

Final report of the 2012 technical
review of the greenhouse gas emission
inventory of France
to support the determination of annual emission
allocations under Decision 406/2009/EC

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Introduction

Pursuant to Article 3.2 of Decision 406/2009/EC⁽¹⁾ (the 'Effort Sharing Decision' – ESD), the European Commission shall determine the annual emission allocations (maximum allowed greenhouse gas emissions) of Member States for the period from 2013 to 2020 in tonnes of carbon dioxide equivalent (CO₂ eq.), using reviewed and verified emission data.

Complete sets of greenhouse gas (GHG) emission estimates for the reference years (2005, 2008, 2009 and 2010) were submitted by each Member State by the 15th of May, 2012 as part of the 2012 national inventory submission under Decision 280/2004/EC (the 'Monitoring Mechanism Decision' – MMD). These estimates must have been reviewed to allow the determination in 2012 of the annual emission allocations for the period from 2013 to 2020.

The 'Guidelines for the 2012 technical review of greenhouse gas emission inventories to support the determination of Member States' annual emission allocations under Decision 406/2009/EC' were endorsed by the Climate Change Committee on 19 May 2011 and published as a European Commission Staff Working Document on 26 April 2012⁽²⁾. The 2012 greenhouse gas emission inventory of France was reviewed in accordance with these guidelines.

This report presents the findings of the 2012 technical review of the greenhouse gas emission inventory of France to support the determination of annual emission allocations under Decision 406/2009/EC.

Review Objectives

The purpose of the technical review of Member States' GHG inventories is to support the determination of the annual emission allocations by:

- a) ensuring that the European Commission has accurate, reliable and verified information on annual GHG emissions for the years 2005, 2008, 2009 and 2010 to determine the annual emission allocations under Decision 280/2004/EC;
- b) providing the European Commission and its Member States with a consistent, transparent, thorough and comprehensive technical assessment of GHG emissions, with a focus on data for the years 2005, 2008, 2009 and 2010 reported in 2012;
- c) examining, in a facilitative and open manner, the reported inventory information for consistency with the 'Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories', with the 2000 'Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories', and with the requirements of Decision 280/2004/EC (the 'Greenhouse Gas Monitoring Mechanism' Decision)⁽³⁾;

⁽¹⁾ Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020. OJ L 140, 5.06.2009, p. 136.

⁽²⁾ Commission Staff Working Document of 26 April 2012: Guidelines for the 2012 technical review of greenhouse gas emission inventories to support the determination of Member States' annual emission allocations under Decision 406/2009/EC. SWD(2012) 107 final.

⁽³⁾ Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto protocol. OJ L 140, 5.06.2009, p. 136.

- d) assisting Member States in improving the quality of their GHG inventories.

Review approach and scope

The technical review of the 2012 GHG inventory estimates of France for the years 2005, 2008, 2009 and 2010 was performed by a Technical Expert Review Team (TERT) under service contract 2011/S 234-378130 to the Directorate General for Climate Action of the European Commission.

The review was conducted by the following experts: Kristien Aernouts & Tomas Gustafson for Stationary combustion (CRF categories 1.A.1, 1.A.2, 1.A.4, 1.A.5) + Reference approach; Maria Liden & Tinus Pulles for CRF categories 1.A.3 Transport + 1.C International bunkers; Ralph Harthan & John Watterson for CRF category 1.B Fugitive; Anke Herold & Ils Moorkens for CRF categories 2.A Mineral products + 2.B Chemical industry + CRF sector 3 Solvents; Kristina Saarinen & Dusan Vacha for CRF categories 2.C Metal production + 2.D Other production + 2.G Other; Maria Jose Lopez & Karin Kindbom for CRF categories 2.E Production of Halocarbons and SF₆ + 2.F Consumption of Halocarbons and SF₆; Michael Anderl & Steen Gyldenkaerne for CRF categories 4.A Enteric fermentation + 4.B Manure management; Sorin Deaconu & Etienne Mathias for CRF categories 4.C Rice cultivation + 4.D Agricultural soils, 4.E Prescribed burning of savannas, 4.F Field burning of agricultural residues; Juraj Farkas & Celine Gueguen for CRF sector 6 Waste. Ole-Kenneth Nielsen, Suvi Monni, Klaus Radunsky and Tatiana Tugui acted as lead reviewers. The review was coordinated by Bernd Gugele and Justin Goodwin. The TERT acknowledges the support of the EEA review secretariat Martin Adams, Francois Dejean and Melanie Sporer.

This technical review was performed on the basis of GHG emission data and the national inventory report (NIR) officially reported by Member States by the 15th of April, 2012 under the MMD. Resubmissions reported by Member States were taken into account until the 15th of May, consistent with the reporting practice for resubmissions under Decision 280/2004/EC. Emissions from international transport and land use, land-use change and forestry (LULUCF) were not reviewed. The review was performed with a focus on data for the years 2005, 2008, 2009 and 2010, reported in 2012.

The technical review process for GHG inventories comprised three stages, each of which considered different aspects of the inventories in such a way that the purposes described above were achieved by the end of the process. The three stages were:

- Stage 1, completed by 15 April 2012 – initial completeness checks of each Member State GHG inventory (submitted by 15 January and by 15 March);
- Stage 2, completed by 15 April 2012 – initial consistency and comparability checks of each Member State GHG inventory (submitted by 15 January and by 15 March);
- Stage 3, to be completed by the end of August 2012 – detailed *technical review* of each Member State GHG inventory (submitted by 15 May).

The detailed timeline of the review, including a summary of the correspondence with France, is presented in Annex 4.

ESD 2012 technical review conclusions

Table 1. Main conclusions from the TERT

Findings
1. The TERT considers that the GHG emission inventory estimates of France for the years 2005, 2008, 2009 and 2010 submitted in 2012 under the MMD included emission overestimates .
2. The TERT did not identify inconsistency issues between the reported GHG emission inventory estimates and verified emission data under the EU ETS.
3. During the course of the technical review, the TERT received revised GHG emission inventory estimates from France in response to its initial findings (see Table 2).
4. The TERT considers that the aggregated revised GHG emission inventory estimates from France for the years 2005, 2008, 2009 and 2010 do not include emission overestimates .
5. The TERT suggests that it is not necessary to implement any technical correction to the GHG emission inventory estimates and to amend the reported GHG total.
6. As stated beneath Table 1, France accepts the aggregated GHG emission inventory estimates presented in Table 2 including any revised estimate received from France and accepted by the TERT.
7. The TERT identified non-binding recommendations for improvements of France's GHG inventory (see Table 3 in Annex 1).
8. The TERT considers that it received a response from France that was sufficient in order to undertake the review appropriately.

Statement from France on the conclusions of the TERT

France agrees with the TERT's conclusions.

Table 2. Summary of national totals, including any revised estimates or technical corrections identified during the review

Data / Category	Reference	Status of GHG emission revision or correction	2005	2008	2009	2010
			Gg CO ₂ eq.			
Total GHG emissions as reported in the 2012 submission under the MMD	4 May 2012, FRM-2012-v1.3		567 491.057	537 746.430	515 008.992	522 792.110
Revised estimates provided by France ⁽⁴⁾						
4B Manure Management, CH ₄ , all animals	Resubmission: 05072012, FR-4A+4B-1 and FR-4A+4B-2	Accepted by the TERT	-2 132.936	-2 204.419	-2 161.980	-2 148.919
Disposal to SWDS, methane	6 Jul 2012, Recovery_based_on_energy_Data.xls	Accepted by the TERT	-2 203.789	-2 497.783	-3 228.992	-3 756.912
Total GHG emissions including any accepted revised estimate received from France and/or technical correction as proposed by the TERT			563 154.332	533 044.228	509 618.020	516 886.279

⁴ Difference: revised estimates – original estimates. A positive difference indicates an increase compared to reported emissions. A negative difference indicates a decrease compared to reported emissions. For more information on revised estimates, see Annex 1.

CO₂ emissions from 1.A.3.a Civil aviation	4 May 2012, FRM-2012-v1.3		5 002.900	4 636.516	4 495.577	4 541.601
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Note: National totals exclude emissions from LULUCF and emissions reported under memo items (e.g. international aviation and maritime transport).

Annex 1 – Recommendations, revised estimates and technical corrections

Table 3. Recommendations of the TERT

Key category	Gas, fuel, activity	Observation	Recommendation	Revised estimate ⁽⁵⁾	Technical correction ⁽⁶⁾
No	1.A.1.a. Public electricity and heat production CH ₄ other 2005, 2008–2010	The implied emission factor for CH ₄ from other fuels in 1.A.1.a. is low and varies. In response to a question from the TERT, France explained that the activity data for ‘other fuel’ is dominated by the activity ‘waste incineration with energy recovery’ versus ‘centralised Public electricity’, whereas the CH ₄ emissions relate only to the emissions from ‘centralised Public electricity production’. No CH ₄ emissions are calculated for ‘waste incineration with energy recovery’. Therefore, there is no actual correlation between the emissions and the activity level. France noted in the response that according to the 2000 IPCC Good Practice Guidance (GPG) CH ₄ emissions from waste incineration are not likely to be significant. The TERT noted that this is true for the waste section in the GPG, but that default CH ₄ emission factors are available in	The TERT recommends that France include CH ₄ emissions from waste incineration with energy recovery in its inventory in order not to underestimate the emissions.	No	No

⁵ The GHG emission estimate for this category was revised by France during the technical review.

⁶ The GHG emission estimate for this category is subject to a technical correction proposal by the TERT.

Key category	Gas, fuel, activity	Observation	Recommendation	Revised estimate ⁽⁵⁾	Technical correction ⁽⁶⁾
		the chapter on Energy in the Revised 1996 IPCC Guidelines and therefore an estimate could be made to avoid underestimation in the sector.			
No	1.A.4.b. Residential CH ₄ solid 2005, 2008–2010	France states in the NIR that default EFs for CH ₄ for solid fuels are used for category 1.A.4.b. (residential). EFs are presented on page 570 of the NIR, and the EF for coal is 10 kg/TJ. However, the IPCC default EF CH ₄ for coal is 300 kg/TJ for the residential sector, and 10 kg/TJ for the commercial/tertiary sector. France responded to a question from the TERT that in France, coal used in the residential sector is combusted in big boilers which are comparable to those in the commercial/institutional sector.	The TERT recommends that France make a correct reference to the IPCC EFs used, and include the rationale given to the TERT for the choice of a commercial/tertiary EF for CH ₄ from solid fuels in the residential sector in the NIR, to justify that emissions are not underestimated.	No	No
No	1.B.1.a. Coal mining and handling Activity data	The TERT noted that the production of sub-bituminous coal is reported in the Reference Approach but that there are no reported emissions from mining. The TERT concluded that this could indicate missing emissions from the inventory and result in an underestimation.	The TERT recommends that France verify whether mining of sub-bituminous coal occurs and estimate the emissions if appropriate.	No	No
Yes	2.A.3. Limestone and dolomite use CO ₂ All years	The IEF for limestone and dolomite use is exceptionally low. A question from TERT led France to discover an error in the reporting of activity data related to limestone production and consumption in the iron and steel sector. However, France clarified that emissions are calculated and reported correctly.	The TERT recommends that France correct the reporting of the activity data to justify that emissions are not underestimated.	No	No
Yes	4.B. Manure management	In its 2012 inventory submission, France used a default Tier 1 methodology to estimate CH ₄ emissions from	The TERT recommends that France revise its GHG inventory following the revisions submitted to the	Yes	No

Key category	Gas, fuel, activity	Observation	Recommendation	Revised estimate ⁽⁵⁾	Technical correction ⁽⁶⁾
	CH ₄ All years	manure management. France used rounded values for VS excretion and default Methane Conversion Factors (MCF) for average temperate climates (15-25 °C) and for warm climates (>25 °C) for liquid manure. For other manure types France also used MCFs for warmer conditions than those occurring in France. This lead to overestimation of emissions. During the review, France submitted revised estimates for CH ₄ from manure management, addressing the issues identified by the TERT. The TERT agreed with the revised estimates.	TERT during the review.		
Yes	6.A.1. Managed waste disposal on land CH ₄ recovery All years	In its 2012 inventory submission, France reported no methane recovery from managed SWDS, reasoning that there is not sufficient information in the country to provide reliable estimates, therefore the default (0) is used. The TERT noted that there was data in Eurostat database on the use of landfill gas for energy, and concluded that the approach of France led to overestimation of emissions. During the review, France provided revised estimates which were accepted by the TERT.	The TERT recommends that France revise its GHG inventory following the revised estimate submitted to the TERT during the review and collect data on methane recovery from landfills to support accurate estimates of emissions from landfill for the full timeseries.	Yes	No

Annex 2 – Detailed technical corrections

There are no technical corrections applied to France’s estimates of emissions.

Annex 3 – Checks and tests completed

The initial checks (stage 1 and 2 checks), which cover the national inventory submissions, informed the stage 3 technical review with a view to:

- a) assess whether all emission source categories and gases are reported as required under Decision 280/2004/EC;
- b) assess whether sub-category sums are consistent with sectoral and national totals;
- c) assess whether emission data time series are consistent;
- d) assess whether implied emission factors across Member States are comparable;
- e) assess the use of 'Not Estimated' notation keys where IPCC Tier 1 methodologies exist;
- f) compare with the previous year's inventory submission of the Member State;
- g) limited sector-specific checks performed by ETC/ACM sector experts.

The EU initial checks were extended in 2012 to address additional elements needed for the 2012 technical review. The extended checks included:

- a) a detailed analysis of recalculations performed for the 2012 inventory submissions, in particular if recalculations are based on methodological changes.
- b) a comparison of the verified emissions reported under the EU ETS with the greenhouse gas emissions reported in GHG inventories. The verified emissions under the EU ETS are not fully comparable with the emissions reported in the GHG inventories. This comparison may only highlight areas where some Member States' data and trends deviate considerably from those of other Member States.
- c) a comparison of the results from Eurostat's reference and sectoral approach, based on energy data reported under Regulation (EC) No 1099/2008, with the Member States' reference and sectoral approach.

The specific activities of the 2012 technical review included:

- a) an analysis of the Member States' implementation of recommendations related to improving inventory estimates in accordance with the Revised 1996 IPCC Guidelines and the 2000 IPCC good practice guidance (GPG) as listed in the UNFCCC Annual Review Reports from the 2010 and 2011 UNFCCC review processes. Where UNFCCC recommendations have not been implemented, the analysis included an assessment as to whether the Member State provided adequate justification for this;
- b) an assessment of the time series consistency of the greenhouse gas emissions estimates, with a particular focus on the 2005 and 2008-2010 estimates;
- c) checking whether problems identified for one Member State in UNFCCC reviews might also have been a problem for other Member States (whether identified by the UNFCCC expert review team or not);
- d) an assessment of any recalculations made by a Member State in its inventory since the previous submission, and an assessment as to whether these were transparently reported and were in accordance with IPCC good practice guidance;
- e) a follow-up on any outstanding findings from existing and extended stage 1 and 2 checks;
- f) the inclusion of revised estimates as provided by Member States in response to the review, and as accepted by the TERT during the review;

- g) the provision of an estimate for any 'technical correction' to emission estimates reported by a Member State where it is believed that emissions reported by the Member State are overestimated, and a statement of the significance of these 'technical corrections' in comparison to the overall reported inventory estimates;
- h) the provision of recommendations where problems have been identified that do not require technical corrections.

Material from previous UNFCCC inventory reviews was used to inform the technical review, including the previous years' Annual Review Reports, which provide an indication of the overall quality of the inventory.

The TERT used additional technical information in the review process, such as EU ETS data, information from Eurostat, and F-gas data from the 'Preparatory study for a review of Regulation (EC) No 842/2006 on certain fluorinated greenhouse gases (⁷), as well as data from other international organisations.

⁷ Service contract 070307/2009/548866/SER/C4 to the European Commission

Annex 4 – Correspondence references

Date	Reference
15 March 2012	Final CRF submission under the MMD, version FRK-2012-v1.2
13 April 2012	Final NIR submission under the MMD
4 May 2012	Final CRF submission including Mayotte under the MMD, version FRM-2012-v1.3
21, 23 May 2012	Initial questions raised by the TERT during the desk review
7, 14, 16 June 2012	Additional questions raised by the TERT during the centralised review
4, 7, 15, 29 June 2012	Responses from France to TERT questions
8 June 2012	Telephone conference between TERT sectoral expert and technical expert from CITEPA on a fugitive emissions related question
21 June 2012	Draft technical corrections from TERT to France
6 July 2012	Response from France to TERT draft technical corrections
13 July 2012	Draft review report from TERT to France
3 August 2012	Response from France to draft review report
17 August 2012	Final review report to European Commission