

Final Review Report

2018 annual review of national greenhouse gas inventory data

pursuant to Article 19(2) of Regulation (EU) No 525/2013

Malta

30 June 2018

European Environment Agency



Reference: 340201/2017/765292/SER/CLIMA.C2
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Conclusions from the 2018 annual ESD review

This Final Review Report presents the findings from the 2018 annual review of the GHG emission inventory of Malta, pursuant to Article 19(2) of Regulation (EU) No 525/2013, with a view to monitoring Malta's achievement of its greenhouse gas emission reduction or limitation target pursuant to Article 3 of Decision No 406/2009/EC (the 'Effort Sharing Decision', ESD) in 2016.

The reviewers carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the national greenhouse gas inventory for the year 2016 submitted in 2018 by Malta pursuant to Articles 7(1) and 7(3) of Regulation (EU) No 525/2013.

The review consisted of two steps:

1. The EU inventory team (European Environment Agency (EEA), European Topic Centre on Air Pollution and Climate Change Mitigation (ETC/ACM), Joint Research Centre (JRC) and Eurostat) performed the initial checks under Step 1.
2. A Technical Expert Review Team (TERT) performed Step 2 of the 2018 annual ESD review.

More information on the Effort Sharing Decision and the procedures for the 2018 annual ESD review is presented in the annexes to this review report.

Step 1 conclusions

The EU inventory team identified 3 significant issues through the checks performed in Step 1. Therefore, Malta was subject to a second step of the 2018 annual ESD review. Only significant issues were subject to the second step review checks.

Step 2 conclusions

1. The TERT considered 3 significant issues from Step 1 in the second step of the review 2018. The TERT provided recommendations for 2 of these issues (see Table 1). Other issues raised during the annual review were clarified and are considered resolved.
2. The TERT identified cases where inventory data were prepared in a manner, which is inconsistent with UNFCCC guidance documentation or Union rules. In particular, the TERT identified an underestimate exceeding the threshold of significance pursuant to Article 31 of Commission Implementing Regulation (EU) No 749/2014.
3. Malta provided 1 revised estimate. The TERT did not agree with the revised estimate.
4. The TERT therefore deemed necessary 1 technical correction in the meaning of Article 19(3)(c) of Regulation (EU) No 525/2013 and calculated such technical correction in consultation with Malta. Table 2 below summarises the technical correction and further information is provided at the end of this review report. In its response to the draft technical correction, Malta stated that it agreed with the technical correction.
5. The TERT identified non-binding recommendations in order to improve the national inventory data of Malta (see Table 4).
6. The TERT considers that it received a response from Malta that was sufficient in order to undertake the annual review appropriately.

Table 1: Issues raised with Malta during the first and the second step

	Issues raised ¹	Recommendations	Revised estimates ²	Technical corrections ³
Total	14	2	-	1
Energy	5	2	-	1
IPPU	2	-	-	-
Agriculture	6	-	-	-
Waste	-	-	-	-
Cross-cutting	1	-	-	-

¹ Excluding findings related to Land use, land use change and forestry (LULUCF) and LULUCF KP.

² Revised estimates: changes in inventory estimates triggered by the review and provided by the Member State.

³ Technical corrections: changes in inventory estimates triggered by the review and provided by the TERT.

National totals

Table 2: National totals

Data / Source category	Reference	Emission estimates (kt CO ₂ equivalent) ¹ 2016
Total greenhouse gas emissions, including indirect CO ₂ , without land use, land-use change and forestry as reported by Malta pursuant to Articles 7(1) and 7(3) of Regulation (EU) No 525/2013	MLT_2018_9_12032018	1 909.754
Difference between original estimate(s) and technical correction(s) deemed necessary by the TERT²		
1.A.3.b Road transportation and 2.D.1 Non-energy use of lubricants, CO ₂	MT-1AB-2018-0001	3.831
Total greenhouse gas emissions including the technical correction deemed necessary by the TERT		1 913.584
CO ₂ emissions from 1.A.3.a Domestic aviation	MLT_2018_9_12032018	4.050
NF ₃ emissions	MLT_2018_9_12032018	-

¹ The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations (in particular of total GHG emissions and total ESD emissions), all available decimal places were used. Therefore, the totals shown may slightly differ from calculation results where only three decimals would be taken into account.

² A positive difference indicates an increase compared to reported emissions. A negative difference indicates a decrease compared to reported emissions.

Greenhouse gas emissions covered by Decision 406/2009/EC

Table 3: Greenhouse gas emissions covered by Decision 406/2009/EC

Data	Reference	Emissions (kt CO ₂ equivalent) ¹ 2016
Total greenhouse gas emissions including the technical correction deemed necessary by the TERT	<i>See Table 2 above</i>	1 913.584
Total verified emissions from stationary installations under Directive 2003/87/EC	Extracted by the European Commission from EUTL on 8 March 2018 (as agreed at the Working Group I of the Climate Change Committee on 18 May 2015) ²	579.539
CO ₂ emissions from 1.A.3.a Domestic aviation	<i>See Table 2 above</i>	4.050
NF ₃ emissions	<i>See Table 2 above</i>	-
Total ESD emissions		1 329.995

¹ The tables presented in this report show numbers rounded to three decimal places, although most numbers are available with greater precision. For all calculations (in particular of total GHG emissions and total ESD emissions), all available decimal places were used. Therefore, the totals shown may slightly differ from calculation results where only three decimals would be taken into account.

² The emissions of ETS stationary installations were independently verified and recorded in the EU Transaction Log (EUTL). These emissions do not derive from the national greenhouse gas emission inventory data and therefore the TERT was not tasked to review them.

Statement from Malta on the conclusions presented by the TERT

Malta agrees with the aggregated GHG emission inventory estimates presented in Table 3.

Technical corrections deemed necessary by the TERT

1	ESD Review Tool ID:	MT-1AB-2018-0001
	ESD Review Tool URL:	https://emrt-esd.eionet.europa.eu/2018/MT-1AB-2018-0001#tab-ga
	Member State:	Malta
	Sector:	1.A.3.b Road transportation and 2.D.1 Non-energy use of lubricants
	Gases:	CO ₂
	Fuel	Liquid fuels
	Completed by Sector Expert:	Laetitia Nicco
	Reviewed by Counterpart:	Ioannis Sempas
	Reviewed by Lead Reviewer:	Suvi Monni
	Reviewed by Quality Controller:	Justin Goodwin
The underlying problem:	The comparison between the reference approach and the sectoral approach showed inconsistencies in CO ₂ emissions for non-energy lubricant uses (accounted for under 2.D.1) and for energy uses (accounted for in 1.A.3.b for 2-stroke engines). The CO ₂ emissions in the sectoral approach seemed underestimated in comparison with the total lubricant supply available in Malta. Malta provided a revised estimate, assuming from their national statistics that all lubricants included in CN27101981 are used in 2-stroke engines. The TERT considered that this is unlikely and that the chosen approach leads to overestimation of emissions. Therefore, the TERT decided to calculate a technical correction.	
The rationale for the corrected estimate:	Underestimation of CO ₂ emissions from lubricant use.	
Summarise the methodology used:	Total lubricant consumption in Malta was provided by the Member state on the basis of an extract of Trade Statistics for lubricating oil made available by the National Statistics Office. The share of lubricants used in 2-stroke gasoline engines (1.A.3.b) is estimated based on gasoline consumption in motorcycles and the mixture ratio of 1:33 for lubricant/gasoline from the 2006 IPCC Guidelines (Volume 2, chapter 3, box 3.2.4). The remaining quantity of lubricant is considered as non-energy uses in 2.D.1. For CO ₂ emission estimates, the Tier 1 methodology from 2006 IPCC Guidelines is used both for combustion of lubricants in 2-stroke engines and for non-energy use of lubricants.	
References to other workbooks:		

2	Details of the corrected estimate								
			Original estimate (kt CO₂eq)						Notes
		Year	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	
	MT-1AB-2018-0001- OE	2016	0.103						
	Was a Revised Estimate received from the MS?		yes						
			Revised Estimate received from MS (kt CO₂eq)						Notes
		Year	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	
	MT-1AB-2018-0001-RE	2016	13.70						
	Was the Revised Estimate accepted by the TERT?		no						
			Technical Correction calculated by TERT (kt CO₂e)						Notes
	Year	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆		
MT-1AB-2018-0001-TC	2016	3.934							
Was the Technical Correction accepted by the MS?		yes							

Recommendations from the TERT including revised estimates and technical corrections

Table 4: Recommendations from the TERT

EMRT - ID	Key category	Category, gas, year	Conclusion step 2 note	Revised estimate	Technical correction
MT-1AB-2018-0001		1.AB Reference approach, CO ₂ , 2016	For categories 1.A.3.b Road transportation and 2.D.1 Lubricant use, lubricants, CO ₂ , all years, the TERT identified inconsistencies in CO ₂ emission estimates for non-energy lubricant uses (accounted for in 2.D.1) and for energy uses (accounted for in 1.A.3.b for 2-stroke engines), when comparing the reference approach and the sectoral approach. The CO ₂ emissions in the sectoral approach appeared underestimated in comparison with the total lubricant supply available in Malta. In response to a question raised during the review, Malta explained the current methodology applied to estimate CO ₂ emissions related to lubricant use but agreed that some CO ₂ emissions were missing from its sectoral approach (CO ₂ from 2-stroke engines in 1.A.3.b and from non-energy lubricant uses in 2.D.1). Malta provided revised estimates for CO ₂ , for all the years including 2016 but the TERT noted that the approach used lead to overestimation of emissions and thus disagreed with the revised estimate. The TERT calculated a technical correction for the year 2016 which was accepted by Malta and included in the review report. The estimates demonstrate that the issue is above the threshold of significance. The TERT recommends that Malta include revised estimates in its next submission and explain the revised methodology in the NIR accordingly. The TERT further noted that 2006 IPCC Guidelines for mobile combustion do not provide a default Tier 1 EF for CH ₄ and N ₂ O but recommends that Malta explore possibilities to improve the current reporting, i.e. use of notation key "NO".	No	Yes
MT-1-2018-0001		1 Energy, CO ₂ , 2016	For categories 1.A.2 Manufacturing industries and 1.A.4 Other sectors and gases CH ₄ and N ₂ O for biomass for year 2016, the TERT noted with reference to the CRF tables (1.A(a)s2 and 1.A(a)s4) that there may be an underestimate of emissions for biomass compared to activity levels in Eurostat statistics. In response to a question raised during the review, Malta explained that there are indeed missing biomass activity data and their related emissions for categories 1.A.2.g, 1.A.4.a, 1.A.4.b, and 1.A.4.c but Malta did not provide a revised estimate. Malta stated that the missing emissions will be included in its next submission. The TERT noted that the issue is below the threshold of significance for technical correction. The TERT recommends that Malta include the missing activity data for biomass in sectors 1.A.2 and 1.A.4 and estimate the related emissions in its next submission.	No	No

Annex I: Legal background and procedures of the 2018 annual ESD review

The Effort Sharing Decision No 406/2009/EC (ESD) sets national emission limits for greenhouse gas (GHG) emissions in the sectors outside the EU's Emission Trading System (ETS) for the period 2013-2020. The ESD and the Monitoring Mechanism Regulation (EU) 525/2013 (MMR) lay down annual reporting obligations, compliance checks and a Union review process to ensure that the compliance with annual GHG emission limits is assessed in a credible, consistent, transparent and timely manner. The requirements for the Union review of the national inventory data submitted by Member States are set out in Article 19 of the MMR.

The details concerning the review process, such as the timing and steps of conducting the annual and comprehensive reviews are set out in Chapter III and Annex XVI of the Commission Implementing regulations (EU) No 749/2014.

The objectives of the 2018 annual ESD review of Member States' GHG emission inventories are:

- a) to support the European Commission by ensuring it has accurate, reliable and verified information on annual GHG emissions for determining compliance with ESD targets for the year 2016 in a credible, consistent, transparent and timely manner, according to Article 19 (2) of the MMR;
- b) to assist Member States in improving the quality of their GHG inventories.

The 2018 annual ESD review of national greenhouse gas (GHG) inventory data was carried out for the compliance year 2016 pursuant to Article 19 of the MMR. The EEA review secretariat (consisting of Melanie Sporer, Claire Qoul and Emma Salisbury) coordinated the 2018 annual ESD review as foreseen in Article 28 of the Commission Implementing Regulation (EU) No 749/2014.

The scope of the 2018 annual ESD review is presented in Table A.1.1. The checks carried out during the 2018 annual ESD review are presented in Annex I.

The review consisted of 2 steps. Step 1 was combined with the 'EU QA/QC procedures' (i.e. initial checks) and was carried out by the EU inventory team (EEA, ETC/ACM, JRC, Eurostat). All findings from the initial checks that were relevant for the ESD and that were not resolved within the initial check phase were followed up in the second step of the annual review.

Step 2 of the 2018 annual ESD review was performed by a Technical Expert Review Team (TERT) under service contract 340201/2017/765292/SER/CLIMA.C2 of the Directorate General for Climate Action of the European Commission. The TERT consisted of the following experts:

- Lead Reviewers: Suvi Monni, Klaus Radunsky
- Energy: Laetitia Nicco, Graham Anderson, Ioannis Sempas
- IPPU: Kristina Kaar, Eva Krtkova
- Agriculture: Etienne Mathias, Katalin Lovas
- Waste: Hans Oonk, Juaj Farkas
- Quality controller: Justin Goodwin
- Co-ordinator: Bernd Gugele

The lead reviewers and sector review experts did not review emission inventories of Member States where these individuals have themselves contributed to the compilation of that inventory, or presently are or have been any part of the decision-making process related to the compilation of that inventory. Reviewers who are nationals of the Member State whose inventory is concerned, did not take part in the review of that inventory.

Step 2 of the review was performed on the basis of GHG emission data and the national inventory report (NIR) officially reported by Member States by 15 March 2018 under the MMR. Where relevant, the TERT calculated technical corrections for over- or underestimates identified in a mandatory category in the

Member States' GHG inventories that exceed the threshold of significance. Technical corrections were calculated for the year 2016.

Table A.1.1: Scope of the 2018 annual ESD review

Element	Scope	Further information
Member States	EU geographical coverage of the Member States	
Years	2016	
Gases	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆	NF ₃ is not covered by the ESD
Sectors	All emission source sectors excluding LULUCF	National totals exclude emissions from LULUCF and emissions reported under memo items
Indirect CO ₂ emissions	Included in national total	
Inventory Submission	Submissions received by 15 March, 2018	

Annex II: Checks carried out during the 2018 annual ESD review in line with Art.29 and 32 of the Commission Implementing Regulation (EU) No 749/2014

As part of the EU's effort to assist Member States in improving the quality of the GHG inventories, the checks to verify the transparency, consistency, comparability and completeness of the greenhouse gas inventory included:

First step review checks:

1. Assessment whether all emission source categories and gases required under Regulation (EU) No 525/2013 are reported;
2. Assessment whether emissions data time series are consistent;
3. Assessment whether implied emission factors across Member States are comparable taking the IPCC default emission factors for different national circumstances into account;
4. Assessment of the use of 'Not Estimated' notation keys where IPCC tier 1 methodologies exist and where the use of the notation key is not justified in accordance with paragraph 37 of the UNFCCC reporting guidelines on annual greenhouse gas inventories as included in Annex I to Decision 24/CP.19;
5. Analysis of recalculations performed for the inventory submission, in particular if the recalculations are based on methodological changes;
6. Comparison of the verified emissions reported under the Union's Emissions Trading System with the greenhouse gas emissions reported pursuant to Article 7 of Regulation (EU) No 525/2013 with a view of identifying areas where the emission data and trends as submitted by the Member State under review deviate considerably from those of other Member States;
7. Comparison of the results of Eurostat's reference approach with the Member States' reference approach;
8. Comparison of the results of Eurostat's sectoral approach with the Member States' sectoral approach;
9. Assessment whether recommendations from earlier Union or UNFCCC reviews, not implemented by the Member State could lead to a technical correction;
10. Assessment whether there are potential overestimations or underestimations relating to a key category in a Member State's inventory.

Second step review checks:

1. Detailed examination of the inventory estimates including methodologies used by the Member State in the preparation of inventories;
2. Detailed analysis of the Member State's implementation of recommendations related to improving inventory estimates as listed in its most recent UNFCCC annual review report made available to that Member State before the submission under review or in the final review report pursuant to Article 35(2) of this Regulation; where recommendations have not been implemented a detailed analysis of the justification provided by the Member State for not implementing them;
3. Detailed assessment of the time series consistency of the greenhouse gas emissions estimates;
4. Detailed assessment whether the recalculations made by a Member State in the given inventory submission as compared to the previous one are transparently reported and made in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories;
5. Follow-up on the results of the checks referred to in Article 29 of the Commission Implementing Regulation (EU) No 749/2014 and on any additional information submitted by the Member State under review in response to questions from the technical experts review team and other relevant checks.