power plants. Data are complemented with default emission factors where needed to calculate emissions, replaced by plant specific factors when they become available.
- Some MS have gone one step further in ensuring that the same data forms the basis of reporting – they have developed one inventory system for both air pollutants and GHGs. For example, Estonia uses one database to report to LCPD, EPBD and NECD. France uses one database to compile inventories for all GHG and AP; the Netherlands also uses one database system.
- The highest level of linkage between the instruments occurs for the LCPD data flow. Almost all countries indicate to re-use these data in the national level inventories
- The lowest level of integration occurs for data collected under EU ETS, although also in this case more than 50 % of the MS reuse these data and another 20 % is making progress towards such integration.

Practical Integration of data

Two different connections between emissions reporting instruments are relevant here:

- The relation between the two national level emissions reporting instruments (GHG and AP)
- The use of facility level information in national level reporting

National level reporting

Thirteen MS indicated that they are using one single database system for national level emissions reporting of GHGs and of air pollutants. Since the source categories for reporting the two sets of data have been largely streamlined it would appear to be technically feasible to integrate both data sets into one single database system.

All MS recognise the importance of using the same statistical data to estimate emissions for the two instruments and most have systems in place to ensure that the same data are used for PAMS (Table 3.1)²².

²² Table 3.1 shows that most countries use the same statistical data for PAM's. It is interesting to note, however, that all countries use common statistical data for their emissions inventories and so emissions reported under the MM and NECD should be consistent.

Table 3.1 “Do you use common data (e.g. energy, economic and production projections) and methods (e.g. cost effectiveness and savings calculations) for calculating MM projections and PAMs (as described in the MM submission) and NECD projections and PAMs”

<i>Respondent</i>	<i>Answer</i>
Austria	Yes - we use common statistical data on energy, economic and production projections and methods for calculating projections under MM and NECD. System for PAM quantification still under development
Belgium	Yes - we use common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD. There are some differences in the methods used by different government departments to quantify PAMs under the MM and NECD. A consistent approach could be followed if the methodologies were specified. Flemish region: The department of the Ministry of Environment is responsible for calculating the MM projections and PAMs.
Cyprus	Yes - we use common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD. There are some differences in the methods used by different government departments to quantify PAMs under the MM and NECD. A consistent approach could be followed if the methodologies were specified.
Czech Republic	Yes – in part; currently the Ministry of Environment (Department on Climate Change) has responsibility for GHG PAM + projections reporting (under MM art. 3.2). This Department cooperates with the company ENVIROS CZ to obtain relevant data and information. On the other hand, the Ministry of Environment (Department on Air Pollution Prevention) has responsibility for NECD reporting. As far as we know, some cooperation between both departments mentioned above takes place. For future, more active role for CHMI is planned in order to achieve a higher level of harmonisation between MM and NECD.
Denmark	Yes - official Danish projections of energy, livestock number etc. are used for projection of greenhouse gases as well as projection of pollutants under the NECD. The projections are not always based on the same energy projection, because the need for updated emission projections varies.
Estonia	The system is under development.
Finland	Basically yes. They are mainly based on the UNFCCC/GHG and NEC inventory data. Projections and scenarios are produced in the context of current national climate and energy strategy preparations are reported to each reporting system. In some cases there may be more or less updated scenarios depending on time schedules.
France	Yes, we use common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD. But, supplementary to common scenarios, specific additional scenarios respectively for MM and NECD may be developed.
Germany	Recently the CSE includes mainly information for the inventories starting with different base years up to the most recent year - partly information for projections are included in a consistent manner. In the near future CSE must be extended as a tool for a stringent reporting. Information and results for projections and possible PAM's are coming from single targeted research activities. One major point to solve is: How does PAM's correspond to the inventory world of source categories. Mainly the affect (partly or in total) more than one source category).
Hungary	--
Ireland	Yes - Ireland uses common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD. There are some differences in the methods used by different government departments to quantify PAMs under the MM and NECD. A consistent approach could be followed if the methodologies were specified.
Italy	-
Latvia	Information is different because the time when necessary to report relating projections and PAMs under NECD and MM is different. If the time periods for reporting have the same then weren't differences.

Table 3.1 “Do you use common data (e.g. energy, economic and production projections) and methods (e.g. cost effectiveness and savings calculations) for calculating MM projections and PAMs (as described in the MM submission) and NECD projections and PAMs”

<i>Respondent</i>	<i>Answer</i>
Lithuania	Different institutions are responsible for different data reporting like one is responsible for GHG inventory other one for NECD and CLRTAP. Therefore different methods are used but the same primary data from statistic department, as this institution is responsible and collects data from all Lithuania
Luxemburg	NA - so far, we only started with GHG projections but, since there is only one inventory unit in Luxembourg for GHG and NECD/LRTAP reporting, it is pretty clear that we will, as far as possible, use common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD.
Malta	To date, these functions are carried out separately for the MM and NECD, on an ad hoc basis as per requirements; however the same basic data (ex energy demand projections) is used in all requirements. Though development of a structured system to calculate projections and draw up PAMs is still in its infancy, it is our aim to try to integrate as much as possible the requirements under the MM and the NECD within one system, which would base projections and development of PAMs on common data sets. This will ensure consistency and reduce resource requirements by avoiding double-work where possible.
Netherlands	Yes, we use common data from statistical agencies. There are differences in sectoral divisions between national projections and IPCC categories: some corrections and shifts need to be made to fit with IPCC categories, if needed.
Poland	Yes, we use common statistical activity data and methods for calculating projections and PAMs under MM and NECD. There can be some methodological differences in preparing activity data by different government departments between projections and PAMs.
Portugal	Yes, PTEN and PNAC use to the extent possible the same activity rates, as well as the same scenarios and methods, in order to ensure national coherence. - we use common statistical data on energy, economic and production projections (regarding economic growth, energy demand, waste management and agricultural activities) and methods for calculating projections and PAMs under MM and NECD.
Romania	-
Slovak Republic	Yes, Slovak Hydrometeorological Institute - Department of Emissions is responsible also for emission projections of all required air pollutants. The inputs and database (National Emission Information System) are consistent and the coordination of reporting requirement is integrated.
Slovenia	Yes - we use common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD and also use the same methods for evaluation of PAMs. But different methods are used for different sectors.
Spain	Yes - we use, in general, common statistical data on energy, economic and production projections and methods for calculating projections and PAMs under MM and NECD. There are, however, some differences in the methods used by different government departments to quantify PAMs under the MM and NECD. A consistent approach could be followed if the methodologies were specified.
Sweden	Our methods for projections have not been totally consistent for the two purposes, but with start from this year we will use the same data sources and carry out the projections in an integrated manner.
United Kingdom	Yes, common data is used for both the MM and NECD projections. For PAMs, at some points assumptions need to be made for specific policy area (waste, transport, ...), which makes the data sourcing more complex.- STILL AWAITING FULL RESPONSE FROM Defra

Use of facility level data in national level reporting

Many MS indicate they have difficulties in linking facility level data to the source categories as used in the national level reporting. Some MS have found solutions to these problems, mainly by increasing the level of detail in the facility level data beyond what is required in E-PRTR, LCPD or EU ETS (Table 3.2).

Table 3.2 “Do you (or are you currently able to) assign facility level data to the CRF and/or NFR source categories?”

<i>Respondent</i>	<i>Answer</i>
Austria	In principle yes. Only a single NACE code is reported. Some facilities have multiple processes but report only total emissions which can not be separated and allocated to CRF or NFR categories. Data is only used for plausibility checks / verification purposes
Belgium	Walloon region: yes but there are some problems in some sectors as cement plant, lime plant, iron and steel plant where it's difficult to identify the energy part and the process part Flanders: reporting under NFR source categories is done in a more detailed way (SNAP level/installation level) than reporting under PRTR (facility level/all installations of one facility together). It should also be stressed that reporting under E-PRTR only comprises part of the total emission inventory, whereas reporting under NECD or CLRTAP includes all known emissions of the complete emission inventory in the Flemish region. \
Cyprus	We do not assign facility level data to the CRF and/or NFR source categories. That would be useful.
Czech Republic	-
Denmark	-
Estonia	Yes, (PartC, question 1)
Finland	Yes, facility level data is coded into CRF and NFR source categories when the data is uploaded into the inventory databases. For the AP inventories, facility level default emissions are calculated and later replaced by VAHTI data reported by the plants (after QA/QC) when available.
France	Yes, economic activity classification is collected as well, and the different types of equipment of the plant are in general reported separately.
Germany	For EPER data this analysis was tried. The results were plausibility checks for source categories. The calculative sector covering is less useful and not extrapolatable. The data are not proper for inventory estimation.
Hungary	No
Ireland	-
Italy	Activities carried out in the reporting facilities are not given the CRF/NFR source categories, because when the on-line procedure was designed this classification for the source categories was not considered. In the framework of the emission inventory preparation this work is done taking in account additional information requested directly to the operators. Future developments may also include a table of codes which will help querying the data related to the CRF and/or NFR categories.
Latvia	Partly, in energy production and industry sectors
Lithuania	no.
Luxemburg	No.
Malta	At present no. Possibly in the future when an appropriate amount of data has been obtained through the E-PRTR process and in conjunction with other data obtained through other regulatory systems, such as EU-ETS and LCPD, facility level data can be derived for large installations which could be useful for inventory purposes.
Netherlands	Yes, however this is not always possible. A problem is sometimes dividing total reported emissions over combustion and process emissions.
Poland	No, we are not able to assign facility level data to the CRF or NFR either.

Table 3.2 “Do you (or are you currently able to) assign facility level data to the CRF and/or NFR source categories?”

<i>Respondent</i>	<i>Answer</i>
Portugal	We have a set of point sources: 19 electric power plants; 8 paper pulp; 2 iron & steel plants; 6 cement plants; 4 inorganic chemical and fertilizer; 2 oil refineries; 2 chemical plants; 1 flat glass plant. We can use this data because they represent the totality of units in country (top-down=bottom-up)
Romania	-
Slovak Republic	No
Slovenia	Yes – every facility uses SKD nomenclature, which could be easily transformed to CRF or NFR source categories.
Spain	EPER and E-PRTR facilities are well identified and their general facility data (geographical coordinates, main NACE code, etc...) available. Nevertheless, facility EPER data have not been used yet to assign them to CRF or NFR source categories as we generally lacked the relevant information on background data (and even emissions) split by CRF or NFR source categories. As the new E-PRTR extends the collection of background data we will consider, when E-PRTR data be available, the possibilities to use E-PRTR data to assign them to CRF and NFR source categories.
Sweden	Yes it is mainly data we find in the yearly environmental reports
United Kingdom	No. It would be useful but facility level emissions as reported to E-PRTR can not be subdivided into these source categories - operators could report it if required but it is not required.

Monitoring Mechanism and the use of Regulated Processes data: the questionnaire responses showed that most MS make use of some Regulated Processes (industrial facility level) emissions and activity data in their MM inventories. Common uses are to derive National emission factors and in reconciling and verification (i.e. QA/QC) of reported inventory data compared with facility level data. However, some MS do not use facility level data in national inventories, questionnaire responses indicated that this was due to different source nomenclature (either because it is undefined or specific to particular instrument EU ETS, E-PRTR, IPPC, LCPD) and/or the lack of reporting of underlying activity data.

If such barriers were to be removed this would improve the quality of inventories e.g. EU ETS facilities have very accurate emissions by type of fuel used. If MM does not use this ETS data and only uses international Emission factors (EFs) then it is possible that ETS decreasing emissions (e.g. via the purchase of low-carbon fuels) will not be picked up in the MM reported data. The alternative approach is to estimate emissions by using activity data multiplied by emissions factors. These figures then undergo a QC and reconciliation process, to reconcile Regulated Processes data with activity data from National Statistical authorities.

NECD and use of Regulated Processes data: Facility level data are already used to varying degrees in the NECD and CLRTAP (the latter requires point source data in reporting of gridded data; this is not required under NECD, one of the main differences between the two instruments). Emissions inventories are usually shared between (used for both) NECD and CLRTAP reporting and make selective use of emissions reported by facilities under E-PRTR, LCPD and/or IPPC. Although emissions inventories are usually shared between (used for both) NECD and CLRTAP reporting, these are not necessarily consistent if they are updated at different times. Due to the earlier reporting cycle, MS often do not update the NECD inventory with revisions made to the CLRTAP inventory. Table 3.3 presents examples of how MS have solved particular problems in this respect.

IPPC: the data obtained depends on the nature of each MS implementation (transposition) of the IPPC Directive. For example, in the UK, IPPC-permitted facilities are required to report their emissions in order to enable the regulator to compare against permit limits. In other MS there is no requirement for IPPC-permitted facilities to report emissions data.

Table 3.3 Examples of “Good Practice”

<i>Member State</i>	<i>Good Practice Example</i>
<i>Austria</i>	Legal framework: Austria designated a single national entity with the overall responsibility for the inventory preparation (i.e. the Umweltbundesamt in the Environmental Control Act 152/1998). Umweltbundesamt has set-up a National Inventory System Austria (NISA) that makes sure that emission related reporting to CLRTAP and UNFCCC is supported by a common database. This database is also consistent with (includes) reporting to LCP and PRTR.
<i>Denmark</i>	A comprehensive QA/QC system has been implemented for the emission inventory work. Facility data are used extensively in the Danish emission inventory, mostly for reporting under the NECD and CLRTAP but since the implementation of the EU ETS CO2 data from facilities have also been included in the Danish emission inventory.
<i>Finland</i>	MM/UNFCCC and NECD/LCPD/CLRTAP systems use largely the same basic data sources. The results are compared and used for QC and verification. There is a continuous co-operation between Statistics Finland and Finnish Environment Institute to improve the consistency of the reporting including also emission factors, activity data, etc. These institutes co-operate also with the Energy Market Authority to ensure the use of ETS data in the reporting.
<i>France</i>	Data are collected through a specific internet access tool (GEREP). This is a common data collection system used for EPER, PRTR, EU ETS, LCPD, national inventories (GHG and air pollution) and other topics. Validated data (reviewed by verifiers for ETS data, and authorities) are stored in a database (BDREP). This database is used then for the different mentioned instruments.
<i>Latvia</i>	LCPD emissions data we are taking from State statistical survey “2-air”, it is a electronic data base where Regional Environmental Boards input air emission data from facilities. Emissions data from State statistical survey “2-air” we are also using for reporting E-PRTR. For reporting under NECD, MM, CLRTAP - we used separate Excel where are collected activity data from national Statistic and then calculated emissions.
<i>Netherlands</i>	NL has one national emission database for emissions and activity data for all source categories. The facilities, competent authorities and emission experts all upload the data electronically [to a central database for emissions and activity data for all source categories] and there is an automated check and logging. This database maintains the relation between the reported source categories and the various to be reported source categories. All national and international reporting of emissions (except ETS) is done from this one source. Many people are needed to work on this db. There are also many other reports that are not linked to the central database in the Netherlands. These relate a.o. to projections, registry data, ETS data and so on. The Netherlands has a data consistency project to improve data consistency. In the Netherlands the ETS data are not used in the database.
<i>Sweden</i>	To a great extent we have managed to integrate data collection, compilation and data storage for the big emission reporting obligations.

3.2 Lessons Learned

Reporting challenges at MS level

Based on the findings of the MS enquiry and the Workshops it was clear that a number of countries have made good progress towards integrating the data flows and data structures used for meeting the provisions of the different emissions reporting instruments. Generally MS with a long history in emissions inventories have moved further along this path than MS that more recently joined the EU and the international Conventions and Protocols.

In principle MS are able set up their systems and procedures such that all emissions reporting is consistent amongst instruments. The MS that have achieved this have not necessarily used the same or even similar approaches and have had to invest considerable amounts of time and work effort. Not all MS have successfully solved all the problems and some are still in the early stages of developing their systems.

Actions that would assist MS to develop more efficient and streamlined systems

Community action to streamline reporting legislation with respect to the following aspects would assist MS to strengthen their national systems:

a) Contents issues:

- MS are hampered by the fact that definitions of several emissions data attributes (source categories, IPCC Annex 1 activities, what constitutes a facility/installation, etc...) differ between the instruments.
- The E-PRTR data would benefit from more detail and greater quality checks to be able to used as input for inventory preparation:
 - there can be several IPCC categories in a single Facility entry and the activity data accompanying the reports would be enhanced by more detail
 - the high threshold for emission reporting;
 - the addition of using standard methods would improve the output.
- MS have difficulty compiling a full set of statistical data for different instruments; this is due to limited access to data (some industrial information is confidential) and changes in statistics between the different deadlines of the instruments.

b) Procedural issues:

- In many cases the relation between the national statistics offices and the inventory team is hampering timely availability to the inventory teams of all data needed to estimate emissions. Data exchange is frequently arranged by simply waiting until a specific annual report is published by the statistics office. Some MS have arranged for a direct involvement of the statistical office in the inventory preparation and by doing so ensure better and more timely access to the statistics
- Most MS²³ have set up a national system under the Kyoto Protocol. However only a few MS also use the procedures and institutional arrangements set up in this system for other reporting obligations.
- Facility level emissions data are in many cases based on confidential background data that is unavailable to the inventory teams and inventory reviewers. This leads to:
 - difficulties for the inventory team to consolidate facility level information with national statistics and hence to show that the inventory is complete
 - a possible lack of transparency during internal and external review processes

c) Templates and tools

- MS that have relatively well developed streamlined data collection and data reporting structures do not have particular problems with the different schema used for GHG and AP reporting. These have been harmonized recently between the respective international Conventions and the corresponding EU legislation closely follows them; formats for other instruments have been designed and developed independently. It would reduce the burden on MS if the reporting formats were all based on a similar structure, derived from the national level reporting formats.
- MS have difficulties linking their systems to the UNFCCC CRF Reporter XML data exchange formats. This is largely due to specifics of the CRF Reporter tool that cannot be changed by the European Commission. Streamlining of the EU instruments could support

²³ Malta and Cyprus are not included in the Annex 1 countries of the UNFCCC and therefore do not have to report their annual inventories under the UNFCCC reporting requirements.

the MS were there to be a joint template or tool that takes care of the export from streamlined national systems into the CRF Reporter XML file format.

d) Other:

- Very often, the optimisation of resources is frustrated by the problems of having to meet demanding reporting deadlines; it is very difficult to meet the deadlines ((x-2) data only available in December (x-1), problem with art 3.1 (f) of 280/2004/EC).

MS views

The stakeholder consultation found that most countries would be in favour of action to streamline reporting requirements provided the benefits compensate for the work required.

The consultation found that most countries had already undertaken streamlining initiatives to overcome problems that they had encountered with emissions reporting – some have made considerable progress. Often these:

- Improved efficiency & reduced the burden (and cost) of duplicative reporting.
- Provided better data (i.e. TCCCA) to enable them to monitor their performance against current targets; it is questionable, however, that this alone would be sufficient for the Commission and MS to prepare cost effective policies for the future.
- Led to better data with clear and simple data flows for all types of emissions data, allowing for multiple user applications while taking into consideration the resulting costs;

MS were concerned however that:

- Despite national inventory systems being integrated it is not necessarily possible to merge the inventory data systems for GHG and AP if a number of institutions are involved;
- Revised legislation might incentivise the sharing and adopting good practice, but those countries with good systems fear that they would lose benefits by having to adopt a 'one size fits all' situation;
- Considerable institutional strengthening work would be needed to reach more sophisticated levels of system integration.

While no country yet has a fully integrated system, some MS are close (Austria, France) and there is sufficient evidence to suggest that it would be feasible to create fully integrated inventory practices and hence to move to a fully integrated system (over a period of 10 years).

General Issues

MS's:

- Would wish streamlining actions to concentrate on quick wins, alignment of definitions/methodology/systems etc., and making better use of facility level data;
- Found that it is often difficult for Statistical agencies to integrate national and facility level data within one package;
- Think that the currently available reporting guidance does not allow users to assess how good reporting is and that inventory review and compliance checking would offer a way of improving inventory quality;
- Believe that if they are to report to the Commission and, in parallel, to international bodies then the guidance/methodology used needs to be (and remain) the same;
- Think that cost of bringing data to the same level of quality; integrating data of varying quality; and bringing MS to the same level is real and considerable but the benefits are less easily valued.
- Are frustrated that some data that is collected at present is not then used – even though there would be policy benefits if it were;
- Experience difficulties using their E-PRTR data more widely because they have problems integrating national statistics with facility/installation level data

Technical issues

While no country yet has a fully integrated system some MS are close; it would be technically feasible to move to a more fully integrated EU reporting system over a period of about 10 years.

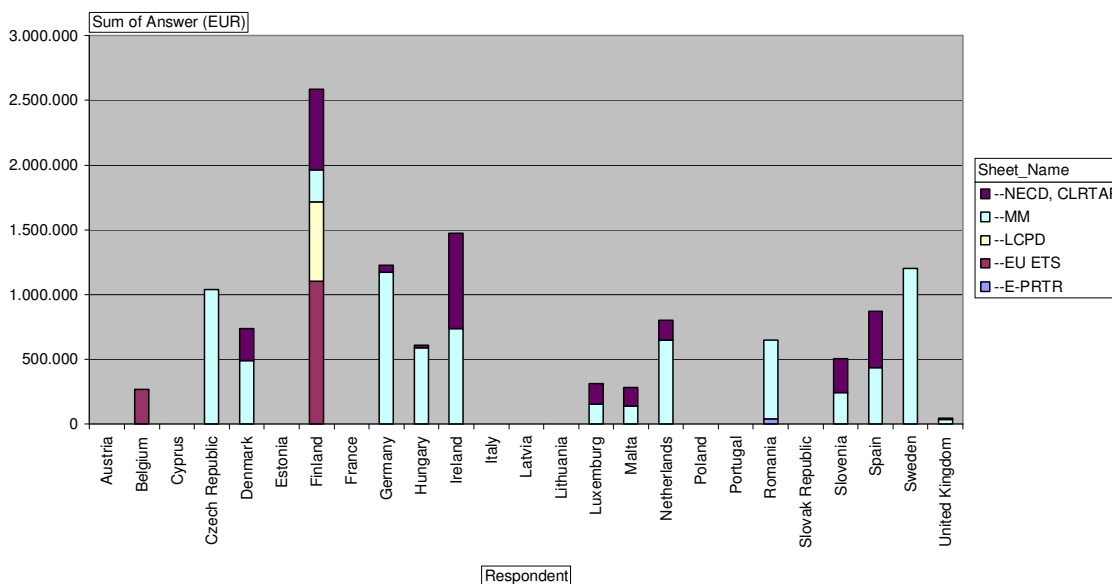
4 Stakeholder consultation – Administrative burden

4.1 Current costs of reporting

Currently the various instruments have differing areas of coverage and unaligned reporting. Not only is there a cost and burden of duplicated effort when compiling national data sets, the data when compiled has gaps and so lacks the clarity needed to optimise future policy – resulting in further costs. Since published information on the current costs of emissions reporting is poor the country enquiry submissions were used to estimate the current costs of those elements of reporting that are likely to be most affected by possible changes, this 'base case' was then used to assess the cost impact of streamlining options. The base case includes only the direct costs of the compilation and reporting of emissions data but not the costs of gathering and preparing any background statistics, industrial measurement programmes and/or installation monitoring used for country specific emission factors, and IT systems²⁴.

Seventeen countries provided estimates of the labour cost of reporting to the MM, thirteen for NECD, but only two for the LCDP, EU ETS and E-PRTR. Most MS gave only one number per instrument and were unable or unwilling to distribute costs between responsible authorities, contracts & institutional arrangements, and tools/databases; neither were they able to effectively untangle annual operating costs and investment. Some MS replied in mandays others in €; to match these responses we used a conversion factor of €520/manday. In some cases MS stated their cost applied to combinations of instruments. Figure 4.1 shows our estimates of the average reporting cost per MS.

Figure 4.1: Labour costs – based on a rate of €520/day



The information available on the costs tools and databases was particularly sparse; the Netherlands indicated maintenance costs for data collection of ~€120000 /year and investment of

²⁴ Neither do the costs quoted include any out-of-pocket expenses for metering or laboratory costs and neither does it include the time spent by the operator to draft, implement and maintain a monitoring plan or for inspections by competent authorities etc.

€300000/year, Slovenia estimated ~€80000/year for compilation and QA/QC and ~€125000/year ~€80000/year on investment.

Since little data was submitted by MS relating to their costs of reporting to the E-PRTR and EU ETS we drew on the more detailed information from the EC project "The review of Permits, Monitoring Plans, and Verification reports in the EU Greenhouse Gas Emissions Trading Scheme at the Level of the Member States" for scaling information. (This study had evaluated the effectiveness of second annual ETS Verification Exercise. It had analysed a number of reports by different industrial operators and different sectors in different countries, highlighting inconsistencies/non-alignments among Member States and with respect to the ETS MRG Guidelines. 145 Verification cases (at least 5 per MS) were studied, and over 650 detailed questionnaires related to all processes in the compliance cycle were sent out - 350 to operators and their verifiers, 25 to Competent Authorities and 25 to Accreditation Bodies. Among other things the questionnaire collected information on the time each took for the various verification stages).

Our business as usual, base case, is the current annual cost for the EU27 MS, industry, and the European Commission/EEA of reporting to the MM, NECD, E-PRTR, EU ETS and the LCPD. This total, based on the information in Table 4.1, is shown in Figures 4.2 and 4.3, which breaks the cost down by instrument. The basis for these calculations is given in section 4.3 - below.

Table 4.1 covers regulated processes (facility level reporting) and national inventories but the information is indicative and should be used with caution; it was drawn from the questionnaire and other sources, some of which contain incomplete or unsubstantiated data that we have had to extrapolate based on our experience and judgement; wherever possible we have used alternative but complementary sources of data in an attempt to cross check our estimates.

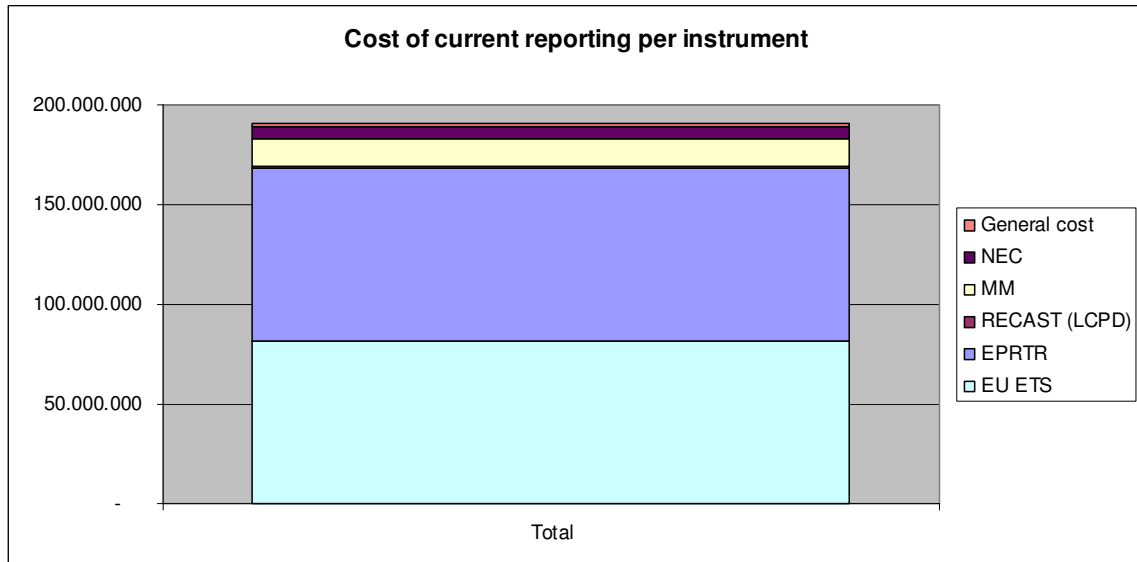
NOTE: these cost estimates were made using the judgement of the project team and not as a result of discussion with either the Commission or the EEA; they cover a subset of the total reporting costs. EU ETS and E-PRTR costs are based on surveys pulled together by PWC on the numbers of days needed to manage reporting by industry and MS excluding software, metering permitting and inspections. National Inventory costs are based an average of the data from the streamlining questionnaire. Costs for National Inventories exclude costs for statistical data gathering. These costs are based on the project Questionnaire. Not all MS reported costs and a number of costs reported include different scopes of costs depending on the responsibilities of the organisations involved.

Table 4.1 Summary of current costs

Instrument	Man days per factor			Number of installations	Cost (man days x fee (€520) x no. of installations)			Total
	MS	Commission & EEA	Industry		MS	Commission & EEA	Industry	
EU ETS	1.2		14	10,000	€ 6,000,000		€ 75,200,000	€ 81,200,000
EPRTR	1.0		13	12,000	€ 6,300,000		€ 81,200,000	€ 87,500,000
RECAST (LCPD)	0.2		1	500	€ 100,000		€ 300,000	€ 400,000
Total for Facility level reporting					€ 12,400,000	€ -	€ 156,700,000	€ 169,100,000
Instrument	Man days per factor			Number of MS	Cost (man days x fee (€520) x no. of MS)			Total
	MS	Commission & EEA	Industry		MS	Commission & EEA	Industry	
MM	997			27	€ 14,000,000			€ 14,000,000
NECD	458			27	€ 6,500,000			€ 6,500,000
Total for National inventories					€ 20,500,000	€ -	€ -	€ 20,500,000
Activity	Man days per factor				Cost (man days x fee (€520))			Total
	MS	Commission & EEA	Industry		MS	Commission & EEA	Industry	
Data Collection and analysis		400		-		€ 208,000		€ 208,000
Analysis and Use (EEA support in collating and preparing data)		400		-		€ 208,000		€ 208,000
Added complexity to Commission policy projects				-		€ 500,000		€ 500,000
EEA management of data				-		€ 250,000		€ 250,000
Total for Commission & EEA					€ -	€ 1,166,000	€ -	€ 1,166,000

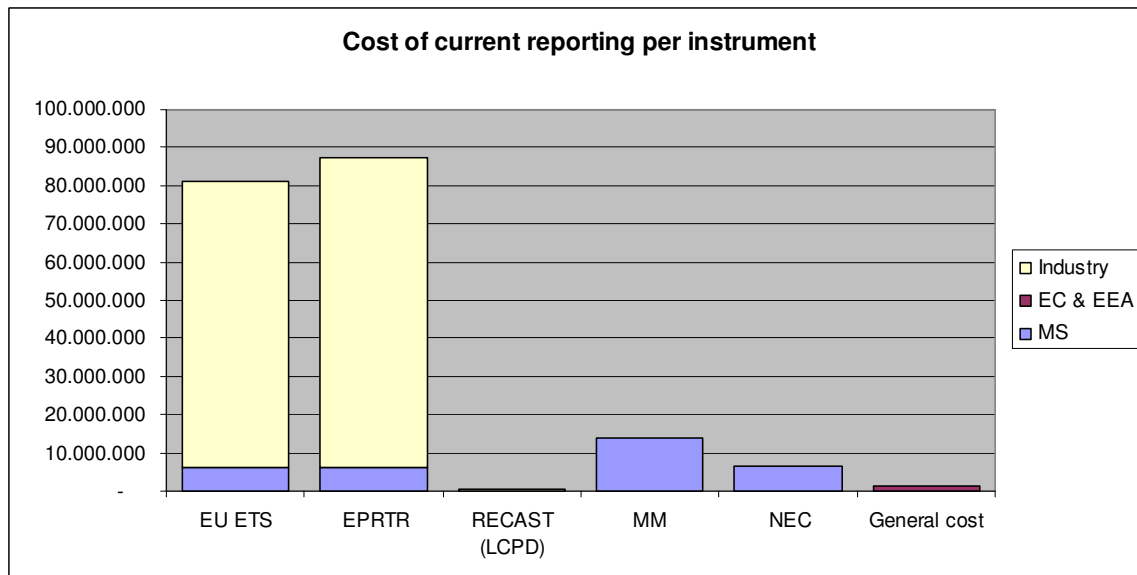
Note: Fee of €520 used to cost each manday

Figure 4.2: An estimate of the annual costs of reporting



NOTE: The main expense for MS is the labour cost.

Figure 4.3: Estimated cost of current reporting by instrument



Overall, costs are likely to go down with the more ambitious streamlining options presented in sections 5 and 6 below. However, at the stakeholder consultation MS expressed concern that the costs of converting their current national systems to accommodate streamlining proposals could be large but given the unavoidability of introducing multi-pollutant multi-effect policies the costs of servicing non-aligning reporting instruments can be expected to grow considerably.

4.2 Supporting information

The following section describes how the information in Table 4.1 was generated, the calculation of the cost to MS and Industry of servicing reporting instruments as a whole, and a breakdown of costs per instrument (as facility level reporting and as national inventories).

In view of the very limited number of responses to the questionnaire, the estimations made in this section should be used with caution. Further investigation would be necessary to better estimate the costs to MS and industry due to the implementation of the reporting requirements considered.

Summary of costs to MS and Industry

MS costs: Table 4.2 shows the Country Enquiry Questionnaire results of the mandays spent by MS (excluding operators) for LCPD, MM and NECD, supplemented by data from the EC project "The review of Permits, Monitoring Plans, and Verification reports in the EU Greenhouse Gas Emissions Trading Scheme at the Level of the Member States"²⁵ and, inspired by these two sources, a guesstimate for E-PRTR. On this basis it would appear, for all reporting instruments in total, that ~10 full time persons/yr were employed per MS.

Table 4.2 - MS estimate of the annual reporting time per instrument for MS (excluding Industry reporting)

MS	E-PRTR*	EU ETS**	LCPD	MM	NECD, CLRTA	Total
Man days per MS	444	453	4	997	458	2.356
Man years per MS	2	2	0	4	2	10
Man years EU	51	52	0	114	52	224
Man days per installation	1.0	1.2	0.2	na	na	na
Standard deviation	na	820	1	717	438	na
Responding MS	0	16	2	17	13	na

NOTE: The standard deviation, where given, indicates – not surprisingly - that the estimates are likely to be highly uncertain.

* E-PRTR cost is based on the assumption that costs are similar to ETS, which could be derived from the few responses on E-PRTR

** The EU-ETS data are from the Review project

Industry costs: Since there were few responses from the Questionnaire, the EU ETS costs, too, were based on data from the "The review of Permits, Monitoring Plans, and Verification reports in the EU Greenhouse Gas Emissions Trading Scheme at the Level of the Member States" project, which asked operators how much time was spent on monitoring and reporting the 2006 emissions data as required by E-PRTR and EU ETS (for EU ETS the data also includes time the operator spent on verification); the order of magnitude was validated using two Dutch studies: SIRA Consulting (2004) - Actal IV: Administratieve Lasten NOx- en CO₂ –emissiehandel DHV (2007), Evaluatie Emissiehandel.

Table 4.3 – Time costs to Industry by instrument

Industry Time	Instrument	
	E-PRTR	EU ETS
Mandays per MS	5,778	5,351
Man years per MS	24	23
Man years EU	661	612
Mandays per installation	13	4

Note: Based on responses from 96 and 172 installations for E-PRTR and EU ETS, respectively.

The study attempted to determine the change in costs due to possible streamlining actions - not to produce numbers on the overall burden of reporting regulations. Consequently, for EU ETS and E-PRTR, the costs determined were the labour costs of: monitoring, reporting and verification; the cost for permitting, registry operation, inspection and enforcement etc were excluded, as were out of pocket cost for metering equipment, laboratories.

²⁵ contract No 070307/2007/481259/MAR/C2 concerning "The review of Permits, Monitoring Plans, and Verification reports in the EU Greenhouse Gas Emissions Trading Scheme at the Level of the Member States"

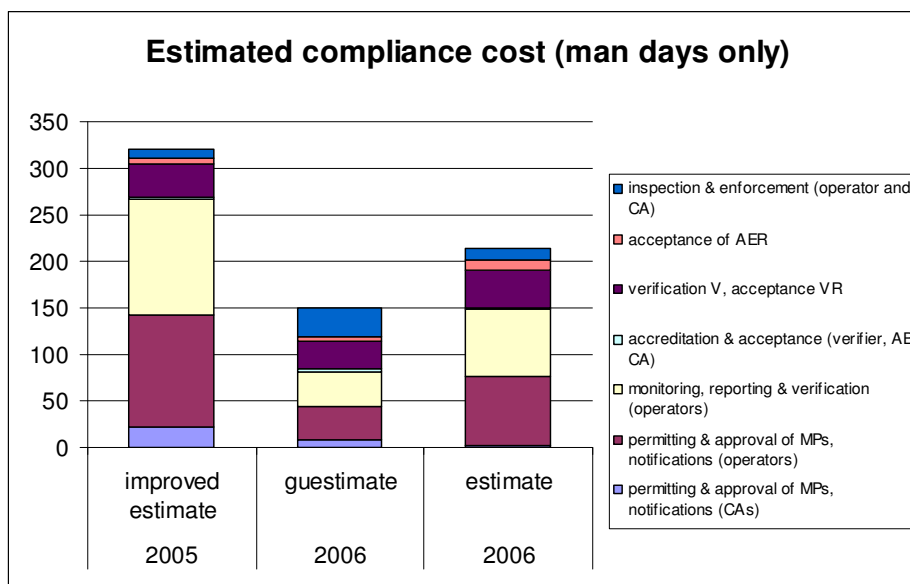
Aggregated costs to MS and Industry by instrument

This section explains the calculations used to develop the tables and graphs shown above, it describes how information related to the estimation of the costs of facility level reporting (from E-PRTR and EU ETS studies) was applied to the estimation of the costs of national inventories. These are aggregated costs – specific savings at a national system level are listed with the costs of the streamlining options and factored into the costs of the options – see Table 6.1

Facility level reporting

Previous estimates²⁶ from EU ETS studies indicate that greater costs are incurred by the operators of installations (facilities) than other actors, as shown in Figure 4.4.

Figure 4.4: Cost estimates for EU ETS activities



Source: PwC, 2008. Final Report of the Review of the second EU ETS compliance cycle, for DG Environment

The resulting cumulative total cost in terms of mandays spent by operators and Competent Authorities (CA) to spring 2006 (the end of the first EU ETS compliance cycle) was estimated to be around €320M for about 10,000 installations, i.e. €32,000 on average. It should be noted that installations in the EU ETS vary significantly in size - as will the actual cost for an installation.

CA and operator estimates of the actual average mandays spent/installation for monitoring and reporting under the 2006 EU ETS and E-PRTR are shown in Tables 4.3 and Table 4.4.

Table 4.4. Mandays spent on EU ETS monitoring and reporting

	Competent Authority	Operators
Number of respondents	27	106
Mandays reported	5	14

NOTE: MS estimate they spend on the average around a day (assumed for this study to be 1.2days) per EU ETS installation solely in enabling reporting i.e. by processing the annual emissions report.

²⁶ The administrative burden on industry are determined from the results of the EC Project "The review of Permits, Monitoring Plans, and Verification reports in the EU Greenhouse Gas Emissions Trading Scheme at the Level of the Member States" as well as a limited number of industry site visits and consultation with the Netherlands MNP

Table 4.5. Mandays spent on E-PRTR Monitoring and Reporting

	Competent Authority	Operators
Number of respondents	27	120
Mandays reported	2,6	13

NOTE: In the absence of any data from the Streamlining questionnaire or country visits, it was estimated MS spend on the average around 1 day per installation solely on making reporting possible, by processing the E-PRTR reports.

Tables 4.4 and 4.5 show the number of mandays required for EU ETS and E-PRTR monitoring and reporting by industry and the CAs. There will be many reasons for the disparity shown by CA and operators and it should be noted that whilst more operators than CA responded they still only represented 1% of the regulated installations – possibly the larger ones with more onerous reporting responsibilities. With regards to E-PRTR, it should also be noted that no MS provided estimations.

The EU ETS cost for industry were estimated by multiplying the average time spent per installation, as it resulted from the EU ETS review project, with the number of installations and an assumed cost rate:

$$\text{EU ETS cost for industry} = 14 \text{ (mandays)} * 10,000 \text{ (installations)} * \text{€}520 = \sim\text{€}73\text{M}$$

The aggregate overall total (monitoring, reporting, and verification) of 14 mandays estimate was based on MS level responses being grouped by operators, accreditation bodies, CAs and verifiers, and then averaged:

	Verification	Monitoring and Reporting
Operators	Average 4.1 (min 1, max 29)	Average 11 (min 2, max 120)
Verifiers	Average 3.4 (min 1, max 25)	
CAs	Average 2.3 (min 0.5, max 4)	Average 7 (min 1, max 30)
Overall	Average 3 mandays for verification.	11 used as CAs deemed not credible

The cost for MS were also estimated by multiplying the average time spent per installation (as reported in the EU ETS review project) by the number of installations and an assumed cost rate:

$$\text{EU ETS cost for MS} = 1.2 \text{ (mandays)} * 10,000 \text{ (installations)} * \text{€}520 = \sim\text{€}6\text{M}$$

NOTE: The EC and EEA are not involved in verifying ETS emission reports, although both look into the numbers collected in the registries and CITL (the Community independent transaction log, which covers all transactions related to the EU ETS emission allowance trading, and therefore also the emission figures on an installation, industry and MS level).

E-PRTR costs for the industry were estimated by multiplying the average time spent per installation as it resulted from the EU ETS review project with the number of installations and an assumed cost rate:

$$\text{EU ETS cost for industry} = 13 \text{ (mandays)} * 12,000 \text{ (installations)} * \text{€}520 = \sim\text{€}81\text{M}$$

The results from the questionnaire showed that installations spend about 13 mandays on the average on monitoring and reporting. The min was 1, the max 140, with a standard deviation of 20.

E-PRTR cost for MS were estimated by multiplying the average time spent per installation as it resulted from the EU ETS review project with the number of installations and an assumed cost rate:

$$\text{EU ETS cost for MS} = 1 \text{ (mandays)} * 12,000 \text{ (installations)} * \text{€}520 = \text{€}6\text{M}$$

Cost related to national inventories

Cost estimates for the national inventories were derived from the country enquiry. Questions were asked, for each of the instruments, on the investment costs and annual maintenance costs of any tools or databases and what the annual resource needs.

While there was no information on the tools and databases we did receive a number of estimates of the cost of human resources per instrument in terms of mandays, especially on the MM and NECD/CLTRAP. Estimates were made on the average cost per MS based limited data from a small group of MS.

The questionnaire responses were taken literally where possible. Some MS replied in mandays others in €; to match these responses we used a conversion factor of €520 per manday. In some cases MS stated their cost were share with other instruments. Figures 4.6 and 4.7 show the average totals of the responses. It would appear for national inventories in total that on average four full time people were employed by MS on MM and two on NECD (assuming 236 working days per full time person). The histogram is indicative - not all MS replied to all categories (data collection, compilation and reporting) individually and it was therefore not clear whether a blank as a response was meant to be a zero or unknown - as a default we assumed the latter. The division between the three categories is therefore of limited value although it makes intuitive sense.

Figure 4.6 Average mandays spent on MM by activity

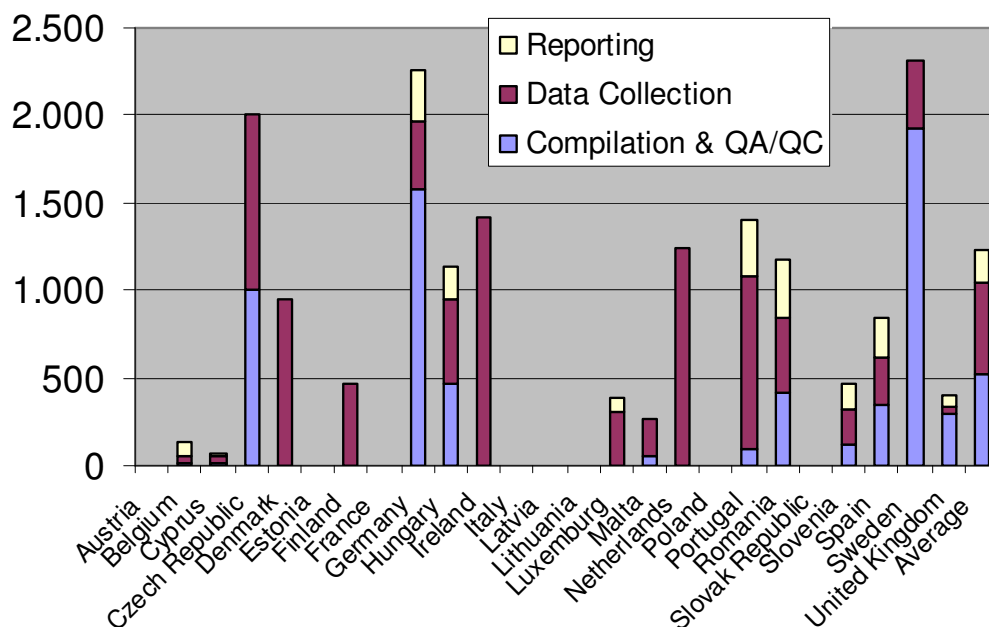
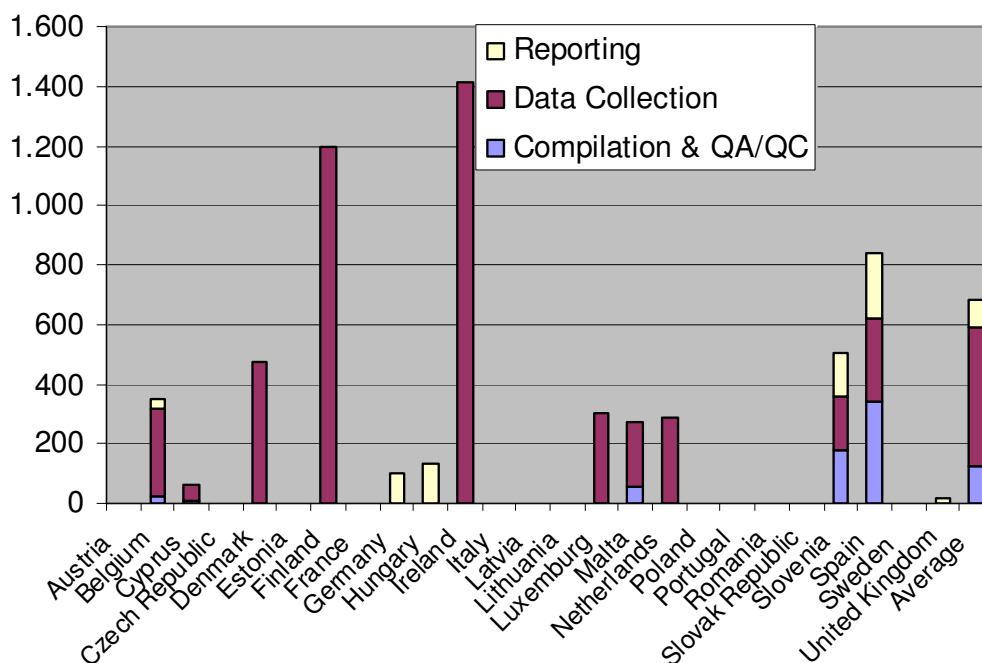


Figure 4.7 Average mandays spent on NECD by activity



4.3 Summary of findings

Currently the various instruments have differing areas of coverage and unaligned reporting. Not only is there a cost and burden of duplicated effort when compiling national data sets, but also the data when compiled has gaps and so lacks the clarity needed to optimise future policy – resulting in further costs. Since published information on the current costs of emissions reporting is poor the country enquiry was used to estimate the current costs of those elements of reporting that are likely to be most affected by possible changes, this ‘base case’ was then used to assess the cost impact of streamlining options. The base case included only the direct costs of the compilation and reporting of emissions data and excluded the costs of gathering and preparing any background statistics, industrial measurement programmes and/or installation monitoring used for country specific emission factors, and IT systems. Based on very sparse data a conservative estimate of the current annual cost for the EU27 MS, industry, and the European Commission/EEA of reporting to the MM, NECD, E-PRTR, EU ETS and the LCPD is of the order of €180M; the most substantial component of this being the cost to industry of reporting to the EU ETS and E-PRTR.

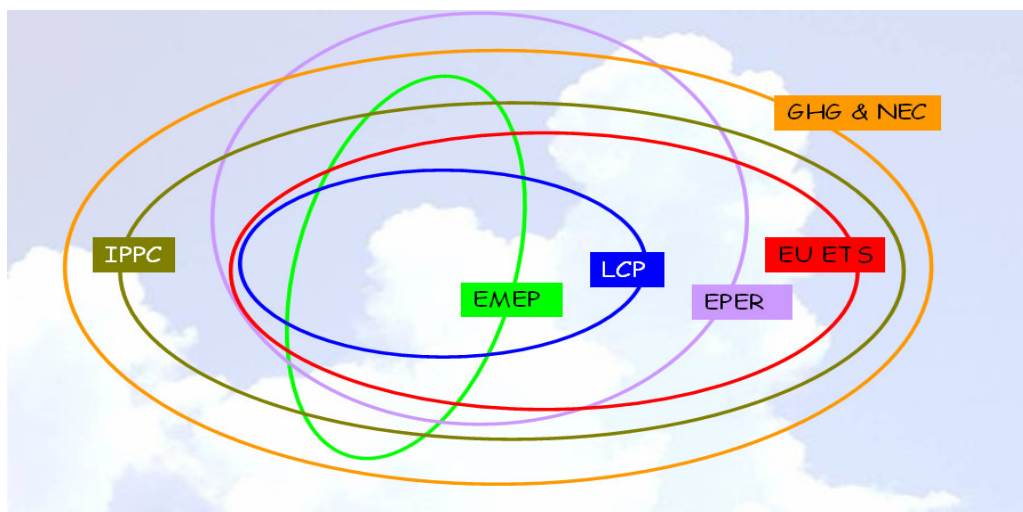
Based on the Country Enquiry Questionnaire reports of the days spent by MSs (excluding operators) for LCPD, MM and NECD, data relating to EU ETS, and an expert guesstimate for E-PRTR, it would appear that, on average, a MS employ a total of ~10 person/years to report all instruments. Based on this reference, the costs to the EU of the additional actions needed to enable the better integration of national inventory systems vary from €0.6M – €9.8M to implement (a maximum investment of 6% of current costs) and €0.03M - €2.4M/year to operate (a maximum additional annual burden of 1.5% of current costs). These are the additional costs of revised requirements related to monitoring, reporting and verification - not the overall burden of reporting regulations overall. The direct savings are difficult to estimate since some countries have already introduced some of the streamlining measures proposed and, given the unavailability of introducing multi-pollutant multi-effect policies, the costs of servicing non-aligning reporting instruments can be expected to grow considerably.

5 Streamlining opportunities

5.1 Defining the Problems

The various emissions reporting instruments considered - listed in Appendix A2.1 - have differing areas of coverage and similar but unaligned objectives for monitoring and reporting of emissions with resultant duplication. This is illustrated in figure 5.1 below.

Figure 5.1 – An illustration of the differing coverage of Reporting Instruments.



Source: air-climate.eionet.europa.eu/docs/meetings/060209_cons_GHGinv_rep_EU_GHG_inv_FR.ppt

ETS_WS/06_Fontelle_ETS-

The key problems and barriers to effective reporting identified during the consultation phase of this project are summarised below. They are:

- Duplication in current reporting;
- Lack of clarity and interoperability between datasets reported;
- Missing and inaccurate data.

Apart from reducing the quality of the data, the cost²⁷ of reporting is higher than it otherwise would be - see Section 4.

Duplication in emissions reporting

MS's and industry are required, in a number of cases, to report the same or similar data (e.g. pollutants, activity data, Policies and Measures – PAMS – etc.) under different instruments. Duplication has evolved through the development of similar objectives in different instruments for monitoring and reporting of emissions and actions to reduce emissions. Streamlining offers an opportunity to include common definitions of data sources and specifications thereby allowing instrument rationalisation to reduce duplication to a minimum and enable essential differences to be more clearly presented.

National inventory data flows and reports: Duplicated national emissions reporting requirements exist for *MM and NECD* for some pollutant emissions (e.g. SO₂, NO_x, NMVOC, CO) and statistical activity data. This increases the reporting burden for MS's and questions arise as to the underlying

²⁷ Information on reporting costs have been calculated is given in section 4.

assumptions that have been made. Both MM and NECD/UNECE reporting activities currently require an inventory report that includes methodologies, data sources and assumptions for emissions sources that may be common to GHG and air pollutant estimates and to some extent duplicates information and effort in production. In addition NECD and MM PAMs and Projections reporting overlaps with requirements for similar information and different phasing/deadlines of the reporting requirements contribute to inconsistencies in reported air pollution and climate change data.

Multiple reporting requirements for processes and facilities put an increased burden on industry, the MS regulator and the Commission. The reporting of emissions for facilities is duplicated for a number of pollutants (e.g. GHGs, NO_x, SO₂, dust) and lacks comparability, traceability across inventories and transparency between them. The lack of transparency and absence of centralised data management increases the burden on MS regulators and policy analysis projects undertaken by the Commission. Different regulated process level datasets per instrument mean that MS cannot readily use the data in the compilation and verification of national inventories.

Lack of clarity between datasets reported

A lack of clarity about how emissions reported under different instruments fit together (in real terms) affects the usability of the reported data by the Commission and its agencies that results in additional burden on MS and the Commission because of the need to seek clarifications. It is difficult to assess the costs of this lack of transparency and traceability. However, it is clear that confidence in the estimates provided by MS is undermined (complicating policy decisions and actions) and additional effort is required in reconciling different estimates.

More specifically, the use of different definitions hampers the efficient use and communication of the data reported under the different instruments²⁸ and leads to a non-alignment of reported data. In some cases (e.g. definitions of national boundaries for emissions reporting) differences are intentional in order to fit with international agreements; in these instances clarity is needed on the differences when data is reported. In other cases different aggregation rules apply to emission releases, which are aggregated at facility level by main activity category (e.g. mainly IPPC Annex I activity for E-PRTR), or at installation level (e.g. for ETS) or at process and technical unit level (e.g. for LCPD and MM) and, in some cases also by statistical source sector definitions (e.g. NACE2 for E-PRTR), differences inhibit the inter-comparison of emissions across the different instruments and these differences should be minimised where possible.

Missing and inaccurate data

Inaccurate, conflicting and incomplete datasets arise through a lack of coordination and prioritisation applied to compilation of emissions estimates. Inaccuracy in reported national emissions data undermines confidence in the data and limits its usefulness for policy development and monitoring against targets. As reported emissions data becomes more closely linked to costs associated with meeting targets (e.g. emissions trading) a higher level of completeness and accuracy is needed. In many cases MS use overly simplified defaults or aggregated statistics where better data exists or could be obtained, this is usually because low national priorities for the collection and integration of the appropriate data into the inventory limit the accuracy of estimates. For example, regulated process data and activity data (and/or monitored fuel use and fuel composition information) are not always readily accessible for use as the basis for country specific emission factors and research is not always focused on developing improved country specific emission factors). In cases where reporting occurs periodically (e.g. periods of greater than every year) such as for PAMs and emissions projections reporting, there may be a loss of institutional experience of reporting and compilation leading to a decline in data quality.

²⁸ Problems can arise at EU level when we attempt to aggregate installation emission data to facility level. In part this is due to two reasons. Firstly the definitions of installation differ between instruments (i.e. ETS IPPC, and LCP). Secondly there is no traceability of emission point sources across different databases/inventories, these are often hosted at different local/regional/national and EU level (there is no facility/installation/activity European unique identification code)

5.2 Reporting Objectives

Tasks 3 and 4, together, led to the definition of the objectives of the solutions to the emissions reporting problems identified by Task 1 and 2 and developed a series of alternatives solutions (options). These may operate at different levels; we have looked to streamline at three separate levels:

Contents, ensuring that the data are all comparable and consistent and can be easily used in European wide applications, including the preparation of EU submissions to the international conventions and protocols. The contents would include “**Why**” - the (chemical and/or physical) identity of the pollutant or gas that is emitted; “**What**” - the (economic and/or societal) activity or sector and fuels that causes the emission; “**When**” the time dependence of the emission; and “**Where**” the (geographic) location of the emission.

Procedures, with the aim of optimising work and data flows between instruments within each MS.

Tools and Formats, providing standardised tools and technical IT support including systems and tools that facilitate a smooth data flow between MS and from MS to the Commission.

Since the objectives should be establish - Measurable, Accepted, Realistic and Time-Dependent (SMART); suitable criteria might include:

- Timeliness;
- Completeness (no significant sources missing);
- Continuity (consistency within time series);
- Comparability (between countries and between systems);
- Quality (freedom from bias and known uncertainty), as well as
- Burden reduction (for industry, SMEs, MS and the EC,) and
- Comparability with SEIS and INSPIRE.

Streamlining of emissions reporting instruments needs to address, both at the national level and facility level:

1. Aligning reported data, between instruments by reconciling the: Contents, Procedures, and Tools and formats they use/define;
2. Reconciling the Estimation Methods & Reporting Procedures they use.

Streamlining also has actions at several technical levels:

- The contents of instruments must be aligned to ensure that the scope of data provided is adequate and that data are all comparable and consistent and can be easily used in European wide applications, including the preparation of EU submissions to the international conventions and protocols.
- Procedures and methods are needed to ensure data is of an adequate quality – Transparent, Complete, Consistent, Comparable, and Accurate (the TCCCA criteria defined in the IPCC and EMEP/CORINAIR Guidance). This means addressing how the data is gathered and compiled (including checks and QA/QC) within the MS, how it is formally presented to meet reporting commitments and how MS manage the data flows between instruments.
- Tools and formats - by providing (common) standardised tools and technical IT support including systems that facilitate a smooth data flow between MS and from MS to the Commission. These can include data specifications and EU common list of values (e.g. sectors, units, pollutants)

These aim: firstly - to align the wording/scope of the emission reporting requirements of the legal instruments; secondly - to require the used of harmonised systems for data compilation, data reporting, data review and publication; and thirdly – to put in place the technical provisions needed to provide a structure to the reported variables and facilitate a common data structure.

Aligning the Contents

To be useful (even for basic assessment of progress to targets) reported emissions information needs to have a number of fundamental dimensions. These define the “*Why*”, “*What*”, “*When*” and

"Where" of the environmental pressure (emission) resulting from the emissions and allow the management of actions to reduce emissions.

- Why: the (chemical and/or physical) identity of the pollutant or gas that is emitted.
- What: the (economic and/or societal) activity or sector and fuels that give rise to the emission, the magnitude of the activity, the emissions and/or the implied or compiled emission intensity.
- When: the time dependence of the emission.
- Where: the (geographic) location of the emission. This also includes the definition and identification of facility, installations, activities, processes and technical units.

Streamlining must ensure that the 'numbers' submitted under the various reporting instruments are aligned and strictly comparable i.e. that a 'tonne' of 'pollutant' means the same thing in all of them.

The emissions reported under different instruments will be comparable if they have been defined the same way, any numerical data will also be 'true' if they have been determined using a suitable reference method. For example, the statement: "Source X emits Y tonnes of pollutant Z." will be comparable between instruments provided that each instrument has the same (or equivalent) definitions of 'source', 'pollutant', and 'tonne' and any measured values have been made using a standard measurement (or calculation) method²⁹.

Streamlining options need to ensure that all the instruments refer to a common (full) set of definitions that there are traceable to suitable references. Suitable definitions for the most important terms are given in the '2006 IPCC Guidelines for National Greenhouse Gas Inventories', the 'EMEP/EEA Air Pollutant Emission Inventory Guidebook', and the Commission Decision of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC. A lot of work has already been done to ensure that the definitions in the revised IPCC guidelines and the EMEP/EEA Guidebook are complementary. Generally the EU ETS definitions have material criteria that are compatible with, but stronger than, those specified in the IPCC and EMEP/EEA Guidebooks (e.g. they have required levels of satisfaction for 'tiers' based on levels of uncertainty of the estimation) – streamlining can draw on such elaborations to iteratively improve reporting. International Standards are also useful: these define things according to a carefully specified methodology and common reference standards that deliver a minimum performance/result when used by a reasonably qualified practitioner.

The emissions reported under the reporting directives may be measured values³⁰ but more commonly they are calculated according to the generic form:

$$\text{Emission} = \text{Activity data} * \text{Emission factor} * \text{scaling factor}$$

[Emission Factor = emission/activity];

The EU ETS MRG, for instance, uses: CO₂ emissions = activity data * emission factor * oxidation factor.

The UNFCCC and UNECE publish "default" emission factors of an equivalent form. The EU ETS requires operators to report at tier 3 using facility specific level emission factors unless they are impractical to produce. PrEN/ ISO 1171 ' Air Quality – Stationary Source Emissions - Determination of time averaged mass emissions' is designed to enable the demonstration of the equivalence of calculation and measurement by reference to CEN and ISO, materially references measurement standards.

Consequently streamlining options should drive towards the use of one, unambiguous, source of 'Activity data' – preferably National Statistics, and encourage the use of better methods – by requesting facility specific emission factors – EU ETS fashion - and referring to CEN/ISO reference

²⁹ Examples of problems include: for source: an installations are defined differently in the EU ETS and the E-PRTR, PM is an ambiguous definition of particulate matter, the measured value of a pollutant can vary if measured by different techniques, and a 'ton' and a 'tonne' are not the same mass.

³⁰ The EU ETS allows the use of measurement as an alternative to calculation.

standards, where they are available, that can be used to demonstrate that 'material criteria' are met (i.e. ensuring a tonne of CO₂ has the same mass as a tonne of SO₂).

'Practical' Example

What, for example, must be done to ensure that in the MM decision, CO₂ emissions data from the EU ETS and SO₂ data reported under CLRTAP are aligned?

Streamlining options would need to ensure that:

- EU ETS activities (consumption/production) are reconciled with National statistics so that the remaining non-EU ETS sectors (or below threshold parts of EU ETS sectors) can be calculated without double counting.
- Information is collection that allows re-aggregation of SO₂ reported under CLRTAP, to EMEP boundary definitions, to MM boundaries (e.g. estimates for transport need to be on a fuel sold basis for the territory).
- The data comes as a single data flow: regulated installation reporting (EU ETS), reconciliation the EU ETS activity data with national statistics, and detailed national reporting providing the different sectoral components separated out so they can be aggregated to the different requirements.
- The data provided are generated using complementary methodologies (IPCC and/or EMEP/EEA for national inventories); that they are based on the same national statistics (versions and sectoral definitions) and that regulated process emissions can be used to provide country specific emission factors; and reconciled national activity statistics for national inventory calculations. (This assumes a minimum standard required for the regulated reporting that meets at least a tier 3 approach under IPCC and EMEP/CORINAIR) MRG methods are sufficient to ensure that data from EU ETS is of sufficient quality.
- A 'tonne' of pollutant has the same mass under all instruments by requiring the use of standardized calculation/measurement methods that are traceable to reference quantities via international standard methods.
- We are able to split the data completely for the EU ETS and non-ETS emissions. The MM would need a requirement under Implementing Provision Article 2(1) to stipulate that, for MS EU ETS sectors, emission estimates must be compiled to tier 3 (according to the IPCC) and include the emissions reported under the EU ETS Directive with activity statistics reconciled to national statistics so that:

$$\text{Non EU ETS component} = (\text{National Statistics} - \text{EU ETS activity}) * \text{appropriate EF.}$$

Harmonising Procedures

Data are relatively dynamic – often updated and revised based on new studies and statistical corrections - and the focus of the instruments (and therefore reporting) are on different aspects of environmental protection (e.g. industrial process regulation, National Action or Public Right to Know). The resulting pool of emissions information is not well co-ordinated and leads to duplication of effort, confusion about messages due to poor quality (principally transparency) and weak/inaccurate estimates of emissions and trends.

Streamlining the air emissions reporting obligations should decrease the burden to all those involved, while at the same time to increase the quality of the data in terms of TCCCA.

Some countries (including AT, FR, NL, PL, UK among the visited) already have well developed, integrated, procedures and systems within the country to try to minimise efforts and inconsistencies between the different emission reports and inventory submissions. Some of these included a clear set of institutional arrangement ensuring that data that is used in one instrument is also available and used for other instruments. Other MS have not yet set up such integrated approaches. Streamlining of procedures should ensure that data are compiled and reported using equivalent practices and procedures - including complimentary QA/QC, data quality requirements and reporting deadlines. Procedures should aim to optimise and facilitate data flows between

instruments within each MS so that the data reported under each is the same or at least the differences in the data reported are transparent. This level would include streamlining of the institutional arrangements set up in each MS to comply with the streamlined reporting obligations and the related reviews.

Reconciling Tools and Formats

Streamlining should ensure that the data reported, and the measures used to express the what, where, why and when of each data entry in each reporting instrument are equivalent. The best way of streamlining data would be to use common reporting tools or formats providing standardised tools including XLM schemas with validation rules, data specifications, common list of values and technical IT support including systems and tools that facilitate a smooth data flow from MS to the Commission.

5.3 Opportunities to implement Streamlining

Streamlining can be achieved in a stepwise manner. Different streamlining options exist depending on the preferred level of ambition and the associated costs and benefits.

Step 1: *Quick wins*: streamline those instruments that are already relatively close in scope and that are currently available for review. These include, in particular, the **national level emissions reporting** under:

- The MM (UNFCCC and Kyoto Protocol.)
- The NECD reporting (and CLRTAP reporting)

The main items to address in step one are to make sure that the emissions estimates for AP and GHG are compiled on the same basis (using, where appropriate, the same underlying national statistics and projections and where not appropriate clearly identifying the differences) and to encourage the development of national systems where data is compiled once in a way that they can be used many times. Technical streamlining of the reporting format and tools can also be important as it can offer efficiencies and reduce transcription errors. Some of the MS have indicated that they have experienced problems with the UNFCCC Common Reporting Format (CRF) Reporter tool. There is no harmonisation yet in technical reporting formats between the UNFCCC and CLRTAP conventions.

A possible solution could draw upon the approach taken by the CollectER software tool for national inventory reporting as developed by the European Topic Centre on Air and Climate Change. In this approach compiling the inventory and reporting are clearly and structurally separated in the software tool. The system allows the compilation and management of national emissions estimates using categories/activities at a detailed process level allowing emissions to be estimated accurately. The different reporting formats can then be aggregated from the same underlying database structure following one simple click, once the inventory agency has completed the database.

Steps towards a solution have already been made with the alignment of the IPCC and the NFR source/sink categorisation (although some minor issues still need to be resolved, including the issue of national and international bunkers).

In addition some MS are beginning to incorporate their AP and GHG inventories within the same national system (as defined by the UNFCCC) to oversee and co-ordinate data collection in other reporting obligations.

The benefits of step 1 will include national estimates and projections that use the same underlying data and assumptions for AP and GHG emissions resulting in the provisions of better evidence for cross AP and CC policy making. It will also improve transparency for GHGs and APs with EU ETS, E-PRTR, F-Gases and CO₂ from Cars.

Step 2: As a second step all **facility level emissions reporting** could be streamlined^{31,32} and at the same time that streamlining will make facility level data more usable by national inventories by:

- aligning the physical installation/facility referencing so that it is clear which EU ETS installations belong to which E-PRTR facilities and IPPC permits
- and ensuring the use of common or compatible activity definitions which enable emissions and activity for each installation and facility to be linked or compiled.

Currently aligning the “*activities*” dimension presents technical difficulties; at present ‘facility’ level emission reporting is allocated to an economic entity (according to who owns the facility or what legal entity holds a permit to operate).

In accordance with the different objectives of the facility/installation level emission reporting instruments, the data flows are along independent paths. EU ETS data ends up aggregated in an emissions trading registry, but is also made public pursuant to Directive 2003/4 such that most of these AERs are actively published. However, this public data excludes confidential data and the co-ordination of this data is not centralised at an EU level. The E-PRTR data will, in time, arrive at a centralised web-based database but lacks the activity detail level and the activity data itself to be of any great use for policy analysis or environmental assessments.

Complicating elements include the difference in objectives and functions of the facility/installation level reporting instruments:

- The primary objective of the EU ETS is related to the CO₂ accounting to be done in relation to emissions trading. If there is detailed verification and trading emissions limits then the objectives of the instrument can be achieved without the need for centralised detailed datasets.
- The RECAST governs the regulating of industry and emissions permitting under IPPC and driving the implementation of Best Available Technologies and require reporting of related emissions data.
- E-PRTR objectives³³ are intended to satisfy the “Community’s Right to Know”. All information in E-PRTR must be available to the general public in a way the general public can understand. The procedures to publish E-PRTR facility level data are aimed at a quick and smooth publication of these data on ‘Community right to Know’ type of web sites in a user friendly and flexible search tool. As such the data provided under E-PRTR are not as thoroughly reviewed or verified as the EU ETS by independent third party verifier. EU ETS legislation imposes much more stringent requirements on monitoring and quality assurance than does the E-PRTR.

Streamlining will ensure that the data reported by operators can be put together to provide a clear picture of emissions from activities, installations, facilities, organisations and so that that data can be put into context of national and Europe wide emissions as well as linked to statistical information on consumption and production. An alignment of the “*pollutants*”, “*activities*”, “*timeframe*” and “*geographical and physical extent*” dimensions of the reported data will ensure that all facilities can be identified at an EU level, across different databases, with those facilities providing clear information to identify the different parts of their production process (installations and activities) and how these fit into overall facility emissions³⁴.

³¹ N.B. All Large Combustion Plants under the LCPD also report under the EU ETS.

³² Most of ETS installations are also IPPC installations (except combustion plant between 20-50 MWh) and hold a permit. Most ETS installations also report under E-PRTR - except combustion plant between 20-50 MWh or plant with emissions below the pollutant threshold.

³³ Due to the very high thresholds in the E-PRTR this will provide limited information focused on the main emitters, and certainly it will not include “all significant environmental impacts”

³⁴ In the EU ETS annual emission report operators are required to submit IPPC category code and E-PRTR identification number. This E-PRTR identification number or the (IPPC) permit number could be used to help uniquely identify the emitting process and the facility it belongs to. The definition of installation in EU ETS is much narrower than facility. There

Step 3: **Integrated reporting.** Further streamlining, following step 1 and step 2, should focus on integrating:

- streamlined National level reporting;
- streamlined facility level reporting

Regulated facility/installation level reporting is by definition one of the subset of national level emissions; advanced streamlining must therefore focus on ensuring that facility level data are appropriately used and embedded within the national inventory compilation process.

Integration of facility level data into national level data includes development of::

- Source categorisations (the “*activity*” dimension) where principles differ for facility level and National level emission reporting:
 - National level reporting follows a process based characterisation of source categories (e.g. IPCC/ Nomenclature for Reporting –NFR)
 - Facility/installation level reporting follows an activity categorisation of the emissions according to which each facility has one main activity and all the generated emission are reported under that activity, by whoever 'owns' the facility.
 - Facility level activity data will, in many cases, be labelled as “confidential”; this can still be reported at EU level but not made publicly available on the web³⁵. In many MS's inventory compilers cannot access these confidential data - resulting in a consequent lack of transparency of their national reporting. Confidentiality could in this case be guaranteed by bringing the inventory compilation under similar rules as those that apply for data collection by national statistics offices

The ultimate goal is to eliminate duplicative reporting and for the operator of a facility containing one or more installations to report emissions and activity data only once at a level of detail that would allow aggregation to meet other requirements. It is also for a national inventory compiler to compile and report a single dataset on national emissions that uses the facility/installation datasets and national statistics as the basis for estimates for all pollutants and geographical regions so that the data can be aggregated to meet all national reporting commitments.

Benefits in harmonization of source categories of facility level data include improved data quality for national inventories, and of facility/installation data which enables analysis of overall performance of trade-offs and co-benefits of environmental action to assist better regulation, policy making and messaging to the public.

can be more installations in a facility and therefore additional sub-identifiers might be needed to cover individual processes/installations. This is explicitly mentioned in RECAST Directive article 4 (2)

³⁵ N.B. The LCP provides examples of data delivered to the Commission that is confidential and which, as a consequence, is not made publicly available.

6 Introduction to Options

The options presented below offer opportunities to improve emissions reporting in both the short and long term. The main objective is to provide practical and feasible steps (building on current instruments) to achieve a valuable evidence base of emissions data that can be used with confidence across the EU for policy making, and driving behaviour change through better informed businesses and the public decision making. The actions must provide flexibility for MS to choose the best methods for their own circumstances, whilst ensuring that reported data is reliable and comparable between MS. A practical and pragmatic approach has been taken which involves working with the current instruments to adapt and move them towards a clearer consistent set of instructions for methods and reporting. The options include subtle but important changes that in their own right improve the accuracy and or transparency of data as strengthening national systems in order to facilitate more dynamic and radical streamlining possibilities later on. Specific aims and outcomes for these options are as follows:

- Allow/prepare for possible future extensions in reporting scope as policy making and community right to know needs arise,
- Facilitate the increased coverage and quality³⁶ of emissions at EU level to improve confidence in decision making and focus policies (spatially or sectorally),
- Improve the general usefulness and accessibility of data at levels relevant to users to improve research and understanding of emissions sources and how to reduce them.

Options and priorities have been based on a feasibility assessment that takes account of the timelines for the review of instruments and the relative complexity and costs for the different options. Specific actions under option 4 include many of the instrument specific proposals (see annexes A1 – A5) presented for options 1, 2 and 3. The proposals are designed to be applicable for the stepwise/partial streamlining in Options 1, 2 and 3 or as part of full streamlining. However, that will require some tailoring so that they fit within the proposed regime of fully streamlined reporting. Costs and actions for option 4 are presented as stand-alone costs (costs for the option to work independently of the implementation of any other options); as a result these are maxima and should not be considered as additional to any of the other options.

Although the options present overall net costs they are recommended because of the improvement they give to the evidence base used for EU Air and Climate policy making. Indirectly these options offer significant savings through improved policies, driving resource efficiency awareness and improving science and research across Europe.

The options presented are based on the current reporting priorities with some anticipation of future requirements. However, a number of initiatives and negotiations are currently ongoing that may radically change the reporting requirements in the future. These include:

- The detailed agreements for monitoring and reporting under the Climate and Energy package and the Burden Sharing Agreement.
- The next commitment period of the Kyoto Protocol (2013 →)
- The revision of the Gothenburg protocol
- SEIS and INSPIRE

The options presented below will need to be adjusted in the light of these initiatives.

6.1 Costs and Benefits

In evaluating the costs of streamlining options the study estimated the change in costs due to revised requirements (and associated actions) - not to produce numbers on the overall burden of reporting regulations, these were mainly related to monitoring, reporting and verification. Based on this reference the costs of the additional actions needed to enable the better integration of national

³⁶ Including improved transparency, comparability, consistency and completeness between emissions datasets and the accuracy of emissions estimates.

inventory systems vary from €0.6M – €9.8M to implement (a maximum investment of 6% of current costs) and €0.03M - €2.4M/year to operate (a maximum additional annual burden of 1.5% of current costs).

Costs have been estimated for the additional administrative activities required by MS, the Commission and Industry, in complying with the proposed changes to the methodologies and reporting requirements for emissions.

As the proposals in this paper are only for changes to the way emissions are accounted and reported the only significant costs will be administrative costs including the development of administrative IT systems. No other costs are anticipated (e.g. for infrastructure investment or annual actions involving mandays of effort).

The estimates of cost are highly uncertain. For this reason they are presented to provide the basis for further discussion and should not be used without complimentary detailed analysis.

As the options propose additional integration of data and the use of more detailed methods or datasets all show a net cost - savings are generally small and only where duplicated reporting can really be removed. There are, however, significant indirect benefits that will be brought about through implementation of the streamlining options. These benefits, while very difficult to quantify, are the important outcomes that will enable much more cost efficient management of emissions reductions in MS and across Europe. These benefits include:

- More efficient policy making and stronger arguments for policies and measures built up through a more up-to-date, detailed, accurate and transparent evidence base of emissions.
- Improved engagement with the media and the public (more successful behaviour change) on emission impacts and emission reductions measures through more reliable and transparent data (less methodological changes and conflicting messages/definitions).
- A more reliable resource of data for industry and business analysis to underpin more environmentally astute investment and longer term environmentally sound strategic thinking. (e.g. if industry and businesses know, with more certainty, the trends and key factors increasing emissions they will be able to invest in solutions).

General cost estimation principals:

As these options and actions are principally concerned with developing and maintaining the flow and presentation of data between industry (generally regulated industry) MS (including their statistical agencies, CAs and national inventory agencies) and the Commission costs have been attributed to one or a combination of these three groups. Costs/savings have been separated into the development (D) of data flows and reporting and the annual cost for maintaining maintenance (M) of data flows and reporting activities.

The estimates were based on professional judgment (usually on the number of days/hours per MS or installation/facility that an additional or expanded task would take and specific IT requirements e.g. facility/installation reporting systems). Assumptions built on information collected during the project on current cost of data collection, compilation and reporting (see section 1.2) and experience with similar actions from other projects (e.g. EU ETS and NECD). The types of activities that have been attributed costs and possible savings include:

- The integration of more accurate data into the national inventories,
- Interpretation and review of datasets by the Commission and its agencies (although these costs were minimal)
- Improving data flows from industry reporting,
- MS development or adjustment of IT systems to enable efficient and consistent data flows.

A standard manday cost of €520 was assumed for an estimated day of resource required to develop/adapt systems or collect or report data.

Where costs to relating to industry data have been estimated the numbers of units across Europe assumed were as follows:

- 10,000 EU ETS installations
- 12,000 E-PRTR facilities
- 52,000 IPPC permits/installations.

In a number of cases “complex” subsets of these numbers have been assumed in applying additional costs that would only apply to complex integrated facilities or installations with a number of interrelated activities.

Where costs for new MS activities have been estimated then all MS (27) have been assumed to incur the estimated average costs. In some cases, where, some MS already engaged with an activity that is being recommended (e.g. use of EU ETS data in national inventories) the number of MS incurring additional cost will be those assumed not to already be carrying out the activity (this is then specified in the details of the Actions).

The costs for each option are stand-alone e.g. Option 4 includes all of the stepwise costs for the options 2 and 3b plus additional costs to realise fully streamlined data flows. Cost for the individual options should not be simply added up as different combinations of actions are feasible and sensible. The largest costs are for extensions to facility/installation data (in options 3 and 4) and the best savings are achieved through streamlining national inventories. In some cases, such as with the development of IT systems, it is likely – given time - that MS would develop these anyway to solve local issues or as a part of the increasing initiatives on eGovernment. This means, that the cost estimates are probably high. In addition the benefits are difficult to account for in terms of savings and are under estimated in monetary terms.

Option Specific cost assumptions.

Table 6.1 presents the options, their estimated cost to the Community as a whole, and a brief description of their benefits. The costs are split into development costs, which will be incurred within the initial two years (from the dates of introduction provided in the first column) and ongoing pro-rata annual maintenance costs.

Table 6.1 Options with costs and benefits:

Proposed Options	Costs €Million - for all EU MS unless otherwise stated	Benefits
<p>1: Revise the MM to address known problems, improve clarity, make better use of available data and ensure consistency with the NECD.</p> <p>(Earliest introduction date 2009)</p>	<ul style="list-style-type: none"> ○ Development cost: €0.6M (spread over the initial 2 years) ○ Ongoing pro-rata³⁷ annual Maintenance cost for the duration of the instruments: €1.3M/yr annually <p>(The costs above relate mostly to the inventory compilers and competent authority for the collection and integration of facility level data)</p>	<ul style="list-style-type: none"> ○ Will deliver national GHG estimates and projections that are more accurate, consistent and comparable with other emissions reporting. ○ Will improve transparency for GHG and ensure it draws on EU ETS, E-PRTR, F-Gases and CO₂ from Cars Data.

³⁷ Some reporting activities may be biannual; costs have been annualised (e.g. 500,000 over 2 years = 250,000 per year)

<p>2: Revise both the MM and the NECD to address known problems, improve clarity, make better use of available data and ensure mutual consistency. (Earliest introduction date 2010)</p>	<ul style="list-style-type: none"> ○ Development cost: €1.0M (spread over the initial 2 years) ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €2.2M/yr Significant costs to MS in collecting facility level data (Includes a year on year annual saving of €0.3M/yr for national reporting) 	<ul style="list-style-type: none"> ○ Will deliver national GHG and Air Pollutant estimates and projections that are more accurate and use the same underlying data and assumptions. Stronger linkages will provide better data for multi-pollutant multi-effect policy making. ○ Will improve transparency for GHGs and APs with EU ETS, E-PRTR, F-Gases and CO₂ from Cars.
<p>Alternative 3a: Revise the MM as indicated in Option 1 and amend the EU ETS to enable a better flow of usable facility level data into National GHG Inventories (Earliest introduction 2010/13 and on)</p>	<ul style="list-style-type: none"> ○ Development cost: €3.5M (spread over the initial 2 years) includes €3m costs to the Competent Authority and the Inventory Agency for improved systems to integrate EU ETS data into the national GHG inventory and €0.5m to industry for adapting to the new reporting systems. ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €0.03M/yr are for the Inventory Agency collating data from EU ETS systems (Full costs are off-set by an annual €0.3M/yr savings to MS from improved management of EU ETS data compared to current estimated costs of manual data gathering systems) 	<ul style="list-style-type: none"> ○ Will deliver national estimates that integrate EU ETS and GHG emissions to provide more accurate national emissions data, show clearly the contributions of non EU ETS sources and provide better support Climate Change policy making. ○ Significant indirect savings to industry may result from their improved awareness of resource use and emissions.
<p>Option 3b: Introduce additional guidance to enable streamlined Industrial Installation reporting and greater availability of facility level data in National GHG and air pollutant Inventories (Earliest introduction 2010/14 and on)</p>	<ul style="list-style-type: none"> ○ €6.2M Development cost (spread over the initial 2 years) (Including €3M to MS Competent Authorities in developing EU ETS AER and E-PRTR systems and €2.6M costs to Industry for adapting to the for more detailed reporting under E-PRTR). ○ Ongoing pro-rata annual Maintenance cost for the duration of the instruments: €2.1M/yr (for industry to resource more detailed reporting). 	<ul style="list-style-type: none"> ○ Improved transparency for GHGs and APs between EU ETS, E-PRTR, and IPPC; enabling analysis of overall performance of industry and trade-offs and co-benefits of environmental action to assist better regulation and policy making. ○ Provides more accurate AP and GHG data for national inventories that use facility/installation specific data to support policy making and messaging to the public. ○ Significant indirect savings to industry may result from their improved awareness of resource use and emissions.

<p>4: Following on from Option 2 and 3b to harmonise emission data flows to deliver national and facility level data suitable for use with a single information reporting tool/platform.</p>	<ul style="list-style-type: none"> o Development cost: €9.9M (spread over the initial 2 years) (Including €4.3M for MS developing EU ETS/E-PRTR AER systems and €2.6M for E-PRTR industries gearing up for detailed reporting, and €1M for national inventory systems and €2M for developing better national methods). 	<ul style="list-style-type: none"> o Significantly improved data flow into national inventories and from facility/installations. o Provide platforms that will provide easy access to data for analysis of the overall trade-offs and co benefits of environmental action, further better regulation and policy making, and enable more effective messaging to the public.
<p>(Earliest introduction 2012/14 and on)</p>	<ul style="list-style-type: none"> o Maintenance cost of €2.4M/yr (Including €2M/yr costs to Industry for more detailed reporting under E-PRTR and IPPC and €0.25M/yr for national projections integration). (Includes annual €0.9M/yr saving for improved national reporting and facility/installation level data management.) 	<ul style="list-style-type: none"> o Specific benefits include improved data quality, speed of compilation, and accessibility through integrated data flows.

NOTE: The estimates of cost are highly uncertain. For this reason they are presented to provide the basis for further discussion and should not be used without complimentary detailed analysis.

Option 1:

The cost basis for option 1 assumes costs for a subset of MS (14) in developing (25 days) and annually using (1hr per EU ETS installation for the 14/27 subset of EU ETS installations) EU ETS data in the national inventories (it is assumed that those that already use EU ETS data do not incur additional costs). Option 1 also includes (35 days per 2 yr) costs for MS in integrating and reporting data on air pollutant and greenhouse gas projections and policies and measures. No additional costs have been assumed for Industry or the Commission.

Option 2:

The cost for option 2 includes the same costs as option 1: costs for a subset of MS (14) in developing (25 days) and annually using (1hr per EU ETS installation for the 14/27 subset of EU ETS installations) EU ETS data in the national inventories (it is assumed that those that already use EU ETS data do not incur additional costs).

Option 2 also includes the same cost as option 1 (35 days per 2 yr) for MS in integrating and reporting data on air pollutant and greenhouse gas projections and policies and measures. No additional costs have been assumed for Industry or the Commission.

A saving by option 2 is assumed based on an estimated current cost of 92 days for NECD, of which 25% (estimated time savings from compiling, reviewing and editing only one document) can be saved by simplifying reporting requirements. It will be important to ensure that this option does not reduce the accuracy of air pollutant data in efforts to streamline reporting and methods. A pragmatic approach will need to be taken by MS and flexible requirements framed by the Commission to achieve streamlining whilst allowing the quality (including accuracy) of AP and CC inventories to continue to improve.

Option 3:

Unlike option 3b, option 3a cost estimates again assume costs for a subset of MS (14) in developing (25 days) EU ETS data in the national inventories, plus cost for the development of the simplest adequate software, which is estimated to be 150,000 EUR per MS for both option 3a and 3b (based on information from current work flow system cost for EU ETS) for 20 MS who do not have yet such systems. It's estimated the €0.3M annual maintenance cost as per option 1 for elaborating EU ETS data in the MM reports is offset by the saving to MS through the existence of

an improved EU ETS data flow. As in option 1, costs are also assumed for MS in developing reports and systems (20 days) for annual presentation (20 days /yr) of EU ETS emissions in the context of national totals.

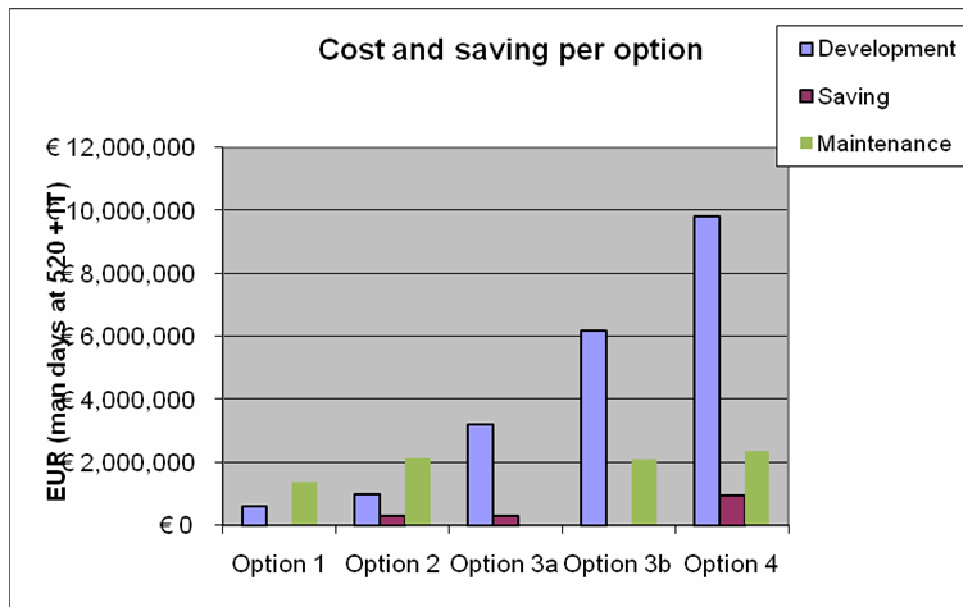
For option 3b it is assumed development cost for MS to adjust reporting for 12,000 facilities takes 1/2 day each a €520. It is believed there is no additional effort for most installations but for an estimated 1000 complex installations it takes 2 days per installation annual cost to collect and report data. Also costs are assumed to be 0.5 days for 8% of IPPC permits of 50,000 installations per year that require revision.

To develop supporting systems on MS level, the 27 MS are assumed to need 40 days on the average.

Option 4:

The costs assumed for option 4 are an aggregation of the costs for a number of the development actions in option 2 and 3b and some of the industry data flow maintenance actions in option 3b. The national inventory component assumes additional costs for enhancement of reporting systems and links from current systems to a new reporting system assume development costs of 50 mandays per MS for the development of systems for each MS and 200 days for the Commission in support activities. The specific costs laid out in option 2 for MS in manually collecting facility/installation level data from the EU ETS and E-PRTR (~ €3.4M in data collection and checking) have been excluded as it is assumed that systems developed in this option will streamline the data flow. The facility/installation component costs assume the cumulative costs of developing and maintaining the dataflow for EU ETS & E-PRTR data as presented in option 3b. Development costs include €0.2m per MS for 20 MS (it is assumed that 7 already have EU ETS systems) for the development of facility/installation reporting systems, 0.5 day per E-PRTR installation for industry to adapt to the new systems and detailed reporting plus 40 mandays per MS for all 27 to develop permitting emissions reporting templates. Maintenance costs assume costs to industry of an additional 2 mandays per year for 100 “complex” EU ETS installations for more detailed IPCC category reporting, 2 mandays for 1000 “complex” Facilities under E-PRTR in dealing with more detailed IPCC reporting and activity data and 0.5 days for the 8% of IPPC permits revisions or applications that will require emissions reporting. As for option 2, all of the costs for the development of new methods for the integration of facility level data into national totals and presentation of datasets have been assumed to be for 14 MS for EU ETS and for all MS for E-PRTR and IPPC and include. Development costs also assume 500 days for the Commission in developing systems for integrating emissions reports.

Figure 6.1 - Summary of costs and savings for each option.



A more detailed table of the cost benefit assessment per option and action is presented in appendix A4

6.2 Summary of Options

A summary of the options and related instruments is presented below. Table 6.2 presents an overview of the options and how they relate to the stepwise approach recommended for streamlining.

Table 6.2 - Summary table for Options and Instruments

Option	MM	NECD	EU ETS	E-PRTR	RECAST	SEIS	F-Gases	Fuel Quality & Content	CO2 Cars
Step 1: Streamlining options for National Inventories									
Option 1: MM only	A	R	R	R	R	R	R	R	R
Option 2: Streamlining MM and NECD	A	A	R	R	R	R	R	R	R
Step 2: Streamlining options for Industrial Installation reporting									
Option 3a: EU ETS Data Flows for National GHG Inventories	A	--	A	--	--	--	--	--	--
Option 3b: Streamlining Industrial Installation reporting	R	R	A	R	R	R	R	--	--
Step 3: Further long-term streamlining is presented in the alternative options below. Options for consolidating...									
Option 4: Consolidated national inventory and facility/installation reporting	A	A	A	R	R	A ³⁸	R	R	R
Key: Option/Instrument annotations: A = Actions require changes to the Instrument Specific proposals are made in the relevant part of annex A. R = Proposals have relevance to the instrument but no changes are required.									

³⁸ With reference to a possible new reporting instrument.

Step 1:

Option 1: MM only: To improve the quality of GHG emissions data reported by MS including the consistent use of national statistics and reported installation emissions data,. The main changes focus on articles 3.1 and 3.2 of the MM and on articles 2(1), 2(2), 2(3), 8, 9 and 10 of the implementing provision. Proposals tackle the strengthening of requirements for the use of more facility level data into MM calculations, for the use (where appropriate) and development of the same national statistics as are used for other national emissions reporting and for the explicit use of the EMEP/EEA guidebook. It also includes proposals to harmonise methods and reporting for PAMs and projections with the NECD. Additional actions relate to proposals for structural adaptations of the MM are presented in action 1.8 and designed to provide flexibility for future emissions reporting streamlining. The costs for option 1 are estimated as additional costs for all MS combined and are in the region of €0.6m for development and €1.3m for annual maintenance. All the development costs and the majority (80%) of maintenance costs relate to the increased MS effort in incorporating the EU ETS and E-PRTR data into the MM. No savings are foreseen through this option as the primary actions are to increase the integration of facility/installation level data and national statistics. However, this option will deliver wider benefits to policy makers through national estimates and projections that are more accurate and consistent with other national and international datasets. Specifically, this option will also improved transparency for GHGs with reports from NECD, EU ETS, E-PRTR, F-Gases and CO₂ from Cars.

Option 2: Streamlining MM and NECD: Proposes an alignment of the requirements for emissions methodologies and reporting between the NECD and the MM by building on the NECD requirements (presented in Articles 7 & 8 and annex III of the NECD). This option focuses on aligning the NECD and MM to a common standard for National Inventories (accepting that there may be different methods used for AP and CC estimates where specific national circumstances exist. Many of the actions are refinements on actions for the MM presented in Option 1 but broadened to accommodate air pollutant emission estimation and reporting requirement (including as above the use of facility/installation level data, common national statistics and projections and policy and measures assumptions). Option 2 can be implemented independently of option 1. This option 2 could be implemented by addressing the provisions for the MM and NECD separately but making their outcomes the same. The actions in Option 2 have been written assuming that both the MM and NECD reporting requirements remain with the respective instruments. If the actions/provisions referenced below were to be combined into a single instrument such as the MM some rationalisation of the actions below would be required. Action 2.9 outlines the high level considerations needed to combine all NECD provisions for emissions estimation and reporting under the MM. Costs for option 2 are estimated to be in the region of €1M for development of data flows and systems and €2.2M for annual maintenance. All the development costs and the majority (90%) of maintenance costs relate to the increased effort in incorporating the EU ETS, E-PRTR and IPPC data into the MM and the NECD. Savings estimated for the combination of methodology reports for the NECD and the MM are in the region of €0.3M, based on assumptions that ¼ of current NECD reporting costs would be saved annually. Therefore, overall maintenance costs for option 2 would be in the region of €1.8M. The benefits of these actions would be a greater level of accuracy in national estimates of emissions and dramatically improved transparency and consistency between reports, improving policy maker and public awareness and utilisation of the data for decision making and emission reduction. However, It will be important to ensure that this option does do not reduce the accuracy of air pollutant data in efforts to streamline reporting and methods. A pragmatic approach will need to be taken by MS and flexible requirements framed by the Commission to achieve streamlining whilst allowing the quality (including accuracy) of AP and CC inventories to continue to improve.

Step 2

Options 3a and 3b_offer choices that work towards the longer-term goal of streamlined facility/installation reporting as well as providing a much more useful base of facility/installation level data for national inventory compilation. These options offer opportunities to: align regulated

activity emissions data so that it can be compared between industrial instruments and promote the flow of improved facility/installation data into national inventories.

Option 3a focuses on the MM and the EU ETS and promoting the flow of AER information to the national Greenhouse Gas inventories. It provides proposals for the introduction of requirements for the MM, (Article IP 2(1), (2), and (3) in 2009) to use EU ETS AER data (as presented in options 1 and 2). It also proposes enhancements to the reporting of data in AERs under the EU ETS (Articles 8 & 14 of the MRG when the EU ETS MRG is incorporated as a regulation in 2012) to make this data more usable for national inventories. Total EU costs (All MS) for option 3a are in the region of €3.5M for development (probably implemented between 2010 and 2013) and €0.3M savings for maintenance³⁹. These costs include €3.2M for the enhanced development of AER data and flows (across all MS) and €0.3M for development of national systems. These requirements, when implemented will establish an improved flow of data and provide transparency between emissions from EU ETS installations and National inventories (especially the MM). They will deliver national estimates that integrate EU ETS and GHG emissions to provide more accurate data, show the contributions of EUETS and non EU ETS sources (consistent with the requirements of the Effort Sharing Decision) and provide better support Climate Change policy making.

Option 3b The objectives of this option include:

- Getting data reported for one instrument in a form that can be aligned with (meaning that a user can see the relevance of EU ETS reported emission in E-PRTR reported emissions for example) other instruments. (e.g. using EU ETS AER activity data for some E-PRTR facilities)
- Enhancing the usability of facility/installation emissions and activity data so that they can be aligned and used for national inventories thereby providing a better evidence base for policy makers.

The option focuses on actions to be undertaken over the next five years. Specific actions focus on stimulating the improvement of the installation/facility referencing and the sector / techno-economic/activity classification (activity categorisation) and detail collected and exchanged within MS relating to EU ETS MRG (articles 8 and 14), the E-PRTR (Article 5) and the RECAST (Articles 8, 13 and 67) so that emissions can be compared across instruments and used for national inventories. From a national inventory perspective, whilst there was a realisation that the greater availability of facility and installation level data would improve national inventories there was acknowledgement that greater effort would be required to collect this data in the right form and level of detail and to integrate it with national statistics. Key actions in this option include:

- 1) Structuring the EU ETS activity data reported in the AERs so that it is useful for national inventory compilation (by helping to include accurate emissions from non EU ETS sources) and linking it to the non-CO₂ emissions under E-PRTR and IPPC.
- 2) Improving the source/techno-economical classification and level of detail in operator reports that feed into E-PRTR reports so that the emissions can be aligned with EU ETS activity data and to enable activity data to be gathered for relevant fuel combustion activities in E-PRTR facilities from the EU ETS AERs. This requires inclusion of more detailed sub facility referencing (e.g. the EU ETS permit numbers and operator registration numbers) as well as more detailed reporting by IPCC subcategory to the CA⁴⁰.
- 3) Improving the operator reporting of activity data for E-PRTR facilities that do not include EU ETS installations by facilitating emissions and activity data reporting associated with permitting under the RECAST.

³⁹ It is assumed that data is collected and analysed manually by those MS.

⁴⁰ Finland has pointed out that in some countries the data already is available at process/boiler level. In a number of Countries the fuel consumption data is available from compliance reporting according to the IPPC directive and from statistical enquiries carried out by the Statistical offices as well as in some E-PRTR facilities reporting.

- 4) Encouraging the transmission to the CA of other important (indicative) emissions activity data from IPPC permit application and reconsideration for important installations that are not in E-PRTR.

Costs for option 3b are in the region of €6.2M for development and €2.1M for maintenance. The majority of the development costs are for the adjustment of operators to more detailed reporting under E-PRTR (€2.6M), the development of new reporting templates to carry and integrate the EU ETS (€3M) and RECAST (€0.6M) data.

Note: E-PRTR systems do not require significant development. The majority of the annual maintenance costs (€1.2M) cover possible additional reporting of annual emissions data that might be specified by CAs in association with permitting.

Benefits include the enhanced usability of facility/installation emissions and activity data for policy makers and for national inventories and begin to streamlining operator reporting through improved the IPCC category referencing in facility/installation reports. A greater understanding of the co-benefits and trade-offs of actions and the performance of industries in the same sector and across sectors will arise through additional detailed emissions and activity data reporting. A common set of variables (source sector/techno-economical/activity definitions, pollutant and location referencing) for a facility, installation, operator and site will improve accuracy, transparency and comparability and ensure that emissions and activity data for individual installations under EU ETS and IPPC and facilities under E-PRTR can be linked unambiguously. These actions are the building blocks towards a final goal of creating a single reporting solution for operators (similar to those implemented in a number of MS already (e.g. France, Estonia, Finland etc.) that would cover all installation and facility reports (see Option 4) that will improve the efficient exchange and use of data (e.g. reporting under E-PRTR linked to EU ETS activity data could remove reporting burden under LCPD, as EU ETS covers all LCPD installation activity data (fuel consumption) and E-PRTR covers all emissions). In addition (EA 2009) it is estimated that the enhanced collection and sharing of installation level activity data and emissions would improve the resource efficiency of businesses and in the case of the UK save between £3M and £16M per year. This option also works towards the ideals of SEIS ("report data once and use it many times") and INSPIRE (developing common spatial definitions for installations and facilities).

Step 3

Step 3 options offer opportunities for longer term streamlining of reporting under a number of different conditions. The most comprehensive of these options is option 4; the actions here work towards the longer-term goal of complete air emission estimation methods and procedures streamlining.

Option 4 focuses on harmonising emission dataflow and delivering national and facility level data into single information reporting tool/platform through improved definitions and reporting schemas. This aims to work more explicitly with the SEIS principles than is presented in the options above in ensuring that the data is kept as close as possible to the source in order to improve efficiency and data integrity. The goal is for an efficient one-stop-shop for emissions reporting with accurate and transparent data based on the same assumptions, statistics and facility/installation level estimates. This system would be easy to get data into and out of and support the evidence base needed for future policy development and public information systems on the environment. The specific actions under option 4 include many of the instrument specific proposals (see annexes A1 – A5) presented for options 1, 2 and 3. These proposals are designed to be applicable for the stepwise/partial streamlining in Options 1, 2 and 3 or as part of full streamlining as presented here. However, that will require some tailoring so that they fit within the proposed regime of fully streamlined reporting. Costs and actions for option 4 are presented as stand-alone costs (costs for the option to work independently of the implementation of any other options). As a result costs are a maximum and should not be considered as additional costs to any of the options and actions above.

Option 4 can be implemented in a number of different ways - four of the most feasible are presented below:

- **4a:** Through the development of the individual provisions under E-PRTR, EU ETS, MM and NECD as described in options 2 and 3b with additional strengthening of the requirement for the delivery/accessibility of data according to a standard specified format/schema so that the data can be joined together by the Commission into one or more integrated Europe wide databases. Feedback from the workshop indicated that this was the preferred option as it provided flexibility for the instruments to exist as they do today but provides the necessary schemas and formats for data to be joined together as needed.
- **4b:** Extending the E-PRTR to carry the combined reporting requirements for itself, the EU ETS, MM, and NECD - as described in options 2 and 3b above - together with a stronger requirement for the delivery of data according to a specified format/schema would enable the data to be joined into a single or MS owned database which forms part of E-PRTR. The detailed reporting requirements in the MM, NECD and EU ETS might then be repealed⁴¹.
- **4c:** To develop a new reporting instrument which defines combined reporting requirements in a similar way to 4b above but focussed around the creation of a dedicated new instrument which also has a stronger requirement for the electronic delivery/accessibility of data according to a specified format/schema so that the data is joined into a single or MS owned database. The detailed reporting requirements in the MM, NECD, E-PRTR and EU ETS could then be repealed. Annex A6 presents some ideas on the key components of Reporting Instrument.
- **4d:** An extended version of the 4c where all methodology requirements are also moved from the existing E-PRTR, EU ETS, MM and NECD instruments and brought together with the reporting requirements into a new reporting instrument. The detailed methodologies and reporting requirements in the MM, NECD, E-PRTR and EU ETS could then be repealed. Annex A6 presents some ideas on the key components of Reporting Instrument.

NOTE: In both 4c and 4d the new Reporting Instrument would introduce requirements for "National System" building on those required for the MM and UNFCCC and governing emission estimation and reporting planning, preparation and management (including QAQC) across facility/installation and national emissions data.

Costs for option 4 include development costs of €11M and include the development/expansion of E-PRTR, RECAST and EU ETS reporting systems to deliver a complete one-stop-shop facility/installation reporting system that also delivers data suitable for use in national inventories. Maintenance costs (€2.4M) are primarily for the increased reporting needs for E-PRTR and RECAST to deliver more detailed data on facilities and in association with IPPC permits and monitoring requirements. Annual savings (of €1M) are achieved through national inventory streamlining reporting on methods and trends and some savings on current EU ETS manual data collection for national inventories. Benefits include minimisation of errors and maximum data quality, speed and accessibility of through integrated dataflows. Improved data quality for national inventories, and of facility/installation data will enable analysis of overall trade-offs and co benefits of environmental action to assist better regulation and policy making and messaging to the public.

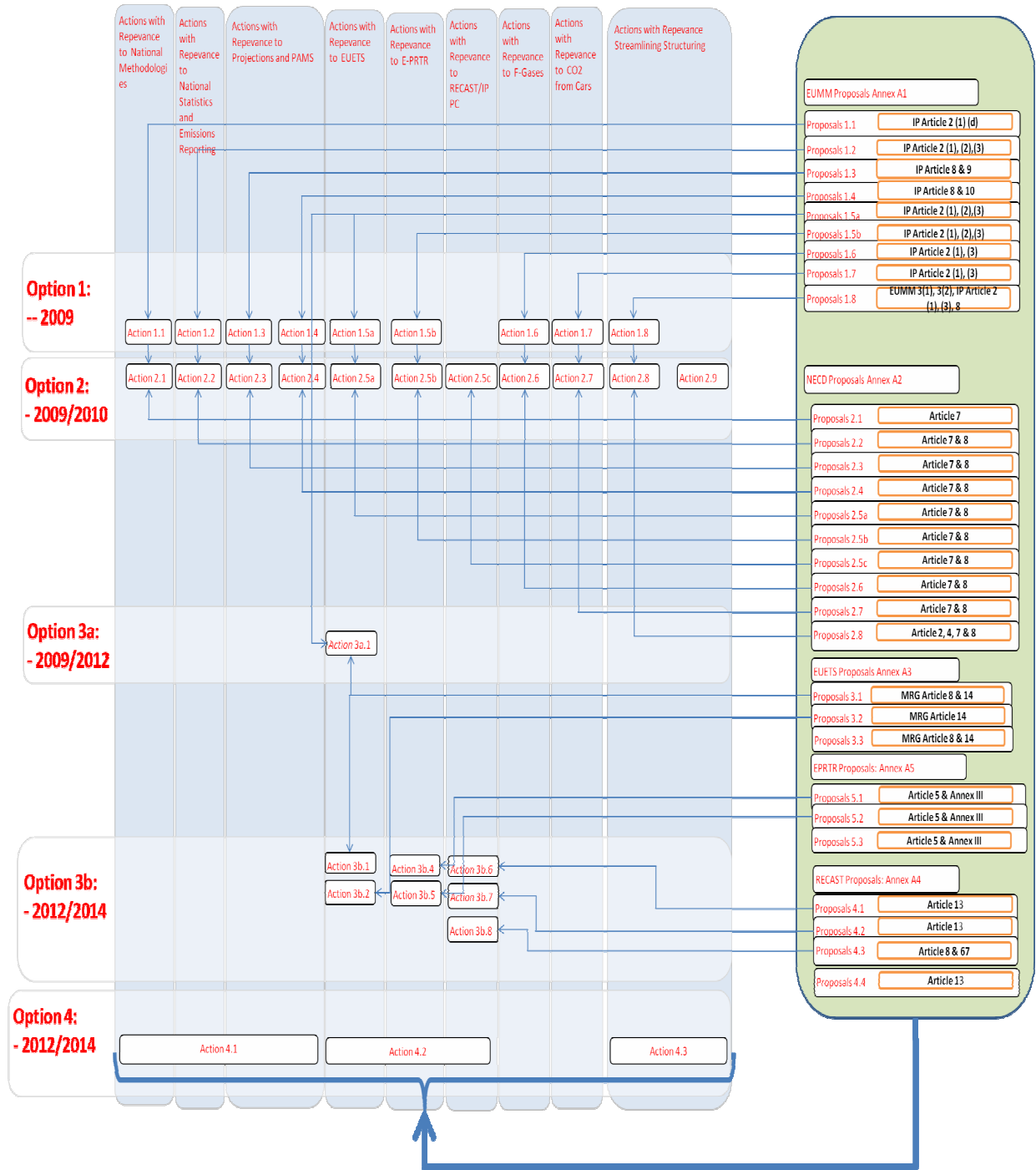
Significant indirect savings (~ €3-16M per MS) to industry may also be possible driven by better awareness of resource use and emissions (EA 2009 section 6)

41 As this is a difficult type of measure to be implemented, it might be easier to promote a new piece of legislation that creates a common EU data infrastructure and enable MS to use one entry point for all the data delivery, harmonising content where possible and creating additional requirements where necessary in order to achieve better data quality and traceability.

6.3 Timelines and roadmap and detailed actions and proposals

There are a number of actions in each option presented in the roadmap in Figure 6.2. The roadmap shows each option and its relevant actions. The Options and actions are presented in the elaborated sections 6.4 – 6.7 below along with an estimate of the aggregated costs for their implementation. Each action incorporates one or more instrument specific proposal (which may have costs or represent savings to the Commission and MS associated with implementation of new requirements). Costs and benefits together additional methodology information, are given for each action; detailed text for proposals and cost data are given in Annex A.

Figure 6.2 – Roadmap showing the relationship between the actions and the specific instrument proposals (presented in the Annex) for each option.



NOTE: Some of the instruments specific proposals are relevant for a number of different actions and options.

6.4 Option 1: MM only

This option is designed to improve the quality of GHG emissions data reported by MS including the consistent use of national statistics and reported installation emissions data. The main changes focus on articles 3.1 and 3.2 of the MM and on articles 2(1), 2(2), 2(3), 8, 9 and 10 of the implementing provision. Proposals tackle the strengthening of requirements for the use of more facility level data into MM calculations, for the use and development of the same national statistics (where appropriate) as are used for other national emissions reporting and for the explicit use of the EMEP/EEA guidebook. It also includes proposals to harmonise methods and reporting for PAMs and projections with the NECD. Additional actions relate to proposals for structural adaptations of the MM are presented in action 1.8 and designed to provide flexibility for future emissions reporting streamlining. No savings are foreseen through this option, as the primary actions are to increase the integration of facility/installation level data and national statistics. However, this option will deliver wider benefits to policy makers through national estimates and projections that are more accurate and consistent with other national and international datasets. Specifically this option will also improved transparency for GHGs with reports from EU ETS, E-PRTR, F-Gases and CO₂ from Cars.

Table 6.3: Option 1 outline

Opportunity	The MM is due for revision in 2010. Opportunities exist to improve the accuracy of national GHG emissions and their alignment with air pollutant emission estimates and installation/facility level data from industry.
Focus and scope	The focus is on MM Article 3(1), and 3(2), Implementing Provisions Articles 2(1), 2(2), 2(3), 8, 9 and 10. Specific additional requirements are proposed through new paragraphs on the use of facility level data (from the EU ETS) and ensuring consistency with national statistics and other national inventories.
Main objectives	<ul style="list-style-type: none"> ✓ To improve the quality of GHG emissions data reported by MS including the consistent use of national statistics and reported installation emissions data, the transparent reporting of emissions from different sectors and how they relate to national data and regulated activity emissions. ✓ To improve reporting and reporting guidance to link terminology and nomenclature across the instruments. ✓ To prepare the MM for further future streamlining by moving specific requirements for methods and reporting to the Implementing Provision.
Argumentation	<ul style="list-style-type: none"> ✓ Implementation of this option will deliver a higher quality MM inventory, making MM emission estimates more transparent, comparable with the emission reporting from facilities and installations and consistent with national and international statistics. ✓ Current MM provisions only refer to the IPCC and leave the specification of methods for non-GHG's to the IPCC Guidelines (which currently refer to the EMEP/CORINAIR Guidebook). In order to ensure consistent use of methodologies for non-GHG's in the MM and for reports under NECD and CLRTAP across MS the EU needs to provide a firmer requirement to use the UNECE Guidebook. ✓ Improved standards for the use of national statistics will improve the accuracy comparability and transparency of MS GHG inventories. ✓ Use of data from the EU ETS (Annual Emissions Reports) will improve the accuracy, transparency/consistency for at least 30% of National emissions of GHG. Use of available installation/facility datasets will improve the accuracy of MS inventories by allowing tier 2 or 3 methods to be applied for more sources. ✓ Consolidation of guidelines for projections and PAMs will result in better forecasting of emissions (more accurate and comparable) and input to future policies.

Summary of Recommended Actions for Option 1

Aligning the NECD to the MM

Action 1.1 National Inventory Methods: Introduce a new requirement for MS to use, in addition to the IPCC guidance, the EMEP guidebook for Air pollutants emission estimation of indirect greenhouse gases (SO₂, NO_x, NMVOC, CO) (see Proposal p1.1 of Annex A1)

- **Pros:** Will ensure that estimates of the same pollutants (NO_x, SO₂, NMVOC, CO) are based on the same methodologies for MM and for reports under NECD and CLRTAP.
- **Cons:** There may be a burden on some MS for re-estimation of emissions should the Guidebook change as a result of on-going maintenance (which is, to some extent, out of the control of the EU or the UNFCCC). Guidebook updates may be more frequent than the IPCC guidelines requiring more frequent revisions. Timing of these updates may impact on MS future commitment period estimates (where future commitment periods include indirect GHGs).
- **Costs + Benefits:** No additional costs are expected from this action. Benefits include improved confidence in data supporting cross air pollutant and greenhouse gas policies with the ability to see co-benefits and trade-offs clearly without confusions to do with different methodologies.
- **MS Practice:** The MS enquiry has shown that all MS use the EMEP Guidebook for their indirect GHG methodologies.

Action 1.2 National Statistics: Improve links to the NECD and official national statistics by Including requirements for MS to use (where appropriate) the same national energy, transport and production/consumption statistics for the MM as are used for the NECD whilst ensuring that good practice (according to the IPCC guidelines) is applied. . Include mandatory requirements for MS to provide detail energy balances (at least CRF subsector level) for the compilation of high quality detailed estimates (at least tier 2) for Key Categories⁴². (See Proposal 1.2 of Annex A1)

- **Pros:** Delivers high quality MM inventory bringing it in line with data used for national and International reporting.
- **Cons:** May put some additional burden on some MS by enforcing closer interactions with national statistical agencies and collection of additional statistical data for key categories.
- **Costs & Benefits:** No additional costs are expected from this action. Benefits include improved confidence in data supporting cross air pollutant and greenhouse gas policies from more accurate estimates and stringer links to other national statistics. Improves the buy-in from agencies and government departments making policies if their data/statistics are used for national inventories. Also improves the ability to see co-benefits and trade-offs clearly without confusions to do with different statistical datasets.
- **MS practice:** 22 MS (AT, BE, CY, DK, FI, FR, DE, EE, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE, UK) already use common national energy statistics for estimating their MM and NECD inventories while CZ and HU use common data in some cases. EE systems currently do not use common statistical data.

Action 1.3⁴³ Projections: Require MS to use the same underlying projected activity data⁴⁴ and assumptions as those used for NECD 2001/81/EC and that these estimations take account of co-benefits and trade-offs across AP and CC. Require MS to make sure that the assumptions used for underlying projected activity data (e.g. energy, transport etc) are based on the latest statistical data (trends) and do not present discontinuities between historic estimates reported under article 2(2) of the Implementing Provisions and projected estimates reported under Article 8 and 9 of the Implementing Provisions. (See Proposal

⁴³ Guidelines for Policies and Measures methodology would help to establish a stronger basis for estimating PAMs and Projections and result in better forecasting of emissions and input to future policies. Guidelines could be developed drawing on CAFE WG guidelines and might cost the commission ~€0.5M for the development of guidelines.

⁴⁴ Using the same base projection data and economic, demographic assumptions.

p1.3 of Annex A.1) In addition it is recommended that the CAFE recommendations (CAFE 2006) are combined with the WGII work on PAMs and projections templates for the MM (EEA, Dec 2006) and the recent EMEP/EEA guidebook chapter on projections to form a consolidated set of guidance for AP and GHG PAMs and projections.

NOTE: Proposals for the consolidation of NECD and MM templates are made in Action 2.3 of option 2. Currently under the NECD MS are encouraged to make use of the CAFE Working Group on Implementation Recommendations (CAFE 2006) which was established using comitology under the NECD and covers methodologies and reporting for NECD PAMs and Projections. These recommendations form a good basis for future guidance/recommendations that could cover NECD and MM projections and PAMs reporting.

- **Pros:** Will ensure consistency with National inventories and with projections reported under other instruments.
- **Cons:** Compilation of projections can be an iterative process as the integration of policies and measures is refined through consultations and sensitivity assessments. Combining AP and GHG projections within the same timeframe will add additional complexity and challenges to MS in their internal consultations.
- **Costs & Benefits:** See costs presented in action 1.4
- **MS practice:** Although all MS mentioned some differences in methods, 18 MS (AT, BE, CY, DK, EE, FI, FR, IE, IT, LU (one inventory unit), NL, PL, PT, SK, SI, ES, SE (start this year), UK) indicated that they use common data (e.g. energy, economic and production projections) and methods (e.g. cost effectiveness and savings calculations) for calculating MM projections and PAMs (as described in the MM submission) and NECD projections and PAMs (as in the National Report). Another 3 (CZ, DE, MT) expressed interests in harmonising while 2 (LV & LT) currently do not use common data or methods.

Action 1.4 PAMs, Joint AP/CC consideration of Co-benefits and trade- offs: Make provisions for the consideration and presentation of the Co-benefits and trade- offs of AP and CC policies and measures including the estimation of costs and benefits given that the corresponding methodologies are available. (See Proposal p1.4 of Annex A1)

- **Pros:** Cross consideration and transparent reporting of the win-wins and compromises will improve forecasting of emissions and input to future policies. It will ensure that future policy making is coherent and considers the impacts of both AP and CC policies with full understanding of the trade-offs and win-wins.
- **Cons:** In the absence of clear guidance, consistent assessments and methods across MS will be difficult to achieve.
- **Costs & Benefits:** Additional burden on MS is required ~ 0.5M every 2 yr for 27 EU countries in integrated analysis for projections and PAMs reporting. This biannual cost relates to the additionally required cross analysis. No development costs are needed as the additional cross analysis specific to the data that is generated at the time. Costs for a set of analysis are estimated to include 35 mandays for 27 MS. Activity is biannually. Benefits include improved confidence in AP and GHG projections in that they include all relevant measures and enable co-benefits and trade-offs to be highlighted without methodology, assumptions or data source differences undermining confidence and usability for policy making.
- **MS practice:** MS currently present limited analysis of cross impacts. Guidance is limited and therefore communication and presentation of results is unclear.

Actions for the MM with links to the EU ETS

Action 1.5a Using EU ETS AER data: Include a requirement in the MM for MS to use the EU ETS Annual Emission Reports (AERs) to derive National emissions estimates. Include requirements for MS to compare the aggregated activity data from the EU ETS AERs with national statistics and use this comparison as the basis for estimating emissions of the non EU ETS component of the MM IPCC categories. (See Proposal p1.5a of Annex A1)

- **Pros:** Enforces a closer link between EU ETS emissions and national inventories. This link, including the integration of EU ETS statistics with national statistics, is essential for enabling the clear estimation of EU ETS emissions and non EU ETS emissions for possible future reporting of non-EU ETS sectors only. Use of available installation/facility datasets will improve the accuracy of MS inventories by allowing tier 2 or 3 methods to be applied for more sources. The action will ensure that the facility level data are incorporated appropriately in national inventories and that the remaining activity (fuel consumption) can be accounted for with appropriate emission factors. Will provide an additional opportunity for CAs to monitor EU ETS performance and compare with other emissions data for relevant sectors.
- **Cons:** Additional time and effort will be required to assemble EU ETS (AER) data flows, align it with MM IPCC categories, and reconcile with National statistics.
- **Costs & Benefits:** Costs are in the region of €0.5m for development and €0.6m for maintenance. These development costs include the 25 MS mandays for the development of a national approach for the incorporation of EU ETS facility level data into national estimates, including the reconciliation with national statistics. The annual burden relates to the manual collection and analysis of the 10,000 EU ETS installations assuming 1 hour per installation as an average and 20 day to produce reports that present EU ETS data in the context of national inventories. As 13 MS already incorporate EU ETS data it has been assumed that 14/27 of the total costs for data collection are additional. Benefits include the improved accuracy of national GHG estimates and a clearer picture of the contributions of both EU ETS and non EU ETS sectors for future policy making and target setting.
- **MS practice: 13 MS already** use AER data as part of their emissions methodologies and another 5 use the data for verification or would like to use it.

NOTE: This provision will be significantly strengthened by actions presented in 3a to improve the consistency and flow of AER data under articles 8 and 14 of the EU ETS MRG and enable full use of this data in national inventories.

Actions for the MM with links to the E-PRTR

Action 1.5b Using E-PRTR data in National estimates: Detailed proposals are presented MS to use any suitable⁴⁵ emissions and activity data reported by facilities under E-PRTR as the basis for estimating emissions for the relevant categories/pollutants not covered by EU ETS (e.g. for MM important sources might be the methane emissions from the agricultural livestock sector). Proposals also include the gathering of aggregated E-PRTR activity data (including fuel consumption and product consumption and production) ,where available, comparison with national statistics and the use of this data in the estimation of emissions for the non E-PRTR component of IPCC/NFR categories⁴⁶.

- **Pros:** Use of available facility datasets from the E-PRTR will compliment the use of EU ETS data and potentially improve the accuracy of a number of IPCC categories (e.g. intensive livestock in agriculture, landfill) by allowing higher tier (e.g. tier 2 or 3) methods to be applied for more categories. Improved accuracy in national estimates will be achieved through the pragmatic incorporation of more facility level activity data into national inventory estimates so that the remaining activity (e.g. non E-PRTR livestock activities) can be accounted for with appropriate emission factors.
- **Cons:** Additional time and effort will be required to gather, interpret and integrate E-PRTR data for national inventory use. In addition, the accuracy of the estimates compiled under E-PRTR would need to be reviewed against to ensure that data of the appropriate quality is used for national inventories.

⁴⁵ Suitable means that the facility estimates are considered to be accurate have been QA/QC'd can be reconciled with national statistics and will produce better national estimates of emissions than could be obtained through other means.

⁴⁶ It is recognised that until E-PRTR data is produced that can be linked to IPCC categories (e.g. splitting energy use and process emissions) and activity data provided then little use of this data can be made by MS.

- **Costs & Benefits:** Costs are assumed to be in the region of €0.7M for all 27 MS in the development of data flows⁴⁷ and €1.1M per year for all 27 MS to collect and manage the data. Development costs include the costs for developing national approaches to use E-PRTR data in national estimates. Annual maintenance costs include 1hr per E-PRTR facility (12,000) for data collection and analysis (€0.8M). Benefits include improved accuracy in some MM IPCC categories through the use of E-PRTR data to estimate emissions at higher tiers. Improved accuracy improves confidence and usefulness of the national inventories and links to facilities for policy making.
- **MS practice:** It is not common practices so far to use E-PRTR data is used in National GHG inventories (first dataset available 2007).

NOTE: This action offers limited beneficial results until the implementation of actions in option 3b which proposes changes to the E-PRTR to require more detailed IPCC categorisation of emissions and reporting of activity data. Once actions in 3b have been implemented an improved flow of facility/installation level data will be available for use in the national inventories. However, it is important to make a provision for use of the improved data in the national inventories.

Actions for the MM with links to the F-Gases Regulation

Action 1.6 F-Gas Regulation enhancements to methods: Where available, MS should make use of data maintained by operators under Article 3(6) of the F-Gas Regulation, available on request, as well as data collected under Article 6(4)⁴⁸ of the F-Gas Regulation in their national inventory where tier 3 estimates can be developed by MS under the MM for some F-Gas categories. (See Proposal p1.6 of Annex A1)

- **Pros:** Improve the accuracy of the MM F-Gas estimates and ensure transparency and consistency with other reported data under F-Gas Regulation
- **Cons:** Current F-Gas regulation requirements makes it difficult for some MS to differentiate the use and potential in their territorial area as reporting under the F-Gas regulation is by addressed to producers, importers or exporters of the gases and does not include a territory variable.
- **Costs & Benefits:** No additional costs have been estimated as costs for dealing with additional detail from F-Gas regulation will be off-set by savings through reduced surveys and research. Benefits include improved accuracy of the MM inventories that will enhance policy making confidence.
- **MS Practice: 6 MS** (AT, BE, DE, LV, MT, NL) indicated that they use or will use data from this instrument to improve national emissions datasets however there are significant difficulties with using this data due to the lack of defined reporting obligation for suppliers. A number of others indicated that implementation of the instrument does not provide for centralised reporting of annual emissions of fluorinated gases.

NOTE: Reporting costs could be saved (~€0.2m/yr across Europe) and duplication removed if F-Gas reporting under 6(1) and possibly 6(4) can be reduced through extended MM reporting.

Actions for the MM with links to the Decision on CO₂ Cars

Action 1.7 CO₂ from cars Reporting consistency: Include requirements under the MM for MS to use IPCC Good practice methods which take into account the various emission factors for different pollution control technologies for estimation of emissions of CH₄ and N₂O from road transport. These methods should use data that is captured under (or consistent with) data on new vehicles as reported under the Decision No 1753/2000/EC CO₂ from New Cars. (See Proposal p1.7 of Annex A1).

- **Pros:** May encourage improved accuracy of the MM CH₄ and N₂O estimates for road transport (through the development of more detailed methods) and ensure

⁴⁷ Assumes some useful E-PRTR AD is provided to CAs. Assumed data collection and incorporation effort is similar to EU ETS because of increased pollutants and less conformity of calculation methods in E-PRTR is offset by but less detail data provided compared to EU ETS. Estimates will be less accurate than EU ETS.

⁴⁸ This Article obliges MS to establish reporting systems for emissions (HFC, PFC and SF6) from the "relevant sectors". Experience with this regulation (Austria) has proved it difficult to reach all suppliers and users and does not provide for a complete inventory

- transparency and consistency with other reported data under Decision No 1753/2000/EC CO₂ from New Cars.
- **Cons:** Data from Decision No 1753/2000/EC CO₂ from New Cars does not provide the full data needed for estimation of all road transport emissions. MS who do not already have detailed road transport models will need to collect additional data and develop methods to incorporate the data from Decision No 1753/2000/EC CO₂ from New Cars.
 - **Costs & Benefits:** Possible costs will be incurred through extended MM methodology development. However, the data provided under the decision is limited and will (for MS already calculating N₂O and CH₄ with advanced road transport models) only provide comparative datasets for checking emissions projections scenarios.
 - **MS practice:** 2 (MS FR, DE) take the data from the decision account for projection scenarios and for checking/comparison with implementation of COPERT emission model. A number of MS indicated that the decision does not provide data collection of national average estimates of CO₂ emissions from vehicles or energy efficiency of vehicles.

Actions for the MM relating to Quality & the enabling further Streamlining

Action 1.8 Streamlining MM Structure: Proposes amendments to the structure of the MM building on the proposals above. Specific proposals for moving texts are elaborated in annex A1 P1.8.

- **Pros:** Makes future MM restructuring, clarifications, revision and streamlining easier.
- **Cons:** Additional administrative burden now to manage and consult on the changes. Opens up existing established and agreed requirements to argument and change.
- **Costs & Benefits:** Not applicable
- **MS practice:** Not Applicable

Overall Costs of Option 1:

The costs for option 1 are estimated as additional costs for all MS combined and are in the region of €0.6M for development and €1.4M for annual maintenance. All the development costs and the majority (80%) of maintenance costs relate to the increased effort in incorporating the EU ETS and E-PRTR data into the MM. However, this option will deliver wider benefits to policy makers through national estimates and projections that are more accurate and consistent with other national and international datasets. Specifically, this option will also improved transparency for GHGs with reports from NECD, EU ETS, E-PRTR, F-Gases and CO₂ from Cars.

6.5 Option 2: Streamlining MM and NECD

This option proposes an alignment of the requirements for emissions methodologies and reporting between the NECD and the MM by building on the NECD requirements (presented in Articles 7 & 8 and annex III of the NECD). This option focuses on aligning the NECD and MM to (where appropriate and accepting that there will be differences for different pollutant methods) a common standard for National Inventories. Many of the actions are refinements on actions for the MM presented in Option 1 but broadened to accommodate air pollutant emission estimation and reporting requirements (including as above the use of facility/installation level data, common national statistics and projections and policy and measures assumptions). Option 2 can be implemented independently of option 1. Option 2 has been written assuming that both the MM and NECD reporting requirements remain with the respective instruments. If the actions/provisions referenced below were to be combined into a single instrument some rationalisation of the actions below would be required. Action 2.9 outlines the high level considerations needed to combine all NECD provisions for emissions estimation and reporting under the MM. For drawing up their second national programme by 2006, MS were encouraged to use the CAFE recommendations; these provided guidance for National Programmes and estimating and reporting for the 2006 NECD PAMS and projections. Future development of the NECD should bring in reporting requirements and guidelines for systems and approaches (such as the CAFE Recommendations).

Options to convert the NECD to a decision include implementing provisions, and linking it to the Effort Sharing Decision should be considered. In addition the establishment of a joint committee covering both MM and NECD requirements and combining the relevant parts of the NECD Air Quality committee with the MM relevant committee should be considered. The benefits of this option would be a greater level of accuracy in national estimates of emissions and dramatically improved transparency and consistency between reports, improving policy maker and public awareness and utilisation of the data for decision making and emission reduction. However, it will be important to ensure that this option does not reduce the accuracy of air pollutant data in efforts to streamline reporting and methods. A pragmatic approach will need to be taken by MS and flexible requirements framed by the Commission to achieve streamlining whilst allowing the quality (including accuracy) of AP and CC inventories to continue to improve.

Table 6.4: Option 2 outline

Opportunity	Revision of the MM (2010) and the NECD (2009/2010) are due. Opportunities exist to improve the accuracy and reliability of national GHG and AP through greater links to national statistics facility/installation level data and with each other. Through the migration of key reporting related requirements to expanded implementing provisions prepare the MM and the NECD for future streamlining opportunities.
Focus and scope	For the MM on Articles 3(1), and 3(2), Implementing Provisions Articles 2(1), 2(2), 2(3), 8, 9 and 10. Including new paragraphs on the use of facility level data (EU ETS) and on consistency with national statistics and other national inventories. For the NECD changes are proposed to Articles: 2 Scope, 3 Definitions, 7 Emission inventories and projections and 8 Reporting by the Member States as well as restructuring of the main estimation and reporting requirements to an implementing provision.
Main objectives	<ul style="list-style-type: none"> ✓ Creation of an implementing provision for laying down rules for reporting to the NECD. ✓ Move/create specific methodology and reporting (procedural) instructions to implementing provision when revising the NECD ✓ Align the requirements for emissions estimation methodologies for air pollutants and greenhouse gases and reporting between the NECD and the MM. ✓ Improve reporting guidance and reporting to link terminology and nomenclature across the instruments. ✓ Included closer links between MM and NECD to encourage greater cross checking and management of national systems. ✓ Explore the harmonisation of national reports covering methodologies and assumptions that underpin emissions data reporting. ✓ Recommendations for review activities under the NECD that are comparable to the UNFCCC reviews.
Argumentation	<ul style="list-style-type: none"> ✓ Streamlining of the requirements for estimation methods and reporting under the MM and the NECD will ensure that in the short-term data reported under MM and NECD are completely consistent and any differences are clearly presented. From the MS enquiry it was clear that many MS already had combined AP and GHG estimation systems covered by a single national system (but not necessarily in a single database). As a minimum MS apply the same or similar methods and data management practices to both NECD and MM inventories. MS encouraged efforts to simplify reporting and to avoid inconsistencies in methodologies and duplication in reporting for annual emissions inventories as well as biannual PAMs and projections reporting.

Summary of Recommended Actions for option 2:

The actions are structured around the assumption that the existing NECD (Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001) will be restructured or amended to reflect the structure of the MM. Proposals are for the NECD to have detailed implementing provisions specifying methods and procedures for estimation and reporting of emissions. Actions below propose the creation of two main implementing provision articles:

- Article 1 on Methods for emission estimation including historic emissions inventories and PAMs and Projections
- Article 2 on Reporting procedures covering the detailed scope, formats and timing for reporting.

Actions are grouped according to the instruments they interact with.

Actions for the NECD with links to the MM

Action 2.1 National Inventory Methods: Include a specific requirement for MS to use the EMEP/EEA Guidebook⁴⁹ for air pollutants⁵⁰ emission estimation for both MM and NECD based estimates (see Proposal 1.1 of Annex A1 for the MM and Proposal 2.1 of Annex A2 for the NECD). This is to reinforce clarity and link terminology and nomenclature across instruments, for the EUMM to explicitly refer to the EMEP/EEA Guidebook for particular methods and good practice in inventory compilation for indirect GHG.

- **Pros:** Will ensure that estimates of the same pollutants (NO_x, SO₂, NMVOC, CO) are based on the same methodologies for MM and for reports under NECD and CLRTAP
- **Cons:** There is a strong connection to processes outside the EU. Therefore it is difficult to control the development of guidance. A burden may fall on some MS for re-estimation resulting from maintenance of the Guidebook (which is, to some extent, out of the control of the EU or the UNFCCC). Guidebook updates may be more frequent than the IPCC guidelines requiring more frequent revisions in national inventories. Timing of these updates may impact on MS future commitment period estimates (where future commitment periods include indirect GHGs).
- **Costs + Savings:** No additional costs are expected from this action. Benefits include improved confidence in data supporting cross air pollutant and greenhouse gas policies with the ability to see co-benefits and trade-offs clearly without confusions to do with different methodologies.
- **MS Practice:** The MS enquiry has shown that all MS use the EMEP Guidebook for their indirect GHG methodologies.

Action 2.2 National Statistics: Include requirements for MS to use (where appropriate and it does not degrade the quality of the inventories) the same national energy, transport and production/consumption statistics for the MM as are used for the NECD whilst ensuring that good practice (according to the IPCC guidelines and EEA/EMEP Guidebook) is applied. Provide provisions that ensure the development and maintenance of national statistics supports the accurate estimation of key categories for air pollutants and greenhouse gases. Include requirements the MS to develop and maintain a detailed energy balance (at least CRF subsector level) for the compilation of high quality detailed estimates (at least tier 2) for Key Categories⁵¹ This action includes proposals for harmonised reporting timetables for the MM and the NECD (see Proposal p1.2 of Annex A1 and p2.2 of Annex A2)

- **Pros:** Delivers high quality MM and NECD inventories bringing them in line with each other and data used for national and international statistics.

⁴⁹ Although the MM refers to the IPCC and the IPCC refers to EMEP/CORINAIR already, it is recommended that the link is reinforced with a direct reference.

⁵⁰ (Particulate Matter, Acidifying gases, heavy metals, POPs, Ozone precursors)

⁵¹ Although the UNFCCC guidelines for national systems goes some way to this it does not enforce the involvement of national statistical agencies. As the EU has a common national statistical reporting regime then stronger requirements may be possible. However, there may be issues with changes required to the statistics regulation, which cannot just be done through the MM unless we know specifically that Eurostat and national statistical agencies have these data but they are not used.

- **Cons:** Puts additional burden on MS in compiling inventories as all data needs to be compiled at the same time for MM and NECD.
- **Costs & Benefits:** Costs may be incurred through the need for expanded teams to deliver data simultaneously, however these costs should be off-set by the development more efficient dataflows and systems for inventory compilation and checking. Annual savings could be achieved through the development of a single methodology report for MM and NECD of €0.3M. This assumes that 25% (estimated time savings from compiling, reviewing and editing only one document) of the current MS average reporting man-days for NECD (92 days/year) are saved. Benefits include improved confidence in data supporting cross air pollutant and greenhouse gas policies and stronger links to other national statistics. It improves the confidence of agencies and government departments, when making policy, if their data/statistics are used for national inventories⁵². Also improves the ability to see co-benefits and trade-offs clearly without confusions to do with different statistical datasets.
- **MS practice:** 22 MS (AT, BE, CY, DK, FI, FR, DE, EE, IE, IT, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE, UK) indicated that they use common statistical data (e.g. national energy statistics) to develop emissions inventories the MM and NECD while another 3 (CZ, HU, EE) indicated a desire to. In addition 13 MS (AT, BE (WR, BR), DK, FR, DE, IE, LU, NL, PT, ES, SE, UK) store all emissions data for greenhouse gases and air pollutants in the one system, or in parallel, interoperable systems and are able to export and report emissions data from a single source in either CRF or NFR format for MM/UNFCCC and NECD/CLRTAP. Another 4 (CZ, CY, EE, SK) indicated that they have partial systems or are working towards combined systems. 6 MS (FI, HU, LV, LT, PL (data can be exported), RO) have separates systems.

NOTE: Consideration of further provisions to the MM (Article 2.2) and the NECD (article 8) to establish a single reporting format or reporting template for all AP and CC reporting could be included here and would represent a constructive step towards action 4.1 of option 4. These provisions could include a modified/Expanded CRF tool to accommodate all pollutants or an xml format/schema for all reporting to the Commission under MM and NECD that enables direct import of GHGs and associated data into CRF tools and exports that would serve UNFCCC and UNECE reporting requirements.

Action 2.3⁵³ Projections & PAMs estimation: Require MS to use the same underlying projected activity data⁵⁴ and assumptions for both the MM and the (NEC) Directive 2001/81/EC estimation of projections and PAMs and that these estimations take account of co-benefits and trade-offs across AP and CC. Require MS to make sure that the assumptions used for underlying projected activity data (e.g. energy, transport etc) are based on the latest statistical data (trends) and do not present discontinuities between historic and projected estimates reported under the MM and NECD.⁵⁵ The action also adds a provision to allow future guidance for PAMs and Projections methods and procedures to be used as a standard requirement under the MM and NECD and could recommended that the CAFE recommendations (CAFE 2006) are combined with the WGII work on PAMs and projections templates for the MM (**EEA, Dec 2006**) and the most recent and updated EMEP/EEA guidebook chapter on projections to form a consolidated set of guidance for AP and GHG PAMs and projections. (See Proposal p1.3 of Annex A1 and p 2.3 of Annex A2).

NOTE: Currently under the NECD MS are encouraged to make use of the CAFE Working Group on Implementation Recommendations for developing and reporting national programmes (CAFE 2006) which covers methodologies and reporting for NECD PAMs and Projections. These recommendations form a good basis for future guidance/recommendations that could cover NECD and MM projections and PAMs reporting. It is recommended that these CAFE recommendations are combined with the WGII work on

⁵² Many MS already engage extensively with their wider stakeholder and policy making groups.

⁵³ Guidelines for Policies and Measures methodology would help to establish a stronger basis for estimating PAMs and Projections and result in better forecasting of emissions and input to future policies. Guidelines could be developed drawing on the new EEA/EMEP Guidebook, the CAFE WG guidelines (CAFE 2006) and work done under WGII with the ETC-ACC and might costs the commission ~€0.5M for the development of guidelines.

⁵⁴ Using the same base projection data and economic, demographic assumptions.

⁵⁵ However, even with activity data from different years, consistency between projections and inventory can be ensured.

PAMs and projections templates for the MM (EEA, Dec 2006) and the recent EMEP/EEA guidebook chapter on projections to form a consolidated set of guidance.

- **Pros: Action will** ensure consistency with national inventories and with projections reported under the MM and the NECD.
- **Cons:** Compilation of projections can be an iterative process as the integration of policies and measures is refined through consultations and sensitivity assessments. Combining AP and GHG projections within the same timeframe will add additional complexity and challenges to MS in their internal consultations.
- **Costs & Benefits:** Costs will be the same as costs presented in action 2.4.
- **MS practice:** Although all MS mentioned some differences in methods, 16 MS (AT, BE, CY, DK, FI, FR, IE, IT, LU (one inventory unit), NL, PL, PT, SK, SI, ES, SE (start this year), UK) indicated that they use common data (e.g. energy, economic and production projections) and methods (e.g. cost effectiveness and savings calculations) for calculating MM projections and PAMs (as described in the MM submission) and NECD projections and PAMs (as in the National Report). Another 3 (CZ, DE, MT) expressed interests in harmonising while 2, (LV & LT) currently do not use common data or methods.

Action 2.4 PAMs, Joint AP/CC consideration of co-benefits and trade-offs: Make provisions for the consideration and presentation of the co-benefits and trade-offs of AP and CC policies and measures including the estimation of costs and benefits given that the corresponding methodologies are available.. (See Proposal p1.4 of Annex A1 and p2.4 of Annex A2.

- **Pros:** Cross consideration and transparent reporting of the win-wins and compromises will improve forecasting of emissions and input to future policies. It will ensure that future policy making is coherent and considers the impacts of both AP and CC policies with full understanding of the trade-offs and win-wins.
- **Cons:** As with action 1.4, in the absence of clear guidance, consistent assessments and methods across MS will be difficult to achieve.
- **Costs & Benefits:** Additional burden on MS is required ~ 0.5 Million every 2 yr for 27 EU countries in integrated analysis for projections and PAMs reporting. This biannual cost relates to the additionally required cross analysis for AP and GHG policies. No development costs are needed as the additional cross analysis specific to the data that is generated at the time. Costs for a set of analysis are estimated to include 35 mandays for 27 MS. The activity is biannual. Benefits include improved confidence in AP and GHG projections in that they include all relevant measures and enable co-benefits and trade-offs to be highlighted without methodology, assumptions or data source differences undermining confidence and usability for policy making.
- **MS practice:** MS present limited analysis of cross impacts. Guidance is limited and therefore communication and presentation of results is unclear.

Actions for the NECD and the MM with links to the EU ETS

Action 2.5a Using EU ETS AER data: Include requirement in the MM and the NECD for MS to use the EU ETS AERs (where this would improve the inventory estimates) to derive national emissions estimates, ensuring that the activity data from the AERs is integrated with national statistics (to identify the non EU ETS component of IPCC categories). (See Proposal p1.5a of Annex A1 relating to the MM and p2.5a of Annex A2 relating to the NECD).

- **Pros:** Enforces a closer link between EU ETS emissions and national inventories. This link, including the integration of EU ETS statistics with national statistics, is essential for enabling the exclusion of EU ETS emissions from national targets and possible future reporting of non EU ETS sectors only. Use of available installation/facility datasets will improve the accuracy of MS inventories by allowing tier 2 or 3 methods to be applied for more sources. Additional accuracy in national estimates will be achieved

by requiring facility level activity data to be incorporated into national inventory estimates so that the remaining activity (fuel consumption) can be accounted for with appropriate emission factors.

- **Cons:** Additional time and effort required to assemble EU ETS (AER) data flows, align with MM IPCC categories and reconcile with national statistics.
- **Costs & Benefits:** Costs are in the region of €0.2M for development and €0.3M for maintenance. These development costs include the 25 MS mandays for the development of a national approach for the incorporation of EU ETS facility level data into national estimates, for using the EU ETS activity data and other parameters to estimate emissions of Air Pollutants (using country specific or default emission factors), including the reconciliation with national statistics. The annual burden relates to the manual collection and analysis of the 10,000 EU ETS installations assuming 1 hour per installation as an average and 40 day to produce MM and NECD reports that present EU ETS data in the context of national inventories. As 13 MS already incorporate EU ETS data it has been assumed that 14/27 of the total costs for data collection are additional. Benefits include the improved accuracy of national AP and GHG estimates and a clearer picture of the contributions of both EU ETS and non EU ETS sectors for future policy making and target setting.
- **MS practice:** 13 MS already use AER data as part of their emissions methodologies for the MM and another 5 use the data for verification or would like to use it. However, it is not clear how much EU ETS data is used for the development of NECD emissions estimates.

NOTE: This provision will be significantly strengthened by actions presented in 3a to improve the consistency and flow of AER data under articles 8 and 14 of the EU ETS MRG and enable full use of this data in national inventories.

Actions for the NECD and the MM with Links to the E-PRTR

Action 2.5b Using E-PRTR data: Action 2.5b Includes proposals for the NECD and the MM. Detailed proposals are presented in proposal p1.5b of Annex A1 on the MM and p2.5b of Annex A2 on the NECD for MS to use emissions and activity data reported by facilities under E-PRTR as the basis for estimating emissions for the relevant categories/pollutants not covered by EU ETS e.g. for MM important sources might be the methane emissions from the agricultural livestock sector). Proposals also include the gathering of aggregated E-PRTR activity data, where available, comparison with national statistics and the use of this data in the estimation of emissions for the non E-PRTR component of IPCC/NFR categories.

- **Pros:** Use of available facility datasets from the E-PRTR will compliment the use of EU ETS data and improve the accuracy of a number of categories (e.g. intensive livestock in agriculture) by requiring higher tier (e.g. tier 2 or 3) methods to be applied for more categories. Additional accuracy in national estimates will be achieved by requiring available facility level activity data (including fuel consumption data (which is usually already available in the annual compliance reporting under IPPC/LCP directives) to be incorporated into national inventory estimates so that the remaining activity (e.g. non E-PRTR livestock activities) can be accounted for with appropriate emission factors.
- **Cons:** Additional time and effort is required to gather, interpret and integrate E-PRTR data for national inventory use. In addition, the accuracy of the estimates compiled under E-PRTR would need to be reviewed to ensure that data of the appropriate quality is used for national inventories.
- **Costs & Benefits:** Costs are assumed to be in the region of €0.4M for all 27 MS in the development of data flows⁵⁶ and €0.8M per year for all 27 MS to collect and manage the data. Development costs include the costs for developing national approaches to use E-PRTR data in national estimates for the MM and the NECD and for the development of elaborated reports showing the E-PRTR emissions as a component of

⁵⁶ Assumes some useful E-PRTR AD is provided to CAs. Assumed data collection and incorporation effort is similar to EU ETS because of increased pollutants and less conformity of calculation methods in E-PRTR is offset by but less detail data provided compared to EU ETS. Estimates will be less accurate than EU ETS.

national totals. Annual maintenance costs include 1hr per E-PRTR facility (12,000) for data collection and analysis (€0.8M). Benefits include improved accuracy in NECD and MM IPCC/NFR categories through the use of E-PRTR data to estimate emissions at higher tiers. Improved accuracy improves confidence and usefulness of national inventories and links to facilities for policy making.

MS practice: 8 MS (CY, EE, FI, FR, IT, LT, NL, SE) indicated that their facility level data collected for E-PRTR reporting were used in the national GHG (MM) and/or AP (NECD/CLRTAP) inventories. Another 6 (AT, BE, LU (EPER for consistency check), MT, ES, UK) make partial use of E-PRTR or would like to. 9 MS (DE, DK, HU, LV, PL, PT, RO, SK, SI) currently do not make regular use of E-PRTR data.

NOTE: This action offers limited beneficial results until the implementation of actions in option 3b which proposes changes to the E-PRTR to require more detailed IPCC categorisation of emissions and reporting of activity data. Once actions in 3b have been implemented an improved flow of facility/installation level data will be available for use in the national inventories. However, it is important to make a provision for use of the improved data in the national inventories.

Actions for the NECD with Links to the RECAST

Action 2.5c Use of RECAST Permitting data in national Estimates: Action 2.5c includes a proposal under the NECD (see proposal p2.5c in Annex A2) to encourage the use of available permit related information under IPPC/RECAST (where appropriate) in the estimation of Air Pollutant emissions Inventories for relevant industrial emissions (not included in E-PRTR or EU ETS or where estimates can be made more accurately). This Action should compliment actions 2.5a and 2.5b above and ensure that for any particular NFR/IPCC sector that the most accurate is used for the national inventory.

- **Pros:** Will further improve the link for emissions estimation between regulated industry and national inventories and improve the accuracy or estimates for relevant industrial process and solvent using sectors. Will help to provide clarity to the significance of different permitted processes to national emissions.
- **Cons:** Adds further complexity to the annual inventory compilation process. MS will need to develop a pragmatic approach to managing the data to avoid using a lot of resources analysing permits, specifically for national inventory compilation, which have little impact on national emissions.
- **Costs & Benefits:** Overall development costs have been estimated to be €0.4m and maintenance costs of €0.8m. Development costs have been estimates based on 25 mandays per MS to develop data collection systems for available permit information and another 20 days per MS to develop NECD reports detailing contributions from IPPC sources. Annual maintenance costs include an estimated 1hr each for 12,000 of the most important IPPC permits (most will also be E-PRTR so could have been covered in 2.5b above) for MS to collection of data Benefits include improved accuracy in NECD IPCC/NFR categories through the use of permitting data to estimate emissions at higher tiers. Improved accuracy improves confidence and usefulness of national emissions and links for permitting for policy making.
- **MS practice:** It was unclear from the MS Enquiry how many MS use permit information on a regular basis to support their national inventory compilation. From other experience the project team have assumed that some MS make some use of permit data in their inventories. However, this data is currently difficult to use as it is not often centralised nationally or electronically and the information contained in it do not often include full activity or annual emissions estimates.

NOTE: This action offers limited beneficial results until actions in option 3b, to improve the flow of permit data into national inventories, are implementation.

Actions for the MM with links to the F-Gases Regulation

Action 2.6 F-Gas Regulation enhancements to methods: This is the same as Action 1.6 and relates to requirements for the MM to use F-Gas regulation data. (See Action 1.6).

Actions for the NECD and MM with links to the Decision on CO2 Cars

Action 2.7: CO2 from cars Reporting consistency: As presented in action 1.7 (and elaborated in proposal p1.7 in Annex A1), to Include requirements under the MM for MS to use IPCC Good practice methods which take into account the various emission factors for different pollution control technologies for estimation of emissions of CH₄ and N₂O road transport. These methods should use data that is captured under (or consistent with) data on new vehicles as reported under the Decision No 1753/2000/EC CO₂ from New Cars. In addition provisions in the NECD should ensure that methods and data for NECD pollutants estimates are consistent with data from the Decision No 1753/2000/EC CO₂ from New Cars. (See p2.7 of Annex A2).

- **Pros:** Improve the accuracy of the MM CH₄ and N₂O estimates for road transport and ensure transparency and consistency with other reported data under Decision No 1753/2000/EC CO₂ from New Cars and the NECD.
- **Cons:** Data from Decision No 1753/2000/EC CO₂ from New Cars does not provide the full data needed for estimation of all road transport emissions. MS who do not already have detailed road transport models will need to collect additional data and develop methods to incorporate the data from Decision No 1753/2000/EC CO₂ from New Cars.
- **Costs & Benefits:** Possible costs will be incurred through extended MM methodology development. However, the data provided under the decision is limited and will only provide comparative datasets for checking emissions projections scenarios..
- **MS practice:** 2 (MS FR, DE) Take the data from the decision account for projection scenarios and for checking/comparison with implementation of COPERT emission model. A number of MS indicated that the decision does not provide data collection of national average estimates of CO₂ emissions from vehicles or energy efficiency of vehicles.

Actions for the NECD and the MM relating to Quality & Streamlining Preparation

Action 2.8 Structuring and organisation of the MM and the NECD for streamlining: Prepare both NECD and MM so that all emissions estimation methodology and reporting requirements are specified in provisions/annexes that are adaptable and movable and are aligned in terms of their requirements and possibly even structure. This action proposes amendments to the structure of the MM as specified in action 1.8 and for the NECD by moving substantive instructions for reporting and methods from articles 7 & 8 along with the proposals for the NECD referred to above to annex III of the directive. . Specific proposals for moving texts are elaborated in annex A2 p2.8).

- **Pros:** Makes future restructuring, revision and streamlining easier and clarifies the link between the MM and the NECD during annual inventory compilation and reporting activities.
- **Cons:** Additional administrative burden now in restructuring the MM and NECD. Proposals for restructuring of existing paragraphs opens up existing established and agreed requirements to argument and change.
- **Costs & Benefits:** Costs for the administrative burden for restructuring have not been estimates.
- **MS practice:** Not applicable

Action 2.9: Under this Action the provisions for emissions estimation and reporting under the MM and the NECD are combined. They would need to be combined under an existing instrument. Therefore the only short-term option for this would be a combination under either the MM or the NECD. If this was done the proposals for the NECD in Annex A2 (p2.1 – p2.7) should be modified and combined with the proposals for the MM (1.1 – 1.8 in annex A1) to form a single set of provisions relevant for NECD/CLRTAP and MM/UNFCCC estimation and

reporting. These combined provisions could then be incorporated in either the NECD or the MM and removed from the other.

- **Pros:** Combines all requirements for national compilation methods and reporting under one instrument. There will be only one set of method and reporting instructions that will improve transparency (which refer to IPCC Guidance and EMEP/Corinair Emission Inventory Guidebooks).
- **Cons:** Implementation of the action will extend the obligations under the instrument carrying the consolidated national compilation methods and reporting requirements beyond the explicit scope of that instrument. This will risk complicating the link of between reporting for certain pollutants and the purpose for the reporting along with the context of other requirements including air quality limits and national programme requirements.
- **Costs & Benefits:** Some additional administrative costs associated with moving implementing provisions. Benefits would include clearer and more concise methods and reporting instructions for MM and NECD
- **MS practice:** MS generally felt that the instruments should be kept separate and should stand alone to meet their explicit requirements.

Overall Costs of Option 2:

Costs to MS for option 2 are estimated to be in the region of €1m for development of data flows and systems and €2.2m for annual maintenance. All the development costs and the majority (90%) of maintenance costs relate to the increased effort for MS in incorporating the EU ETS, E-PRTR and IPPC data into the MM and the NECD. Savings to MS are estimated for the combination of methodology reports for the NECD and the MM are in the region of €0.3M, based on assumptions that ¼ of current NECD reporting costs would be saved annually. Therefore, overall maintenance costs to MS for option 2 would be in the region of €1.8M. The benefits, which cannot easily be quantified, but are expected to outweigh the costs include a greater level of accuracy in national estimates of emissions and dramatically improved transparency and consistency between reports, improving policy maker and public awareness and utilisation of the data for decision making and emission reduction.

6.6 Options 3 - Streamlining Installation reporting

The following 2 options (3a and 3b) provide alternative actions for the streamlining of installation/facility level information with a view of optimising the detail, flow and compatibility of regulated industrial process emissions and maximising their usefulness for national inventories. The two main issues to address are the classification of facility/installation activities and associated emissions and activity data and the unique identification of individual facilities and installations.

Option 3a: EU ETS Data Flows for National GHG Inventories

The actions below introduce requirements for the EU ETS and the MM to enable an improved flow of data and transparency between emissions from EU ETS installations and National inventories (especially the MM). It requires the future (e.g. 2010) implementation of proposals for the EU ETS MRG (see Annex A3) and a number of proposals in the MM (See Annex A1).

Table 6.5: Option 3a outline

Opportunity	The revision of the MM in 2009 and an ongoing review of the EU ETS Directive provide opportunities to strengthen the link between EU ETS data managed by CAs and the MM. It also provides opportunities to prepare the EU ETS installation information for closer compatibility with other facility level data. The current review of the EU ETS gives the Commission the prerogative to draft a regulation for monitoring and reporting. The provisions in the MRG will end up in a regulation that will enter into force in 2012.
Focus and scope	This action focuses on the MM implementing provision articles IP 2(1), 2(2) and 2(3) and EU ETS MRG articles 8 and 14 to ensure a flow of detailed installation data from the EU ETS into the MM.

- Main objectives**
- ✓ Reinforce the use of EU ETS data as the basis for estimating national emissions and presented transparently in the MM NIR.
 - ✓ EU ETS MRG to ensure the appropriate flow of data from the EU ETS to the MRG.
 - ✓ Improve reporting guidance and reporting to link terminology and nomenclature across the instruments.
- Argumentation**
- ✓ Further strengthening of the MM and the EU ETS would ensure that all EU ETS data can be used as a starting point for estimating national GHG emissions (under the MM) for those IPCC categories that contain EU ETS activities. National estimates that fully reflect detailed emissions estimated at an installation level would greatly enhance the usefulness of the MM for policy making.
 - ✓ Changes to the EU ETS MRG in 2009/2010 will allow an improved flow of data that will enhance the tools used for policy making in the field of Climate Change mitigation. The strengthening of EU ETS AER data flow would also enhance the methods for Air Pollutant (as well as GHG) emission estimation by making available detailed installation activity data so it can be reconciled with national statistics and used as the basis for calculating air pollutant emissions.

Summary of Recommended Actions for Option 3a:

Option 3a contains one action. This action relates to proposals for both the MM and the EU ETS. The action focuses on complimenting proposal 1.5a for the MM (to include EU ETS data in National Inventories) with proposals for the EU ETS MRG (see annex A3 proposal 3.1) so that data compiled by operators and managed by the CAs is made more usable to the MM.

Actions for the EU ETS and the MM

Action 3a.1 Improving availability and transparency of AER data for National GHG estimates: Includes EU ETS MRG requirements for AERs to be compiled applying the IPCC nomenclature⁵⁷ (activity classification) for each emission and activity estimate separately (This is required to enable fuel consumption and process activity data for EU ETS installations to be aggregated by the CA and reconciled with national statistics) (see Proposal 3.1 of Annex A3). Proposals in the MM (see Proposal p1.5a of Annex A1) are as for action 1.5a for the incorporation of EU ETS data into National Inventories (MM) in an efficient and transparent manner.

- **Pros:** Improving the flow and availability of EU ETS installation datasets will improve the accuracy of National MS inventories by allowing more tier 2 or 3 methods to be applied for more IPCC categories. Improvement of the EU ETS AERs ensures the installation level data are incorporated appropriately in national inventories and that the remaining activity (fuel consumption) can be accounted for with appropriate default or country specific emission factors. This will facilitate future reporting where national emissions may need to be reported separately from EU ETS. Also ensure the EU ETS data can be linked to E-PRTR emissions data as well as used for national inventories.
- **Cons:** Implementation of this action will require some changes to reporting (by industry) and data flows/analysis in MS. Some MS have indicated that data is not collected in electronic formats so is difficult to analyse and use.
- **Costs & Benefits:** Development costs are assumed to be in the region of 3.5 million. Development costs include €150,000 per MS for 20 MS to develop EU ETS IT based

⁵⁷ There is an additional suggestion that recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of doing this include - better comparison and consistency to other statistical data (national accounts etc.)- better knowledge of coverage of information included in different registers and data sets compared to national totals- reporting of total emissions allocated to NACE categories if needed- better links to environmental accounting systems (SEEA, NAMEA,...)

reporting systems. The €0.3M annual maintenance costs for elaborating EU ETS data in the MM reports is offset by the saving to MS through the existence of an improved EU ETS data flow and reporting system resulting in net zero maintenance costs. Maintenance costs assumed that with the EU ETS data flow system in place the existing costs of collecting EU ETS data and using them for national MM inventories is reduced to 10% of the annual cost presented in action 1.5a. Benefits include the improved accuracy of national GHG estimates and a clearer picture of the contributions of both EU ETS and non EU ETS sectors for future policy making and target setting.

- **MS practice:** 13 MS (AT, CY, DK, FI, FR, HU, IE, LV, LU, MT (just started), NL (EF of fuels), PL, SI) already use AER data (e.g. plant emission estimates, carbon content factors and stack monitoring data) in their national emissions estimates and another 5 (CZ, DE, RO, ES, SE) use the data for verification or would like to use it. Also, 10 MS (AT, BE (WR), CY, DK, FR, HU, IE, LV, LU, SI) centralise data (e.g. activity data and emission factors used) from EU ETS monitoring and reporting reports and AERs. 16 MS (AT, BE, CY, CZ (generally yes), DK, FR, HU, IE, IT, LV, LU, MT (only 2 installations), SI, FI, PT (generally yes, excluding combustion emissions), UK (in some not all cases)) have detailed enough internal EU ETS categories to aggregate to MM CRF categories (with varying degrees of success to align their EU ETS sector. Another 8 MS (EE, DE, NL, PL, RO, SK, SE, ES) do not have the category detail but would like to develop it in the future.

NOTE: Further opportunity for streamlining can be created if those activity data can be traced and reused also for other facility reporting e.g. E-PRTR or LCP (see proposals and action for option 3b below).

Overall Costs of Option 3a:

Costs for option 3a are in the region of €3.2m for MS for development with savings of €0.3m for maintenance because of improved data flows. These costs include €3.2m for the enhanced development by MS of AER data and flows. Savings for MS that currently manage EU ETS data for national inventories are estimated to be €0.3m annually. Once again the indirect benefits cannot be quantified. However, benefits include the improved accuracy of national GHG estimates and a clearer picture of the contributions of both EU ETS and non EU ETS sectors for future policy making and target setting.

Option 3b: Streamlining Industrial Installation reporting

This option focuses on assisting MS build on existing good practice in MS management and reporting of facility/installation level data for EU ETS, E-PRTR and RECAST/IPPC. It facilitates simplified operator reporting and the provision of data that is much more cross comparable. Additionally, actions within this option will also enhance the usability of facility/installation emissions and activity data so that they can be aligned with, and used for, national inventories thereby providing a better evidence base for policy makers. The proposals for extended use of common nomenclature (for describing/defining activities scope) and definitions (for describing/defining installations and facilities scope) in permit applications and for reporting of installation and facility emissions will ensure that any information gathered by CAs under IPPC installation permitting, monitoring and reporting (RECAST), reported under EU ETS and E-PRTR will be more comparable and reporting could be streamlined if appropriate (i.e. the detailed activity data provided under EU ETS (which currently covers CO₂ only) can be made applicable to some of the reporting of facility level emissions under E-PRTR (includes CO₂, CH₄, N₂O, F-gases + several other)). This will improve the effectiveness of the E-PRTR dataset for policy analysis and could remove reporting burden under LCPD (if EU ETS (which covers all LCP activity data installations) and E-PRTR emissions data (which covers all LCPD emissions (SO₂, NO_x, TSP to be reported)). From a national inventory perspective, whilst there was a realisation that the greater availability of facility and installation level data would improve national inventories there was acknowledgement that greater effort would be required to integrate this data which need to be aggregated according to specific IPPC/CRF subcategory levels. These actions are the building blocks towards a final goal

of creating a single reporting system for operators that would cover all installation and facility reports (see Option 4) that will improve the efficient exchange and use of data.

Table 6.6 Option 3b outline

Opportunity	The ongoing review of the EU ETS Directive provides opportunities to strengthen the link between EU ETS and the E-PRTR and RECAST and put in place building blocks for fully streamlined facility installation reporting. The current review of the EU ETS gives the Commission the prerogative to draft a better regulation for monitoring and reporting. It is likely that the provisions in the MRG could end up in a regulation which will enter into force in 2012. Future revisions or amendments of E-PRTR and implementation of RECAST could offer opportunities to further consolidate on definitions of installation and facility scope and classifications of activities.
Focus and scope	This actions focus on the EU ETS (MRG article 8 and 14), and the provision of additional guidance to support the implementation of the E-PRTR and RECAST. The actions propose to introduce an approach for uniquely identifying installations and facilities, for the categorisation of activities related to greenhouse gases and air emissions reporting and improving the flow of emissions data from operators to the MS Competent Authorities in association with E-PRTR and RECAST.
Main objectives	<ul style="list-style-type: none"> ✓ Enable all reported facility/installation emissions and activity data to be integrated and compared accurately across instruments at an operator, facility, site or installation level. ✓ Establish an efficient, accurate and usable core of installation/facility level data for national inventory compilation that can be clearly matched to other national statistics (e.g. production, consumption, energy use etc) and shows the relative importance of emissions by regulating instrument, by facility, installation and at a national level. ✓ Improve reporting guidance and reporting to link terminology and nomenclature across the instruments.
Argumentation	<ul style="list-style-type: none"> ✓ Establishing a consistent nomenclature for defining emitting activities and for identifying operators, installations, facilities and sites is an important step in efficient management of emissions from large stationary sources. It will provide a clearer picture of the significant emitting activities across different regulatory areas and enable efficient development of future technologies and policies. A coherent base of facility/installation emissions and activity data will also improve the accuracy of national emissions inventories. This will help to improve the policy and public understanding of regulated emissions sources, their relevance to national emissions and emission reduction efforts. ✓ The proposals for extended reporting of EU ETS AER type information (Activity data as well as emissions) at a detailed activity level will enable the Competent Authority to monitor performance of installations and help to focus inspections and strategies for emissions improvement. ✓ MS are already using or trying to use installation/facility data (derived from E-PRTR reporting, Permitting processes, inspections reports, LCPD reporting requirements, ETS reporting requirements etc) in their national inventories. During the MS enquiry MS inventory experts showed interest in support from EU legislation in promoting the transparent flow of more detailed emissions and activity data from all reporting facilities/installations while at the same time reducing duplicate reporting. Efforts to utilise data reported under E-PRTR/EPER are frustrated by differing activity definitions used on one side under the national inventories as well as NEC and MM regimes (IPCC/CRF) and on the other side the activity definitions used under RECAST, ETS and E-PRTR (EEA 2007). These differences create a barrier to national inventory use of E-PRTR and ETS data.

- ✓ Currently some MS explicitly in their responses to the questionnaires) have implemented legislation to collect facility level data into a common database format using web based data collection systems in a way that makes it compatible for national inventory comparison.
- ✓ Although additional detail will need to be reported by operators, this detail is usually the level of detail at which emissions are measured, calculated or estimated by operators and therefore no additional difficulties for operators in deriving data are foreseen. Where this detail requires confidential data to be provided to CAs, CAs can be bound by confidentiality laws and required to aggregate these data before publication.

Summary of Recommended Actions for Option 3 b

Actions have been arranged below by instrument and are relevant for EU ETS (MRG articles 8 and 14), recommendations are made for the additional guidance needed by MS to assist their implementation of the E-PRTR and RECAST. The actions focus on the development of the definitions of facilities and installations and between emitting activities and categories so that reported data under each instrument can be accessed easily and combined or compared accurately.

Actions for the EU ETS with links to the E-PRTR

Make some changes to MRG Article 14 to enable consistent and unique identification of the installation with strong links to emissions and activity data for activities controlled or reported under other EU instruments.

Action 3b.1: Improved AER data flow and fuller integration of IPCC Categories into EU ETS reporting:

Include a new requirement under MRG 8 for CAs to collect make available electronically and manage AER data. Modify MRG 14.2 - 6 tables to align EU ETS activities more concisely with IPCC subcategories so that emissions can be linked to other emissions reported under E-PRTR used in MM and activity (including materials production/consumption and fuel consumption) data used for estimation of air pollutant emissions. (See proposal 3.1 of Annex A3)

- **Pros:** Action will ensure that EU ETS data reported in AERS also it follows the IPCC/CRF categories (in addition to IPPC) and that the EU ETS data can be matched up with E-PRTR data as well as used for national AP and GHG inventories.
- **Cons:** Implementation of this action will require some more detailed activity/category reporting (by industry) and data flows/analysis in MS. Some MS have indicated that data is not collected in electronic formats so is difficult to analyse and use efficiently.
- **Costs & Benefits:** Costs for this action are estimated to be in the region of 3 millions for development and €0.1m for maintenance. Costs include (as for action 3a.1) the development of EU ETS IT systems (assumed to be €150,000 per MS for 20 MS that have not yet developed IT based reporting systems). Maintenance costs are based on costs to industry in accommodating some additional changes to the MRG Article 14. These take into account the rare special cases where installations have detailed sub categories that need elaborating. Annual costs are estimated to be 100,000 EUR which equates to 2 days per installation for an EU total of 100 installations at €520. Costs for the provision of activity data for measured emissions (MRG14.6) have been estimated to be minimal as there is currently minimal measurement in EU ETS. In specific cases costs may be too high to collect additional data; these cases could be prevented by calling on the cost effectiveness principle in the EU. Benefits include the improved accuracy of national GHG estimates and a clearer picture of the contributions of both EU ETS and non-EU ETS sectors for future policy making and target setting.
- **MS practice:** 10 MS (AT, CY, FI, FR, IT, LV, PL, PT, ES, SE) already use EU ETS data to verify reported emissions data and/or activity data under the E-PRTR and IPPC while 6 other MS (BE, CZ, DE, IT, MT, NL) expressed an interest in getting better links between facility and installation reports.

NOTE: This action also enhances the usability of installation data for national inventories and will improve the implementation of proposal 1.5a (relating to the MM see annex A1) and 2.5a (Relating to the NECD see annex A2).

Action 3b.2 Improving EU ETS installation Definitions and links to other Permits and Reports:

Refine requirements⁵⁸ under MRG article 14.1 to ensure installation are defined so that they can be linked to other permits and reports under EU instruments (E-PRTR and RECAST)⁵⁹. (See Proposal 3.2 of Annex A3)

- **Pros:** These additions would ensure that specific E-PRTR facility or facilities data and IPPC permit/s could be identified for each EU ETS installation guaranteeing transparent presentation of the EU ETS reporting across other instruments.
- **Cons:** Some additions to the MRG reporting template (article 14) are required to include the additional information to uniquely define the installation. Implementation of this action will require some improvements to reporting (by industry) and data flows/analysis in MS.
- **Costs & Benefits:** No additional costs are expected as changes are quick to implement and do not place additional burden on industrial reporting. Benefits include the improved linkage between EU ETS installations and E-PRTR & IPPC facilities/installations. These will provide a clearer picture of the contributions of EU ETS component of industry and allow benchmarking with other pollutant emissions from the same installations for future policy making and target setting.
- **MS practice:** As indicated in action 3b.1 above, 10 MS (AT, CY, FI, FR, IT, LV, PL, PT, ES, SE) already use EU ETS data to verify reported emissions data and/or activity data under the E-PRTR and IPPC while 6 other MS (BE, CZ, DE, IT, MT, NL) expressed an interest in getting better links between facility and installation reports.

NOTE: This action also enhances the usability of installation data for national inventories and will improve the implementation of proposal 1.5a (relating to the MM see annex A1) and 2.5a (relating the NECD see annex A2).

Actions for the E-PRTR with links to the EU ETS

The actions below are intended to assist MS with the implementation of reporting under E-PRTR Regulation. They include providing adapted reporting templates (building on E-PRTR annex III) and the provision of additional guidance for Operator reporting. The objective is to enable consistent and unique identification of the facilities and improve links to emissions and activity data for activities controlled or reported under EU instruments (e.g. EU ETS, IPPC).

Action 3b.4 Facility Level Definitions: Assist MS elicit reports from operators that include facility definitions that data can be linked to other permits and reports under EU instruments (EU ETS and RECAST). (See proposal 5.1 of Annex A5).

- **Pros:** data could be matched up, if possible, with the relevant emissions and activity data associated with IPPC permit/s and EU ETS installations, guaranteeing transparent presentation E-PRTR data. It will also enable EU ETS activity (including materials production/consumption and fuel consumption) data to be used to check and analyse E-PRTR returns for the facilities covered by both instruments.
- **Cons:** **Some** issues may arise for complex facilities that include parts of installations. Administrative effort is required to revise E-PRTR annex III and article 5.
- **Costs & Benefits:** No additional costs are expected as changes are quick to implement and do not place additional burden on industrial reporting. Benefits include the improved linkage between E-PRTR facilities and EU ETS & IPPC installations. These will provide a clearer picture of the contributions of E-PRTR component of industry, allow EU ETS activity (including materials production/consumption and fuel consumption) data to be assigned to allow benchmarking with other pollutant emissions from the same installations

⁵⁸ Austria have cautioned that it should be carefully reconsidered if the ETS installation definition needs to be revised in order to streamline national inventory reporting. A change of the definition of ETS installation in order to streamline national inventory reporting poses a high risk of inconsistency in other areas eg in permitting regimes.

⁵⁹ NOTE that all ETS installations report under LCP; Most of ETS installation are IPPC installations (beside the 20-50 MWh) and hold a permit; Most ETS installation report under E-PRTR (beside the 20-50 MWh and if below the pollutant threshold).

for future policy making and target setting. In addition benefits are expected from improved data access for information that is currently reported but not made available electronically in a format that is compatible with the Europe wide databases.

- **MS practice:** 8 MS (CY, EE, FI, FR, IT, LT, NL, SE) already use their E-PRTR data as input to their national inventories, can link their E-PRTR activities to IPCC/CRF categories and have some degree of accompanying activity statistics for their facility level reports. 6 MS (AT, BE, LU, MT, ES, UK) either use E-PRTR data for consistency checks or have registered interest in further integration of E-PRTR data with national inventories.

NOTE: This action also enhances the usability of facility level data for national inventories and will improve the implementation of proposal 1.5b (relating to the MM see annex A1) and 2.5b (Relating to the NECD see annex A2).

Action 3b.5 Facility level emissions reporting: Assist MS elicit reports from operators that include CRF/IPCC subcategory level reporting and definitions⁶⁰ (including activity data) for subcategories/activities that are not included under EU ETS AER reports, effectively providing an opportunity to extend the detail of E-PRTR reporting to make possible disaggregation of data to IPCC/CRF subcategory level.⁶¹ (See proposal 5.2 of Annex A5).

- **Pros:** This will improve the transparency of the E-PRTR data so that it can be used in/compared with national inventories⁶² and compared directly with EU ETS and IPPC installations. It will improve the quality of the data by allowing cross checking of emissions against activity (including materials production/consumption and fuel consumption) data. It will also allow some streamlining of reporting of activity (including materials production/consumption and fuel consumption) data for the installations covered by both ETS and E-PRTR.
- **Cons:** This will require more detailed data to be reported to CAs (possibly several IPCC/CRF categories per facility).
- **Costs & Benefits:** Development costs are estimated to be in the region of 2.6m for the adjustment of E-PRTR facilities to the new detailed reporting and assumes ½ day for each of the 12,000 facilities. Maintenance costs are estimated at €1m and are based on the assumption 1000 complex facilities may take an additional 2 days per installation annually to collect and report the more detailed data. It is believed there is no additional effort for the non complex installations in providing the IPCC activity level reports. Benefits include the improved accuracy of national air pollutant estimates and a clearer picture of the contributions of both E-PRTR and non E-PRTR sectors for future policy making and target setting. Better comparability between the E-PRTR and the EU ETS will also be ensured and support efficient tracking of performance across air pollutants and greenhouse gases for industry.
- **MS practice:** 8 MS (CY, EE, FI, FR, IT, LT, NL, SE) already use their E-PRTR data as input to their national inventories, can link their E-PRTR activities to IPCC/CRF categories and have some degree of accompanying activity statistics for their facility level reports. 6 MS (AT, BE, LU, MT, ES, UK) either use E-PRTR data for consistency checks or have registered interest in further integration of E-PRTR data with national inventories.

NOTE: If more detailed IPCC category level reporting under E-PRTR is not feasible for reasons of confidentiality or burden, then operators could be required to compile and maintain their emissions estimates (emissions are public) and details of activity (these may always be more or less confidential) for each facility at a detailed IPCC category level using standardised electronic formats (e.g.

⁶⁰ There is an additional suggestion that recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of doing this include - better comparison and consistency to other statistical data (national accounts etc.)- better knowledge of coverage of information included in different registers and data sets compared to national totals- reporting of total emissions allocated to NACE categories if needed- better links to environmental accounting systems (SEEA, NAMEA,...)

⁶¹ Thresholds for reporting makes it difficult to capture information on the full extent of emissions from E-PRTR processes. A suggestion is that thresholds could still be set at the facility level but reporting to the CA to be at a IPCC/CRF subcategory level with amendments to the reporting template specified in annex III of the E-PRTR.

⁶² Section 8.4 of the Second EPER review http://eper.ec.europa.eu/eper/documents/EPER_Review_2004_version16May2007.pdf highlights the difficulties in comparing the EPER activities with national inventories principally because EPER/E-PRTR activities do not differentiate between combustion emissions and process emissions within a particular facility.

spreadsheets). This data could be then made available to the Inventory Agency or CA on request but not accessible to the public.

Actions for the RECAST with links to the EU ETS and E-PRTR

NOTE: The current IPPC Directive and the IPPC (RECAST) does not require reporting to the European Commission of emission data from all installations. IPPC Directive (and future RECAST) is similar to a framework Directive which provides for general obligations for permitting but leaves a lot of flexibility to Competent Authorities (CA). For instance, the obligation is that permits contain "suitable monitoring requirements". It is for the CA to set the specific conditions (which pollutants, type, frequency, methodology for monitoring). As a result, MS can already require emissions data from individual installations in a format and through a structure which allow for a streamlining with other reporting requirements (EU ETS, E PRTR, establishment of national inventories, etc). Actions have therefore to be taken to provide guidance on opportunities at the level of implementation for streamlining data format and dataflow.

Action 3b.6: Installation emissions reporting: Assist MS implement good practice in emissions reporting (including the better definition of the installation and its emissions and activity in IPCC categories and the collection of annual emissions and activity data) for important installations regulated under RECAST. This will improve the linkages of data from permitted installations with that reported under EU instruments (E-PRTR and EU ETS). (See proposal 4.1 of Annex A4).

- **Pros:** Ensures that permitting activities are linked to reporting of annual emissions to CAs under E-PRTR and EUETS. Ensures that permit applications or changes contain relevant emission estimates for the installation using additional IPCC categories so that they can be compared with emissions under EU ETS and E-PRTR or used as the basis for deriving country specific emission factors in national inventories. Supports CAs in implementing requirements for reporting of annual emissions from important installations regulated under IPPC but not reporting under E-PRTR or EU ETS.
- **Cons:** Will require the consideration of annual emissions reporting requirements by CAs for permitted installations and the development of systems to report emission. Additional annual burden for installations in providing additional emissions data for new permit applications and renewals. Additional MS development for collecting new data in permits.
- **Costs & Benefits:** Supporting development of reporting templates for the collection of annual emissions data associated with permitted annual reporting of emissions is estimated to take MS 40 days and cost in the region of €0.6m. Annual costs of €1m are estimated based on increased reporting by 1/2 day for between 2 and 15 %⁶³ (8% assumed) of the 50,000 IPPC installations per year that require permit revision.
- **MS practice:** 18 MS (AT, BE, CY, EE, FI, FR, DE, HU, IT, LV, LT, NL, PL, PT, RO, SL, ES, SE, UK) use/report data from installations covered by Annex I of RECAST. However, most of that data comes through under E-PRTR rather than being utilisation of the permit information. There is limited information on the data collected by MS during the permit application process. However, a number of MS (including FI, FR, AT and EE) have implemented legislation that requires annual reporting of emissions from regulated activities.

NOTE: This action also enhances the usability of installation data for national inventories and will improve the implementation of proposal 2.5c (Relating to the NECD see annex A2).

Overall Costs of Option 3b:

Costs for option 3b are in the region of €6.2m for development and €2.1m for maintenance. The majority of the development costs are for the adjustment of operators to more detailed reporting that might be encouraged through CAs (€2.6m) and the development of new reporting templates to carry the EU ETS (€3m) and for the exchange of data between operators and CAs under RECAST (€0.6m). Note: E-PRTR systems do not require significant development. The majority of the annual maintenance costs (€12m) cover potential additional reporting of annual emissions data to the CAs for new and revised permits and additional detail to gain clarity on IPCC categories and linkages

⁶³ Based on analysis from Policy Brief for the EP Environment Committee EP/IV/A/2003/09/01 Implementation of the IPPC Directive (96/61))

to E-PRTR and EUETS. Benefits include the improved linkage between E-PRTR facilities and EU ETS & IPPC installations. These will provide a clearer picture of the contributions of the different component of industry reporting, allow EU ETS activity data to be utilised by E-PRTR and allow wider benchmarking with other pollutant emissions from the same installations for future policy making and target setting. In addition benefits are expected from improved data access for information that is currently reported but not made available electronically in a format that is compatible with the Europe wide databases. The availability of clearer, more detailed (IPCC category listed) facility/installation data that is ready to be integrated into national inventories will improve accuracy and transparency of national inventories for policy making and the public.

6.7 Option 4: Consolidated national inventory and facility/installation reporting

Option 4 focuses on harmonising emissions dataflow and delivering national and facility level data into a single information reporting tool/platform. This aims to work with the SEIS principals in ensuring that the data is kept as close as possible to the source of origin in order to improve efficiency and data quality and completeness⁶⁴. The specific actions under option 4 include many of the instrument specific proposals (see annexes A1 – A5) presented for options 1, 2 and 3. These proposals are designed to be applicable for stepwise/partial streamlining in Options 1, 2 and 3 or as part of full streamlining as presented here. Costs here include the costs for the actions highlighted in option 1, 2 and 3b that are required for the implementation of option 4.

Table 6.7: Option 4 outline

Opportunity	<ul style="list-style-type: none"> ✓ To establish in the medium to long term (over the timeframe for the amendment/revision of the E-PRTR and implementation of the RECAST) a concise consolidated set of requirements that govern the efficient delivery of the national/facility/installation level emissions data required under the MM, NECD, UNFCCC, CLRTAP, EUTS, E-PRTR into a single air emissions information delivery system.
Focus and scope	<ul style="list-style-type: none"> ✓ Focus is on utilising requirements in the existing instruments adapted to improve data quality and flow, as presented below, to create a streamlined set of reporting instructions that could be incorporated into an extended E-PRTR or a new reporting instrument. The focus is on the following instruments and articles and includes the relevant proposals presented in options 1, 2 and 3b. <ul style="list-style-type: none"> ○ E-PRTR (Annex III under Comitology), ○ EU ETS (MRG Articles 8 and 14), ○ MM (IP Articles 2.1 2.2, 2.3, 8 and 9), ○ NECD (Article 7 & 8)
Main objectives	<ul style="list-style-type: none"> ✓ Dramatically improve the flow and clarity of emissions data for facilities and installations and for national inventories so that it can be collected into a single compatible resource for policy making and informing the public. ✓ To remove inconsistencies and inaccuracies in reported emissions data. ✓ Improve reporting guidance and reporting to link terminology and nomenclature across the instruments.

⁶⁴ Please note that the language is sometimes restrictive and proposals and actions will refer to reporting even though the broader concept of “making data available” is intended.

- Argumentation**
- ✓ Bringing systems together and introduces ideas for overarching data quality principals and encourages greater cross checking and management of national emissions compilation and reporting systems.
 - ✓ Explore the harmonisation of national reports covering methodologies and assumptions that underpin emissions data reporting.
 - ✓ There is a need to bring more harmonisation to international reporting of facility/installation emissions.
 - ✓ Use of facility level data in national inventories will bring benefits of longer-term savings through efficient reporting and significant improvement in data quality (which means more efficient policies and better information to the public and decision makers).
 - ✓ Single operator reporting will remove duplicated facility reporting between EU ETS and E-PRTR and deliver a complete and streamlined reporting system covering emissions from regulated activities and national diffuse source.
 - ✓ Use of facility level data in national inventories will also improve efficient review of emission data will also improve efficient review and policy analysis.
 - ✓ Use of facility level data in national inventories encourages use of common source data (e.g. National statistics and facility level data) and sets up a framework for national systems and overarching QA/QC for all emissions data.
 - ✓ A number of MS (UK, IE, FR, NL) have established national laws, have combined MM and EU ETS compilation into a single framework and are working towards the development of a single database already.

Option 4 will not completely replace the reporting requirements under the individual instruments considered (e.g. EU-ETS would still need formal reporting to the Registries) but could cover the main National and general facility level emissions and activity data reporting requirements. Option 4 can be implemented in a number of different ways. Four of the most feasible ways are presented below.

- **4a:** 'Strengthening requirement for the delivery/accessibility of data through the development of the individual provisions or guidance under E-PRTR, EU ETS, MM and NECD similar to those described in options 2 and 3b with stronger specified format/schema so that the data is reported into the same/compatible systems. Feedback from the workshop indicated that this was the preferred option as it provided flexibility for the instruments to exist as they do today but provides the necessary schemas and formats for data to be joined together as needed.
- **4b:** By extending the E-PRTR to carry the combined reporting requirements (excluding the methodology requirements) for itself EU ETS, MM, and NECD as described in options 2 and 3b above with a stronger requirement for the delivery of data according to a specified format/schema so that the data is joined into a single or MS owned database which forms part of E-PRTR. The detailed reporting requirements in the MM, NECD and EU ETS could then be repealed⁶⁵.
- **4c:** To develop a new reporting instrument which defines combined reporting requirements in a similar way to 4b above but focussed around the creation of a

⁶⁵ As this is a difficult type of measure to be implemented, it might be easier to promote a new piece of legislation that creates a common EU data infrastructure and enable MS to use one entry point for all the data delivery, harmonising content where possible and creating additional requirements where necessary in order to achieve better data quality and traceability.

dedicated new instrument which also has a stronger requirement for the electronic delivery/accessibility of data according to a specified format/schema so that the data is joined into a single or MS owned database. The detailed reporting requirements in the MM, NECD, E-PRTR and EU ETS could then be repealed. Annex A6 presents some ideas on the key components of Reporting Instrument.

- **4d:** An extended version of the 4c where all methodology requirements are also moved from the existing E-PRTR, EU ETS, MM and NECD instruments and brought together with the reporting requirements into a new reporting instrument. The detailed methodologies and reporting requirements in the MM, NECD, E-PRTR and EU ETS could then be repealed. Annex A6 presents some ideas on the key components of Reporting Instrument.

NOTE: In both 4c and 4d the new Reporting Instrument would introduce requirements for "National System" building on those required for the MM and UNFCCC and governing emission estimation and reporting planning, preparation and management (including QAQC) across facility/installation and national emissions data.

Summary of Recommended Actions for Option 4

The proposals and actions required for 4a, 4b, 4c and 4d are the same and presented in general terms below. They would need to be tailored to the specific requirements once the preferred option (4a, 4b, 4c or 4d) had been agreed.

Action 4.1: Combine National Inventory reporting into a single National Inventories report:

Require MS (through revised references in the MM and the NECD) to report via a centralised system⁶⁶ (one-stop-shop) using a standardised xml schema or tool set and a national emissions reporting structure. The xml schema or tool set would include all the detailed requirements needed for reporting to the UNFCCC (e.g. CRF variables) and UNECE (from the Guidelines templates) including detail to enable the different national boundary definitions and methodologies for estimating transport emissions (fuel used vs fuel sold) to be accommodated. The schema/toolset would also include the additional and 5 yearly data required by the UNECE, the variables needed for the MM indicators (as referred to in article 7 of the MM implementing provision 2005.166) and the biannual reporting of projections and policies and measures under NECD and MM. This action relies on the implementation of the actions presented in option 1 and 2 for national inventories (MM and NECD) including improved methodologies, uses of national statistics, projections and F-Gas and CO2 from cars data. However, the requirements in actions 1.8 and 2.8 (for restructuring the NECD and the MM) would need to be tailored specifically to any new combined reporting requirements. A single reporting date would need to be fixed (this could be 15th Jan y+2 for all data and 15th March y+2 for the report) and a combination IPCC/NFR nomenclature established that contains the most detailed categories needed for all sectors⁶⁷.

- **Pros:** Provide a one-stop-shop reporting environment for national inventories. Enables a transparent submission of air pollutant and greenhouse gas data on national emissions improving data flow and data integrity for policy making. Once established the system would also be more robust and efficient as MS will need to be familiar with one stable system for all national reporting requirements. This is in line with the SEIS principles that information should be collected only once and used by many; and that information should be readily accessible.
- **Cons:** Effort required for the development of the system or schema and effort required by MS to update their current systems that would be tailored to their current systems for reporting.
- **Costs & Benefits:** Costs will be for the design and adaptation to a new reporting framework (schema/tools) for the Commission and MS. These costs have been estimated to be in the region of 0.8 Million for development. Once established it is assumed that MS will experience an overall saving in time as dataflows to the commission will be streamlined and duplicative reporting is eradicated off-setting costs of increased reporting

66 This could be the MS own or one provided by the Commission but would be compliant with the principals of SEIS.

67 This is not a big job as the IPCC and NFR are well aligned at a reasonably detailed level.

on PAMs & Projections. Savings are expected to be in the region of 0.4 million per year assuming 25 mandays per MS are saved through combined data reporting and 23 through combined methodology reports. Benefits will deliver national estimates that integrate EU ETS and GHG emissions to provide more accurate emissions estimates, show the contributions of non EU ETS/PRTR/IPPC sources and provide better support Climate Change and air pollution policy making. Benefits include minimisation of errors and maximum data quality, speed and accessibility through integrated dataflows. Improved data quality for national inventories, and of facility/installation data will enable analysis of overall trade-offs and co benefits of environmental action to assist better regulation and policy making and messaging to the public.

- **MS practice:** As indicated in action 2.2 above, 19 MS (AT, BE, CY, DK, FI, FR, DE, IE, LV, LT, LU, NL, PL, PT, RO, SK, SI, ES, SE, UK) use common statistical data (e.g. national energy statistics) to develop emissions inventories the MM and NECD. Another 3 (CZ, HU, EE) indicated a desire to. In addition 13 MS (AT, BE (WR, BR), DK, FR, DE, IE, LU, NL, PT, ES, SE, UK) store all emissions data for greenhouse gases and air pollutants in the one system, or in parallel, interoperable systems and are able to export and report emissions data from a single source in either CRF or NFR format for MM/UNFCCC and NECD/CLRTAP. Another 4 (CZ, CY, EE, SK) indicated that they have partial systems or are working towards combined systems. 6 MS (FI, HU, LV, LT, PL (data can be exported), RO) have separate systems.

Action 4.2: Combine E-PRTR, EU ETS and RECAST emissions reporting into a single transparent operator reporting system (one-stop-shop) that includes detailed activity data and parameters for EU ETS AERs as laid out in MRG 14, E-PRTR emissions and activity data as specified in E-PRTR annex III. By developing efficient integrated EU ETS/E-PRTR/IPPC operator annual emissions reporting system and requiring more detailed reporting (in terms of the facility/installation referencing and the reporting of emissions and activity data by IPCC activity this action will ensure the flow of high quality interoperable data from operators to MS and the commission. Relevant instrument proposals include 3.1 – 3.3 of the EU ETS annex A3, 4.1 - 4.5 of the RECAST annex A4 and 5.1 - 5.3 of E-PRTR Annex A5. The focus for this action would be to bring reporting by operators on annual emissions together into a single reporting template of schema which include a detailed EU ETS section based on MRG 14.1 – 14.6 (including modifications recommended in proposal 3.1 and 3.2.) and a more general E-PRTR section following the modified requirements for the E-PRTR 's Annex III.

This action could be implemented through provisions for direct reporting by operators to the Commission or reporting via CAs. The advantage of reporting via CAs is that the data has an additional quality review and provides relevant information for the regulation of permitted activities under IPPC.

- **Pros:** Focus operator reporting on a single reporting format with elaboration for EU ETS AER data and links between EU ETS installations and facilities. This will remove duplicative reporting by operators and improve transparency between emissions under the different instruments. Having a single reporting system will enable the impacts on air pollutants emissions of EU ETS emissions reductions to be estimated (or at least the combustion parts of E-PRTR facilities). In addition, the y+1 EU ETS activity data could be used to estimate y+1 emissions for other air pollutants for the EU ETS component of E-PRTR facilities improving the speed with which emissions estimates can be provided to policy makers. It would allow companies to develop more advanced electronic reporting for quick, reliable and consistent reporting. This is in line with the SEIS and INSPIRE principles that data should be collected only once and can be used by many in an interoperable way.
- **Cons:** Despite timing issues where EU ETS data is available sooner e.g. 2009 EU ETS data will be available in March 2010 while only 2008 E-PRTR data will be available at that time) reporting can be harmonised. Effort will be required for a number of MS to combine reporting including the development of data systems and procedures.
- **Costs & Benefits:** costs are estimated to be in the region of €7m to develop systems for one-stop-shop operator reporting (based on additional €50,000 per MS on top of the costs for an EU ETS system presented in proposal 3.1 (annex A3) to accommodate expansion to E-PRTR reporting). The savings in data collection experienced through better EU ETS data flows to national inventories (0.3m, see EU ETS proposal 3.1 annex A3) will be off-set

by more detailed E-PRTR and RECAST reporting (see E-PRTR proposal 5.2 Annex A5 and RECAST 4.2-4.3) to give a net maintenance cost of €2m. The benefits will be a much more transparent reporting system that will improve the delivery of information to the public and to policy makers and ensure a flow of data for high quality national inventories. Benefits include minimisation of errors and maximum data quality, speed and accessibility of through integrated dataflows. Improved data quality for national inventories, and of facility/installation data will enable analysis of overall trade-offs and co benefits of environmental action to assist better regulation and policy making and messaging to the public.

- **MS practice:** Two MS (EE, FR) have a combined E-PRTR facility and EU ETS installation AER reporting system. A number of other MS including AT, IR, BE, ES, UK, PL, LU, and NL have indicated an interest in further developing combined operator reporting systems.

Note: If more detailed reporting under E-PRTR is not feasible for reasons of confidentiality or burden, then operators could be required to compile and maintain their emissions estimates and details of activity for each facility at a detailed IPCC category level using standardised electronic formats (e.g. spreadsheets). This data could be then made available to the Inventory Agency or CA on request but not accessible to the public.

Action 4.3: Combine National and Facility emissions reporting to a single system. The final action is to implement provisions (in the E-PRTR or a new Reporting Instrument) that join up the estimation and reporting of emissions for national inventories and facilities. This action would require the implementation of the technical elements of proposals 1.5a, 1.5b (annex A1) and 2.5a, 2.5b (Annex A2) 3.1, 3.2, 3.3 (Annex A3) & 5.1, 5.2 & 5.3 (Annex A5) but modified to exist in the context of an extended E-PRTR or new Reporting instrument rather than the original instruments. Additional provisions would need to be implemented (in the E-PRTR or a Reporting Instrument) which ensure that the national emissions reporting (as defined in action 4a.1 above) and the facility/installation (as defined in action 4a.2 above) are delivered into the same or compatible systems. This will allow the national emissions estimated to be drilled into to extract EU ETS & E-PRTR components and allow the diffuse component of emissions (required under E-PRTR) to be derived by the Commission (EEA).

- **Pros:** The action above will provide a single one-stop-shop and framework for the Commission (EEA) to manage E-PRTR diffuse emissions and deliver integrated emissions data system that is capable of providing the most up-to-date and detailed information on emissions across AP and CC in a single system. MS modelling and policy development work would benefit from a pan European cross AP and CC database of emissions with consistent and transparent presentation of regulated process and national total emissions. MS would benefit from a single system and set of reporting instructions. This is in line with the SEIS and INSPIRE principles that data should be collected only once and used by many. In addition, this would facilitate the fulfilment of the requirements of the Aarhus Convention and Directive 2003/4/EC on access to environmental information to provide information on the state of the environment and reporting activities to the general public.
- **Cons:** Most data is available on appropriate timescales for this dataflow to be feasible. However, although the delivery deadline of E-PRTR data to the CAs is not defined in the E-PRTR regulation, the E-PRTR delivery deadline to the commission (e.g. E-PRTR = march y+2) is not until after the delivery date of the national inventories (e.g. 15th Jan Y+2.) Therefore unless data can be accessed by MS before the official delivery date under E-PRTR the latest E-PRTR data will not be included in the national estimates. In addition, as E-PRTR data can be based on less robust methods than are required under the MM/NECD there may still be exceptions where national estimates for some IPCC categories are not derived using E-PRTR data even though E-PRTR estimates exist. These exceptions will need to be highlighted in the facility level data flow.
- **Costs & Benefits:** Costs include those for the proposals for the development of joined up national and facility level data and add an interface to the data and are estimated to be development costs of €3.4M. Costs include the costs associated with development of the systems and links between national inventories and facility/installation data covered in proposals MM 1.5a, 1.5b and NECD 2.5a, 2.5b and 2.5c and RECAST 4.2. Costs for the

development of facility/installation reporting systems are excluded, as these are included in action 4.2 above. Costs for the additional maintenance of facility/installation data flows to national inventories are assumed to be minimal as the streamlined reporting will deliver efficiencies and eliminated the additional costs experienced in options 1, 2 and 3a for bespoke data gathering and analysis. Benefits will deliver national estimates that integrate EU ETS and GHG emissions to provide more accurate emissions estimates, show the contributions of non EU ETS/E-PRTR/IPPC sources and provide better support Climate Change and air pollution policy making. Benefits include minimisation of errors and maximum data quality, speed and accessibility of through integrated dataflows. Improved data quality for national inventories, and of facility/installation data will enable analysis of overall trade-offs and co benefits of environmental action to assist better regulation and policy making and messaging to the public.

- **MS practice:** NL and FR have a joined up E-PRTR system that provides data for their national inventory and facility level emissions together.⁶⁸

Overall Costs of Option 4:

Estimated costs for option 4 include the complete costs for all proposals needed as well as savings generated through more efficient systems and data flow. The total development costs are €11m and include the development/expansion of E-PRTR, RECAST and EU ETS reporting systems to deliver a complete one-stop-shop facility/installation reporting system that also delivers data suitable for use in national inventories. Maintenance costs (€2.4M) are primarily for the increased reporting needs for E-PRTR and RECAST to deliver more detailed data on facilities and IPPC permits. Annual savings (of €1M) are achieved through national inventory streamlining and some savings on current EU ETS data flows use for national inventories.

⁶⁸ Finland pointed out during the consultation that Many MS use data reported by the plants according to the IPPC(=RECAST?)/LCPD/E-PRTR/MM in their inventories to the UNFCCC/MM and CLRTAP/NECD

6.8 Impacts

The detailed estimated aggregate costs, i.e. for all MS added together, for each option and its associated actions are presented in the table below (see section 6.2 onwards for more details about the options). The costs are split into development costs, which will be incurred over the initial two years of the proposed options, and ongoing pro-rate annualised maintenance costs.

Table 6.8: Cost estimates for the options

Options	Action	Instrument Proposals	Article Relevance	Development / Implementing	Annual Maintenance ⁶⁹	Annual Saving
Option 1						
	Action 1.1	MM p1.1	Article IP 2 (1) (d)	non-quantifiable	non-quantifiable	non-quantifiable
	Action 1.2	MM p1.2	Article IP 2(1), (2), (3)	non-quantifiable	non-quantifiable	non-quantifiable
	Action 1.3	MM p1.3	Article IP 8 & 9	non-quantifiable	€ 250,000	non-quantifiable
	Action 1.4	MM p1.4	Article IP 8 & 10	non-quantifiable	none	non-quantifiable
	Action 1.5a	MM p1.5a	Article IP 2(1), (2), (3)	€ 200,000	€ 300,000	non-quantifiable
	Action 1.5a	MM p1.5a	Article IP 2(1), (2), (3)			non-quantifiable
	Action 1.5b	MM p1.5b	Article IP 2(1), (2), (3)	€ 400,000	€ 800,000	non-quantifiable
	Action 1.5b	MM p1.5b	Article IP 2(1), (2), (3)			non-quantifiable
	Action 1.6	MM p1.6	Article IP 2(1), (3)	non-quantifiable	non-quantifiable	non-quantifiable
	Action 1.7	MM p1.7	Article IP 2(1), (3)	non-quantifiable	non-quantifiable	non-quantifiable
	Action 1.8	MM p1.8	MM 3(1), 3(2), IP Article 2 (1), (3), 8	non-quantifiable	non-quantifiable	non-quantifiable
				€ 600,000	€ 1,350,000	€ -
Option 2						

⁶⁹ Some reporting activities may be biannual; costs have been annualised (e.g. 500,000 over 2 years = 250,000 per year)

Action 2.1	MM p1.1, NECD p2.1	Article IP 2 (1) (d) & NECD Article 7	non-quantifiable	non-quantifiable	non-quantifiable
Action 2.2	MM p1.2, NECD p2.2	Article IP 2(1), (2), (3) & NECD Article 7 & 8	non-quantifiable	non-quantifiable	-€ 300,000
Action 2.3	MM p1.3, NECD p2.3	Article IP 8 & 9 & NECD Article 7 & 8	non-quantifiable	non-quantifiable	non-quantifiable
Action 2.4	MM p1.4, NECD p2.4	Article IP 8 & 10 & NECD Article 7 & 8		€ 250,000	non-quantifiable
Action 2.5a	MM p1.5a, NECD p2.5a	Article IP 2(1), (2), (3) & NECD Article 7 & 8	€ 200,000	€ 300,000	non-quantifiable
		Article IP 2(1), (2), (3) & NECD Article 7 & 8	€ -	€ -	non-quantifiable
Action 2.5b	MM p1.5b, NECD p2.5b	Article IP 2(1), (2), (3) & NECD Article 7 & 8	€ 400,000	€ 800,000	non-quantifiable
Action 2.5b	MM p1.5, NECD p2.5b	Article IP 2(1), (2), (3) & NECD Article 7 & 8	€ -	€ -	non-quantifiable
Action 2.5c	MM p1.5, NECD p2.5c	NECD Article 7 & 8	€ 400,000	€ 800,000	non-quantifiable
Action 2.5c	MM p1.5, NECD p2.5c	NECD Article 7 & 8		€ -	non-quantifiable
Action 2.6	MM p1.6, NECD p2.6	Article IP 2(1), (3) & NECD Article 7 & 8	non-quantifiable	non-quantifiable	non-quantifiable
Action 2.7	MM p1.7, NECD p2.7	Article IP 2(1), (3) & NECD Article 7 & 8	non-quantifiable	non-quantifiable	non-quantifiable
Action 2.8	MM p1.8, NECD p2.8	MM 3(1), 3(2), IP Article 2 (1), (3), 8 & NECD Article 7 & 8	non-quantifiable	non-quantifiable	non-quantifiable
Action 2.9	MM p1.1 - p1.7, NECD p2.1 - p27	MM 3(1), 3(2), IP Article 2 (1), (3), 8 & NECD Article 7 & 9	non-quantifiable	non-quantifiable	non-quantifiable
			€ 1,000,000	€ 2,150,000	-€ 300,000

Option 3a					
Action 3a.1	MM 1.5a, EU ETS 3.1	MM Article IP 2(1), (2), (3) & EU ETS MRG 8 & 14	€ 3,200,000	€ 30,000	-€ 300,000
Action 3a.1	MM 1.5a	MM Article IP 2(1), (2), (3)	€ -	€ -	
			€ 3,200,000	€ 30,000	-€ 300,000
Option 3b					
Action 3b.1	EU ETS 3.1	EU ETS MRG 8 & 14	€ 3,000,000	€ 100,000	none
Action 3b.2	EU ETS 3.2	EU ETS MRG 8 & 14	non-quantifiable	non-quantifiable	non-quantifiable
	EU ETS 3.2	EU ETS MRG 8 & 14	non-quantifiable	non-quantifiable	non-quantifiable
Action 3b.4	E-PRTR 5.1	E-PRTR Article 5 & Annex III	non-quantifiable	non-quantifiable	non-quantifiable
Action 3b.5	E-PRTR 5.2	E-PRTR Article 5 & Annex III	€ 2,600,000	€ 1,000,000	non-quantifiable
Action 3b.6	RECAST 4.1	RECAST Article 13	non-quantifiable	non-quantifiable	non-quantifiable
Action 3b.7	RECAST 4.2	RECAST Article 13		€ 1,000,000	non-quantifiable
Action 3b.7	RECAST 4.2	RECAST Article 13	€ 600,000	non-quantifiable	non-quantifiable
Action 3b.8	RECAST 4.3	RECAST Articles 8 & 67	non-quantifiable	non-quantifiable	non-quantifiable
			€ 6,200,000	€ 2,100,000	€ -
Option 4					

Action 4.1: Combine National Inventory reporting into a single National Inventories report	MM 1.1, 1.2 (enhanced), 1.3 (Enhanced), 1.4, 1.6, 1.7, 1.8, 2.1, 2.2 (Enhanced), 2.3 (Enhanced), 2.4, 2.8	MM (IP Articles 2.1 2.2, 2.3, 8 and 9) NECD (Article 7 & 8)	€ 806,000	€ 250,000	-€ 651,000
Action 4.2: Combine E-PRTR and EU ETS reporting	EU ETS, 3.1, 3.2 and 3.3 E-PRTR 5.1, 5.2, 5.3	EU ETS MRG A.8 & E-PRTR Article 5	€ 7,150,000	€ 2,130,000	-€ 300,000
Action 4.3 Combine National and Facility emissions reporting to a single system	MM 1.5a & 1.5b NECD 2.5a, 2.5b, 2.5c Recast 4.2	MM (IP Articles 2.1 2.2, 2.3, 8 and 9) NECD (Article 7 & 8) EU ETS MRG A.8 & E-PRTR Article 5	€ 1,860,000	non-quantifiable	non-quantifiable
			€ 9,816,000	€ 2,380,000	-€ 951,000

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8 Glossary, Definitions, etc

8.1 Abbreviations

Legal Instruments

National Emissions	MM	Monitoring Mechanism (MM) Decision No 280/2004/EC & Implementing Provision (Commission Decision of 10 February 2005)
	NECD	National Emission Ceiling Directive (NECD) Directive 2001/81/EC
	UNFCCC	Reporting under the United Nations Framework Convention on Climate Change
	CLRTAP	Reporting under the Convention on Long-range Transboundary Air Pollution
Facility/ installation level emissions	EU ETS	EU Emissions Trading Scheme Directive 2003/87/EC
	RECAST	Proposal for a Directive of the European Parliament and of the Council on industrial emissions. To incorporate: Integrated pollution prevention and control (IPPC) Directive 96/61/EC, Large combustion plant (LCPD) Directive 2001/80/EC, Waste Incineration Directive 94/67/EC (WID) and VOC Solvents Directive 1999/13/EC.
	E-PRTR	European Pollutant Release and Transfer Register Regulation No. 166/2006
	F-Gases	Fluorinated gases: Regulation 842/2006
Non facility emissions control Instruments	CO2 Cars	CO2 from new cars: Decision No 1753/2000/EC
	Fuel Quality	Fuel quality directive 98/70/EC, petrol and diesel fuels
	Fuel S Content	Sulphur content of fuels, Directive 1999/32/EC
Information	Aarhus	EU Directives adopting Aarhus Convention's requirements: 2003/4/EC, 2003/35/EC.
	SEIS	Shared Environmental Information System for Europe
	INSPIRE	Infrastructure for Spatial Information in the European Community, established under Directive 2007/2/EC

Aarhus Convention	UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Aarhus 1998.
Activity data	Consumption, production and transportation statistics upon which emission estimates (historic activity data) or emission projections (projected activity data) are based.
AP	Air pollutant(s)
CAFE	Clean Air for Europe Programme
CA	Competent Authority
CC	Climate Change
CLRTAP	Convention on the Long-Range Transmission of Air Pollutants in Europe
CORINAIR	Core Inventory of Air Emissions
CRF	Common Reporting Format, as defined in the UNFCCC Reporting Guidelines
EEA	European Environment Agency
EC	European Commission
EF	Emission Factor
EIONET	European Information and Observation Network – a partnership of the EEA, ETCs and national experts, supporting the collection, use and dissemination of data. e-Eionet is the IT infrastructure supporting the network.
EMEP	European Monitoring and Evaluation Program. <i>See UNECE/EMEP.</i>
EMEP/EEA Guidebook	EEA/EMEP Emissions Inventory Guidebook-2009.
EPER	European Pollutant Emission Register, Commission Decision 2000/479/EC. The first European-wide register of industrial emissions into air and water. <i>See also E-PRTR.</i>
E-PRTR	European Pollutant Release and Transfer Register under Regulation 166/2006, implementing the UNECE PRTR Protocol. It will succeed the EPER after the first evaluation report by MS in March 2011 (2007-2009 data). Releases and transfers are reported every year starting from 2007 via Reportnet (EEA).
EU	European Union
EU ETS	European Union Emissions Trading Scheme
GHG	Greenhouse gas(es)
IAG	Commissions Impact Assessment Guidelines, SEC (2005) 791, 15 June 2005
Inventory	Statistic and measurement based historic emissions by sector, for a particular geographic area (eg MS).
INSPIRE	Infrastructure for Spatial Information in the European Community, established under Directive 2007/2/EC
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention and Control, Directive 2008/01/EC
LCPD	Large Combustion Plants Directive, 2001/80/EC
MM	Council Decision No 280/2004/EC concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol
MRG	Monitoring and reporting methods
MS	Member State(s) of the European Union
NAP	National Allocation Plan, for EU ETS
National Inventory	<i>See inventory.</i>
NECD	National Emissions Ceiling Directive
NFR	Nomenclature for Reporting – UNECE reporting standard (UNECE 2002)
NIR	National Inventory Report
NMVOIC	Non-methane Volatile Organic Compounds
ODS	Ozone Depleting Substances
PAMs	Policies and Measures.

8.2 Commonly used acronyms

Projections	Emission estimates for one or a number of future years for one or a number of different scenarios, such as a baseline/reference, 'with measures', 'with additional measures'.
SEIS	Shared Environmental Information System for Europe
SMEs	Small and Medium Enterprises
TCCCA	Transparency, Consistency, Completeness, Comparability, and Accuracy of emissions data – the quality criteria as defined in both UNFCCC and CLRTAP.
TFEIP	Task Force on Emission Inventories and Projections – provides reporting guidance for the UNECE.
UNECE	United Nations Economic Commission for Europe
UNECE/EMEP	United Nations Economic Commission for Europe/Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe
UNFCCC	United Nations Framework Convention on Climate Change
VOC	Volatile Organic Compounds
Webdab	Online database for CLRTAP
WG	Working Group. Active working groups under the EU Climate Change Committee are: WG1: Emissions Inventories WG 2: National Programmes and Projections WG3: EU ETS.
WID	Waste Incineration Directive, Directive 2000/76/EC

8.3 Glossary of Pollutants

CH ₄	- Methane
CO	- Carbon Monoxide
CO ₂	- Carbon Dioxide
HFCs	- HydroFluoroCarbons
HM	- Heavy Metals (e.g. Lead, Cadmium and Mercury etc)
NH ₃	- Ammonia
NMVOCs	- Non-Methane Volatile Organic Compounds
NO _x	- Oxides of Nitrogen
N ₂ O	- Nitrous Oxide
NO	- Nitric Oxide or Nitrogen Monoxide
NO ₂	- Nitrogen Dioxide
O ₃	- Ozone
PAHs	- Polycyclic Aromatic Hydrocarbons
PFCs	- PerFluoroCarbons
PM	- Particulate Matter
PM _{2.5}	- Ultra-Fine Particulates, size 2.5 µm or less
PM ₁₀	- Fine Particulates, size 10 µm or less
POPs	- Persistent Organic Pollutants (e.g. Polychlorinated Biphenols, Dioxins, etc.)
SF ₆	- Sulphur Hexafluoride
SO ₂	- Sulphur Dioxide
TOPs	- Total Ozone Precursors, includes: NO _x , NMVOCs, CO and CH ₄
TSP	- Total Suspended Particulates
VOCs	- Volatile Organic Compounds

Appendix 1: Streamlining implications of INSPIRE and SEIS

A1.1 Spatial and environmental information management

The INSPIRE Directive aims to enhance sharing of spatial data between public authorities in an interoperable way. The Directive requires MS:

- to create metadata for spatial data sets for the 34 themes defined in annex of the Directive;
- to harmonize and make spatial data sets interoperable in order to be able to use them in cross-border and cross-sector applications;
- to provide network services in order to be able to discover, view, download and when necessary transform spatial data sets.

The INSPIRE Directive (ID) Article 18 requires the MS to establish and operate view services making it possible, as a minimum, to display, navigate, zoom in/out, pan or overlay spatial data sets and to display legend information and any relevant content of metadata.

Further to this the European commission has issued a communication on plans to create an online system for collecting, public viewing, reporting and analysis of environmental data in the EU. The "Shared Environment Information System" (SEIS) will gradually eliminate paper-based reporting and bring all EU spatial data flows into a network of interconnected national and sub-national data hubs. The SEIS principles are that:

- Information should be managed as close as possible to its source;
- Information should be collected once and shared with others for many purposes;
- Information should be readily available to public authorities and enable them to easily fulfil their legal reporting obligations;
- Information should be readily accessible to end-users, primarily public authorities at all levels from local to European, to enable them to assess in a timely fashion the state of the environment and the effectiveness of their policies, and to design new policy;
- Information should also be accessible to enable end-users, both public authorities and citizens, to make comparisons at the appropriate geographical scale (e.g. countries, cities, catchment area) and to participate meaningfully in the development and implementation of environmental policy;
- Information should be fully available to the general public, after due consideration of the appropriate level of aggregation and subject to appropriate confidentiality constraints, and at national level in the relevant national language(s); and
- Information sharing and processing should be supported through common, free open-source software tools.

At a practical level a Shared Environment Information System can be conceived of as an online regulatory and data exploitation platform with links to a network of national environmental databases. SEIS will rely on the European Spatial Data Infrastructure which will see light with the implementation of INSPIRE, as well as on statistical, Earth Observation and 'in situ' data. SEIS will act as an interface between GMES programme, INSPIRE directive and meet many other criteria including reporting for EC & EEA. Consequently we construed these requirements⁷⁰ as requiring of MS:

- A legally enforced data sharing system for publicly funded spatial data.

⁷⁰ At a technical level the requirements are that:

- The network services for each member state shall conform to the Implementation Rules (IR), which specify the general architecture, security, multilingualism, compliance modes, technical architectures and end user needs;
- The SEIS is the resulting geospatial information sharing service, comprising a prescribed technical architecture, with rules for:

- A network of national and sub-national hubs to publish, archive, discover and use environmental and other spatial data on the web.
- An access point on environmental information for the general public, regulatory reporting and commercial service providers.
- A Service Oriented Architecture (SOA).

These principles are comparable to the principles on which INSPIRE is based. While SEIS addresses environmental information, INSPIRE is applicable to the 34 spatial data themes that are mentioned in the annexes (Vandenbroucke 20/12/2007). The INSPIRE principles are:

- Data should be collected once and maintained at the level where this can be done most effectively.
- It must be possible to combine seamlessly spatial information from different sources across Europe and share it between many users and applications.
- It must be possible for information collected at one level to be shared between all the different levels, e.g. detailed for detailed investigations, general for strategic purposes.
- Geographic information needed for good governance at all levels should be abundant and widely available under conditions that does not restrain its extensive use.
- It must be easy to discover which geographic information is available, fits the needs for a particular use and under what conditions it can be acquired and used.
- Geographic data must become easy to understand and interpret because it can be visualized within the appropriate context and selected in a user-friendly way.

A.1.2 Streamlining implications of SEIS and INSPIRE

The SEIS and INSPIRE principles provide an additional/alternative framework with which to harmonize reporting and monitoring obligations. Were SEIS to be fully implemented, it might be possible for it to be used for all reporting obligations and do away with the separate obligations that exist alongside it.

The Commission proposes, in the SEIS Communication, a revision to directive 91/692/EC on standardizing and rationalizing reports on the implementation of certain Directives relating to the environment. This is intended to modernize the legal provisions relating to the way in which information required in Community environmental legislation is made available. The Commission intends to issue a proposal for a directive in spring 2009, not only intending just to revise the existing provisions, which only apply to a relatively small proportion of reporting obligations in environmental legislation, but for the new provisions to cover a large number of existing environmental reporting obligations⁷¹. Likely consequences are that paper reporting will be removed and the process for making information available will be made simpler, more flexible and more efficient. This includes simplification relating to the content of information requirements in thematic environmental legislation; to the content and procedure for reporting at international level; and to the more efficient organization of data-gathering activities within the MS.

According to the EEA report "Evaluation of SEIS country visits", many of the information systems that are operational in the MS are already functioning in accordance with SEIS to provide access to the data that is used at the European level, or could do so if some organisational and structural obstacles were removed. Most of the infrastructure is already available. The EEA added, "The thinking is still rather sectoral and focuses on the responsibility for data and information that each organisation has. In some countries there is a need for better cooperation between the institutions in order to get to that level of integration. Achieving this integration will probably require more resources and political and organisational decisions.

⁷¹ SEIS would cover: Atmospheric emissions, Water emissions, hydrology, geology, terrain, elevation, transport networks, satellite imagery, ecology, biodiversity, protected sites, addresses, place names, human, governmental and industrial geography and demographics, oceanographic data, species, energy, mineral resources, natural risk zones, Air composition, Water composition, UV exposure.

However, good examples of how the system might work offer a useful illustration of its potential benefits”.

The EEA found that the countries are only vaguely aware of the need for information within the European context. There is very little interest in cross-border data and multi-lingual information is rather scarce. However, the understanding of SEIS and INSPIRE did not cause any problems.

In addition to the country reports, a network was initiated under the ICT PSP program of DG INFSO, called NESIS, in order to assess the status of development of the technical components which are already in place in Europe and which could be used for building SEIS. The network envisages analyzing the situation, to indicate the Best Practices and to prepare a roadmap for the implementation of SEIS. The assessment is foreseen to be finished in spring 2009, while the first version of the roadmap will be finished before summer as well. Currently, 17 EIONET members contribute to NESIS.

In the initial instrument analyses presented in Appendix 2 of the Background Report, each instrument was reviewed against the general SEIS Principles. Furthermore, the instrument data flows (section 4.3) and linkages study (MM extract as example in appendix 4) considered metadata aspects (the what and how of data requirements) and the country enquiries tested the readiness of MS. An option to be considered in developing the streamlining strategy is that were SEIS to be fully implemented – via the revision of 91/692/EEC, it might be possible for it to be used for all reporting obligations and to do away with the separate obligations.

Appendix 2. Reporting Instruments

A.2.1 Instruments Reviewed.

The instruments included in Table A2.1 below, identified at the outset of the project, offer opportunities for streamlining because they require MS (and in some case the operators of industrial installations) to report environmental information that is, or could be, related. Table A2.1 provides a summary of the reporting requirements under these instruments, their associated guidelines, and their current status with respect to revision processes.

We distinguish between 'emissions' and 'non-emissions' reporting instruments. "Emissions reporting instruments" are those that require countries to report total emissions from a geographical location (i.e. National reporting) and that require reporting of facility level emissions data. "Non-emissions reporting instruments" do not generate emissions data sets but nevertheless produce data that might feed into the national emissions datasets. Thus the emissions reporting instruments can be thought of as the core set of GHG and air quality reporting instruments for the streamlining exercise, and the facilitating set of non-emissions reporting instruments that influence the data quality available for reporting⁷².

Table A2.1 European legal instruments to be covered by the study

Note: Reporting guidance is noted in italics.

Directive/Decision	Reporting obligation	Notes
<i>Emissions Reporting Instruments</i> - These require countries to report total emissions from a geographical location (i.e. National reporting)		
Monitoring Mechanism (MM) Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community GHG emissions and for implementing the Kyoto Protocol In addition: Reporting under the UNFCCC .	*GHG inventories. *Projections and national programmes. *Process and procedures. <i>Reporting to the UNFCCC must be to the format of the IPCC Inventory Guidelines 2006</i>	Under revision (planned for 2009). Active Working Groups are: <ul style="list-style-type: none"> • Climate Change Committee (CCC) • CCC WG1: Annual Inventories under the Climate Change Committee. • CCC WG 2: National Programmes and Projections Reporting guidance for the UNFCCC is provided by the IPCC.

⁷² The non-emissions reporting instruments together cover the same pollutants as the emissions reporting instruments, and the data reported under them could be used to improve the quality of data reported under the emissions reporting instruments. For example, there is (or should be) a feedback loop from the results of fuel quality monitoring to the national emission factors particularly for sulphur dioxide (SO₂) emissions. Hence use of data reported under the fuel quality directives can improve the quality of SO₂ emissions data reported under other instruments.

Directive/Decision	Reporting obligation	Notes
<p>National Emission Ceilings Directive (NECD) Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants</p> <p>In addition: reporting to the UNECE LRTAP Convention Protocols (CLRTAP):</p> <ul style="list-style-type: none"> • 1985 Helsinki Protocol on the Reduction of Sulphur Emissions • 1988 Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides • 1991 Geneva Protocol on the Control of Emissions of Volatile Organic Compounds • 1994 Oslo Protocol on Further Reduction of Sulphur Emissions, • 1998 Aarhus Protocol on Heavy Metals, • 1998 Aarhus Protocol on Persistent Organic Pollutants, • 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone) 	<p>*National inventories and emission projections</p> <p>*National programmes</p> <p><i>National level reporting to the ECE according to the format of the Reporting Guidelines developed by the TFEIP. The Guidelines are currently under review and are likely to be published in 2008.</i></p>	<p>Currently under review. Proposal expected by May 2009.</p> <p>Active Working Groups are:</p> <ul style="list-style-type: none"> • CAFE Working Group on Implementation (WGI). <p>Reporting guidance for the UNECE is provided by the Task Force on Emission Inventories and Projections (TFEIP)</p>
<p>EU ETS Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for GHG emission allowance trading within the Community and amending Council Directive 96/61/EC</p>	<p>* National Allocation Plan</p> <p>* Sect oral level Emissions: 31 March</p> <p>* Reporting on the implementation of the scheme: 30 June</p> <p>* Article 21 questionnaire</p>	<p>The directive does not include a sunset clause, but states that the commission will review the directive in 2007. The review is under way and a revised directive will be in place for 2012 onwards</p> <p>Active Working Groups: CCC WG3: EU ETS</p>
<p>Regulation (EC) No 166/2006 concerning the establishment of a European Pollutant Release and Transfer Register (E-PRTR) and amending Council Directives 91/689/EEC and 96/61/EC)</p>	<p>Annual E-PRTR facility level reporting has replaced the EPER data reporting in 2009 (reference year 2007). Implementation report every three years starting from 2011 (2007-2009 data)</p>	<p>Active Working Groups: E-PRTR WG Developing reporting and validation tool in cooperation with EEA</p>
<p>Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants (LCPD)</p>	<p>Emission inventory from large combustion plants, and Report on programmes on emissions from large combustion plants</p>	<p>Under revision (see below).</p>
<p>Non-Emissions Reporting (these facilitate data quality but do not generate complete emissions datasets).</p>		
<p>Council Directive 2008/01/EC concerning integrated pollution prevention and control (IPPC)</p> <p>Council Directive 2000/76/EC on the incineration of waste (WID)</p>	<p>IPPC questionnaire</p> <p>Implementation Report Incineration of Waste Directive</p>	<p>Under revision.</p> <p>The reporting requirements of the sectoral directives (LCPD, WID, and SED) and the IPPC Directive are likely to be integrated (i.e. Recast) into a new single Directive on industrial emissions.</p>

Directive/Decision	Reporting obligation	Notes
Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations.		The key principle will be to move away from separate 3 yearly reporting under the different Directives towards reporting based on the SEIS principles using IT tools (IRIS) and leaving specific decisions on the nature and format of reporting to the comitology procedure.
Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 93/12/EEC. Directive 2003/17/EC amended 98/70/EC. Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC	Report on the sulphur content and other parameters of certain liquid fuels. Directive 2003/17/EC requires submission of annual reports on petrol and diesel fuel quality by 30 June. A common format for reporting from 2004 was agreed by MS, following the reporting format laid out in Commission Decision 2002/159/EC.	Under revision. In January 2007 the Commission proposed further cuts to sulphur levels in diesel and gasoil, and establishment of a new petrol blend allowing higher content of the biofuel ethanol.
Decision No 1753/2000/EC of the European Parliament and of the Council of 22 June 2000 establishing a scheme to monitor the average specific emissions of CO2 from new passenger cars	Monitoring report on CO ₂ emissions of new passenger cars, due annually by 1 April. The reporting format is laid out in an Annex to the Decision.	The monitoring scheme fits within the Community Strategy to reduce CO ₂ emissions from passenger cars and light-commercial vehicles, reviewed in February 2007. No proposed revision of the monitoring scheme.
Regulation 842/2006 on certain fluorinated gases (F-gas Regulation)	Annual reporting by 31 March of production, import and export of fluorinated gases.	First reports under the Regulation are due 31 March 2008. Commission review of the Regulation by 4 July 2011.
Regulation 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer Montreal Protocol on substances that deplete the ozone layer	Ozone depleting substances report, due annually, by 31 December. Management Committee guidance reporting forms are available at Circa. Ozone depleting substances report (annually) and Activity Report (biannually), by 30 September. Guidance in: Handbook on Data Reporting under the Montreal Protocol by United Nations Environment Programme Division of Technology, Industry and Economics (UNEP TIE), 1999.	
Aarhus Convention on public access to information, participation in decision-making and access to justice in environmental matters EU Directives adopting the Convention's requirements: principally 2003/4/EC on public access to environmental information and 2003/35/EC on public participation. EC Regulation 1367/2006, applying the Convention to Community institutions and bodies.	MS are obliged to provide data and allow for public participation as set out in the Convention. Information is systematically provided through EIONET, EPER and Eurostat, but must also be provided on an ad-hoc basis in response to requests from the public. All institutions, bodies, offices and agencies established by, or on the basis of the EC Treaty likewise need to provide data and allow for public participation.	Under implementation across the EU; currently no review process. Directives 2003/4/EC and 2003/35/EC were to be implemented in MS' national law by 14 February and 25 June 2005 respectively. In 2004 transposition was found to vary across the new MS. ⁷³

N.B. The Ozone depleting Regulations were not included in the study.

⁷³ Study on the Implementation of the Aarhus Convention in the New Member States and Bulgaria, Romania and Turkey, Final Report, August 2004

A2.2: Analysis of MM Decision

Table A2.2 SWOT Analysis of MM Decision

The instrument review exercise (described in Section 2) explored user's view of the strengths and weaknesses of the reporting instruments (and the MM and the NECD in particular). The detailed outcome of this exercise is shown below focussing on the MM and the NECD in tables A2.2 and A2.3, respectively. These tables have informed the summary of findings in Table 2.4 and formed the basis of our recommendations in sections 5 and 6.

	Strength {Weakness} of current reporting requirements⁷⁴	Opportunity (Threat) for streamlining with other instruments⁷⁵
National Systems	The MM through reference to the UNFCCC guidelines requires the establishment of a National System for the compilation and reporting of emissions. {Projections and PAMs reporting is not as well established in this national system requirement as it is not required under the UNFCCC}	Establish a stronger National System requirement for Projections and PAMs and to widen the historic reporting National System to include integration of other emissions reporting (NECD, EUETS, E-PRTR etc)
Reporting Frequency	(Perception that demands for reporting on PAMs and projections is too frequent)(Difficulties complying with deadlines) Frequent reporting maintains consistency and capability in MS (MS experience some difficulties in incorporating review results due to tight timing.) (Submissions usually not timely)	Improve efficiency and clarity of PAMs and Projections reporting Reduce burden on MS of reporting (e.g. synchronize with CLRTAP projections reported every 5 years and NECD every year. (Different requirements & commitments under NECD and CLRTAP)
Reporting route	Strong and well established data flow To EC, EEA using the ReportNet IP Art.20(1) tools of the EEA for submission of annual information under MM Art.3(1). {No reference to SEIS and/or INSPIRE criteria}	(CLRTAP data is submitted electronically on templates available from http://www.emep.int/emis2006/reporting_templates.html) Electronic reporting through a single channel for all instruments would simplify reporting routes for MS.
Pollutants	Covers all GHG, and all pollutants required for UNFCCC reporting: CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ (year X-2); CO, SO ₂ , NOx, VOCs	Improve transparency/consistency with NECD and CLRTAP Provide comparability with operator emissions reported under EU ETS and E-PRTR.

⁷⁴ Predominantly intra-instrument features.

⁷⁵ Predominantly inter-instrument features

	Strength {Weakness} of current reporting requirements⁷⁴	Opportunity (Threat) for streamlining with other instruments⁷⁵
	{Overlaps with NECD & CLRTAP reporting for indirect GHGs but with different national boundaries} {Lack of transparency with pollutant/gas emissions reported by operators (EU ETS & E-PRTR)}	(Confusion about the importance of different pollutant emissions due to compilation on different basis and incomparability between instruments)
Sectors	Well established Nomenclature for reporting in accordance with IPCC guidance, therefore this requires Common Reporting Format (CRF) sectors – largely harmonised with NFR {Nomenclature not consistent with reporting under EUETS and E-PRTR so there is a lack of transparency between these datasets} {Limited specification for sectoral reporting of projections}	Improve sectoral reporting detail and standardisation for Projections. Improve consistency with sectoral detail needed for non GHGs. Emissions data from EU ETS, E-PRTR and LCPD could be integrated into the annual inventories. {Deviation between different reporting requirements (NECD, CLRTAP and MM) creates lack of transparency for users} {Different nomenclature for MM and operator reporting creates lack of transparency}
Activity data	Good historic activity data is reported under the MM in the CRFs and associated with historic indicators. These data enable review and analysis of trends {Some Projections activity data are required under the MM parameters for Projections and historic/projected indicators. Reporting requirements are ambiguous in some cases leading to confusion and inconsistent reporting.} MM annex 1 requests reporting of “methodologies, data sources and emission factors used by Member States for EC key sources for the purpose of Article 4(1)(b)”	Activity data from EU ETS, E-PRTR and LCPD could be integrated into the annual inventories. {Economic, (i.e. NACE 2), energy (CRF), and technology (SNAP) are not comparable and sectoral comparisons with some national statistics are difficult}. {Different nomenclature for EUMM and operator reporting creates lack of transparency}
Inventory report	Strong clear mandatory Requirements for national inventory report under UNFCCC replicated for MM. {Lack of guidance and structure for reporting PAMs and	Improve data quality of MS reports along lines of UNFCCC review recommendations. Improve the standardisation and guidance for PAMs and

	Strength {Weakness} of current reporting requirements⁷⁴	Opportunity (Threat) for streamlining with other instruments⁷⁵
	Projections}	Projections Report. {Report is burden on MS especially the indicators} { Some duplication in Reporting e.g. Demonstrable Progress Reports, National Communications}
Time-series	Strong requirement for timeseries consistency in historic inventory following IPCC Good Practice. {Incompatible targets between EUMM and NECD (EUMM based on % reduction of fixed assigned amount while NECD on an absolute reduction.) {Limited requirement for consistency between historic and projected estimates in PAMs and Projections} {Inconsistent future year reporting with NECD/CLRTAP}	CLRTAP / NECD require only 2010 projections) The revised EMEP require projections reported for 2010, 2015, 2020, 2030 and 2050
Projections & Policies and Measures (PAMs)	Specified requirement for National projection scenarios for 'with measures' and 'with additional measures', where necessary. A 'reference scenario/base line/without measures' may also be provided. {(Art. 3.2(b): Better definitions of 'with measures' and 'with additional measures' needed, coherent among MS} {Some MS report detailed information in national language only.} {No clear guidance on deciding /reporting which PAMs were included in the WM and WAM projections.} {Year and data chosen for base year often inconsistent or not transparent} {Years for which parameters are required is not clear - 2005, 2010, 2015, 2020 (Art2(b)(iv))} MM requests detailed reporting e.g. indicators for projections to monitor the evaluate progress of policies and measures. Interactions, description {The scale of disaggregation (e.g. cluster of transport initiatives vs. individual initiatives) is not specified in MM/IP) (Some details could be unnecessary or redundant (i.e. economic	Guidance for compilation and reporting projections & PAMs needed. MM and NECD Parameters reporting could be made consistent. Consistent templates can be developed. {current inconsistency in MS reporting of projections & PAMs undermines usefulness of the data} Information from Regulators and Operators could be further integrated /aggregated into Projections and PAMs reporting. Information on measures being taken or planned for the implementation of Community legislation provided in reporting for that Community legislation

	Strength {Weakness} of current reporting requirements⁷⁴	Opportunity (Threat) for streamlining with other instruments⁷⁵
	<p>impacts of PAMs, Information on measures being taken or planned for the implementation of Community legislation).</p> <p>(IP Art.9(b) (interaction with other PAMs): Difficult to determine the expected interaction of PAMs)</p> <p>(Standardized method how to account for the difference between actual emissions from sectors that fall under the EU ETS and the allocated emission ceiling)</p>	
National Programmes/ action plans etc	<p>Reference to and requirement for national programmes. MM requests economic cost assessment where possible.</p> <p>{Limited links required with other programmes (e.g. NECD)}</p> <p>{ Little consistency in the estimation of costs 3.2(a)v (PAMs estimates):}</p> <p>{Difficult to assess and analyse the economic impacts of the policies and measures included under the scenarios.}</p>	<p>Refer to Standardised cost model Secretariat General in the Impact Assessment of any simplification proposal is available: http://ec.europa.eu/governance/impact/docs_en.htm</p>
Uncertainty Analysis	<p>Good requirements for uncertainty assessment made in accordance with the IPCC good practice guidance.</p> <p>{Limited guidance on reporting of sensitivities for projections}</p>	<p>Guidance on sensitivity analysis and reporting.</p> <p>{Increased burden on MS reporting}</p>
Indicators	<p>MM requires indicators for projections for the years 2005, 2010, 2015 and 2020 as listed in Annex III to the Implementing Provisions.</p> <p>{MS significant difficulty reporting specific indicators due to data gaps or delays and also not used for policy making etc.})</p> <p>(Definitions unclear, e.g. energy transformation).</p>	<p>Opportunity to reduce list of indicators and use for both MM and NECD.</p> <p>Improve the guidance associated with reporting Indicators</p>
Reporting guidelines and data delivery	<p>Good methodology documents from IPCC</p> <p>{Complex set of reporting instructions crossing EUMM annexes and UNFCCC guidelines on inventories, national communications, LULUCF etc. and numerous communiqués ,</p>	<p>Methodologies and guidance for assessing the effectiveness and costs of policies and measures and estimating projected emissions should be developed and used consistently across MM and NECD so that reporting can be consistent across both</p>

	Strength {Weakness} of current reporting requirements⁷⁴	Opportunity (Threat) for streamlining with other instruments⁷⁵
	IPCC,} {Limited guidance for Projections and PAMs}	requirements.
Reporting format / template	CRF templates already exist and are continually developed by the UNFCCC. All MS use it for reporting to UNFCCC Less well established reporting templates for PAMs and projections exist as Excel template.	CRF and NFR already mostly harmonised (Any MM and NECD template developed should be consistent with UNFCCC and CLRTAP requirements)

Table A2.2a : Reporting of emissions from aviation, maritime and multilateral activities

Sector		CLRTAP	NECD	UNFCCC/MM
Domestic Aviation	LTO	✓	✓	✓
	Cruise	✓	✗	✓
International Aviation	LTO	✗	✓	✗
	Cruise	✗	✗	✗
Military (aviation and maritime)		✗	✗	✗
Maritime	Domestic	✓	✓	✓

Note: x are reported as memo items

A2.3 - Analysis of NEC Directive

Table A2.3 SWOT Analysis of NECD

Reporting Requirement	Strength (Weakness) of current reporting requirements	Opportunity (Threat) for streamlining with other instruments
National Systems	{The NECD does not have specific National System requirements for the compilation and reporting of emissions.} {Projections and PAMs reporting has underlying recommendations but the systems for compilation and reporting are not well established }	Establish a stronger National System requirement for Historic Emissions, Projections and PAMs and to include integration of other emissions reporting (NECD, EU ETS, E-PRTR etc)
Reporting Frequency	Annually (by 31 December): Programmes, Emissions Inventory, Emissions Projections, to the EC copied to EEA.	CLRTAP data is submitted electronically on templates available from http://www.emep.int/emis2006/reporting_templates.html (CLRTAP projections reported every 5 years. NECD every 2 years.)
Reporting route	(Electronic reporting is not mandated but MS are encouraged to upload deliverables to the EEA's Central Data Repository.) {No reference to SEIS and/or INSPIRE criteria for standardised}	Electronic reporting through a single channel for all instruments would simplify reporting routes for MS.
Pollutants	{Overlaps with MM & CLRTAP reporting for NO _x , SO ₂ , NH ₃ and NMVOC but with different national boundaries} Concise reporting of annual national total emissions of NO _x , SO ₂ , NMVOC, NH ₃ which minimises burden on MS, aligns with EC need for the data (whereas CLRTAP requires reporting of many pollutants.)	Improve transparency/consistency with MM and CLRTAP Provide comparability with operator emissions reported under E-PRTR. (Can be marginalised as there is no direct link to GHG reporting or effects) (Some important pollutants not included e.g. Heavy Metals and fine particulate matter (PM _{2.5})) (Overlap with E-PRTR.)
Sectors	Covers all National Sources. (The reporting format nomenclature is not specified clearly, however reference is made to the EMEP/CORINAIR Guidebook which covers methodologies for estimation but not to any reporting guidelines.)	Countries often extract data for the four NECD pollutants from their CLRTAP reports so there is minimal burden to provide sectorally disaggregated data Emissions data from EU ETS, E-PRTR and LCPD could be integrated into the annual inventories. (Differences exist in the NECD the way the NECD sets the boundaries (with specific exclusions presented in Article 2 "Scope")

		<p>This creates incomparability with other instrument reporting (MM and CLRTAP).</p> <p>{Different nomenclature for NECD and operator reporting creates lack of transparency}</p> <p>NECD should refer to the NFR - Nomenclature For Reporting in the UNECE Reporting Guidelines and, as amended, is made available to Parties at http://www.emep.int/emis2007/reporting_templates.html. This NFR structure is reasonably consistent with the IPCC categorisation used for the MM.</p>
Spatial Coverage	<p>National totals include all anthropogenic sources. (Territorial restrictions apply i.e: Spain, emissions in the Canary Islands; France, emissions in the overseas departments; Portugal, emissions in Madeira and the Azores. which are inconsistent with those for EUMM and CLRTAP) (No spatial disaggregation specified) (No reference to SEIS and/or INSPIRE criteria)</p>	<p>(No reference to SEIS and/or INSPIRE criteria) (Limited integration of operator based data into National Estimates inhibits the usefulness of reported data for policy analysis.)</p>
Activity data	<p>(NECD does not explicitly request activity data leaving little opportunity for the reported data to be reviewed or verified)</p> <p>NECD requires emission projections to include information to enable a quantitative understanding of the key socioeconomic assumptions used in their preparation with recommendations provided by the CAFE Recommendations (CAFE 2006)</p>	<p>Require reporting of historic activity data (could be through extension to the CRF or separate template consistent with CLRTAP).</p> <p>Include annual projections activity data reporting (basic parameters)</p> <p>Extend detail of CAFE Recommendations for reporting on PAMs and Projections.</p> <p>(Economic, (i.e. NACE 2), energy (CRF), and technology (SNAP) are not comparable) so sectoral analysis of emissions compared to economic drivers can be difficult.</p>
Inventory report	<p>(No requirement for submission of an Inventory Report outlining methods, assumptions and data used).</p>	<p>Improve transparency by requiring a National Inventory Report. This report could be merged with the CLRTAP (IIR) report required under</p>

		http://www.ceip.at/fileadmin/inhalte/emep/reporting_2009/Rep_Guidelines_ECE_EB_AIR_97.pdf
Time-series	(Limited adherence to requirements for timeseries consistency in instrument with requirement for Historic: X – 1 (preliminary), X – 2 (final) which is inconsistent with requirements under CLRTAP and MM) (No explicit requirements to re-report historic data or ensure time series consistency.) {Limited requirement for consistency between historic and projected estimates in PAMs and Projections} {Inconsistent future year reporting with EUMM & CLRTAP}	Improve timeseries reporting under NECD as this is already required under CLRTAP. Keep good practice in mind for reporting consistent timeseries each year. Consider reporting additional future years to support policy analysis beyond target year.
Projections & Policies and Measures (PAMs)	National total emissions for 2010 reported annually (Sectoral disaggregation required not specified. Scenarios required not specified.) Projections and PAMs reported biannually supported by CAFE Recommendations (CAFE 2006). Programmes for 2002 (updated at 2006) for attaining the ceilings in Annex I by 2010. These describe policies, measures, quantified estimates of the effects and anticipated significant changes in the geographical distribution of national emissions. (Some ambiguity on what to report and how to estimate emissions, costs and savings).	Improve sectoral reporting for projections. Extend, strengthen and link to NECD the CAFÉ WGI recommends which should include sectoral reporting for projections, methods for estimating costs of measures, projections, and scenarios (e.g. WM, WAM). Could extend CAFE Recommendations to use the parameters listed in Annex IV of the Implementing Provisions to Monitoring Mechanism Decision 280/2004/EC provides a list of parameters.(mandatory and non-mandatory) MM requests economic cost assessment where possible. EC project currently underway to establish methodologies to quantify the emissions impact of PAMs. Standardised cost model Secretariat General in the Impact Assessment of any simplification proposal is available: http://ec.europa.eu/governance/impact/docs_en.htm
National Programmes	{Limited links required with other programmes (e.g. EUMM)} {Difficult to assess and analyse the economic impacts of the policies and measures included under the scenarios.}	Improve Guidance for development of programme monitoring and reporting.
Uncertainty Analysis	(Not Required)	The CAFÉ WGI recommends MM implementing provisions encourage MS to define a high, central and low scenario for the key input variables and to quantify projected emissions for these

		<p>scenarios. MS are furthermore encouraged to include a measure of robustness of their predictive model and its methods used for their assessments.</p> <p>MSs may consider the use of multi-variant scenarios, using combinations of input variables.</p> <p>Further guidance needed on robustness and sensitivity analysis and reporting.</p>
Indicators	(Not Currently Required)	<p>The CAFÉ WGI recommends Indicators for monitoring the state of implementation.</p> <p>NECD could adopt EUMM indicators for projections for the years 2005, 2010, 2015 and 2020 as listed in Annex III to the Implementing Provisions.</p>
Reporting guidelines and data delivery	<p>Good methodology documents EMEP/CORINAIR (2008) revisions {No explicit reporting guidelines available,}</p> <p>CAFE Recommendations are a good start for Projections and PAMS reporting.</p>	<p>Reporting guidelines need developing or referring to CLRTAP http://www.ceip.at/fileadmin/inhalte/emep/reporting_2009/Rep_Guidelines_ECE_EB_AIR_97.pdf .</p> <p>Improving CAFE Recommendation Methodologies and guidance for assessing the effectiveness and costs of policies and measures and estimating projected emissions use consistently across MM and NECD so that reporting can be consistent across both requirements.</p>
Reporting format / template	<p>{inadequate specification of reporting formats and/or templates}</p> <p>Optional templates for PAMs and projections exist from CAFE Recommendations (CAFE 2006).</p>	<p>Improve reporting templates for NECD historical emissions and projections. Align with EUMM and or CLRTAP.</p> <p>Improvements needed to CAFE Recommendations (CAFE 2006) reporting templates for PAMs and projections exist.</p> <p>(Any MM and NECD template developed should be consistent with UNFCCC and CLRTAP requirements)</p>

References

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UNECE (2003), AIR POLLUTION STUDIES No. 15, Guidelines for Estimating and Reporting Emission Data under the Convention on Long-range Transboundary Air Pollution Prepared by the Convention's Task Force on Emission Inventories and Projections and the secretariat, Geneva

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CAFE Working Group on Implementation (2006), Recommendations on developing and reporting national programmes under the National Emission Ceilings Directive, Published 3 April 2006, (http://ec.europa.eu/environment/air/pdf/recom_nec.pdf)

AEA, 2008, Technical Report: Evaluation of national plans submitted in 2006 under the National Emission Ceilings Directive 2001/81/EC compiled for the EC under Service contract: 070501/2006/453041/MAR/C5, http://ec.europa.eu/environment/air/pdf/nec_report.pdf

Dame, E., 2007, DG ENV, Unit C5, Presentation: Streamlining and harmonizing climate change and air pollution requirements, TFEIP, 23 – 24 May 2007, Dessau

EEA's Central Data Repository, <http://cdr.eionet.europa.eu/>

Appendix 3: MS questionnaire

A.3.1 Questionnaire

Part A: 1. Data flows, processors and administrative burden

The purpose of the first question relating to the data flow diagrams was to understand which data inputs MS use, and how this data is manipulated in order to fulfil the reporting requirements under each instrument.

The second part aimed to find out about data management and the administrative burden of reporting under each instrument (in terms of time and costs if such information is available). It was important to distinguish between:

- Data collection - this involves recording activity data and developing emission factors, or recording emission data reported by facilities
- Compilation and QA/QC - bringing together data (compilation), checking and verifying (QA/QC)
- Reporting - preparing and submitting data and written reports to the Commission or to UNFCCC/UNECE.

Part A: 2. Links with other instruments:

1. Do you use common statistical data (e.g. national energy statistics) to develop emissions inventories such that emissions reported under the MM are consistent with emissions reported under the NECD?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
2. Do you store all emissions data for greenhouse gases and air pollutants in the one system, or in parallel, interoperable systems, or in completely separate systems? Are you able to export and report emissions data from a single source in either CRF or NFR format for MM/UNFCCC and NECD/CLRTAP?
3. Do you use common data (e.g. energy, economic and production projections) and methods (e.g. cost effectiveness and savings calculations) for calculating MM projections and PAMs (as described in the MM submission) and NECD projections and PAMs (as in the National Report)? If not where do these differ?
4. Do you use information from EU ETS returns and monitoring (e.g. plant emission estimates, carbon content factors and stack monitoring data) to improve your national emissions estimates for MM reporting? If so, how (i.e. totalised emissions, standardised emission factors etc)? If not, would this be useful and what barriers would you need to overcome?
5. Do you use the instruments listed in Part B, or others, to gather and use sector or site specific emissions and emission factors in your MM inventory?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
6. Do you use data from other instruments (e.g. E-PRTR, LCPD etc) in reporting under NECD and/or CLRTAP?
If yes, what is this data and how do you use it? If not, would this be useful? What barriers would you need to overcome?
7. Do you report the same emissions data under NECD and CLRTAP or do you modify the data for NECD purposes (maritime, aviation exclusions; time series differences NECD last 2 years; CLRTAP since 1980)?
If yes, what is your system for doing this? If not, would this be useful? What barriers would you need to overcome?
8. If your emissions estimates are revised, are the revised figures reported under both NECD and CLRTAP?
If yes, what is your system for doing this? If not, would this be useful? What barriers would you need to overcome?
9. Are there benefits of the CLRTAP systems that would improve reporting under NECD, and vice versa? e.g. mandatory use of reporting templates, QA/QC). Please describe.

10. Do you centralise data (e.g. activity data and emission factors used) from monitoring and reporting reports that are reviewed by verifiers?
Do you use these data in reporting under other instruments (e.g. MM)?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
11. Do EU ETS facilities report other pollutant emissions (more than CO₂) from their facilities?
Do you use these data in reporting under other instruments?
12. Are your internal EU ETS sectoral definitions detailed enough to be aggregated to the MM CRF nomenclature?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
13. Do you use EU ETS data to verify reported emissions data and/or activity data under the E-PRTR, IPPC or other industrial emissions instruments?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
14. Are facility level data collected for E-PRTR reporting used in the national GREENHOUSE GAS (MM) and/or AP (NECD/CLRTAP) inventories?
If yes, please describe. If not, would this be useful? What barriers would you need to overcome?
15. Do you report emissions from installations covered by Annex I of the IPPC Directive? What are your systems for collecting and reporting these data to the E-PRTR?
Please describe:
16. Are underlying activity data for facility level emissions available?
If yes, how do you use this data? If not, would this be useful? What barriers would you need to overcome?
17. Do you (or are you currently able to) assign facility level data to the CRF and/or NFR source categories?
18. Do you use emissions data collected under the LCPD in reporting under other instruments? e.g. are LCPD facility level emissions data used in the national SO_x and NO_x inventories under NECD/CLRTAP? Do you use LCPD data to verify other data in the NECD/CLRTAP inventories?
If yes, please describe your use of LCPD emissions data. If not, would this be useful? What barriers would you need to overcome?
19. Are underlying activity data (type and amount of fuel used) for LCP emissions available?
If yes, please describe your use of LCPD activity data. If not, would this be useful? What barriers would you need to overcome?

Part B: Non-emissions reporting instruments

Do you use the following instruments to generate, or improve the quality of, data relevant for national reporting under the instruments described under Part A?

Instrument	Description of use of instrument to improve national emissions datasets	Data under which instruments is linked/improved?
Fluorinated gases: Regulation 842/2006		
Ozone depleters: Montreal Protocol		
Ozone depleters: Regulation 2037/2000		
CO2 from new cars: Decision No 1753/2000/EC		
Fuel quality directive 98/70/EC, petrol and diesel fuels		
Sulphur content of fuels, Directive 1999/32/EC		
IPPC: Integrated Pollution Prevention and Control Directive 96/61/EC, and Regulation 1882/2003/EC		
WID: Waste Incineration Directive 2000/76/EC		
VOC Solvents Directive 1999/13/EC		
Aarhus Convention on public access to information		
EU Directives adopting Aarhus Convention's requirements: 2003/4/EC, 2003/35/EC.		
SEIS and INSPIRE: Shared Environmental Information System for Europe, and INSPIRE Directive 2007/2/EC		

Part C: Streamlining Opportunities

Please comment on your experiences of reporting under the various instruments, what could potentially be streamlined, and how.

Question 1 - How have you improved reporting?

Please describe the systems that you have put in place to assist reporting overall - e.g. systems for integrating data from facilities for use in national reporting, or for integrating climate change and air quality monitoring and reporting? Please describe:

Question 2 - Streamlining problems

Please describe any problems you have with differences in requirements, definitions/nomenclature, time schedules, types of emission factor etc, to that of another of the instruments listed in Part A?

Question 3 - more consistent instruments

Are there aspects that might be made more consistent between instruments (given that some differences between instruments cannot be avoided because they serve different purposes)? Please describe:

Question 4 - Shared Environmental Information System (SEIS)

- How do you currently use automated systems to electronically collect, manage and report data under the instruments in Part A? e.g. to fill the CRF, WEBDAB etc.
- In what format/s are your electronic data collected and reported under each instrument? e.g. xml files, other. (Note: SEIS will require that MS deliver data through a system that is interoperable with the systems of other MS)
- Which parts of your inventory system are NOT capable of managing and reporting data in an electronic format? Why not?
- How might your systems be improved, to simplify data collection, processing and dissemination (in the sense of reporting to the EC and accessibility for the public)?

Question 5 - streamlined reporting

- (a) Please comment on whether Figure A.3.1 below fits with your vision for streamlining?
(b) What would be the main challenges for you to work towards such a streamlined system?

Fig A3.1 – Example of fully integrated reporting – ‘Utopia’

The figure illustrates an example of a streamlined data flow. The example below follows the processes shown in the figure. It shows how the main national functions might be organised to ensure consistent and transparent data flow for national emissions reporting to satisfy the requirements of a number of reporting instruments.

A **Facility**, a car manufacturing plant called “Noddy’s Autos” is regulated under IPPC and included under EU ETS. A number of processes fall under E-PRTR and its combustion plant SO₂ and NO_x emissions come under LCPD. As required by its permit, Noddy’s Autos reports its annual **emissions** in a standardised electronic format allowing emissions to be aggregated by site, process and pollutant, and its annual **activity data** associated with each regulated process (e.g. GJ fuel used by type, solvent used, steel consumed, cars produced), thus linking activity data to emissions for specific processes. The Permit also requires Noddy’s Autos to interact with the regulator to form a view of **projected emissions** from the plant taking account of future technological upgrades or plant expansion.

The **Regulator** reviews the facility reports and collates them with all other regulated processes data into a single database containing both the emissions and the activity data, then publishes the emissions data by process, site, year and pollutant (meeting part of E-PRTR requirements). The Regulator also provides the national statistical authorities, the Inventory Agency and any other emissions trading authority with the detailed process level emissions data and activity data statistics. The Regulator also works with experts, trade associations and industry to estimate projected emissions by sector for all of the regulated plant incorporating national economic and energy drivers. The Regulator makes these data available to the **National Statistical Authorities** and the **Inventory Agency**.

The National Statistical Authorities use the process level activity statistics from the **Regulator** to develop and reconcile the national statistics and to separate out the production and consumption statistics for “regulated/reported” (e.g. IPPC-permitted) and “un-regulated/reported” (e.g. road transport) processes. The National Statistical Authorities provide the **Inventory Agency** with this separated statistical data in addition to the standard statistical data it compiles for other purposes (fuel consumption, agricultural statistics etc).

The Inventory Agency compiles a complete **emissions inventory** by using the “regulated/reported” emissions data and estimating emissions for the “un-regulated/reported” component and all other sources e.g. domestic, transport etc. It also compiles the **projected** emissions estimates using national energy, economic and demographic projections combined with projections relating to regulated processes from the regulator, and information on **policies and measures** from relevant government authorities.

The Inventory Agency would then upload, to a suitable EC server, a detailed inventory and projections submission containing:

- Historic process/site level emission estimates from the regulated/reported processes (to meet E-PRTR/EPER, LCPD and CLRTAP requirements)

Gridded or NUTS level emission estimates for the non regulated/reported processes and the other sectors (to meet E-PRTR and CLRTAP requirements)

- National total emission estimates by pollutant and media, by sector (to meet MM/UNFCCC, NECD and CLRTAP requirements)
- National projections by sector for agreed scenarios and years (to meet MM/UNFCCC, CLRTAP and NECD requirements)
- National policies and measures (PAMs) (to meet MM and NECD requirements)
- Activity data to support national inventories and projections.

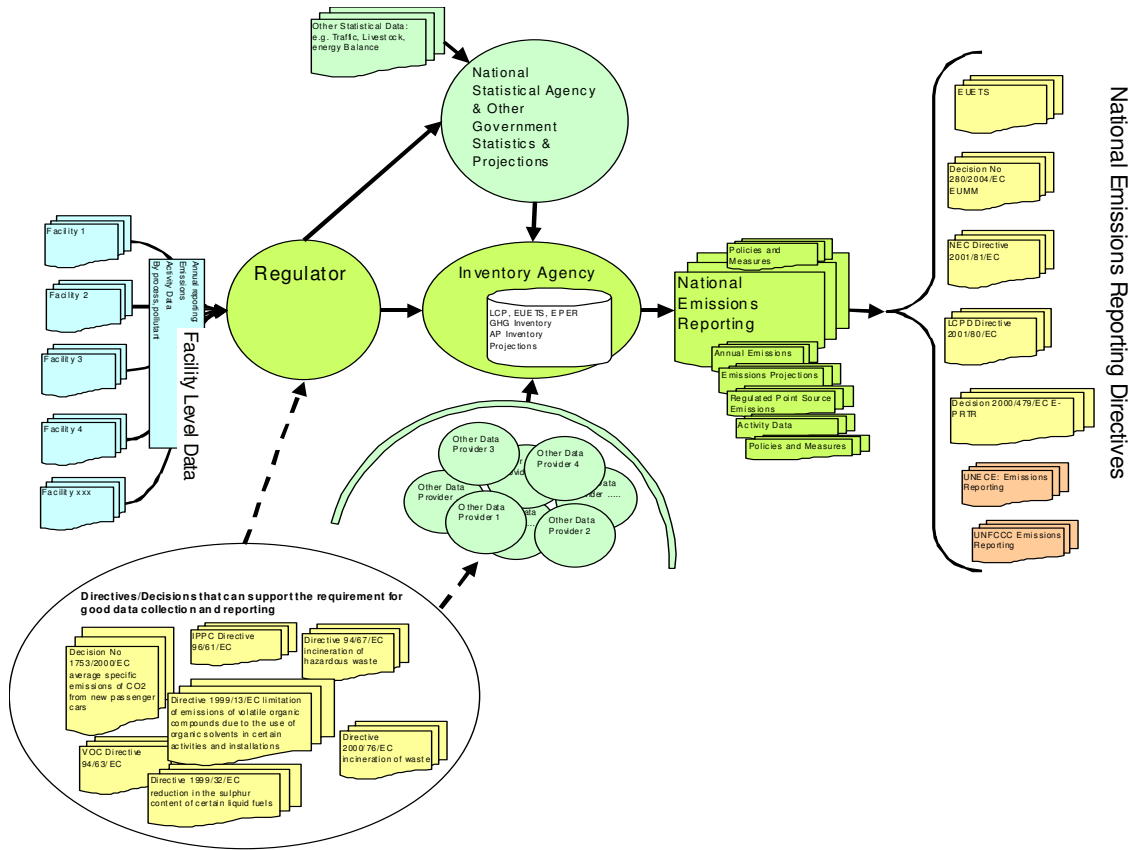


Figure A.3.1. A vision of a fully integrated inventory - Utopia

A3.1 : Functional entities in National Inventory Systems

There are a number of discrete functional roles (and associated entities) that, between them, process the requirements of the above legal instruments.

A *competent authority function*, often responsible for:

- Authorising and reviewing permits, specifying the reporting requirements (a minimum of annual emissions, the activity data and interactions on projections required) collecting and checking (reviewing) the reports and collating them with all other regulated processes data into a single database containing both the emissions and the activity data parts;
- Inspection/enforcement of permit conditions;
- Collating and verifying datasets of emissions and activity data from all regulated processes and publish the emissions data by process, site, year and pollutant (meeting part of E-PRTR requirements).
- Providing information to the national statistical authorities, the Inventory Agency (UNFCCC 2005) and any other emissions trading authority (who has all signed non disclosure agreements) with the detailed process level emissions data and activity data statistics.
- Working with experts, trade associations and industry to estimate projected emissions by sector for all of the regulated plant incorporating national economic and energy

drivers. The regulator makes these data available to the national statistical authorities and the Inventory Agency (UNFCCC 2005) with suitable documentation on methods, assumptions and details of policies and measures included.

A National statistical function that uses process level activity statistics to develop and reconcile the national statistics and to separate out the production/consumption statistics for “regulated/reported” and “un-regulated/reported” processes (helping to create robust national statistics to underpin domestic policy). National Statistical Authorities provide the Inventory Agency with this separated statistical data (regulated process & unregulated process) in addition to the standard statistical data it compiles for other purposes (e.g. fuel consumption, traffic, agricultural statistics etc).

An Inventory function to:

- Compile and report a complete inventory (for all sources) using the reported “regulated/reported” emissions data, by estimating emissions for the “un-regulated/reported” component⁷⁶ using the national separated statistics and by estimating emissions for all other sources e.g. domestic, transport etc. The Inventory Agency compiles the inventory according to strict international good practice guidelines (e.g. IPCC 2006 and the EMEP/CORINAIR guidebook) for all pollutants and media required. The Inventory Agency also compiles the projected emissions estimates using national energy, economic and demographic projections combined with projections relating to regulated processes from the regulator and information on policies and measures from relevant national authorities, policy makers or government departments.
- Upload, to a suitable server, detailed inventory and projections in an agreed international format and notifies the Commission and its data collection agency of the release (thus meeting emissions reporting obligations under E-PRTR, NECD, MM & LCPD).
- Publish a single report describing the method used in compiling the dataset by sector an analysis of trends & uncertainties + a selection of annexes tuned to each reporting requirement need. e.g. EU ETS, E-PRTR, NECD, MM.

A central EU function to receive data from the individual member state publication areas and compile an EU wide database of emissions data, extracting the necessary summaries for monitoring against targets, distributing data for centralised modelling and policy assessment, co-ordinating annual reviews of the submissions and aggregating the individual member state submissions for MM and NECD/CLRTAP to provide EU wide CLRTAP and UNFCCC submissions.

Instrument data flow mapping

Several instruments may require the same (or related) generic data; for example, in developing the EU ETS National Allocation Plans (NAPs), MS tend to use information from national statistical offices (projections, trends, new entrants, etc.) as well as facilities’ own estimations of future projections and so these are indicated in the data flow with an arrow into the NAP – even though none of these sources is specified in the ETS Directive.

Table A3.1 provides a summary of generic data types. Where several instruments use the same data inputs there are opportunities to integrate processes and report under several instruments from a common data pool. The exercise shows the importance of ensuring that Regulated Processes (facility) data is in a form that can be readily used by the other instruments – MM, NECD, and CLRTAP. It also demonstrates the large breadth of data types and large number of source entities involved in fulfilling the reporting requirements of the instruments.

⁷⁶ Better inventory quality is achieved because appropriate emission factors can be applied to the un-regulated/reported component of a sectors emissions (e.g. public service un-regulated/reported will include only small boilers) and all reported data compiled at a process level can be used in the national inventory.

Table A3.1: Description of the generic data inputs shown in the data flow maps

Generic data inputs	Details of the data	Source entities
National statistics – (historical) activity data	Activity data for energy, transport, agriculture, waste sectors; e.g. energy consumed, number of head of livestock.	National Statistical Authority
International Emission Factors (EFs)	Emissions factors derived from IPPC / EMEP/CORINAIR guidance. These are the “default” values; more accurate national EFs may be determined.	Inventory Agency (derived from IPPC / EMEP/CORINAIR guidance)
National EFs	Optional: EFs derived from Regulated Process data, or EFs provided directly by industry. MS may also fine-tune National EFs using data from the non-reporting (facilitating) instruments.	Inventory Agency and Regulated industrial facilities
Regulated Processes data	Facility level emissions and/or activity data, reported under EU ETS, E-PRTR, LCPD (and IPPC in some MS)	Regulated industrial facilities
National plans/programmes	National strategies / policies and measures to reduce emissions of GHG and/or air pollutants	Environment Ministry or similar
National statistics – projections	Projected socio-economic data and activity data (energy consumption etc)	National Statistical Authority

The idealized, reference, data flow maps developed for discussion with MS are shown in Figs 2.1 to 2.6 below. These are based on the linkage identified in the instrument review and the experience of the project team. Data flows are not prescribed by the instruments and so may vary from country to country depending on the systems they have chosen to use. Nevertheless they represent the essential elements needed to fulfil the reporting requirements of each instrument. Through the questionnaire responses, countries confirmed that the data flow maps are sufficiently representative of the way that data is managed to act as a baseline 'model' for developing streamlining options and as 'tools' to assist countries to deal with all these different obligations and make an analysis of the best way to collect, process and transmit data.

For the national inventories (MM, NECD, UNFCC and CLRTAP) reporting guidance is progressively being brought into convergence⁷⁷ and for 'good practice' to be shared, for example the MM and the IPCC and UNFCCC, and the NECD and CLRTAP (EMEP/CORINAIR and UNECE). In addition, the CAFE Working Group I Recommendations on national programmes apply to reporting under NECD.

⁷⁷ The Commission, together with the EEA and EMEP, are in the process of updating the EMEP CORINAIR Guidebook that will then become the minimum requirement of reporting under LRTAP and the NEC.

Appendix 4: Workshop Reports

January 2009

Background

The workshop was an opportunity for:

- The project team to:
 - Propose options for using the Monitoring Mechanism as a tool to assist countries maximize the quality of their CC and AP emissions data and optimise the cost/effectiveness of their reporting to CC and AP instruments in general;
 - Seek further clarification on specific issues from the Countries and the Commission.
- Countries to:
 - share their expectations of the streamlining project, question the Project Team on their proposals, comment on any particular benefits they saw in them, and voice particular concerns;
 - Use their experience to suggest ways of fine-tuning the options to minimise the costs and maximise the benefits of streamlining.
- To prioritise the options and future actions.

Prior to the meeting the attendees had received a Discussion Paper (which described the Options and associated actions) and a Summary Report of the Country briefs.

Eighteen member states participated; there were also representatives from the Commission (inc. the EEA and the JRC), the CCC WGs 1, 2 and 3, the UNECE TFEIP, and UNFCCC.

Business sessions

The meeting had four sessions, interspersed with breakout and plenary discussions.

Session 1 - scene setting

The meeting was opened by Erasmia Kitou (EK), the Commission desk officer for the Streamlining climate change and air pollution reporting project.

Mike Woodfield, of the project team, provided a short description of the activities undertaken within the project to date, and introduced the streamlining options to be considered during the Workshop.

The issues highlighted were:

The legislation review and stakeholder consultation found that countries had already undertaken streamlining initiatives to overcome problems that they had encountered with emissions reporting. Often these:

- Improve efficiency & reduce the burden (and cost) of duplicative reporting;
- Provide sufficient data of adequate quality (i.e. TCCCA) to enable cost effective future policies and monitor performance against targets;
- Lead to better data with clear and simple data flows for all types of emissions data, allowing for multiple user applications while taking into consideration the resulting costs.

The streamlining options, in a stepwise manner, make quick wins by aligning National level reporting, align facility level emissions reporting, and lead to fully integrated CC and AP

emissions reporting. Enabling actions were proposed with specific proposals relating to text in individual instruments.

Plenary Discussion

- The project team clarified that:
 - The project did not include detailed recommendations for compiling and reporting PAMs. However, Options 1 and 2 includes some specific requirements for streamlined reporting and methods;
 - The views of the MS were collected by questionnaire and visits, the views of Commission were taken in course of developing the option proposals.
- Various, MS's commented that:
 - Any revision of the MM is likely to have to reflect the energy and climate change package. (This will be addressed in a later project);
 - it is often difficult for Statistical agencies to integrate national and facility level data within one package;
 - reporting under existing instruments may be more or less adequate but, in either case, the available guidance does not allow users to assess how good current reporting is;
 - if MS are to report to the Commission and, in parallel, to international bodies then the guidance used needs to be (and remain) the same;
 - The cost bringing data to the same level of quality; integrating data of varying quality; and bringing MS to the same level would be considerable whereas the benefits are less easily valued.

Country views

Most countries were in favour of action to streamline reporting requirements provided the benefits compensate for the work required; concerns were expressed that streamlining would lead to collecting data for its own sake.

Session 2 Aligning National level emissions reporting

(Chaired by Eduard Dame (ED) - Commission.)

Justin Goodwin (JG), from the project team, proposed 2 Options (and associated actions) for aligning national emissions reporting under the EU MM and other instruments. He outlined the pros & cons, costs & benefits of each, and the way that Member States currently manage the reporting issues.

Option 1 is for the MM only, it:

- Prepares for further streamlining by moving specific requirements for methods and reporting to the Implementing Provisions;
- Improves the quality of GHG emissions data reported by MS;
- Requires the consistent use of national statistics and reported installation emissions data;
- Improves the transparency of reporting of emissions from different sectors and how they relate to national data and regulated activity emissions.

Option 2 aligns the MM and the NECD by:

- Creating an implementing provision for laying down rules for reporting to the NECD;
- Moving/creating specific methodology and reporting (procedural) instructions to implementing provision when revising the NECD;
- Aligning the requirements for emissions methodologies and reporting between the NECD and the MM.

These options take into account that all MS already use the EMEP Guidebook for their indirect GHG methodologies, most use common National energy statistics for both AP and CC reporting emissions, PAMs, and projections, and over half of the MS already use EU ETS AER data as part of their emissions methodologies for the MM or would like to. The proposals seek to overcome the problems most countries experience in using their E-PRTR data due to difficulties integrating the national statistics and facility/installation level data. Option 2 offers the opportunity of merging the MM and the NECD.

The benefits of these options would be to: simplify multipollutant multi effect policy making And lead to more targeted policy with better regulatory goals, make better use of country specific data (facility/installations and national statistics), and use the same underlying data and assumptions.

Case study

Jean-Pierre Fontelle, described the French Integrated Inventory system which uses a single data base with data held at a level where the definitions and methodologies are sufficiently detailed and consistent to allow a single process for reporting to multiple instruments/organisations i.e. the MM, NECD, E-PRTR and to the ECE and FCCC.

Plenary Discussion and Country views

- The countries indicated that merging the MM and the NEC is not technically a problem but that it could be a political one. Some countries, for example, questioned whether the same indirect GHGs (and NECD) pollutants should/could be submitted under NECD and MM – given that they had a different purpose;
- Countries suggested that since the NEC /CLRTAP are already aligned and share the EMEP/EEA emission estimation methodology the same values (the National data set) could be submitted under both;
- Countries were divided on the pros and cons of merging the MM and NEC; currently these are currently quite separate – GHG and air pollutants – some felt that it would be difficult for either of the instruments to include substances outside its scope.

Session 3 - Aligning Facility level emissions reporting

(Chaired by Marco Loprieno - Commission)

Tinus Pulles (TP), from the project team proposed Option 3, and its associated actions, to align facility level reporting under either the EU ETS or the E-PRTR. He outlined the pros & cons, costs & savings of each, and the way that Member States currently manage the reporting issues.

Options 3a - uses EU ETS Data Flows for National GHG Inventories to:

- Extend/Strengthen methodology instructions in the MM IP so that EU ETS data can be used as the basis for estimating national emissions and presented transparently in the MM NIR;
- Extend/strengthen reporting instructions in the EU ETS MRG to ensure the appropriate flow of data to the MM.

Options 3b - uses the EU ETS, E-PRTR and RECAST to enable all reported facility/installation emissions and activity data to be compared across instruments at an operator, facility, site or installation level, it would:

- Enable all reported facility/installation emissions and activity data to be compared accurately across instruments at an operator, facility, site or installation level;
- Establish an efficient, accurate and usable core of installation/facility level data for national inventory compilation that can be clearly matched to other national statistics (e.g. production, consumption, energy use etc) and shows the relative importance of emissions by regulating instrument, by facility, installation and at a national level.

Over half MS already use AER data, directly or indirectly in their national emissions estimates. Option 3a would enable the MM to use EU ETS AER to provide detail in IPCC source categories, together with sufficiently adequate activity data that it would be possible to reconcile aggregated facility level data with national statistics and use it in the National Inventory System. Most (~90%) MS use emission data collected under the LCPD when reporting under other instruments and/or to verify other data in the NECD/CLRTAP inventories. On the other hand a lower proportion of countries are able to use their E-PRTR data as input to their national inventories, or can link their E-PRTR activities to IPCC/CRF categories and have some degree of accompanying activity statistics for their facility level reports. Option 3b seeks to put in place the links needed to let more MS use facility level data.

Case studies

Country Practice:

- Estonia (Elo Mandel) described how their national facility level legislation requires detailed emissions and activity data from industrial plant to be reported on an on-line standardised form that allows streamlined reporting to CLRTAP and NECD. At the moment Estonia has two separate inventory systems: one for Air Pollution (NECD, CLTRAP, E-PRTR, LCPD...) another for their GHG Inventory. An Integration project is under development to integrate the GHG inventory into the systems used for air pollutant inventories.
- Finland's (Kristina Saarinen) inventory is largely integrated but there is division of responsibilities between different authorities. Although not all data systems are physically in one place, the practical work and functionalities are carried out in close cooperation (e.g. permanent working groups and intensive expert collaboration). The MM/UNFCCC (greenhouse gases (GHG)) inventory system and the inventory system for CLRTAP/NECD/LCPD (air pollutants (AP)) are separated while both systems have similarities as they are largely based on bottom-up data and national energy statistics. An inter-comparison is used for verification and to obtain consistent results in both systems. EU ETS reporting is the responsibility of the Energy Market Authority and E-PRTR reporting of the West Finland Regional Environment Centre. In Finland the facility level data are reused in both inventories and this increases the accuracy of inventories

Plenary Discussion and Country views

- All participants agreed that harmonisation of classifications and definitions etc., and greater use of electronic reporting, common templates/schema, for all industrial emissions would reduce operational costs and improve the quality of data;
- Countries were divided on the pros and cons of mandatory legal provisions (either National or EU) vs guidance to drive harmonisation and alignment. MS pointed out that guidelines offer greater national flexibility but where reporting obligations are shared between the EU and the ECE and/or the FCCC, MS had to meet the requirements of specific guidelines that might in the future evolve to conflict with EU legislation;
- The countries that are already streamlining aspects of their systems were asked how revised legislation might incentivise the sharing and adopting good practice. MS expressed fears that those countries with good systems would lose benefits by having to adopt a 'one size fits all' situation. In particular the outcome of the streamlining project must not endanger the quality of AP data, where it is good, by forced harmonization. The Commission was invited to define the result needed but then allow national solutions to meet the requests;
- The Project Team postulated, and Countries confirmed, that given our environmental problems multipollutant/multieffect policies are needed - and that further integration of existing legislation (and emissions reporting) may be necessary.

Session 3. fully integrating national and facility level reporting, (Chaired by Martin Adams (MA) of the European Environment Agency).

JG from the project team proposed Option 4 and its associated actions; he outlined the pros & cons, costs & savings of each, and the way that Member States currently manage the reporting issues. **Options 4 - Full integrated reporting – Utopia** - are designed to:

- Harmonise and raise the quality of emission data flows;
- Enable national and facility/installation level data to be combined into a single transparent up-to-date information system;
- Work with the SEIS principals in ensuring that the data is kept as close as possible to the source of origin in order to improve efficiency and data integrity.

The specific actions under option 4 include many of the instrument specific proposals presented for options 1, 2 and 3. The proposals are designed to be applicable for stepwise/partial streamlining in Options 1, 2 and 3 or as part of full streamlining.

Case studies

- In the Czech Republic (Pavel Fott) emission reporting is only partly integrated, there are a number of institutions involved and there are separate inventory systems for air pollution (AP) and greenhouse gases (GHG) emission estimates. Both GHG Inventory and Inventory of pollutants under CLRPTAP are compiled at the same Institute, GHG data are reported in CRF Reporter and other pollutants in NFR Format. Emissions of GHG precursors (NO_x, CO, NMVOC) are taken directly from NFR Format. Considerable institutional strengthening work would be needed to reach Utopia.
- Austria (Manfred Ritter) has a well integrated system. The strengths include one institution being responsible for all emission reporting (the Umweltbundesamt), which was defined close to the time reporting requirements were introduced, it has good communication and legal, procedural and institutional arrangements with data providers. All emission data, including that from point sources, are stored in one database and this ensures consistency between reporting at national and at EU level.

Plenary Discussion and Country views

- Most MS agreed that the ideal goal of streamlining should be a system where a complete set of data is compiled once and used for multiple purposes. The difficulties to be overcome include: differences in current reporting practices, fixed (but differing) reporting periods – deadlines - and definitions etc. There was particular frustrations about reporting of emissions that are not subsequently used and concerns that the proposed options requested more information, some of which wouldn't be used either. It was agreed that common reporting templates would help but that there would be difficult to design. Inventory review and compliance checking offer a way of improving inventory quality;
- MS expressed a desire to move forward but stated that they needed a clearer vision of which instruments to amend, why and how – it was pointed out that that was the intention of the proposed options and MS were urged to comment on the Discussion Paper;
- Several MS were concerned that the proposals hint at a complete change to the reporting regime, others felt this was unnecessary and that even given the will to evolve there would be practical difficulties: legal, institutional, human resources, cost etc.; and that other International groups would need to be involved;
- MS asked what the real timetable for action would need to be and the tools, like international methods and standards that are (or would need to become) available. The Project Team and the Commission indicated that work would need to begin this year for option 4 to be available in 2015;
- There were strong views that not only would it be desirable to agree to work on option 4 now but also that it would be more cost-efficient. Several countries stated that they are already quite close to having fully integrated systems already.

Facilitated breakout sessions

Two parallel breakout sessions that reviewed Options 1 & 2 and Options 3 and subsequent plenary discussion concluded that:

Group A – Aligning National Level reporting:

- Options 1 and 2 are practical – countries (e.g. France, Austria and others) already do it;
- Actions shouldn't be introduced in the Options purely for transparency benefits if they increase unnecessarily the reporting burden;
- Care is needed, when introducing higher tier requirements, to avoid requiring data at unnecessarily high detail (using EU ETS and E-PRTR should reduce duplicated activity);
- Inventory review requirements should be strengthened as a tool for assuring quality of data;
- A single reporting/unified approach is needed for Projections as a priority;
- National Inventory reporting – emissions data (including activity data) should be reported in one submission (but it would need to be at a more detailed level than the CRF in order to aggregate it) There were complications highlighted around the EU providing the sole UN commitments of the MS;
- The project team was requested to consider, as an alternative to the current option 2, for the NEC to adopt the CLRTAP templates and for the MM to drop the air quality requirements.

Group B - Aligning facility level reporting

Re. Option 3a - To use EU ETS data flows for National GHG Inventories would require:

- AERs to be accessible by the Statistics Office compiling the Energy balance;
- More reporting transparency to enable reconciliation with e.g. national energy and production statistics;
- Using industrial data would raise confidentiality issues:
 - Would it be possible to use data but not publish it?
 - Could inventories be brought under same procedures as Stats Office?
 - Can facilities be forced to report data?
- Facilities use disaggregated data when estimating emissions and therefore should be able to report necessary detail at no extra cost.

Re. Option 3b - Improve AER data flow and introduce fuller integration of IPCC categories into EU ETS

- Definitions would need to be aligned (i.e. EU ETS and E-PRTR);
- Facilities would need to report on IPCC source categories.
- Issues still to be addressed in the Options include:
 - Timing of different obligations,
 - Thresholds (most MS have lower thresholds than the one imposed by regulations);
 - Definitions for facilities and installation (reporting different);
 - Reporting projected data by point source.

Plenary discussion

(Chaired by MA and facilitated by TP)

There was an open plenary discussion, following the presentation of all the Options and the Breakout Groups, which reviewed the Options as a package. Streamlining may have apparently simple aims – of improving efficiency, reducing reporting burden, ensuring data quality etc. but the problems - duplication, definitions, timing, institutional arrangements, confidentiality etc- create complexity. The Options are designed to address these, the workshop attendees were invited to identify problems they would have with the option as they are currently formulated.

Points of discussion were:

- The implementation timetable differs by option, allowing alternative routes to Utopia. This flexibility might influence future developments in international emissions reporting. Results of the streamlining activity could be communicated to national and EU negotiators under the conventions.
- Ways forward given the projected timetable for streamlining:
 - Moving directly to Option 4 (“big bang scenario”), as opposed to stepwise evolution, would be the simpler administrative action but it would require cooperation between EU institutions and with the UNFCCC and ECE;
 - The Options taken sequentially would allow MS to move towards Utopia but progress might be faltering:
 - Option 1 could mainly be handled by MS themselves (and several already have);
 - Option 2 – depends on changing NECD and the CLRTAP reporting, but would not require any action outside the EU and its MS;
 - Option 4 requires changes by the UNFCCC (NB. The Conference of parties meeting - looking beyond Kyoto – will consider reporting and suggestions from parties can be considered);
- The objectives of the streamlining options – and what benefits would justify mandatory reporting, not just of existing information but further, supplementary information, possibly in a different way (e.g. reporting to NECD using CLRTAP guidelines etc.);
- Are the currently available guidance, associated schema and tools, sufficiently developed for the type of streamlining Options present? 3B has the closer link to the IPPC categories – but data may not be good enough for the national inventories.

Forward look

MA provided an EEA perspective in which he explored where we want to be in 15yrs time. Policy is in an evolutionary phase and working to improve reporting now, despite its cost, will optimise future policy benefits. He illustrated how EEA could use improved reporting to better inform policy makers and MS, particularly when linked to SEIS principles.

ED, speaking on behalf of the Atmosphere – a notably under-represented stakeholder, illustrated the ‘joined up’ nature of the environmental problems that policy makers are addressing and the need for both CC and AP policies to draw from a common data pool in order to maximise the benefits of multipollutant policies aimed at tackling multiple, adverse, environmental effects.

Tour de table of Country views on streamlining

MS were asked to state, concisely, their views on Streamlining, any concerns regarding the Options presented by the Project Team, and any suggestions for their elaboration - the full responses are listed below.

Issues and Country views

- All the countries agreed that streamlining is a goal that should be pursued. All were supportive, in principle, of the streamlining approach taken by the Commission and the Project Team;
- Specific reservations were raised by a number of countries because of: the costs not being offset by quantifiable benefits, an unsubstantiated emphasis on merging the MM and the NECD (rather than aligning the reporting to each independently), the ambition level of some of the options exceeds the available resources at MS level;
- MS reacted positively to the proposals to: concentrate on quick wins, align definitions/methodology/systems etc., and making better use of facility level data;
- Some countries (NL, FR, SE, UK) were in favour of progressing to Option 4 as soon as possible, a number of others saw it as the ultimate goal following a stepwise progression through the options presented;

- The Project Team was requested to clarify the goals and benefits of the proposed options, and to check that data was not being requested without a well reasoned need.

MS were invited to submit specific and more detailed comments, for revision of the Options to the Project team and these would be reflected in a revision of the Discussion Paper.

Country comments on the Streamlining options.

	Tour De Table – Views on Streamlining
Austria	Supportive. Concentrate on low hanging fruit for commission (especially for PAMs and projections reporting procedures). A common vision is needed.... with a definite end product.
Cyprus	Supportive in principle - but would have to make institutional changes to achieve it
Czech R	Supportive in principle - but currently a long way short of it and will have institutional problems achieving it.
Denmark	Supportive. Link to facility level reporting needs streamlining (EU ETS OK). E-PRTR is of no use. Lack of AD makes E-PRTR data useless for national inventories.
Estonia	Supportive in principle - Streamlining should have clear definition and goals, it should not make it more complex/costly than it is.
Finland	In favour of streamlining. Option 3 should have priority over combining MM and NECD. An urgent task for MM is to include Climate and Energy package. Concerns were noted that MS's have to report to International conventions [that are outside the control of the EU and so may not have systems that can be harmonised].
France	Supportive - should aim for Utopia but in cooperation with other organisations, not unilaterally mandated. Guidance is needed to enable MS achieve comparable levels of detailed information.
Germany	Supportive. Would require collecting further plant specific data from ETS and LCPD. Attention should be given to achieving consistent time series data and harmonised projection reporting (base year, recent year, projections included in inv process). There should be no additional work load.
Ireland	Streamlining needs to concentrate on the facility level reporting. The Options presented are more than streamlining, they describe a new reporting regime with more information. (For example – mandatory use of ETS and E-PRTR in inventories has extreme impacts). Streamlining should take low hanging fruits and build using small steps suitable to the machinery being used (countries)
Italy	Supportive in principle. Italy while far from Utopia has made progress in that direction, makes use of facility level data but streamlining of facility level data is needed. Would welcome Commission Guidance with MS's able to use their own systems.
Malta	Supportive in principle. New for Malta but they are developing consolidated systems. EU ETS data is useful for the inventories, E-PRTR data is not - because of threshold. Common deadlines helps with consistent activity data. Developing one DB. CollectER use but needs support for reporting activities.
Netherlands	Supportive - in favour of utopia. Further work needed: integration of E-PRTR and collection of activity data (requires a fix for confidentiality problems), LCP data collection, integration of action 4.2 EU ETS & E-PRTR as a part of 3b; clarification of categorisations and integration of definitions. Encourage the use of common vocabulary via joint communications and exchanges with international groups.
Portugal	Supportive: Most challenging is link to facility level data (3b). Alignment of timing, definitions and reporting.
Spain	Supportive of ways of producing a single inventory capable of reporting to several commitments. Integration of partial reporting instruments (EU ETS). Also undertaking for E-PRTR. Nomenclatures to be standardised. Expanding guidance beyond UN/IPCC guidance. Good to consider the good things of each instrument (identification of installations and facilities) . Interactions with other water and land/waste instruments
Sweden	Supportive - in favour of utopia – but a living vision of totally streamlined reporting is needed. . Most important is the reporting by facility operators (E-PRTR & RECAST & EU ETS) as it improves national reporting data. Additional cost should be minimal.
United Kingdom	Supportive. Needs are: common goal, definitions, facility level reporting. Don't request data for its own sake.
Belgium Slovakia	No report

The countries absent were: Bulgaria, Greece, Hungary, Latvia, Lithuania, Luxemburg, Poland, Romania, and Slovenia.

May 2008

STREAMLINING WORKSHOP 22-23 MAY 2008 BRUSSELS

The objective of the workshop was to inform attendees: of the Project's aims and objectives, progress to date, the initial findings of the Stakeholder Enquiry, of the streamlining activities countries have already undertaken, the opportunities for further streamlining, and the actions necessary to realise those opportunities.

The workshop identified problems with reporting and generated options for the revision of the Monitoring Mechanism Decision; developed streamlining recommendations for the revision of other legal instruments; and enabled the exchange of good practice, tools, and other means of reducing the burden of emissions reporting and making better use of environmental information.

Prior to the meeting the attendees had received a Strategy Paper that provided further information on the background to the project, outlined its objectives and suggested initial solutions to known reporting problems.

24 member states (MS) participated; there were also representatives from WG 1, 2 and 3, the UNECE TFEIP, INSPIRE and IEG.

The meeting had four sessions, interspersed with breakout and plenary discussions.

Session 1 – Introduction, instrument linkages & data flow characterisation

1.1 The Workshop was opened by Erasmia Kitou (EK), the Commission desk officer for the Streamlining climate change and air pollution reporting project; she welcomed delegates and then a brief introduction to, and an overview of, the project was given by Justin Goodwin (JG) of the Project team.

1.2 The Workshop logistics were outlined by Eleanor Glenn (EG) from the project team. She introduced the project and Workshop goals, and provided a short description of the activities undertaken within the project to date.

Main messages:

- Both reporting (core) instruments (those that have a requirement for reporting emissions data at National level) and non-reporting (facilitating) instruments (those that do not require reporting of complete emissions data sets) are being examined in the project.
- The Project objectives are to address weaknesses in the Monitoring Mechanism (MM) and harmonize reporting and data use with related directives.
- Alternative streamlining approaches and scenarios were described. .

Several countries queried what was wrong with the data reported at present; is it not efficient and where are the problems? – *The Project Team identified some of the issues such as data reported under different instruments does not equate and the quality of the data is questionable.*

1.3 Tinus Pulles (TP) from the Project Team introduced and defined 'Utopia', the situation where all the data used are of a high quality across all possible components of the inventory (in terms of TCCCA), he also highlighted what the data needs might be.

Main messages/issues:

- There are different stakeholders and so there are different perspectives on what streamlining is.
- MS highlighted that, in general, instruments serve well defined purposes, and that generating data of high quality (in terms of its TCCCA) is only part of what they are for.

1.4 A presentation by the JG gave an example of 'utopia' showing a potential idealised data flow. This was used as the starting point for the Facilitated break-out sessions discussing barriers and solutions on:

- Brief discussion on variants of Utopia.
- Identification of Barriers
 - Inside and outside control of instruments
 - What's bad in current instruments
- Identify Solutions
 - Ideas (not yet tested)
 - Existing solutions (who's done what, what's good in the current instruments)
 - Broad solutions (identify where instruments could help)

Barriers

- Instruments were developed by different groups, at different times, and with different data requirements.
- The two different levels that data is required at (facility and national) can lead to inconsistency.
- Formats and definitions differ and some times are not detailed enough.
- There are different standards, input data and validation between instruments.

Solutions

- Finland stressed that greater input from MS is needed as to how they collect the data
- Ireland suggested that work on harmonizing legislation instruments can begin by using consistent methods, basic concepts, standards etc...
- Facility level data into can integrated into national inventories.
- Have data available between instruments.
- the RECAST Directive was identified as a good example of moving towards a streamlined approach.
- It was suggested that the first step is the Commission to streamline the requirements and then promote technical streamlining within MS to deliver data.

1.5 The first session finished with a brief synthesis by JG.

- The main barrier identified was the inconsistencies that arise between requirements for facility level and national level data.

Session 2 - MS infrastructure, experience, costs/burdens; Industry costs/burdens

2.1 The second session began with an introduction to the Member State Questionnaire and the initial findings. This was given by the team members: EG, TP and Magda Jozwicka (MJ).

2.2 The Member State Questionnaire results were presented by MJ and TP.

Main messages:

- The main barriers were identified and streamlining solutions suggested:
 - Barriers:** There are different reporting formats (CRF for MM/UNFCCC and NRF for NECD/CLRTAP).
 - Potential solution:** using a single data base able to provide data in both CRF and NRF format.
- The initial findings showed that several countries had made significant steps in the integration of the data needed for the various reporting instruments, and also that the LCPD is the best integrated instrument across Member States.

2.3 Presentations by the Netherlands, Belgium and Sweden by country representatives were given to illustrate specific experiences of the current issues and streamlining solutions.

Netherlands

- The centralized PRTR system and database was presented and pros and cons outlined:

Pros – There is only one reporting obligation for facilities.

Cons – Can be costly and difficult to implement.

Belgium

- The emission registration system in Belgium is split into three political regions, which itself causes issues with compilation at the national level.
- Other issues with the current system were highlighted such as overlapping pollutants and different sources of emission factors.

Sweden

- The country's emissions to air data flow was used to illustrate the main problems of co-ordinating EU ETS and GHG inventory:
 - few and different classifications of fuels
 - different geographical coverage
 - different repeating periods
 - different emissions factors and activity data

2.4 EG and MJ presented details on how the Member State visits would work, the objectives, structure of reports to be prepared, and progress to date was introduced.

Main messages

- The country visits will use the questionnaire responses as a starting point and identify how systems operate within the MS, what examples of good practice there are as well as the difficulties experienced, and what the MS suggestions are for streamlining.
- The selection of MS to be visited is based on the questionnaire responses, the range of good practice/difficulties experienced, geographical spread and outcomes from this workshop.

2.5 JG and TP gave examples of national systems and how close they might be to delivering utopia.

2.6 A presentation by PwC addressed administration burden and costs of reporting, and the cost and benefits of utopia.

Main messages

- Implementation of new legislation / changes in existing legislation has several stages of costs that can be allocated to different parties and estimated using activity based cost models (mandays * tariff + out-of-pocket costs).
- There are various models to use and this project has gathered data using the questionnaire whilst maintaining awareness of the existing literature.
- The questionnaire results found the annual cost of the instruments range from the MM (~€950,000) to LCPD (~€200,000). NECD and MM have significant systems/IT investment costs at ~€1.2M and ~€800,000, respectively. The E-PRTR is the only instrument with significant annual maintenance costs ~€800,000.

Session 3 – Opportunities and Initiatives

3.1 The session opened with two presentations by EEA

- a) EEA streamlining past and present by Eva Goosens
- b) Electronic tools for reporting industrial emissions by EC by Dania Cristofaro.

3.2 Jeroen Kruijld, PwC (part of the project team) described EU ETS development and links.

3.3 Following on from session 1 EG, TP and JG presented an analysis of data flows/linkages using an MM example. This was the starting point for the break-out groups that followed.

3.4 Break-out groups examined what might be done, via amended instruments, to encourage streamlining.

- It was identified that it is hard to harmonize and merge all instruments but smaller steps such as aligning definitions, formats and reviewing guidelines are important.
- An overarching framework was seen as the best option but legal issues may prevent this.

Session 4 - Way forward

4.1 This session began with a report back from the three break-out groups.

4.2 Two invited guest presentations were given on:

- a) Infrastructure to support Streamlining - Streamlining as part of a bigger picture, by Massimo Craglia, JRC
- b) SEIS & Inspire - Reporting climate change and air pollutants by Danny Vandenbroucke and Katleen Janssen of KUL

4.3 The proposed schedule of work leading to practical recommendations for revision of the Monitoring Mechanism Decision and other findings from the sessions was given by the project team. This was followed by a plenary discussion chaired by JG and EG.

Workshop Conclusions

The break-out sessions were particularly productive and identified a variety of problems with the current instrument requirements and proposed several solutions, see Table 1.

Table 1: Problems and Solutions identified at the Workshop

Area/Problem Category	What the problems are: Specific Problem	What we want to get: Solution
Future proofing reporting for new instruments	No Future Rules: no current guiding principals for specifying emissions related data reporting that can be used when specifying reporting requirements in new legislation.	Develop overarching guidance/principals to streamline future instruments that will ensure future legislations emissions reporting is streamlined to existing emissions reporting.
International changes/influences	Weak International Influence: international changes (UNFCCC, UNECE) impact on manoeuvring scope for directives and flexibility for reporting.	EU reporting priorities need to be defined so that they can be used to shape international negotiations on reporting. Adaptability and compromise solutions also needed.
Cross Instrument co-ordination: Leadership / Authority on Reporting & Consistency in approach.	Limited Prioritisation of Inventory Compilation: Different departments/Agencies deliver different data with different levels of QA/QC, definitions, transparency.. No single national entity responsible for emissions reporting.	Define a national system across instruments: that ensures an overarching understanding of the quality and availability of emissions reported data, encourages strong and lasting organisational structures & pools of experts. Understands other statistical data reporting streams to the EU and internationally (e.g. Energy & Production Statistics)
Guarantee of resources and expertise.	Lack of co-ordination of national programmes: Lack of Resources & Expertise: Lack of resource and expertise to establish methods, gather & check data, checking reports (intra and across instruments) and reporting. Burden on industrial reporting to meet different requirements.	Read across during the implementation and monitoring of National Programmes: Ref (1) ". Achieving the appropriate level of reporting on national programmes (and other requirements) that encourages appropriate action and provides sufficient information to provide confidence, assess performance and share good practice. " Working Groups, Workshops, training, access to/nurture of expertise, National/International Expert/Working Groups for Sectors/Categories (e.g. Industrial Emissions, Road Transport, Agricultural Emissions) responsible for all dimensions of pollutants, regional, policies & measures, technologies/practices and source data for emissions related reporting.
Being able to use the same methods, data and approaches to compiling and "verify"/"QA/QC"/"Check"	Lack of Common Definitions: Different/Conflicting/Ambiguous Definition of Reporting Categories (Sectors), Pollutants, Regions (Country Boundaries) and other variables.	Establish common definitions across all Instruments. (Pollutants, costs estimation, technologies, controls, processes, reporting sectors/categories, measures definition, projections, years, countries (Federal States.... Etc)

<p>estimates of emissions across instruments.</p>	<p>Lack of Transparency: Ensuring clarity on the differences between similar datasets and checks to ensure that where expected, data is based on the same statistics. QA/QC: Different levels of and approached to QA/QC/Verification/Review across instruments. Different priorities reflect different levels of checking and quality of resulting data (e.g. PRTR/EU ETS). Different maturities of directives also reflect different requirements (e.g. MM/NECD).</p>	<p>Cross instrument QA/QC of data, common approaches for all instruments, Peer review across instrument datasets, National cross checking before submission. "Statement of Conformity". Do the same for all or accept and understand different needs and make them complimentary.</p>
<p>Reporting: Avoiding duplicate reporting: Being able to use data generated/ reported for one instrument in another.</p>	<p>Estimation Methods (projections, PAMs, Inventories etc): Different and lack of quality/detail in needs from instruments for the methods (NECD "Scientific", MM "Accounting", E-PRTR "Public Right to Know".) What compilation methods are acceptable for different instruments.</p> <p>Overlapping Reporting: MM indirect in NECD, MM for effectiveness of F-Gas Regulation, E-PRTR in NECD/MM, different statistical demands (Waste Statistics). Issues of detail nomenclature, country boundaries & methodologies. Different Tools & Templates & Report structures: Many different reporting tools and templates. Different/Similar Methodology Reports & Emissions Reports: More time/capacity needed for compilation of data and reports. Or solutions to combine reporting.</p>	<p>Methods and Procedures. Common and overarching understanding of appropriate methods (projections, PAMs, Inventories etc), linkages between them and known acceptable differences (what's acceptable for what and where are there acceptable differences in results.) Specify in instruments what methodology guidance is needed and what the priorities for that reporting is.</p> <p>Minimising duplicating of reporting of data generated for other instrument reporting. Identification of which datasets would be acceptable for what.. Clear communication with reporting on conformity for use with other instruments.. E.g. NECD pollutants in MM, UNFCCC for MM, UNECE for NECD, All facility level emissions reported together.</p> <p>Common Reporting Templates & databases (e.g. CRF, Facility level reporting templates). Integrate reporting templates (or use common data reporting frameworks) across instruments (e.g. CRF add on for NECD, E-PRTR for point source reporting under NECD*, common templates for MM and NECD PAMS & Projections reporting. Combination relevant emissions and methodology reports. Pragmatic approaches to combining methodology reports, transparency on differences, accepting differences,</p>

	Different Timing: Data flow and management of timings needed	Use timing to enhance quality: Deal with different timing issues for different instrument reporting. All at the same time for data time stamp, or staggered to deal with resourcing issues and providing clarity on source data versions. Use timings to make best use of resources while maintaining transparency of data.
Improving input data for inventory compilation	Lack of drivers for country specific data (through other instruments): Limited use of other regulatory instrument to enhance data collection activities and data quality (e.g. more country specific EFs).	inclusion of "reporting to regulator" requirements: Instruments (e.g. industrial could specify intra national reporting (Activity data, emission factors, forecasts) by inclusion of "reporting to regulator" requirements in non reporting instruments (IPPC, EU ETS*, Industrial (WID/VOC etc) S in fuels, CO2 in cars etc...
	Poor links with other Statistical reporting: Poor understanding and guidance on other EU statistical reporting requirements. E.g. transport, energy, agricultural, production statistics,	Linking guidance to requirements and definitions used for other statistical reporting. Common understanding of timings and incompatibilities in definitions etc..
	Limited Influence on National Statistics: Better integration of inventory compilers needs in national statistical data collection. Inventory compilers need more power to collect statistical data.	Reflection of inventory needs in other directives/National initiatives on statistical data to drive national collection, more powers to inventory experts to drive surveys & census data.
	Limited accessibility of facility Level Activity Data & detail: Improved flow of new statistical and activity data associated with regulated processes (IPPC, EU ETS, E-PRTR). Dealing with "Confidentiality" barriers.	Include "reporting to regulator" requirements in non reporting instruments and requirements for regulator/statistics agencies to integrate data into national statistics. Confidentiality management procedures needed... or forcing activity data to be public...

Annex A – Details of Article Specific Proposals

The following sections present specific Proposals proposed for the instruments.

Annex A1.1 - MM Proposals.

The following proposals p1.1 – p1.7 focus on improving the intra instrument comparability and introduce requirements to optimally re-use data that are collected under other instruments in the MM. The proposals are grouped according to their relevance to other instruments. In proposal 1.8 suggestions are also made to improve the transparency of the MM and reported data and to bring the technical and procedural issues of the MM emissions methodologies and reporting under comitology and structure the requirements with a view to establishing greater consistency with other national emissions reporting instruments. The Decision text then will include more references to the IP. This also provides flexibility for the methodology and reporting instructions in the MM to be adapted in possible future streamlining activities. The relevance to the options and actions in section 2 are indicated in the first column in the table below. Articles that are not considered relevant to the streamlining of emissions estimation and reporting have been excluded from this analysis and it is assumed that these articles remain unchanged in their instruments.

Proposal Number & (Action Relevance)	MM Proposal	Cost
	<i>MM with NECD and National Statistical Interactions</i>	
<p><i>p1.1 International Methodologies</i></p> <p><i>(Relevant to Action/s 1.1, 2.1 & 4.1)</i></p>	<p>a) Add a new requirement to Article IP 2(1) (d) MS shall use internationally agreed methods, including the EEA/EMEP Guidebook for estimating AQ Pollutant emissions for estimating national emissions, for determining emissions of the indirect GHGs which are Air Pollutants</p> <p>b) Add a new requirement to Article IP 2(1) MS shall use the IPCC definitions for GHGs when referring to emissions of greenhouse gases and the EMEP pollutant definitions when referring to the non greenhouse gases and air pollutants.</p>	<p>none</p>

Proposal Number & (Action Relevance)	MM Proposal	Cost
<p>p1.2</p> <p>National Statistics & Reporting</p> <p>(Relevant to Action/s 1.2, 2.2 & 4.1)</p>	<p>Add to Article IP 2(1):</p> <p>a) "MS shall use the same national energy and production and consumption statistics for the MM as are used for the NECD whilst ensuring that good practice (according to the IPCC guidelines) is applied.</p> <p>b) MS shall use official national statistics as their basis for activity data for national energy, transport, agricultural and production/consumption emissions estimation for the energy, industrial process, agriculture and waste sector estimates. Where industry specific data (e.g. EU ETS data) is available and is used in preference to national statistics the rationale for this should be clearly stated.</p> <p>c) MS shall support the accurate and transparent compilation of national emissions estimates by compiling energy balances on an IPCC subsector category level (especially enable at least tier 2 methodologies to be used for key categories) and use these as input for the national inventory.</p> <p>d) Option: Could add a provision for the MS to report or for the Commission to estimate y -1 emissions using provisional energy data and available production/consumption proxies.</p>	<p>No costs or savings associated with Option 1. Annual savings of between €0.3-0.6 M to MS can be achieved through streamlining in option 2(action 2.2 and 4(action 4.1) respectively.</p> <p>This saving relates to an estimated reduction of 25% of current manday cost (92 mandays at €520) for each MS on NECD</p>
	<p>e) Add to Article IP 2(3): "MS shall, when reporting emissions from aircraft, include in their NIR reporting, separated estimates of emissions from: International flights: landing and take off, International Cruise; Domestic flights landing and take off, and Domestic Cruise. Note: To be consistent with requirements for NECD/CLRTAP⁷⁸</p> <p>f) Add paragraphs to IP 2(3): "MS shall provide a description, in the National Inventory Report (NIR), of the use of national statistics and any differences between those used for the inventory compilation and the latest statistics submitted to Eurostat, the IEA and FAO.</p>	<p>none</p>
	<p>g) Add paragraphs to IP 2(3): "MS shall include a chapter, in the NIR, on the comparison of NECD and MM emissions and trends"</p>	<p>none</p>

⁷⁸ This needs to be provided for in the CRF or an additional bridging table format provided so that MM data can be compared with NECD/LRTAP.

Proposal Number & (Action Relevance)	MM Proposal	Cost
	<p>h) Add paragraphs to IP 2(3): “MS may provide a single combined Methodology report for MM and NECD/CLRTAP with detailed descriptions of methods that could be referred to from the MM and NECD reports.”</p> <p><i>Note: For option 4, the requirement for emissions inventory reporting should be strengthened and extended to cover the NIR and data reporting to a single centralised system or schema that builds on the CRF and the NIR report structure.</i></p>	<p>none</p>
<p>p1.3</p> <p>Projections and PAMs Methodologies</p> <p><i>(Relevant to Action/s 1.3, 2.3 & 4.1)</i></p>	<p>a) Add to Article IP 8: “Emission projections shall be based on the latest national statistics as used for the national emission inventory reported under article 2(2) of the implementing provision and use the same economic, demographic, energy and transport assumptions as the NECD Directive 2001/81/EC.”</p> <p>b) Add to Article IP 8: “MS shall report projections and PAMs according to the WGII Projections and PAMs templates (see ETC-ACC Projections and PAMs work)”</p> <p>c) Add text to Article IP 8 to make provision to require MS to use guidance on PAMs and projections that might be developed in the future.⁷⁹</p> <p><i>Note: For option 4, this requirement should be strengthened and require reporting to a single centralised system or schema.</i></p>	<p>€0.5 M every 2 yr for 27 EU countries for additionally required cross analysis for air pollutants and GHG policies (35 mandays at 520 per MS)</p>
<p>p1.4</p> <p>Impacts of AP and GHG actions.</p> <p><i>(Relevant to Action/s 1.4, 2.4 & 4.1)</i></p>	<p>d) Add to Article IP 8: “MS shall evaluate and report on Co-benefits and trade-offs of all implemented and planned NECD Air Pollutant (NO_x, SO₂, NMVOC, NH₃, PM₁₀, PM_{2.5}, HMs) and GHG emission reduction measures.”</p> <p>e) Add paragraphs to IP 9. “MS shall report on the impacts of air emission reduction measures in projected GHG estimates and impacts on AQ emissions of GHG measures in their biannual reports. “</p> <p>f) MS may, report their emission projections and PAMs together with, or as part of, the information on projections as required by under NECD 2001/81/EC.</p>	<p>€0.5 M every 2 yr for 27 EU countries for additionally required cross analysis for air pollutants and GHG policies (35 mandays at 520 per MS)</p>
<p>MM with EU ETS Interactions</p>		

⁷⁹ These templates should be developed into guidelines to facilitate the use of good practice in estimating PAMs and projections. Guidelines should cover both AP and GHG pollutants and provide guidance on compilation of estimates, sensitivity analysis, scenarios (e.g. WM, WAM, WOM), and assessment of costs of measures. Guidelines could build on work done already on PAMs and Projections (CAFE, 2006) by the Commission and on the Projections chapter of the EEA/UNECE Guidebook. Could cost ~ €0.5m to develop.

Proposal Number & (Action Relevance)	MM Proposal	Cost
<p>p1.5a</p> <p>Use of EU ETS data in national Estimates.</p> <p>(Relevant to Action/s 1.5a, 2.5a and 3a.1 & 4.1)</p>	<p>a) Article IP 2(1): “For IPCC categories which include EU ETS activities:</p> <p>I. MS shall use any suitable data contained in the verified EU ETS Annual Emissions reports as the basis for calculating the national EU ETS component for that IPCC category.</p> <p>II. Where more accurate methods are unavailable MS shall calculate the non EU ETS component and pollutants using the activity data presented in verified AERs, national statistics and appropriate country specific emission factors such that the non EU ETS component is based on national statistics minus the activity data presented in the AERs.</p> <p>Note: The non-EU ETS component of an industrial sector can be estimated accurately based on the remaining consumption/production statistics and the application of an appropriate emission factor.</p> <p>Note Annual Maintenance costs are reduced by €0.3m if Option 3a or 3b are implemented.</p>	<p>€0.2M (25 days @ €250/day/per MS) development of national data flows, analysis and presentation of EU ETS data for 14 MS⁸⁰</p> <p>€0.3 M/yr Maintenance based on 1hr per installation for the 14 MS that currently do not use EU ETS dat. Cost applies to the MS to reconcile data from the different sources (14/27 times 10,000 installations times €520 / 8)</p>
	<p>a) Add to Article IP 2(2): “MS shall, present national comparison tables showing the EU ETS component of the different IPCC subcategories reported to the UNFCCC with links to the publically available data for each installation”.⁸¹</p> <p>b) Add paragraphs to IP 2(3): “MS shall provide, in an annex to their NIR, detailed tables showing the contribution of the EU ETS installations emissions to national emissions and their share of national production and consumption.”</p>	<p>Development cost the EU €0.3M overall (20 mandays for 27 MS to develop methods) with annual cost of €0.3M for all MS (20 mandays for 27 MS to present EU ETS data in the context of NIS)</p>
<p>MM with E-PRTR Interactions</p>		

⁸⁰ The MS enquiry showed that 13MS make use of EU ETS data.

⁸¹ (e.g. can drill down from national emissions to those of installations from AERs).” Note: This would be a SEIS compliant requirement requiring MS to present their annual emissions for EU ETS facilities alongside their national emissions estimates.

Proposal Number & (Action Relevance)	MM Proposal	Cost
<p>P1.5b</p> <p>Use of E-PRTR Facility Level data in national Estimates.</p> <p>(Relevant to Action/sa1.5b, 2.5b & 4.1)</p>	<p>a) Add to MM Article IP 2(1): “Any suitable⁸² Emissions Reports compiled under the E-PRTR should be used to derive national estimates for the sectors containing regulated processes and ensure that these categories are compiled to IPCC tier 3.”</p> <p>b) Add to MM Article IP 2(1): “Any suitable⁸³ available consumption and production data for E-PRTR facilities processes should be used along with national statistics so that the non reporting component for the sector can be estimated based on the remaining consumption/production statistics and the application of an appropriate emission factor.</p> <p>c) Add to MM Article IP 2(1): “Where E-PRTR facility level data are used as the basis for national estimates (e.g. for IPCC/EMEP/CORINAIR tier 3), MS shall ensure that E-PRTR facility level emissions estimates are compiled using certain minimum standards which ensure that the data used is unbiased and provide an accurate and representative country specific emission factor⁸⁴”</p>	<p>€0.4M for the development of data flows⁸⁵ (25 mandays for 27 MS) Maintenance assumes 1hr per Facility (12,000) to extract useful emissions data for all 27 MS.</p>
	<p>a) Add to MM Article IP 2(2): “MS shall, present national comparison tables showing the E-PRTR component of the different IPCC subcategories reported to the UNFCCC with links to the publicly available data for each facility”.⁸⁶</p> <p>b) Add paragraphs to IP 2(3): “MS shall provide, in an annex to their NIR, details of the contribution of the E-PRTR to national emissions and of national production and consumption⁸⁷.”</p>	<p>€0.3M for Development of for MS for presentational material and analysis (Assumes 20 days for 27 MS). . Annual cost of €0.3M for total of all 27 MS.(Assumes 20 days/MS)</p>
MM with F-Gas regulation Interactions		

⁸² Suitable standards include those acceptable under the MRG or international (CEN or ISO) measurement standards for stack emissions; other installation/facility level data standards would need to be agreed with the MS CA. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants) QA/QC 'd and can be reconciled with national statistics to produce better national estimates of emissions than could be obtained through other means.

⁸³ Suitable means that the facility estimates have been compiled according to certain acceptable minimum standards (These standards are already adequate for use of EU ETS data from AERS. However for other installation/facility level data standards would need to be agreed. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants) QA/QC 'd and can be reconciled with national statistics to produce better national estimates of emissions than could be obtained through other means.

⁸⁴ Assumes some useful E-PRTR AD is provided to CAs. Assumed data collection and incorporation effort is similar to EU ETS because of increased pollutants and less conformity of calculation methods in E-PRTR is offset by but less detail data provided compared to EU ETS. Estimates will be less accurate than EU ETS.

⁸⁵ This could be an additional table of emissions of GHGs pollutants estimated for E-PRTR activities. The dataset could be a simple excel templates or a more complex presentation of data that allows drill down from national emissions to those facilities (Although there will be cross definition problems).” Note: This would be a SEIS compliant requirements requiring MS to present their annual emissions for E-PRTR facilities alongside their national emissions estimates.

⁸⁶ Where data is not commercially sensitive.

Proposal Number & (Action Relevance)	MM Proposal	Cost
<p>p1.6</p> <p>F-Gas Regulation enhancements to methods</p> <p>(Relevant to Action/s 1.6 and 2.6 & 4.1)</p>	<p>a) Article IP 2(1): MS Shall use data collected as a result of the requirements under Article 3(6), Article 6(4)⁸⁸ and 6(1) of the F-Gas Regulation as the basis for their estimates of emissions and potentials of F-Gases for the relevant IPCC categories. Data used must have been compiled using at least tier 2 and/or 3 methods as defined in the IPCC GUIDELINES and as required under the F-Gas Regulation.</p> <p>Note: Article 6(4) provides some powers to MS to develop reporting systems for their operators within which they can establish additional detail to determine the quantity of products consume (production – (exports + stocks) + imports) in their country so that national emissions estimates can be compiled.</p> <p>b) Add paragraphs to IP 2(3): “MS will present data collected under articles 6(1) and 6(4) of F Gases regulation in an annex to their NIR.”</p>	<p>None</p>
MM with Decision No 1753/2000/EC CO2 from New Cars interactions		
<p>p1.7</p> <p>CO2 from cars Reporting consistency</p> <p>(Relevant to Action/s 1.7 2.7 & & 4.1)</p>	<p>a) Article IP 2(1): “MS shall check that data compiled on new vehicles as reported under the Decision No 1753/2000/EC CO2 from New Cars is consistent with their road transport emissions methodologies and their methodologies take into account the various emission factors for different pollution control technologies for estimation of emissions of CH₄ and N₂O for road transport.”</p> <p>b) Add paragraphs to IP 2(3): “MS shall report in NIR their information required on the detailed CO₂ emissions from Cars as per CO₂ from cars: Decision No 1753/2000/EC.</p> <p>Note: Could replace Reporting requirement under Decision No 1753/2000/EC CO2 from New Car but would require modifications to that decision.</p>	<p>Minimal</p>
Proposals for the MM relating to Quality & enabling further Streamlining		

⁸⁸ This Article obliges MS to establish reporting systems for emissions(HFC, PFC and SF6) from the "relevant sectors"

Proposal Number & (Action Relevance)	MM Proposal	Cost
<p>p1.8</p> <p>Structuring and organisation of the MM for streamlining</p> <p>(Relevant to Action/s 1.8 and 2.8 and 4.1)</p>	<p>a) Replace MM Article 3(1) with: “MS shall, for the assessment of actual progress and to enable the preparation of annual reports by the Community, in accordance with obligations under the UNFCCC and the Kyoto Protocol, determine and report to the Commission their annual emissions of greenhouse gases and CO, SO₂, NO_x and VOC in accordance with the requirements laid down in IP 2 (1) on methods, 2(2) on data reporting and 2(3) on national inventory reports of the implementing provision.”</p> <p>b) Move MM Articles 3(1c-k) to Implementing Provisions 2(2) on data reporting:</p> <p>c) Change article 3(1a & b) and move to Implementing Provisions 2(2): “MS shall report, on 15th Jan, their anthropogenic emissions of greenhouse gases listed in Annex A to the Kyoto Protocol (carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and their emissions of sulphur hexafluoride (SF₆) and their emissions of carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen oxides (NO_x) and volatile organic compounds (VOC) during the year before last (year X-2);”</p> <p>d) Amend IP 2(3) to: “A complete national inventory report (NIR) shall be drafted using the national inventory report structure set out in the UNFCCC reporting guidelines for annual inventories.”</p> <p>e) Replace MM Article 3(2) with: “MS shall, for the assessment of projected progress, report to the commission, projections and Policies and measures according to the requirements laid down in Articles 8, 9 and 10 of the implementing provision.”</p> <p>f) Move MM Articles 3(2 a, c and d) to Implementing Provisions 9:</p> <p>g) Move MM Articles 3(2 b) to Implementing Provisions 10 and combine: Note: Elaboration of combined MM 3(2b) and IP 10 text is needed here when MM is revised and formal proposals for the EUM are made..</p> <p>h) Replace IP Article 8 with: “MS shall, for the assessment of projected progress, report to the commission, by the 15th March of every odd year, beginning 2009, the information listed in articles 9 and 10 in accordance with the guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications, hereinafter referred to as ‘the UNFCCC reporting guidelines for national communications’, and the Guidelines under Article 7 of the Kyoto Protocol.”</p>	<p>None</p>
<p>Note: Under Action 2.9 the provisions for emissions estimation and reporting under the MM and the NECD could be combined. They would need to be combined under an existing instrument therefore the only short-term option for this would be either the MM or the NECD. If this was done the proposals above p1.1 – p1.7 should be modified and combined with the proposals for the NECD 2.1 – 2.8 in annex A2 to form a single set relevant for NECD/CLRTAP and MM/UNFCCC estimation and reporting.</p>		
<p>Note: Under Options 3a and 3b there will be benefits to the MM through additional detail for regulated processes which can be used in the national NECD inventory and improve NECD reporting outputs (see 1.5a, b above)</p>		
<p>Note: under Option 4 There will be benefits to the MM through additional requirements for the integration on national inventories. Therefore the NECD will require additional strengthening to proposals 1.4, 1.3 and 1.2 as indicated above. Under option 4 the NECD and the MM will also be streamlined and their provisions for estimation and reporting of emissions combined.</p>		

Annex A1.2 NECD Proposal.

The following proposals p2.1 – p2.7 focus on improving the intra instrument comparability and introduce requirements to optimally re-use data that are collected under other instruments in the MM. Proposals are based on the current NECD (2001/81/EC)⁸⁹. The proposals are grouped according to their relevance to other instruments. In proposal 2.8 suggestions are also made to bring the technical and procedural issues of the NECD emissions methodologies and reporting under comitology and structure the requirements with a view to establishing greater consistency with other national emissions reporting instruments (e.g. the MM) with substantive methods and reporting instructions presented in an annex. The directive text then will include more references to the annex. This also provides flexibility for the methodology and reporting instructions in the NECD to be adapted in possible future streamlining activities. The relevance of the proposals to the options and actions in section 2 are indicated in the first column in the table below. Articles that are not considered relevant to the streamlining of emissions estimation and reporting have been excluded from this analysis and it is assumed that these articles remain unchanged in their instruments.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
Proposals for the NECD with links to the MM		
<i>Note: The following proposals assume that the NECD requirements will be restructured to assemble substantive requirements into an annex and use provisions allowing comitology. The structural proposals for this are described in Action 2.8 below. The following text proposals assume this structure.</i>		
<p>p2.1</p> <p>International Methodologies</p> <p><i>(Relevant to Action/s 2.1 & 4.1)</i></p>	<p>a) Add to Annex III (to Part 1a): "MS are required to use the EEA/EMEP Guidebook for estimating AQ Pollutant emissions for estimating national emissions."</p> <p>b) Add to Annex III (to Part 1a): "MS are required to pay due regard to the principals of quality (Transparency, Completeness, Consistency and Comparability) outlined in the EMEP/EEA Guidebook and to ensure that their estimates of emissions and projections abide by these principals.</p> <p>c) Add to Annex III (to Part 1a): "MS shall use the IPCC definitions for GHGs when referring to emissions of greenhouse gases and the EMEP pollutant definitions when referring to the non greenhouse gases and air pollutants.</p>	<p>none</p>

⁸⁹ The Commission did in depth preparatory work with a view to amend the NECD. Where possible the proposals in this annex work towards and include the requirements in the draft amending proposal not officially launched yet.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
<p>P2.2</p> <p>National Statistics & Reporting</p> <p>(Relevant to Action/s 2.2 & 4.1)</p>	<p>g) Add to Annex III: “Part 1a: “MS shall use the same national energy and production and consumption statistics for the reporting under the NECD⁹⁰ as are used for the MM (280/2004) whilst ensuring that good practice (according to the EMEP/EEA Guidebook and IPCC guidelines) is applied.</p> <p>h) Add to Annex III: Part 1a: “MS shall use official national statistics as their basis for activity data for national energy, transport, agricultural and production/consumption emissions estimation for the energy, industrial process, agriculture and waste sector estimates. Where industry specific data (e.g. EU ETS data) is available and is used in preference to national statistics the rationale for this should be clearly stated.”</p> <p>i) Add to Annex III: Part 1a: support the accurate and transparent compilation of national emissions estimates by compiling energy balances on an IPCC/NFR sub-sector category level (especially enable at least tier 2 methodologies to be used for key categories) and use these as input for the national inventory.</p> <p>j) Add to Annex III Part 1a: “MS shall compile estimates of emissions for Key Categories (established as key categories using the EMEP/EEA Guidebook) using tier 2 or above methods as presented in the EMEP/EEA guidebook.”</p> <p>k) Add to Annex III Part 1a: National emission inventories shall be calculated and reported without adjustments. If a MS carries out adjustments to inventory data, they shall be reported separately in the Inventory Report, with clear indications of the method followed.</p> <p>l) Add to Annex III Part 1a: For emissions from transport, MS shall calculate and report emissions consistent with national energy balances reported to Eurostat or the International Energy Agency.</p> <p><i>Emissions from road vehicle transport shall be calculated and reported on the basis of the fuel sold in the MS concerned.</i></p> <p><i>In addition, MS may report emissions from road vehicles based on fuel used or kilometres driven in the Member State.</i></p> <p>i) Add to Annex III Part 1a For MS for which the national emission ceilings set out in Annex I are derived from national energy projections based on the amount of fuels sold, compliance checking shall be based on the reporting on the basis of fuels sold in the Member State.</p> <p><i>MS not covered by the first subparagraph may choose to use the national emission total calculated on the basis of fuels used in their territory as a basis for compliance.</i></p> <p>j) Add to Annex III Part 1a: MS shall report their annual national emissions expressed in tonnes.</p>	<p>None</p>

⁹⁰ Allowing for different boundary definitions required.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>k) Add to Annex III: Part 2a: “MS shall report annually updated emissions on 15th January for emissions of current year -2 emission inventories for the pollutants sulphur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compound (VOC), ammonia (NH₃), fine particles (PM_{2.5}, PM₁₀ and TSP), heavy metals and carbon monoxide (CO) compiled in accordance with methodologies outlined in Part 1a of annex III.”</p> <p>l) Option: Could add a provision for the MS to report or for the Commission to estimate y -1 emissions using provisional energy data and available production/consumption proxies.</p> <p>m) Add to Annex III: Part 2a: “MS shall report full and recalculated timeseries from the base year⁹¹ to current year -2 for all pollutants (including indirect GHGs).”</p> <p>n) Add to Annex III: Part 2a: “MS shall, when reporting emissions from aircraft, include in their reporting, separated estimates of emissions from: International flights: landing and take off, International Cruise; Domestic flights landing and take off, and Domestic Cruise. To be consistent with requirements for MM/UNFCCC⁹².”</p> <p>o) Add to Annex III: Part 2a: “MS shall report data according the formats specified in (Where can we specify the format/schema?)⁹³”</p> <p>Note: For option 4, this requirement should be strengthened and require reporting to a single centralised system or schema based on the CLRTAP and CRF.</p>	

⁹¹ As defined for each MS under CLRTAP.

⁹² This could be the CLRTAP tables as defined in Guidelines (ECE/EB.AIR/2008/4) for Estimating and Reporting Emission Data under CLRTAP but could be provided for in an extended CRF so that NECD reporting can be done using the CRF tables. Alternatively an additional bridging table format could be provided so that MM data can be compared with NECD/CLRTAP.

⁹³ Could refer national Emissions Reporting to CRF style template or variable set/xml schema that expands on the CRF so that the CRF xml can be generated and the full CLRTAP source sectors can be compiled which allows different National totals to be presented. Alternatively a CollectER/ReportER type of system could be referred to which provides the UNECE and CRF style outputs.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>p) Add to Annex III: Part 2b: “MS shall, by 15 March each year (year X), communicate to the Commission and to the European Environment Agency, their complete national inventory reports compiled in accordance with (a reference to a data reporting format needed here)⁹⁴ and include:</p> <ul style="list-style-type: none"> a. A description of the methods used for calculating emissions of national key categories of emissions. b. Description of reasons the trends in emissions focussing on the key categories”. c. Information on uncertainties and QA/QC and verification d. A description of the institutional arrangements for inventory preparation. e. Assessment of completeness addressing gaps in geographical coverage and subcategories estimates. f. Further specific provisions to match those required under 280/2004 Implementing Provision Article 4 ” g. If indicators are required for NECD then further specific provisions to match those required under 280/2004 Implementing Provision Article 7 ” 	None
	<p>q) Add to Annex III: Part 2b: MS shall provide in their NIR the transparent presentation of any differences in definition to national boundaries or methodologies between their estimated inventories for MM and NECD. E.g. emissions for different territory definitions or emissions from transport “fuel consumed” as opposed to “national fuel sales”.</p>	none
	<p>r) Add to Annex III: Part 2b: “MS may provide a single combined Methodology report for MM and NECD/CLRTAP with joint analysis on national emissions and emission trends, and refer to it from their IIR and NIRs, as long as the report meets the requirements for structure and content quality (TCCCA) set out in the UNECE reporting guidelines for annual inventories.”</p> <p>Note: For option 4, the requirement for emissions inventory reporting should be strengthened and extended to cover the NIR and data reporting to a single centralised system or schema that could build on the CRF and the NIR report structure.</p>	<p>Option 2 (Action 2.2) (combining MM and NECD) offers savings in the region of €0.3M per year through streamlined reporting actions. This saving relates to an estimated reduction of 25% of current manday cost (92 mandays at €520) for each MS</p>

⁹⁴ Report template to be designed based on the UNECE IIR and the UNFCCC NIR. Template should allow for MS to report methodologies for both NECD and MM requirements and manage updates of information fo details required annually and 5 yearly.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
<p>P2.3</p> <p>Projections and PAMs Methodologies</p> <p>(Relevant to Action/s a2.3 & 4.1)</p>	<p>m) Add to Annex III: “Part 1b: “Emission projections shall be based on the latest national statistics as used for the national emission inventory reported under Part 2a of annex III and use the same economic, demographic, energy, agriculture and transport assumptions as the Decision 280/2004 (MM and the CLRTAP).”</p> <p>n) Add to Annex III Part 1b: MS are encouraged to use the CAFE WG on Implementation Recommendations for PAMs and projections reporting for their methods and reporting of PAMs and projections and to have regard for the guidance on projections provided in the EMEP/EEA guidebook.⁹⁵</p> <p>o) Add to Annex III Part 1b: .to make provision to require MS to use guidance on PAMs and projections that will be developed in the future.⁹⁶</p>	<p>€0.25M Under Option 2 Assumes 35 days additional costs for the joint consideration of co-benefits and trade-offs for APs and GHGs</p>

⁹⁵ This is an interim step until updated guidance for AP and GHG PAMs and projections is established see below.

⁹⁶ These CAFE Recommendations (**CAFE, 2006**) should incorporate or refer to the MM Projections and PAMs templates as these templates are further developments on the templates presented in the current CAFE Recommendations. Future Guidance should be developed using the WGII templates and instructions and the CAFE Recommendations. This will facilitate the use of good practice in estimating PAMs and projections. Guidelines should cover both AP and GHG pollutants and provide guidance on compilation of estimates, sensitivity analysis, scenarios (e.g. WM, WAM, WOM), and assessment of costs of measures. Guidelines could also build on work done on the Projections chapter of the EEA/UNECE Guidebook. Estimated cost of developing guidance could cost ~ €0.5m to develop.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>p) Introduce to Annex III 2c: “MS shall, for the assessment of Policies and Measures and projected progress, report to the commission, by the 15th March of every odd year, beginning 2009, the information listed in the paragraphs below compiled in accordance with part 1b of this annex III. Emission projections shall cover a period of at least 10 years starting in year X-2 and ending with the nearest year divisible by 5.”</p> <p>For Projections:</p> <ul style="list-style-type: none"> a) Clear identification of the policies and measures included in the projections b) Details of the sensitivity analysis⁹⁷ performed for the projections c) Description of the methods and models underlying assumptions and key input/output parameters that are transparent and allow for independent review of data. d) Note could also include indicators for projections consistent with MM IP 9(c) <p>For Policies and Measures:</p> <ul style="list-style-type: none"> a) (a) the objective of the policy and measure b) (b) the type of policy instrument; c) (c) the status of implementation of the policy or measure; d) (d) indicators to monitor and evaluate progress with policies and measures over time <ul style="list-style-type: none"> • Note: Could include the same reporting parameters and templates as used for MM (see MM article 3(2)(a) & MM IP 9(a) & (b)--- • Note: could also include quantitative estimates of the effect of policies and measures on emissions by sources and removals by sinks of NECD pollutants between the base year and subsequent years • Note: could also Include additional parameters presented in the MM PAMs reporting template developed under WGII (EEA, Dec 2006) <p>Note: For option 4, this requirement should be strengthened and require reporting to a single centralised system or schema.</p> <p>q) Add to Annex III Part 2c: MS are encouraged to use the CAFE WG on Implementation Recommendations for PAMs and projections reporting for their methods and reporting of PAMs and projections.</p> <p>Note: MS could report projections and PAMs according to the same templates as those used of MM (280/2004) but would need modified MM Projections and PAMs templates (EEA, Dec 2006)”</p>	

⁹⁷ This analysis approach should be defined in an appropriate place.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>r) Add to Annex III 2c: MS may, report their emission projections and PAMs together with, or as part of, the information on projections as required by under MM (280/2004) Implementing Provision 9.</p> <p>Note: For option 4, this requirement should be strengthened and require reporting to a single centralised system or schema.</p>	
<p>P2.4</p> <p>PAMs Impacts of AP and GHG actions. (Relevant to Action/s a2.4 & 4.1)</p>	<p>a) Add to Annex III Part 1b: MS are encouraged to use the CAFE WG on Implementation Recommendations for PAMs and projections reporting for their methods and reporting of PAMs and projections</p> <p>b) Add to Annex III Part 1b: Estimates of PAMs shall be coherent (considering the co-benefits and trade-offs) with Plans and Programmes designed under this instrument as well as those set out in Article 2 of Decision 280/2004/EC and on air quality referred to in Article 23 of Directive 2008/50/EC of the European Parliament and of the Council</p> <p>c) Add to Annex III Part 2c: “MS shall report on the impacts of all GHG measures in projected AP estimates and the impacts on GHG emissions of AP measures in their biannual reports. “</p>	
NECD with EU ETS Interactions		
<p>Note: The following proposals assume that the NECD requirements will be restructured and make use of implementing provisions as described in Action 2.8 below.</p>		
<p>P2.5a</p> <p>Use of EU ETS data in national Estimates. (Relevant to Action/s a2.5a & 4.1)</p>	<p>b) Add to Annex III Part 1a: “For NFR categories which include EU ETS activities:</p> <p>I. MS shall use any suitable⁹⁸ data (activity data) contained in the verified EU ETS Annual Emissions reports as the basis for calculating the national EU ETS component for that NFR category.</p> <p>II. Where more accurate methods are unavailable MS shall calculate the non EU ETS component and pollutants using the activity data presented in verified AERs, national statistics and appropriate country specific emission factors such that the non EU ETS component is based on national statistics minus the activity data presented in the AERs.</p>	<p>€0.2M (25 days per MS) development of national data flows, analysis and presentation of EU ETS data for 14 MS⁹⁹</p> <p>€0.3 M Annual maintenance based on 1hr per installation for the 14 MS that currently do not use EU ETS data</p> <p>Note: These costs are the same as the costs for proposal 1.5a in annex A1 and should not be added.</p>

⁹⁸ Suitable means that the facility estimates have been compiled according to certain acceptable minimum standards (These standards are already adequate for use of EU ETS data from AERS. However for other installation/facility level data standards would need to be agreed. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants) QA/QC'd and can be reconciled with national statistics to produce better national estimates of emissions than could be obtained through other means.

⁹⁹ The MS enquiry showed that 13MS make use of EU ETS data.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>d) Add to Annex III Part 2a: "MS shall, present national comparison tables showing the EU ETS component of the different IPCC/NFR subcategories reported to the UNECE with links to the publicly available data for each installation".¹⁰⁰</p> <p>e) Add to Annex III Part 2b: "MS shall provide, in an annex to their NIR, detailed tables showing the contribution of the EU ETS installations emissions (currently this would have to be estimated by MS as only CO2 is provided by EU ETS installations) to national emissions and their share of national production and consumption¹⁰¹."</p>	<p>Development cost the EU €0.3M overall with annual cost of €0.3M for all MS.</p>
NECD with E-PRTR Interactions		
<p>Note: The following proposals assume that the NECD requirements will be restructured and make use of implementing provisions as described in Action 2.8 below.</p>		
<p>P2.5b</p> <p>Use of E-PRTR Facility Level data in national Estimates.</p> <p>(Relevant to Action/ a2.5b & 4.1)</p>	<p>a) Add to Annex III Part 1a: "Any suitable¹⁰² Emissions Reports compiled under the E-PRTR should be used to derive national estimates for the NFR Categories containing E-PRTR activities/processes and ensure that these categories are compiled to IPCC tier 3."</p> <p>b) Add to Annex III Part 1a: "Any suitable¹⁰³ available consumption and production data for E-PRTR facilities processes should be used along with national statistics so that the non reporting component for the sector can be estimated based on the remaining consumption/production statistics and the application of an appropriate emission factor.</p> <p>c) Add to Annex III Part 1a: "Where E-PRTR facility level data are used as the basis for national estimates e.g. for IPCC/EMEP/CORINAIR tier 3, MS shall ensure that E-PRTR facility level emissions estimates are compiled using certain minimum standards which ensure that the data used is unbiased and provide an accurate and representative country specific emission factor¹⁰⁴."</p>	<p>€0.4m for the development of data flows¹⁰⁵</p> <p>Maintenance assumes 1hr per Facility (12,000) to extract useful emissions data for all 27 MS.</p> <p>Note: These costs are the same as the costs for proposal 1.5b in annex A1 and should not be added.</p>

¹⁰⁰ This could be an additional table of emissions of NECD pollutants estimated for EU ETS processes and go towards the LCLRTAP LPS reporting requirements. The dataset could be a simple excel templates or a more complex presentation of data that allows drill down from national emissions to those of installations from AERs)." Note: This would be a SEIS compliant requirement requiring MS to present their annual emissions for EU ETS installations alongside their national emissions estimates.

¹⁰¹ Where data is not commercially sensitive.

¹⁰² Suitable means that the facility estimates have been compiled according to certain acceptable minimum standards (These standards are already adequate for use of EU ETS data from AERS. However for other installation/facility level data standards would need to be agreed. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants) QA/QC 'd and can be reconciled with national statistics to produce better national estimates of emissions than could be obtained through other means.

¹⁰³ Suitable means that the facility estimates have been compiled according to certain acceptable minimum standards (These standards are already adequate for use of EU ETS data from AERS. However for other installation/facility level data standards would need to be agreed. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants) QA/QC 'd and can be reconciled with national statistics to produce better national estimates of emissions than could be obtained through other means.

¹⁰⁴ Standards would need to be agreed. MRG 2007/589/ EC sets the standard for estimating/monitoring emissions reading emissions but is quite strict if applied to all pollutants.

¹⁰⁵ Assumes some useful E-PRTR AD is provided to CAs and time is used by MS incorporating it into national inventories.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
	<p>d) Add to Annex III Part 2a: "MS shall, present national comparison tables showing the E-PRTR component of the different IPCC/NFR subcategories reported to the UNFCCC with links to the publically available data for each facility".¹⁰⁶</p> <p>e) Add to Annex III Part 2b: "MS shall provide, in an annex to their NIR, details of the contribution of the E-PRTR to national emissions and of national production and consumption"¹⁰⁷."</p>	<p>Development cost the EU €0.3M overall (2 times 20 mandays for 27 MS to develop methods for MM and the NECD) with annual cost of €0.3M for all MS (2 times 20 mandays for 27 MS to present EU ETS data in the context of NIS for MM and the NECD.</p>
NECD with Recast Interactions		
<p>Note: The following proposals assume that the NECD requirements will be restructured and make use of implementing provisions as described in Action 2.8 below.</p>		
<p>P2.5c</p> <p>Use of RECAST Permitting data in national Estimates.</p> <p>(Relevant to Action/s a2.5c & 4.1)</p>	<p>a) Add to Annex III Part 1a: "Where sufficient detail and quality are available to enable good practice methods to be applied, MS shall use appropriate annual emissions data associated with IPPC permits as the basis for estimation of emissions for related sectors in the NECD inventory.</p> <p>b) Optional: Add to Annex III Part 2b: "MS shall provide, in an annex to their NIR, details of the contribution of IPPC permitted processes emissions to national emissions and their share of national production and consumption"¹⁰⁹."</p>	<p>€0.4M for the development of data flows¹⁰⁸ Maintenance assumes 1hr per Facility (12,000) to extract useful emissions data for all 27 MS</p> <p>€0.3M Development of presentational material and analysis (Assumes 20 days/MS). Annual cost of €0.3M for total of all 27 MS.(Assumes 20 days/MS)</p>
NECD with F-Gas regulation Interactions		
<p>P2.6 (F-Gases)</p>	No proposals for the NECD	none
NECD with Decision No 1753/2000/EC CO2 from New Cars interactions		

¹⁰⁶ This could be an additional table of emissions of NECD pollutants estimated for E-PRTR processes and go towards the LCLRTAP LPS reporting requirements. The dataset could be a simple excel templates or a more complex presentation of data that allows drill down from national emissions to those facilities (Although there will be cross definition problems)." Note: This would be a SEIS compliant requirement requiring MS to present their annual emissions for E-PRTR facilities alongside their national emissions estimates.

¹⁰⁷ Where data is not commercially sensitive.

¹⁰⁸ Assumes the same effort as for E-PRTR.

¹⁰⁹ Where data is not commercially sensitive.

Proposal Number & (Action Relevance)	NECD Proposal	Costs
<i>Note: The following proposals assume that the NECD requirements will be restructured and make use of implementing provisions as described in Action 2.8 below.</i>		
<p>P2.7</p> <p>CO2 from cars Reporting consistency</p> <p>(Relevant to Action/s a2.7 & 4.1)</p>	<p>a) Add to Annex III Part 1a: “MS shall cross check the data compiled on new vehicles as reported under the Decision No 1753/2000/EC CO2 from New Cars with their detailed road transport emissions assumptions and statistics.”</p>	<p>none</p>
Proposals for the NECD relating to Quality & Streamlining Preparation		
<p>P2.8</p> <p>Structuring and organisation of the NECD for streamlining</p> <p>(Relevant to Action/s a2.8 & 4.1)</p>	<p>Article 2: Revise the NECD pollutant definitions paragraphs to point to an annex which specifies the pollutants:</p> <p>a) “This Directive covers emissions in the territory of the MS and their exclusive economic zones from all sources of acidifying and eutrophying pollutants, primary particulate matter and precursors of secondary particulate matter and ozone as listed in annex XX, which arise as a result of human activities.”</p> <p>Replace Articles 7(1) & (2) & 8 (1): with:</p> <p>a) “MS shall, for the assessment of actual progress and to enable the preparation of annual reports by the Community, in accordance with obligations under the UNECE and the CLRTAP, determine and report to the Commission information on their annual emissions of pollutants in accordance with the requirements laid down in annex III 1a, 2a and 2b.”</p> <p>b) “MS shall, for the assessment of projected progress, determine and report to the commission, projections and Policies and measures according to the requirements laid down in annex III parts 1b and 2c.”</p>	<p>none</p>
	<p>Create in Annex III Part 1: “methodologies for emissions inventories, projections and quantification of Policies and Measures”</p>	<p>none</p>
	<p>Create in Annex III Part 1a on Methods for Emissions Inventories: and include relevant text from proposals 2.1, 2.2, 2.5, 2.7 above.</p>	<p>none</p>
	<p>Create in Annex III Part 1b on Methods for Projections and PAMs: and include relevant text from proposals 2.3 & 2.4 above.</p>	<p>none</p>
	<p>Create in Annex III Part 2: “Reporting Procedures”</p>	<p>none</p>
	<p>Create in Annex III Part 2a: “Annual Emission data Reporting.” and include relevant text from proposals 2.1, 2.2, 2.5, 2.7 above.</p>	<p>none</p>
	<p>Create in Annex III Part 2b:: “Annual National Inventory Reports.” and include relevant text from proposals 2.1, 2.2, 2.5, 2.7 above.</p>	<p>none</p>
	<p>Create in Annex III Part 2c: “Biannual PAMs and Projections reporting and reports.” and include relevant text from proposals 2.3 & 2.4 above.</p>	<p>none</p>

Proposal Number & (Action Relevance)	NECD Proposal	Costs
<p><i>Note: Under Option 2 Action 2.9 the provisions for emissions estimation and reporting under the MM and the NECD could be combined. They would need to be combined under an existing instrument therefore the only short term option for this would be either the MM or the NECD. If this was done the proposals above p2.1 – p2.7 should be modified and combined with the proposals 1.1 – 1.8 in annex A1 to form a single set relevant for NECD/CLRTAP and MM/UNFCCC estimation and reporting.</i></p>		
<p><i>Note: Under Options 3a and 3b there will be additional detail for regulated processes which can be used in the national NECD inventory and improve NECD reporting outputs (see 2.5a, b and c above).</i></p>		
<p>Note: under Option 4 There will be additional requirements for the integration on national inventories. Therefore the NECD will require additional strengthening to proposals 2.4, 2.3 and 2.2 as indicated above. Under option 4 the NECD and the MM will also be streamlined and their provisions for estimation and reporting of emissions combined.</p>		

Annex A1.3 - Proposal for EU ETS:

The following proposals¹¹⁰ p3.1 – p3.3 focus on improving the flow of EU ETS data and introduce requirements to optimally re-use data that are collected under the EU ETS in national inventories and to complement the E-PRTR. The proposals are grouped according to their relevance to other instruments. The relevance of the proposals to the options and actions in section 2 are indicated in the first column in the table below. Articles that are not considered relevant to the streamlining of emissions estimation and reporting have been excluded from this analysis and it is assumed that these articles remain unchanged in their instruments. The time frame for these proposals is likely to fit in with the review of the EU ETS Directive that is underway which gives the Commission the prerogative to draft a regulation for monitoring and reporting. Therefore it is anticipated that the proposals 3.1 and 3.2 below could be included in the provisions in the MRG regulation that will enter into force in 2012. Proposal 3.3 should be reserved for a possible future revision when more radical streamlining can be considered.

NOTE: These proposals are provisional because, in some cases, they may impact on the scope of the existing EU and MS legislation and we cannot guarantee that there will be no adverse impacts on aspects other than reporting for the regulation of the installations covered.

<i>Proposal Number & (Action Relevance)</i>	EU ETS Proposals	Costs:
	EU ETS with NECD and MM Interactions	
<p>p3.1</p> <p>Improving availability & transparency of AER data.</p> <p><i>(Relevant to Action/s 3a.1 and 3b.1 & 4.2)</i></p>	<p>a) Add Paragraph to Article 8 of the MRG: “The Competent Authority (CA) shall compile all of the AER data into a database presenting emissions, emission related parameters (e.g. fuel quality data) and activity data by IPCC category for each installation. The CA shall make this database available to the National inventory Compilation process as part of the National System. The CA shall also undertake checks on the aggregated (by IPCC sector) emissions (using National statistics based estimates) and consumption production data (using national statistics).”</p> <p>b) Amend MRG 14.2 – 6: Amend the tables in 14.2 – 14.6 so that reported data can be aligned more concisely with IPCC subcategories,¹¹¹ This will ensure that the reported EU ETS data can be used for national estimates and the EU ETS activity data linked to other emissions reported under E-PRTR.</p> <ul style="list-style-type: none"> o 14.2 Include subcategory rows for the IPCC/CRF subcategories (e.g. 1A1a) under the activity rows. o 14.3, 14.4, 14.5 and 14.6 include a row for the CRF/IPCC subcategory and require reporting at a CRF/IPCC subcategory (e.g. 1A1a) level. 	<p>Development costs are assumed to be in the region of €3M</p> <p>Development costs include 150,000 EUR per MS for 20 MS to develop EU ETS IT based reporting systems.</p> <p>€0.1M maintenance is assumed to cover complex installation reporting additional burden (additional 2 days fro 100 installations)</p>

¹¹⁰ A review of the EU ETS Directive is underway which gives the Commission the prerogative to draft a regulation for monitoring and reporting. The provisions in the MRG will end up in a regulation that will enter into force in 2012. Given the timeline in the report the suggestions for streamlining will probably end up in the regulation

¹¹¹ There is an additional suggestion that recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of doing this include - better comparison and consistency to other statistical data (national accounts etc.)- better knowledge of coverage of information included in different registers and data sets compared to national totals- reporting of total emissions allocated to NACE categories if needed- better links to environmental accounting systems (SEEA, NAMEA,...)

	<p>c) Add to MRG 14.6: a requirement to report the activity data associated with the consumption and production of activities producing the measured emissions.</p> <p>Note: Currently there is not much measurement but in situations where measurements are more widespread then the lack of accompanying activity data will reduce the usefulness of the measurement information in National Inventories and comparability of the EU ETS with E-PRTR.</p>	
<p>EU ETS with E-PRTR& RECAST</p>		
<p>P 3.2</p> <p>Improving installation Definitions and links to other Permits and Reports.</p> <p><i>(Relevant to Action/s 3b.2 & 4.2)</i></p>	<p>a) Modify MRG Article 14.1: Add to the requirements to define the installation so it can be linked to other permits and reports including:</p> <ul style="list-style-type: none"> • Modify row 2 to uniquely identify the owner of the operation (by the company registration number), • Refine coordinates of location 3.7 to be uniquely identify the site of operation (comprising a site name, address and postcode and the Geographical box as defined under INSPIRE Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC), • Keep: the E-PRTR facility or facilities (e.g. as defined by the E-PRTR reference number) containing the EU ETS installation plant. • Add row on the IPPC permit or permits of processes included in the installation. 	<p>None</p>
<p>P3.3</p> <p>Streamlining EU ETS and E-PRTR reporting</p> <p><i>(Relevant to Action 4.2)</i></p>	<p>a) Change Article 8 to include provision for EU ETS data to be reported along with E-PRTR data. The MRG article 8 would refer to either the E-PRTR or a new reporting instrument (depending on the sub option chosen for Option 4) that would incorporate the requirements of MRG 14 and the proposal above in p3.1 & 3.2. Reports would include explicitly the EU ETS installations (AER data)¹¹² and IPCC categories and the E-PRTR facilities and activities (by IPCC category).</p> <p>Note: Under Option 4, the E-PRTR or new Reporting instrument would define a common reporting system (XML schema or tools set) which combined the reporting requirements currently set out in article 14 of the MRG and Annex III of the E-PRTR plus the detailed requirements laid out in proposals 3.1, 3.2 and 5.1 and 5.2 above. These proposals will require the additional detailed reporting on the installation reference and using IPCC categories proposed in proposals 3.1 and 3.2 above. Requirements for methods of estimation under MRG would be upheld. However, the requirements for reporting would now point to a single reporting framework for facility/installation data.</p>	<p>None but required 3.1 level effort to develop EU ETS data flow component.</p>

¹¹² Or at least the non confidential parts)

Annex A1.4 Proposals relevant to the RECAST

Proposals p 4.1 – p 4.4 specify the (additional) measures needed to enable data reported from IPPC regulated installations to be used for the compilation of National Inventories and to ensure data comparability with EUETS and E-PRTR datasets. The measures include the introduction of standardised data formats/tools and guidance to help MS to implement good practice when defining and designing their emission reporting and data compilation systems for permitted processes.

The current IPPC Directive (and the proposed IPPC RECAST) does not require reporting to the European Commission of emission data from all installations. The IPPC Directive resembles a framework directive (as does the RECAST) in that it provides for general obligations for permitting but leaves a lot of flexibility to Competent Authorities (CA). For instance, the obligation is that permits contain "suitable monitoring requirements"; it is for the CA to set specific conditions (which pollutants, type, frequency, methodology for monitoring). As a result, MS already have the powers to require the reporting of emissions data from individual installations in their chosen format and using systems that allows for their streamlining with other reporting requirements (EU ETS, E PRTR, establishment of national inventories, etc). Our actions, therefore, are designed to assist MS take advantage of opportunities, at an implementation level, for streamlining the format of data and dataflows from Operators.

The proposals are grouped according to their relevance to other instruments. The relevance of the proposals to the options and actions in section 6 are indicated in the first column in the table below. Proposal 4.4 should be reserved for a possible future action plan to support Member States implementation and streamlining efforts.

NOTE: These recommendations are provisional because, in some cases, they may impact on the scope of the existing EU and MS legislation and we cannot guarantee that there will be no adverse impacts on aspects other than reporting for the regulation of the installations covered.

<i>Proposal Number & (Action Relevance)</i>	RECAST Proposals	Costs
	RECAST with links to E-PRTR & EU ETS	

Proposal Number & (Action Relevance)	RECAST Proposals	Costs
<p>P 4.1 Definition of IPPC regulated Installations Relevant to Action/s 3b.6 & 4.2:</p>	<p>a) Provide guidance to stimulate Member States to ensure that IPPC permits issued by the competent authority and subsequent reporting under that permit include provisions on the description of the following data format</p> <ul style="list-style-type: none"> ○ site of operation according to European and International data specification standards (comprising a site name, address and postcode and the Geographical box as defined under Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC ○ the owner of the operation (defined by the company registration number), ○ any E-PRTR facilities (facility ID numbers) within which the IPPC installation lies. ○ any EU ETS installations (as defined by their permit numbers) associated with the IPPC permit, ○ Any other permitted process that is associated with the IPPC permitted process. <p>and that these permits and annual reports are stored electronically such that the data can be accessed and used by the Inventory agency for national emissions estimation.</p>	<p><i>None</i></p>
<p>P 4.2 Estimation of annual emissions with Permit Applications Relevant to Action/s 3b.6 & 4.2</p>	<p>b) Provide guidance to stimulate MS to ensure that requirements for new permits applications and permit reconsiderations are accompanied by details of expected annual emissions and activity data, where those information are not yet available to the competent authorities, in the following data format:</p> <ul style="list-style-type: none"> • Expected emissions (e.g. tonnes/yr) subdivided by installation (consistent with EU ETS) and IPCC/CRF category, process (fuel type, technology type and feedstock type) and pollutant • Expected activity volumes (fuel consumption (GJ/yr), production (kt/yr), materials consumption) of process • Other related permit numbers (e.g. EU ETS) <p>and linked to the site/permit descriptions in P4.1 above.</p>	<p><i>Development costs for MS of systems to gather and manage the data are estimated to be €0.6m based on assuming 40 days per MS for the development of systems)</i></p> <p><i>Annual maintenance of the data flow is assumed to be €1m (based on assuming 8%¹¹³ of permits are renewed/amended and ½ day per permit to integrate emissions estimates.</i></p>

¹¹³ Based on analysis from Policy Brief for the EP Environment Committee EP/IV/A/2003/09/01 Implementation of the IPPC Directive (96/61)

<i>Proposal Number & (Action Relevance)</i>	RECAST Proposals	Costs
<p>p4.3</p> <p>Annual or on demand Activity data and Emissions Reporting</p> <p>Relevant to Action/s 3b.6 & 4.2:</p>	<p>a) Provide guidance to stimulate to specify, for permits requiring an annual emission¹¹⁴ report, the following data format:</p> <ul style="list-style-type: none"> • Annual emissions (e.g. tonnes/yr) aggregated by installation (consistent with EU ETS) and IPCC category, process (fuel type, technology type and feedstock type), industrial branch code (NACE/ISIC)¹¹⁵ and pollutant • Expected activity volumes (fuel consumption (GJ/yr), production (kt/yr), materials consumption) of process • Relevant information to identify and streamline reporting done by the operator under other emission reporting obligations (e.g. EU ETS) <p>and be linked to the site/permit descriptions in P4.1 above.</p> <p>b) Provide guidance for MS that would assist them to collect and make available to the Commission, in a suitable format for compilation at EU level, representative data of IPPC installations, especially if they are not captured by the scope of EU ETS and E-PRTR. RECAST (Article 67) foresees that the type, format and frequency of the information to be made available to the Commission on implementation will have to be established through a Comitology procedure. Further guidance should be provided on how to best streamline these data flows with other reporting obligation.</p>	<p><i>None</i></p>
<p>P4.4</p> <p>Streamlining RECAST, EU ETS and E-PRTR emissions reporting</p> <p>Relevant to Action/s 3b.6 & 4.2:</p>	<p>a) Provide MS with an EU format and associated guidance for permit information reporting that would help them develop standardised systems to collect details of the nature and quantities of existing and foreseeable emissions as well as associated permit information. The common reporting system (XML schema or tools set) would be compatible with the data format used for the reporting requirements relating to article 14 of the MRG and Annex III of the E-PRTR and Article 13 of RECAST plus the detailed requirements laid out in proposals 3.1, 3.2, 4.1, 4.2 and 5.1 and 5.2 of this document so that a compilation of the various dataset would be possible.</p>	<p><i>None: but required implementation of 4.1 – 4.3 above for IPPC data flow component.</i></p>

¹¹⁴ This proposal leaves it open for CAs to decide on the need for annual reporting. Requirement for annual reporting should be only for installations that are deemed important and are not covered by the emissions under E-PRTR or EU ETS.

¹¹⁵ Recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of taking this approach include - better comparison and consistency to other statistical data (national accounts etc.)- better knowledge of coverage of information included in different registers and data sets compared to national totals- reporting of total emissions allocated to NACE categories if needed- better links to environmental accounting systems (SEEA, NAMEA).

Annex A1.5 Proposal for E-PRTR

The following proposals p 5.1 – p 5.3 focus on improving the flow of data associated with E-PRTR and introduce requirements to optimally re-use data that are collected under E-PRTR in national inventories and to compliment the EU ETS by showing the emissions of non CO₂ pollutants by EU ETS permitted processes. The proposals are grouped according to their relevance to other instruments. The relevance of the proposals to the options and actions in section 6 are indicated in the first column in the table below. There are no explicit time frames for revision to the E-PRTR. Article 18, however, sets the provisions to amend Annex II (pollutants) and annex III (reporting format) via Comitology (art 19). Therefore, it is envisaged that in the short term (next 5 years) these provisions can be enacted to improve the data collected through E-PRTR as recommended in proposals 5.1 and 5.2. Proposal 5.3 should be reserved for a possible future action plan to support Member States implementation and streamlining efforts.

NOTE: These recommendations are provisional because, in some cases, they may impact on the scope of the existing EU and MS legislation and we cannot guarantee that there will be no adverse impacts on aspects other than reporting for the regulation of the installations covered.

<i>Proposal Number & (Action Relevance)</i>	E-PRTR Proposals	Costs:
E-PRTR with links to RECAST & EU ETS		
P5.1 Facility Level Definitions (Relevant to Action/s 3b.4)	a. Proposals for change, through comitology, to Annex III to improve the Identification of the Facility: <ul style="list-style-type: none"> • Replace the “coordinates of location” by the Geographical box as defined under Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC • Add requirement to record the owner of the facility (defined by the company registration number), • Identify each EU ETS installation (as defined by their permit numbers) included within the E-PRTR facility. • Identify each IPPC permitted activity (as defined by their permit numbers) included in the E-PRTR facility.” • Identify each industrial branch code (NACE/ISIC) ¹¹⁶ 	<i>None</i>

¹¹⁶ There is an additional suggestion that recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of doing this include - better comparison and consistency to other statistical data (national accounts etc.) - better knowledge of coverage of information included in different registers and data sets compared to national totals - reporting of total emissions allocated to NACE categories if needed - better links to environmental accounting systems (SEEA, NAMEA,...)

<i>Proposal Number & (Action Relevance)</i>	E-PRTR Proposals	Costs:
<p>P5.2</p> <p>Facility level emissions reporting</p> <p><i>Relevant to Action/s 3b.5)</i></p>	<p>a. Proposals for change, through comitology, to Annex III text to introduce reporting at an installation (for EU ETS installations), IPCC sub category¹¹⁷ (e.g. 1A1a), and process (fuel type, technology type and feedstock type) level within each facility:</p> <ul style="list-style-type: none"> • Annual pollutant emissions (calculated, estimated or measured) • Annual activity volumes e.g. (fuel consumption (GJ/yr), production (kt/yr), materials consumption). • report emissions and activity data for each installation, • Identify IPCC sub-category and process within the facility. <p>Note: These requirements could be incorporated in EU ETS reporting frameworks being developed by the Commission now so that MS could encourage their operators to use the EUETS platform to report under E-PRTR.</p> <p>Where there are confidentiality issues then Operators should be encouraged to compile and maintain their emissions estimates and details of activity for each facility at a detailed installation and IPCC category level using standardised electronic formats (e.g. spreadsheets). This data could be then reported for public use at an aggregated facility level and the detail made available to the Inventory Agency or CA on request but not accessible to the public.</p>	<p><i>Development costs €2.6m assumes ½ day for 12,000 facilities in adjustment of E-PRTR facilities to the new detailed reporting. Annual maintenance costs are estimated at €1m. Assumes 1000 complex facilities take an additional 2 days per installation annually.</i></p>
<p>P5.3</p> <p><i>Streamlining EU ETS and E-PRTR reporting</i></p> <p>(Relevant to Action 4a.2)</p>	<p>b) Provide MS with an EU format and associated guidance for permit information reporting, which would help them develop standardised systems to collect details of the nature and quantities of existing and foreseeable emissions as well as associated permit information. The common reporting system (XML schema or tools set) would be compatible with the data format used for the reporting requirements relating to article 14 of the MRG and Annex III of the E-PRTR and Article 13 of RECAST plus the detailed requirements laid out in proposals 3.1, 3.2, 4.1, 4.2 and 5.1 and 5.2 of this document so that a compilation of the various dataset would be possible. Propose The Schema would need to be scalable so that E-PRTR reporting requirements could be less stringent but reporting would be in the same set of forms. Where activities overlapped with EU ETS E-PRTR reporting could refer to EU ETS installation activity data.</p>	<p><i>None: but required implementation of 5.1 – 5.2 above for E-PRTR data flow component.</i></p>

¹¹⁷ There is an additional suggestion that recording of the industrial branch code (NACE/ISIC) should be included in all systems collecting facility/installation level bottom-up data. However it is acknowledged that to get the codes right, intensive co-operation between statistical offices, other data collectors and emissions inventory compilers might be required. The advantages of doing this include - better comparison and consistency to other statistical data (national accounts etc.)- better knowledge of coverage of information included in different registers and data sets compared to national totals- reporting of total emissions allocated to NACE categories if needed- better links to environmental accounting systems (SEEA, NAMEA,...)

Annex A1.6 Proposals for New Emissions Reporting Instrument

The proposals below present initial ideas on the content of a new Reporting Instrument for AP and CC Emissions. The Instrument would, as a minimum, specify the reporting requirements for certain emissions related datasets managed by MS and needed by the EU and MS for policy development and reporting to the UN. It is not envisaged that a reporting instrument will replace all of the requirements of the MM, NECD, EU ETS, E-PRTR or IPPC. However, the relevant emissions reporting (and possible methodologies) parts could be grouped together into a streamlined instrument with requirements governing data flows, data quality and allowing for maximum re-use of data. The timeframe for a new instrument would be in the next 5 – 10 years) and would need to consider the current revisions underway to ensure that reporting requirements are still met in the short term.

New Reporting Instrument Proposals. (Proposals Relevant to Option 4c & d)
<p>Create a Reporting Instrument (Probably a Decision as this has more flexibility and can be more detailed). :</p> <p>Include “Whereas” that refers to the following..:</p> <ul style="list-style-type: none"> ○ The need for MM targets and progress ○ The need for UNFCCC reporting, ○ The need for NECD targets and progress, ○ The need for UNECE/CLRTAP reporting, ○ Quality of national emissions (reliant on installation/facility level data for tier 3 methods). ○ Opportunities to reduce MS reporting burden to UNFCCC and UNECE, ○ Regulated Process and Trading facility emission monitoring (transparency between emissions trading pollutant emissions and emissions or other pollutants from the same installations and facilities) , ○ Public Environmental Information, ○ Detail and consistency in methods and reporting needed for efficient policy making.
<p>Definitions: Include article referring to and detailed annexes on Definitions with flexibility for future revision through comitology including:</p> <ul style="list-style-type: none"> ○ Pollutant Definitions (AP and CC): Could use UN definitions or definitions developed by Netherlands and other MS as needed for emissions related policy (e.g. different definitions of CO₂/Carbon) ○ Sectoral Definitions (combining IPCC/NFR as a common core for describing emissions related activities) Include other standardised economic activity identification e.g. NACE ○ Define national boundaries used under different agreements and commitments. ○ Define Installation/facility/process boundaries for operator reporting drawing on definition used in E-PRTR/EU ETS/IPPC and INSPIRE. ○ Definitions of scenarios and year descriptions (e.g. target year, base year etc) as used for MM, NECD, UNFCCC and UNECE emissions, Projections and PAMs reporting.
<p>National Systems: Create Article and related annex with flexibility for future revision through comitology on National Systems for Air Pollutant and Climate Gas emissions estimation and reporting.</p>

<p>New Reporting Instrument Proposals. (Proposals Relevant to Option 4c & d)</p> <ul style="list-style-type: none"> ○ Define the minimum standards for National Systems including planning preparation and management of emissions information. ○ Include paragraphs on QA/QC, Archiving and Verification and Review relating as far as possible to the whole emissions data flow from installation reporting to national inventory compilation and reporting. ○ Include requirement for data to line up (Operator reporting = National Statistics = National Inventories = Across different pollutant Inventories. ○ Refer to Review & verification as mechanism for Commission to QA MS data.
<p>Methods: Include Article, and related annex with flexibility for future revision through comitology, on Methods for AP and CC emissions estimation:</p> <ul style="list-style-type: none"> ○ Draw together and expand, where necessary (as per Annex A1, A2, A3, A4 and A5), the specific provisions defining minimum requirements for emissions estimation methods for installation, facility and national emissions from MM, NECD, EU ETS, E-PRTR and RECAST (IPPC). <p>Reporting: Include Article, and related annex with flexibility for future revision through comitology, on Reporting of AP and CC emissions estimation:</p> <ul style="list-style-type: none"> ○ Draw together and expand, where necessary (as per Annex A1, A2, A3, A4 and A5), the specific provisions defining minimum requirements for emissions reporting for installation, facility and national emissions from MM, NECD, EU ETS, E-PRTR and RECAST (IPPC). ○ Include specific provisions laying down a common format for reporting to the Commission to meet EU ETS, E-PRTR, NECD and MM commitments and commitments of the EU to the UN (including templates and/or data system specifications).
<p>Example of proposal for texts to be moved from original instruments to the Emissions Reporting Instrument:</p> <p>MM assuming/including the proposals laid out in Annex A1 (p1.1 - p1.8)</p> <ul style="list-style-type: none"> ○ Move Implementing Provisions 2(1) ○ Move Implementing Provisions 2(2): ○ Move Implementing Provisions 2(3) ○ Move Implementing Provisions 8 ○ Move Implementing Provisions 9 ○ Move Implementing Provisions 10 <p>NECD. assuming/including the proposals laid out in Annex A2 (p2.1 - p2.8)</p> <ul style="list-style-type: none"> ○ Move Annex III <p>RECAST assuming/including the proposals laid out in Annex A4 (p4.1 – p4.4)</p> <ul style="list-style-type: none"> ○ With cross reference to RECAST <p>EU ETS assuming/including the proposals laid out in Annex A3 (p3.1 – p3.3)</p> <ul style="list-style-type: none"> • Move MRG 8 and 14 <p>E-PRTR assuming/including the proposals laid out in Annex A3 (p5.1 – p5.4)</p> <ul style="list-style-type: none"> • Move Annex III

Annex A1.7 F-Gas regulation

The following proposal p7.1 focus on improving the flow of data associated with F-Gases and introduces requirements to optimally re-use data that are collected under F-Gas regulation in national inventories. The proposals are grouped according to their relevance to other instruments. The relevance of the proposals to the options and actions in section 2 are indicated in the first column in the table below. Articles that are not considered relevant to the streamlining of emissions estimation and reporting have been excluded from this analysis and it is assumed that these articles remain unchanged in their instruments.

<i>Proposal Number & (Action Relevance)</i>	F-Gases Proposals	Costs
F-Gas regulation with MM Interactions		
<p>P7.1</p> <p>Improved F-Gases data flow</p> <p>Relevance to Action a1.6 and a2.6</p>	<p>Article 6(4)¹¹⁸ and 6(1) of the F-Gas Regulation</p> <ul style="list-style-type: none"> • <i>MS shall collect consumption/imports/exports such that the data can be used as input to national estimates of F-gas emissions and potentials (by including a MS differentiator in reports from suppliers, users and operators).</i> • <i>If the MM ensures that tier 2 or tier 3 approaches are used at least for the main sectors refrigeration, air-conditioning, heat pumps, fire protection) then MM reporting may be considered adequate and additional reporting under this instrument minimised.</i> • <i>By 2011 a review of the reporting requirements will assess the need for the competent authorities to report periodically to the Commission estimated (F-Gas) emissions based on representative samples [Article 10(2)].</i> 	None

¹¹⁸ This Article obliges MS to establish reporting systems for emissions (HFC, PFC and SF6) from the "relevant sectors"

Annex B – Associated reports

Annex B comprises a CD of other reports produced under the contract :

- a) Streamlining climate change and air pollution reporting - Country Enquiry
- b) Background Report
- c) Interim Report