

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

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Umweltbundesamt GmbH
Spittelauer Lände 5
1090 Vienna
Austria

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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 Latvia was reviewed in accordance with these guidelines.

This report presents the findings of the 2012 technical review of the greenhouse gas emission inventory of Latvia 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 Latvia 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 Latvia, 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 Latvia 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 did not receive any revised GHG emission inventory estimate from Latvia in response to its initial findings.
4. The TERT suggests that it is necessary to implement technical corrections to the GHG emission inventory estimates and to amend the reported GHG total (see Table 2).
5. As stated beneath Table 1, Latvia accepts the aggregated GHG emission inventory estimates presented in Table 2 including technical corrections as proposed by the TERT.
6. The TERT identified non-binding recommendations for improvements of Latvia's GHG inventory (see Table 3 in Annex 1).
7. The TERT considers that it received a response from Latvia that was sufficient in order to undertake the review appropriately.

Statement from Latvia on the conclusions of the TERT

Latvia agrees with the conclusions of the TERT, including the aggregated GHG emission inventory estimates presented in Table 2 and the recommendations in Table 3 in Annex 1.

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	14 April 2012, LVA-2012-v1.4		11 246.938	11 724.416	10 961.900	12 077.034
Technical corrections proposed by the TERT ⁽⁴⁾						
Industrial waste water, CH ₄	LV-6-1		-169.717	-148.100	-123.530	-91.600
Total GHG emissions including any accepted revised estimate received from Latvia and/or technical correction as proposed by the TERT			11 077.222	11 576.316	10 838.370	11 985.434
CO₂ emissions from 1.A.3.a Civil aviation	14 April 2012, LVA-2012-v1.4		3.266	2.965	0.292	0.438

Note: National totals exclude emissions from LULUCF and emissions reported under memo items (e.g. international aviation and maritime transport).

⁴ Difference: technical correction – original estimates. A positive difference indicates an increase compared to reported emissions. A negative number indicates a decrease compared to reported emissions. For more information on technical corrections, see Annex 2.

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⁾
Yes	1.A.3.b. Road transportation CO ₂ All years	Latvia reports in the NIR that the CO ₂ EF for gasoline is country specific. The TERT noted that the implied EFs for 1999 and later are lower than the values earlier in the time series and equal to the Revised 1996 IPCC Guidelines default value. The country-specific EFs for gasoline are in most other Member States a few percent higher than the EF of Latvia. This may indicate that emissions are underestimated.	The TERT recommends that Latvia investigates the appropriateness of the country-specific EF and revises it if appropriate.	No	No
Yes	2.F(a).3. Fire extinguishers HFCs 2008-2010	Latvia reports the same emission estimates for the entire time period 2007-2010 based on data from 2006. Furthermore, the emission estimate includes only emissions from stocks. The TERT considers that the market situation for HFCs in fire extinguishers might have changed from 2007 to 2010 and keeping the emissions constant could lead to an underestimation of actual emissions.	The TERT recommends that Latvia collect annual data to estimate emissions from this category. If this is not possible the TERT recommends that Latvia use appropriate interpolation/extrapolation methods in order to improve the accuracy of the estimates and avoid potential underestimation of emissions.	No	No

⁵ The GHG emission estimate for this category was revised by Latvia 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⁾
Yes	6.B.2.a. Industrial wastewater treatment CH ₄ All years	Please see technical correction reference LV-6-1. in Annex II.	The TERT recommends that the inventory is revised to address the issues raised in the technical correction. Furthermore, the TERT recommends that time series consistency is ensured by implementing the revision for all relevant years of the time series.	No	Yes
No	6.C.1. Biogenic AD All years	In response to a question from the TERT, Latvia explained that biogenic waste incineration includes only cremation and not other waste streams. The TERT concluded that this may lead to underestimation of emissions.	TERT recommends that Latvia verify the activity data on incinerated waste and estimate the shares of fossil and biogenic carbon in waste to avoid potential underestimation of emissions.	No	No

Annex 2 – Detailed technical corrections

Name of technical correction	Industrial wastewater emissions of methane				
Reference to transcript finding record	LV-6-1.				
Subsector	6.B.1. Industrial wastewater				
Gas/fuel/activity	CH ₄				
	2005	2008	2009	2010	
Original estimate	188.58	163.80	136.50	101.01	Gg CO ₂ eq.
Corrected estimate	18.86	15.70	12.97	9.41	Gg CO ₂ eq.
The underlying problem	Latvia has not considered the MCF parameter in the estimation of emissions from industrial wastewater.				
The rationale for the technical correction	Latvia is using a formula derived from Revised 1996 IPCC Guidelines for estimation of emissions from industrial wastewater, but the MCF parameter is not included in the calculations. This presumes that MCF=1. This value is applicable only for anaerobic treatment of all industrial wastewater. For aerobic treatment, MCF is 0 or 0.1.				
The assumptions, data and methodology used to calculate the technical correction	The DC values reported by Latvia in CRF Table 6.Bs1 were used as activity data. The TERT identified one anaerobic wastewater treatment plant in brewery Cesu Alus. Information from the Internet was used to obtain the amount of wastewater treated by the plant. All the biogas from the plant is combusted in the steam boilers of the brewery, and therefore the TERT assumed that there are no CH ₄ emissions from that plant. The TERT further assumed that the rest of industrial wastewater is treated aerobically or untreated (MCF=0.1). Methodology defined in the 2000 IPCC Good Practice Guidance (GPG) was used to calculate the emissions.				

Response from Latvia on all technical corrections

Latvia agrees with the technical correction applied for Industrial wastewater sector.

Final remarks by TERT

The TERT thanks Latvia for the very good cooperation during the review process.

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
14 April 2012	Final CRF and NIR submission under the MMD, version LVA-2012-v1.4
21, 23 May 2012	Initial questions raised by the TERT during the desk review
13, 14 June 2012	Additional questions raised by the TERT during the centralised review
4, 5, 19 June 2012	Responses from Latvia to TERT questions
21 June 2012	Draft technical corrections from TERT to Latvia
6 July 2012	Response from Latvia to TERT draft technical corrections
13 July 2012	Draft review report from TERT to Latvia
3 August 2012	Response from Latvia to draft review report
13 August 2012	Draft final review report from TERT to Latvia
15 August 2012	Response and additional information from Latvia to final review report
17 August 2012	Final review report to European Commission