Final Review Report

2025 Comprehensive Review of National Greenhouse Gas Inventory Data

pursuant to Article 38(1a) of Regulation (EU) No 2018/1999 and Article 4(4) of Regulation (EU) No 2018/841

Slovakia

28 August 2025

European Environment Agency

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Introduction and conclusions from the 2025 comprehensive review

This Final Review Report presents the findings from the 2025 review of the greenhouse gas (GHG) emission inventory of Slovakia.

The comprehensive review was carried in accordance with Article 38(1a) of Regulation (EU) 2018/1999 ('Governance Regulation'). The purpose of the comprehensive review is to enable the Commission to set out the annual limit values of Slovakia for the years from 2026 to 2030, in terms of tonnes of CO_2 equivalent, as required by Article 4(4) of Regulation (EU) No 2018/841 (the 'LULUCF Regulation').

The reviewers carried out checks to verify the transparency, accuracy, consistency, comparability and completeness of the national GHG inventory for the years 2016, 2017 and 2018 as well as 2021, 2022 and 2023 submitted in 2025 by Slovakia pursuant to Articles 26 (4) of the Governance Regulation.

The initial checks were carried out on the draft inventory submissions submitted pursuant to Article 26(3) of the Governance Regulation. The review builds on the initial checks performed by the EU inventory team (European Environment Agency (EEA) and the European Topic Centre on Climate Change Mitigation (ETC/CM)). The comprehensive review was performed by a Technical Expert Review Team (TERT).

More information on the procedures for the 2025 comprehensive review is presented in the annexes of this review report.

Initial check and comprehensive review conclusions

1. The TERT raised 25 issues with Slovakia during the initial check and comprehensive review (see Table 1). The TERT provided recommendations for 13 of these issues. Other issues raised during the comprehensive 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 two under-estimates exceeding the threshold of significance pursuant to Article 31 of Commission Implementing Regulation (EU) No 2020/1208.

3. Slovakia provided no revised estimates.

4. The TERT also deemed necessary technical corrections in the meaning of Article 38(2)(d) of Regulation (EU) No 2018/1999 and calculated such technical corrections in consultation with Slovakia. The technical corrections are presented in Table 2 of the present review report and are accompanied by evidence-based justification. In its response to the draft technical corrections, Slovakia stated that it agrees with the technical corrections.

5. The TERT identified recommendations in order to improve the national inventory data of Slovakia (see Table 3).

6. The TERT considers that it received a response from Slovakia that was sufficient in order to undertake the comprehensive review appropriately.

Table 1: Overview of issues raised with Slovakia

	Issues raised during the initial check	Issues raised during the comprehensive review	Recommendations	Revised estimates[1]	Technical corrections[2]
LULUCF	**3**	**22**	**13**	**-**	**2**

[1] Revised estimates: changes in inventory estimates triggered by the review and provided by the country.

[2] Technical corrections: changes in inventory estimates triggered by the review and provided by the TERT.

National totals for the purpose of Article 4(4) of Regulation (EU) 2018/841 (LULUCF)

Table 2 Totals net LULUCF emissions for the purpose of Article 4(4) of Regulation (EU) No 2018/841

Emission source category	Reference	Emission estimates (kt CO_2 equivalent)[1]					
		2016	2017	2018	2021	2022	2023
Total net greenhouse gas emissions for the LULUCF sector, pursuant to Article 26(4) of Regulation (EU) No 2018/1999	SVK-CRT-2025-V0.3_15-03-2025	-5 313.247	-5 204.826	-4 232.058	-7 212.820	-7 227.173	-7 775.624
Difference between technical corrections and original estimates deemed necessary by the TERT[2]							
4A Forest land, CO_2, DOM (Dead wood)	SK-4A-2025-0005	392.295	624.842	617.652	595.443	587.808	580.417
4B1 Cropland remaining cropland, CO_2, Living biomass	SK-4B1-2025-0001	1 109.354	1 156.921	1 124.481	1 136.228	1 150.752	1 142.254
Total net greenhouse gas emissions for the LULUCF sector including technical corrections		-3 811.598	-3 423.062	-2 489.924	-5 481.148	-5 488.613	-6 052.952

[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 all available decimal places were used. Therefore, the totals shown may slightly differ from calculation results where only three decimals are taken into account.

[2] A positive difference indicates an increase compared to reported emissions or decrease in reported removals. A negative difference indicates a decrease compared to reported emissions or increase in reported removals. For more information on revised estimates and/or technical corrections, see Annex 1.

Statement from Slovakia on the conclusions presented by the TERT

Slovakia agrees-with the aggregated GHG emission inventory estimates presented in Table 2.

Recommendations from the TERT, considering technical corrections deemed necessary by the TERT

Table 3: Recommendations from TERT (RE = Revised estimate; TC = Technical correction)

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
SK-4A-2025-0005	No	4A Forest land, CO_2, 1990-2023	For 4A1 Forest Land remaining Forest Land and 4A2 Land Converted to Forest Land, the annual carbon stock change (CSC) factor for deadwood of 0.08 t C/ha/year applied for the whole time series is derived by linearly interpolating average carbon stock measurements from NFIs in 2005 (6.6 ± 0.5 t C/ha) and 2015 (7.4 ± 0.7 t C/ha). The approach assumes an unlikely continuous increase in deadwood carbon stock in Forest land. During the review, Slovakia explained that it plans to improve these estimates by incorporating more dynamic time series data to enhance the accuracy and temporal representatives of deadwood CSC reporting, as soon as the relevant activity data become available (after the end of the next – the 3rd cycle of the NFI, in 2028). The TERT disagreed with the explanation provided by Slovakia, as the FAO Global Forest Resources Assessment have published deadwood C stock values for years 1990; 2000; 2010; 2015-2020, allowing a dynamic CSC estimate. Thus, using FAO dataset the TERT recalculated C stock changes in Dead Wood carbon pool in Forest land for the years 2016, 2017, 2018, 2021, 2022 and 2023, resulting in a significant technical correction, which was accepted by Slovakia. The TERT recommends that Slovakia include a complete time series of revised estimate demonstrating the annual dynamics of deadwood CSC for Forest Land in its next submission.	TC
SK-4B1-2025-0001	Yes	4B1 Cropland remaining cropland, CO_2, 1990-2023	For 4B1. Cropland remaining Cropland, the TERT noted a considerable imbalance between biomass gains and biomass losses reported. The annual biomass growth rates applied are as follows: orchards 2.35 t C/ha, vineyards 4.43 t C/ha, and gardens and hop gardens 2.1 t C/ha. These growth rates were derived from the average biomass stocks: 70.5 t C/ha for orchards, 132.9 t C/ha for vineyards (values taken from Hungarian inventory), and 63 t C ha^{-1} for gardens and hop gardens (2006 IPCC Guidelines default value). The TERT further noted that these annual growth rates were applied without considering the default assumption that perennial crop areas reach carbon stock equilibrium 30 years after conversion. As a result, biomass gains are significantly over-estimated. Additionally, for biomass losses from perennial cropland converted to annual cropland, Slovakia applied a stock change factor of 1.15 t C/ha, which should match but is lower than the average biomass stocks. Hence, the biomass losses are under-estimated. In response during the review, Slovakia stated that it could not verify the original source of the biomass values taken from the Hungarian inventory and confirm their applicability in the Slovakian inventory. Slovakia did not provide a revised estimate. Therefore, using IPCC default data for biomass in perennial cropland, the TERT recalculated C stock changes in perennial Biomass carbon pool in Cropland remaining Cropland for the years 2016, 2017, 2018, 2021,	TC

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
			2022 and 2023, resulting in a significant technical correction, which was accepted by Slovakia. The TERT recommends that Slovakia include a complete time series of revised estimate for carbon stock changes in perennial biomass in cropland, following relevant guidance in the 2006 IPCC Guidelines, Volume 4, Chapter 5.2. The TERT notes that the IPCC default methodology limits carbon biomass gains in perennial crop to the harvest/maturity cycle (30 years, as specified in Table 5.1), and calculate a biomass stock loss equivalent to the biomass carbon stock at harvest/maturity at the end of the cultural cycle (default value of 63 t C/ha, also from Table 5.1).	
SK-4-2025-0003	No	4 Land use, land-use change and forestry, CH_4, CO_2, N_2O, 1990-2023	In the 2025 NID (p. 312), Slovakia defines Forest Land as “land covered by all tree species serving for the fulfilment of forest functions.” Furthermore, on page 326, Slovakia states that wooded land below forest thresholds (i.e., tree species covering less than 0.3 ha, canopy cover below 20%, or woody vegetation not expected to exceed 5 m in height) is reported under the Forest Land Remaining Forest Land category as well. This suggests that Forest Land includes areas both above and below typical forest thresholds. At the same time, the definition of Cropland includes perennial woody crops. As these systems are also composed of tree or shrub species, the definitions of Forest Land and Cropland could result in classification ambiguity if based solely on vegetation structure. In line with the 2006 IPCC Guidelines (Vol. 4, Ch. 3), land-use categories must be mutually exclusive. The TERT asked to clarify on how Slovakia ensures that areas classified as Cropland do not match the definition applied to Forest Land. Further, for other wooded land no information on the thresholds (height, cover) of such land type is reported to assess whether it meets the forest land definition. In response to a question raised during the review, Slovakia explained that Forest land in Slovakia is based on the Forest Act, which covers the aforementioned threshold for forest, but also dwarf pine stands. This definition is consistent with the definition of forest given in the cadastre, whose areas were used for inventory purposes. Similarly, the cadastre precisely defines what Cropland is. Each land parcel can only be registered under one category. Therefore, there is no situation where areas classified as Cropland could otherwise be classified as Forest Land. The TERT recommends that Slovakia include the provided information about the classification of other wooded land under Forest Land and of perennial cropland under Cropland in the NID of the next submission to enhance transparency. Specifically, it should be clarified that forest stand parameters are not used as a threshold for distinguishing other wooded land from forest land as well as for perennial cropland, and that alignment between the land-use definitions in the inventory and in the cadastre data ensures that misclassification of areas is not possible.	No
SK-4A-2025-0002	No	4 Land use, land-use	For 4A Forest Land, the TERT noted that Slovakia reports a category of “other conifers” under Forest Land, which according to the NID (p. 326) includes wooded areas below forest definition thresholds,	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
		change and forestry, CO_2, 1990-2023	such as Pinus mugo in alpine zones. The TERT observed that the current annual increment (CAI) values assigned to this subcategory (NID, p. 322) appear similar to those used for deciduous tree species, although such alpine vegetation typically has much lower productivity. In response to a question raised during the review, Slovakia explained that all forests are considered as managed and that Pinus mugo stands below forest thresholds are included in increment estimates as other conifers and because this kind of forest is protected in Slovak conditions, there is no harvests there. Slovakia clarified that data, including on increment, in table 6.9 for other conifers apply to Pinus mugo. To improve transparency, the TERT recommends Slovakia to include this information in the NID and provide the relevant information to characterize the category of "other conifers". Considering the category other conifers include multiple tree species, the provided information should clarify harvest and growth rates for each species included in the category.	
SK-4A-2025-0006	No	4A Forest land, CO_2, 1990-2023	The TERT noted that the NID (p. 326) refers to "organic soil" in the context of carbon stock estimates. However, no organic soils are reported in the inventory under 4A Forest Land or other land-use categories. Furthermore, the NID (p. 327) indicates that carbon stocks were measured in NFI and FMS plots, with reported values of up to 486.8 t C/ha in the 0-20 cm layer. Such high carbon stocks may be an indication for organic soils. In response to a question raised during the review, Slovakia confirmed that reported values of up to 486.8 t C/ha in the 0-20 cm layer could be too high for a mineral soil. Slovakia explained that neither monitoring plots nor inventory plots have organic soil (according to the respective definition) and confirmed that the presence of organic soils should be further evaluated based on detailed soil mapping, not only based on the information from monitoring systems. Slovakia explained that the highest soil organic carbon stocks are in mountain regions with Andosols or Umbrisols. Slovakia informed the TERT that the value indicated in the NID is not correct for the depth 0-20 cm and that the maximum value should be corrected in the text. The TERT recommends that Slovakia enhance transparency on their reporting of organic soils by providing clear evidence for the presence or absence of organic soils in Slovakia.	No
SK-4A-2025-0004	No	4A Forest land, CO_2, 1990-2023	For 4A Forest Land, the TERT noted that information provided on page 323 of the NID implies that current annual increment (CAI) values for spruce, fir, pine, beech, oaks, and poplar are derived from national growth and yield tables (Halaj and Petráš, 1998), using age and "bonita" degree estimates provided annually by NFC-IFRI Zvolen. However, Slovakia distinguishes 20 tree species or species groups for carbon stock change estimation in biomass. In response to a question raised during the review, Slovakia explained that the current annual increment (CAI) values for all tree species (for the full set of species/groups distinguished in the inventory) are provided annually by NFC. However, the values of BCEFi for spruce, fir, pine, beech, oaks, and bred poplars are derived from national growth	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
			and yield tables (Halaj and Petráš, 1998), using age and "bonita" degree. And these BCEFi are used for conversion of net annual increment in volume to above-ground biomass growth for individual tree species in the following way: BCEFi for pine is used also for larch and other conifers; BCEFi for beech is used also for hornbeam, maple, ash, elm, Locust, birch, alder, linden and other broadleaves; BCEFi for oak is used also for turkey oak; BECEFi for bred poplars is used also for poplars and willow. To improve transparency, the TERT recommends that Slovakia include the provided information in its next submission, along with a justification for the applicability to other tree species of BCEFi values derived from data for spruce, fir, pine, beech, oaks, and poplar.	
SK-4A2-2025-0001	Yes	4A2 Land converted to forest land, CO_2, 1990-2023	The TERT noted that biomass losses are not reported for land converted from Cropland and Grassland to Forest Land, while both biomass gains and losses are reported for Cropland and Grassland categories. This omission is not consistent with the IPCC 2006 Guidelines, which require reporting of carbon stock changes for all relevant pools during land-use conversions, and it affects the completeness and internal consistency of the LULUCF reporting. In response to a question raised during the review, Slovakia explained that the changes in living biomass and deadwood are assumed to be zero at conversion due to common afforestation practices; if any vegetation exists in cropland or grassland it is not removed before conversion to forest land and remains in afforested areas. Slovakia also reported that land converted to forest land is located exclusively on the steeper slopes of the Carpathian Mountains with less productive soil, while rich soil in the lowlands remains managed under cropland or grassland for economic reasons. Therefore, when these areas are converted to forest land, existing grass vegetation is not removed to prevent intensive soil erosion on mountain slopes. Slovakia also clarified that it used equations 2.15 and 2.16 for estimating CSC in biomass in the land converted to forest land category. The TERT partially agreed with the explanation provided. The applicability of the approach of omitting biomass losses for Grassland is supported by national conditions, if afforestation in Slovakia typically occurs on the steeper slopes of the Carpathian Mountains, where existing grass vegetation is not removed in order to prevent intensive soil erosion. Given the likely low initial carbon stock in such mountainous grasslands, afforestation impact on initial C stock in living biomass is likely negligible, therefore the TERT agrees that the applied approach is consistent with good practice in the case of Grassland afforestation. However, reported areas for Cropland to Forest land indicate that afforestation of Croplands is occurring in Slovakia, therefore biomass on land before conversion has to be taken into account in reporting C stock changes in living biomass due to Cropland conversion to Forest land. Associated biomass losses should be reported for consistency, since biomass gains have to be reported for land converted to Cropland. The TERT noted that the issue is below the threshold of significance for a technical correction – according to the Tier 1 method, carbon stock losses in living biomass in Cropland converted to Forest land during the years	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
			2016–2018 and 2021–2023 reaches 4.97 kt CO_2 eq/year. The TERT recommends that Slovakia improve the reporting of living biomass carbon stock changes associated with land-use conversions, particularly biomass losses for Cropland converted to Forest Land (default C stock 5 t C/ha in croplands in provided by 2006 IPCC Guidelines). Given that afforestation can occur in both lowland and mountainous areas — and that these conditions can influence biomass carbon stock change dynamics — the TERT recommends that carbon stock changes for such areas are reported separately in the NID to improve accuracy.	
SK-4B-2025-0002	No	4B Cropland, CO_2, 1990-2023	The TERT noted that on page 336 of the NID, Slovakia states that emissions and removals were estimated for changes in woody perennial biomass stocks of 4B1 Cropland remaining Cropland, including below-ground biomass. However, the NID subsequently provides only above-ground biomass carbon stock values at harvest, specifically: 70.5 t C/ha for orchards and 132.90 t C/ha for vineyards. No information is provided on the assumptions or factors used to estimate belowground biomass carbon stocks for perennial cropland or land-use conversions involving perennial and annual cropland. In response, Slovakia explained that the change in biomass is only estimated for perennial woody crops. For annual crops, increase in biomass stocks in a single year is assumed equal to biomass losses from harvest and mortality in that same year – thus there is no net accumulation of biomass carbon stocks. Further, it is assumed that there is no net change across time in below-ground biomass of perennial trees in agricultural systems. The TERT recommends that Slovakia improve the methodological description for calculating biomass gains and losses, particularly the treatment of belowground biomass, in the NID of future submissions. If the revised estimates in response to observation SK-4B1-2025-0001 results in living biomass in Cropland remaining Cropland remaining a significant carbon pool, the TERT recommends transitioning to a higher Tier method that includes carbon stock changes in below-ground biomass.	No
SK-4B2-2025-0001	Yes	4B2 Land converted to cropland, CO_2, 1990-2023	The TERT noted that Slovakia reports both biomass gains and losses for 4B2 Cropland remaining Cropland, and reports biomass losses for several conversion categories such as Cropland converted to Settlements and Cropland converted to Other Land. However, biomass gains are not reported for Forest Land converted to Cropland, Grassland converted to Cropland and Other land converted to Cropland. This omission is not consistent with the completeness and consistency requirements of the 2006 IPCC Guidelines (Vol. 4, Ch. 5), which require that carbon stock changes in living biomass be reported for all relevant land-use transitions where biomass is expected to accumulate. In response to a question raised during the review, Slovakia explained that did not identify any direct transfer from other categories to perennial cropland, only to annual Cropland. Therefore, no biomass gain is reported in the transfer. If a new orchard is established, the soil is first prepared -it is ploughed,	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
			fertilized, pre-crops are grown- and trees are planted a few years later. Therefore, a direct transfer from forest to vineyard, orchard, etc. is not possible and it is not possible to report biomass gain directly in the transfer to cropland. Revised estimates for the years 2016–2018 and 2021–2023, including biomass gains for Forest Land converted to Cropland, are zero because during these years the conversion area was zero. Revised estimates for the years 2016–2018 and 2021–2023, including biomass gains for Grassland to Cropland, are zero because the Grassland category does not include any woody biomass increment in Slovak conditions. The TERT disagreed with the explanation provided by Slovakia. According to the 2006 IPCC Guidelines, changes in carbon stocks in biomass resulting from land conversion to Cropland occur due to the removal of existing vegetation and its replacement with Cropland vegetation. This applies to all land-use conversions to all cropland types — including annual crops. Consequently, the current reporting omits biomass carbon stock changes. This is not consistent with the 2006 IPCC Guidelines nor the LULUCF Regulation, which requires that all sources and sinks be reported using at least a Tier 1 method. The TERT noted that the issue is below the threshold of significance for technical correction. According to the Tier 1 method, carbon stock gains in living biomass in lands converted to Cropland during the years 2016–2018 and 2021–2023 amount to 7.13 kt CO_2 eq/year. During the review, Slovakia agreed to the necessity to include the missing estimates in the inventory. The TERT recommends that Slovakia include a complete time series of estimates of biomass gains for Forest Land converted to Cropland, Grassland converted to Cropland and Other land converted to Cropland in its next submission	
SK-4C-2025-0001	No	4B Cropland, 4C Grassland, CH_4, CO_2, N_2O, 1990-2023	The TERT noted that Slovakia does not report biomass burning emissions for 4B Cropland or 4C Grassland, including both controlled burning and wildfires. In the 2025 NID (p. 353), Slovakia states that “biomass burning is not a common practice in Cropland, Grassland or other land-use categories,” and that these activities are “strictly prohibited by Act No. 314/2001 Coll. on Fire Protection”. While this may justify the absence of controlled burning, the non-occurrence of wildfires can unlikely be justified by legislation alone. The 2006 IPCC Guidelines provide default Tier 1 methodologies for Grassland biomass burning (Vol. 4, Ch. 6, Section 6.2.4), and Cropland biomass burning, including crop residue burning (Vol. 4, Ch. 5, Section 5.3.4). In response to a question raised during the review, Slovakia explained that it is currently investigating whether wildfires occur in Cropland or Grasslands and whether relevant AD exists (burning areas). If AD areas available, Slovakia plans to include the calculation of GHG emissions from wildfires in next year's inventory (if it can be calculated). According to Global Wildfire Information System (GWIS), the annual area burned has reached approximately 0.8 kha in the period after 2016. Therefore, emissions estimated using the Tier 1 approach of the 2006 IPCC Guidelines fall below the threshold of significance for a technical correction. The TERT recommends that Slovakia include reporting of emissions from biomass burning in Cropland and	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
			Grassland in future submissions, as data from the Global Wildfire Information System (GWIS) indicate that wildfires occur within these land-use categories.	
SK-4C2-2025-0001	Yes	4C2 Land converted to grassland, CO_2, 1990-2023	The TERT noted that Slovakia has not reported biomass losses for 4C2b Cropland converted to Grassland, although both biomass gains and losses are reported within the Cropland category. Similarly, biomass gains are not reported for Forest Land converted to Grassland and Other Land converted to Grassland, while biomass gains are reported for Cropland converted to Grassland. This inconsistent treatment of biomass carbon stock changes across land-use transitions is not in line with the completeness and consistency requirements of the 2006 IPCC Guidelines (Vol. 4, Ch. 6). The Guidelines require that carbon stock changes in living biomass be reported for all relevant transitions unless they are demonstrated to be insignificant or not occurring. In response to a question raised during the review, Slovakia explained that in national conditions no transfers between perennial Cropland and Grassland were identified in some years. For this reason, the biomass losses are zero. Slovakia reported all carbon stock changes in living biomass for all relevant transitions or used the relevant Notation Key. Biomass losses for Cropland converted to Grassland for the years 2016–2018 and 2021–2023 are zero as well as biomass gains for Forest Land converted to Grassland and Other Land converted to Grassland for the years 2016–2018 and 2021–2023. The TERT disagreed with the explanation provided by Slovakia. According to the 2006 IPCC Guidelines, changes in carbon stocks in biomass resulting from land conversion to grassland occur due to the removal of existing vegetation and its replacement with grassland vegetation. This applies to all land-use change types, including conversions from all cropland types — not only perennial croplands. Consequently, the currently reporting omits biomass carbon stock changes. This is not consistent with the 2006 IPCC Guidelines or the LULUCF Regulation, which requires that all sources and sinks be reported using at least a Tier 1 method. The TERT noted that applying the Tier 1 method and default values -i.e. biomass carbon stock in cropland of 5 tonnes C/ha, in grassland biomass of 6 tonnes C/ha, (assuming 50% C content on 12 tonnes d.m./ha)-, carbon stock changes due to Biomass losses for Cropland converted to Grassland, Biomass gains for Forest Land converted to Grassland, and Biomass gains for Other Land converted to Grassland for the years 2016–2018 and 2021–2023 are below the threshold of significance for a technical correction.. The TERT recommends that Slovakia include, in its next submission, estimates of biomass losses for Cropland converted to Grassland, as well as biomass gains for Forest Land and Other Land converted to Grassland, for the respective years in which such land-use conversions occurred. The TERT note that default annual biomass C stock values for Grassland are provided in Vol. 4, Ch. 6, page 6.27 of the 2006 IPCC Guidelines, and that, according to the 2006 IPCC Guidelines, which assign land with bare soils to the Other Land category, the C stock of biomass in Other land is 0 t C/ha.	No

EMRT-ID	Key category	Category, gas, year	Recommendation	Revised estimate or technical correction in 2025 (RE/TC/no)
SK-4G-2025-0003	Yes	4G Harvested wood products, CO_2, 1990-2023	For 4G Harvested Wood Products, the TERT noted that Slovakia begins estimating carbon stock changes (CSC) in harvested wood products (HWP) from the year 1961. However, according to the 2006 IPCC Guidelines (Vol. 4, Ch. 12, Section 12.2.3), it is good practice to begin HWP calculations from 1900 to avoid bias in the initial carbon stock at the start of the inventory time series (i.e. 1990). The Guidelines provide a default methodology for extrapolating activity data back to 1900 using Equation 12.6. The TERT recommended that Slovakia provide revised HWP CSC estimates using extrapolated activity data starting from 1900. Slovakia provided a revised estimate for years 2016, 2017, 2018, 2021, 2022 and 2023 and stated that it would be included in the next submission. The TERT agreed with the revised estimate provided by Slovakia. The TERT recommends that Slovakia include the revised estimate in its next submission.	No
SK-4G-2025-0002	Yes	4G Harvested wood products, CO_2, 1990-2023	During the last UNFCCC review (ARR 2022), the ERT recommended (L.19) that Slovakia provide information on the parameters used to estimate carbon stock changes in harvested wood products (HWP), specifically wood densities and carbon fraction values by HWP type. The TERT could not identify this information in the 2025 NID. While HWP carbon pools are reported, the lack of transparency regarding these basic parameters prevents full verification of the estimates. In response to a question raised during the review, Slovakia explained that it followed the ERT recommendation (L.19 - ARR 2022) and provided further information on parameters for estimating CSC for HWP. Following default C conversion factors cf (from the Table 12.1 of 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Refinement, p. 12.21) for estimating CSC of HWP were used: sawn wood (aggregate) 0.229 Mg C/m^3 (density 0.458 Mg/m^3, C fraction 0.5), wood-based panels (aggregate) 0.269 Mg C/m^3 (density 0.595 Mg/m^3, C fraction 0.454) and paper and paperboard (aggregate) 0.386 Mg C/Mg (relative dry mass 0.9 Mg/Mg). The TERT recommends that Slovakia include the provided information in its next submission.	No

Technical corrections deemed necessary by the TERT[1]

1	EMRT ID:	SK-4A-2025-0005
	EMRT URL:	https://emrt-esd.eionet.europa.eu/2025/SK-4A-2025-0005
	Country:	Slovakia
	Sector:	4A Forest land
	Gases:	CO_2
	Pool:	DOM (Dead wood)
	Completed by LULUCF Expert:	Aldis Butlers
	Reviewed by Thematic Counterpart Expert:	
	Reviewed by Lead Reviewer:	Sandro Federici
	Reviewed by Quality Controller:	Justin Goodwin
	The underlying problem:	Deadwood in Forest Land remaining Forest Land is derived by linearly interpolating average carbon stock measurements from NFIs in 2005 (6.6 ± 0.5 t C/ha) and 2015 (7.4 ± 0.7 t C/ha). The TERT noted that for Forest Land, the same constant CSC factor of 0.08 t C/ha/year is applied, as indicated on NID p. 330. The approach assumes a continuous endless increase in deadwood carbon stock in Forest land.
	Summarise the methodology used:	C stock changes in deadwood were derived from deadwood C stock values published by FAO Global Forest Resources Assessment (FRA, https://www.fao.org/forest-resources-assessment/fra-2020/country-reports/en/). Initially, a ratio between the deadwood C stock values published in NID and FRA for the year 2015 was calculated. The ratio was applied to interpolated FRA data to get a complete time series of deadwood C stock. The time series of deadwood C stocks has been used to calculate carbon stock changes for the entire time series.

2

	Original estimate (Gg CO_2e)				Notes
Year	CO_2	CH_4	N_2O	Total GHG	
2016	-583.220			-583.220	
2017	-584.179			-584.179	
2018	-584.777			-584.777	
2021	-586.040			-586.040	
2022	-586.253			-586.253	
2023	-586.718			-586.718	

	Technical Correction calculated by TERT (Gg CO_2e)				Notes
Year	CO_2	CH_4	N_2O	Total GHG	
2016	-190.925			-190.925	
2017	40.664			40.664	
2018	32.876			32.876	
2021	9.403			9.403	
2022	1.555			1.555	
2023	-6.300			-6.300	

	Difference between TC and OE (Gg CO_2e)			
Year	CO_2	CH_4	N_2O	Total GHG
2016	392.295			392.295
2017	624.842			624.842
2018	617.652			617.652
2021	595.443			595.443
2022	587.808			587.808
2023	580.417			580.417

1	EMRT ID:	SK-4B1-2025-0001
	EMRT URL:	https://emrt-esd.eionet.europa.eu/2025/SK-4B1-2025-0001
	Country:	Slovakia
	Sector:	4B1 Cropland remaining cropland
	Gases:	CO_2
	Pool:	Living biomass
	Completed by LULUCF Expert:	Aldis Butlers
	Reviewed by Thematic Counterpart Expert:	
	Reviewed by Lead Reviewer:	Sandro Federici
	Reviewed by Quality Controller:	Justin Goodwin
	The underlying problem:	An overestimation of biomass gains in perennial crops due to the application of continuous biomass accumulation without accounting for the carbon stock equilibrium typically reached after 30 years. In addition, unverified average carbon stock values have been used. Biomass losses from converted perennial crops are under-estimated, as the applied stock loss factor is lower than the assumed average carbon stock in mature perennial crops.
	Summarise the methodology used:	The analysis uses annual area data on conversions between perennial and annual crops since 1990, as provided by Slovakia (ESR_EU_SK-4B1-2025-0001.xlsx). The default carbon stock value of 63 t C/ha from the 2006 IPCC Guidelines is applied, assuming that perennial crops reach maturity—and thus carbon stock equilibrium—within 30 years, with no further net carbon stock increase beyond that point. The same carbon stock value (63 t C/ha) is also applied as the amount of biomass lost in the year of conversion from perennial to annual crops.

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	Original estimate (kt CO_2e)				Notes
Year	CO_2	CH_4	N_2O	Total GHG	
2016	-1 096.880			-1 096.880	
2017	-1 126.660			-1 126.660	
2018	-1 125.636			-1 125.636	
2021	-1 132.208			-1 132.208	
2022	-1 124.095			-1 124.095	
2023	-1 122.989			-1 122.989	

	Technical Correction calculated by TERT (kt CO_2e)				Notes
Year	CO_2	CH_4	N_2O	Total GHG	
2016	12.474			12.474	
2017	30.261			30.261	
2018	-1.155			-1.155	
2021	4.019			4.019	
2022	26.657			26.657	
2023	19.265			19.265	

	Difference between TC and OE (kt CO_2e)			
Year	CO_2	CH_4	N_2O	Total GHG
2016	1 109.354			1 109.354
2017	1 156.921			1 156.921
2018	1 124.481			1 124.481
2021	1 136.228			1 136.228
2022	1 150.752			1 150.752
2023	1 142.254			1 142.254

[1] Carbon stock changes (in kt C) from the CRT tables have been converted into kt CO_2 by multiplying by -44/12.

Annex I: Legal background and procedures of the 2025 comprehensive review

The LULUCF Regulation (EU) 2018/841 sets net emission removal targets for 2030 and net emission budgets in the period 2026 to 2029. In Article 4(5) of the LULUCF Regulation, the Commission is required to adopt decision setting out the annual limit values for net greenhouse gas removals for each year in the period from 2026 to 2029, for which it shall carry out a comprehensive review.

The Governance Regulation (EU) 2018/1999 lays down annual reporting obligations, compliance checks and a 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 review of the national inventory data submitted by countries are set out in Article 38 of Regulation (EU) 2018/1999. The details concerning the review process, such as the timing and steps of conducting of the annual and comprehensive reviews are set out in Chapter V and Annex XXII of the Commission Implementing Regulation (EU) No 2020/1208.

The 2025 reviews were thus held as a comprehensive review in line with Article 38(1a) of Regulation (EU) 2018/1999in concert with the reviews required by the LULUCF Regulation.

Objectives

The objectives of the comprehensive review of countries' GHG emission inventories in 2025 are:

a) to support the European Commission by ensuring it has accurate, reliable and verified information on annual GHG emissions for
    - determining the budget for the period 2026-2029 according to Article 4(4) of Regulation (EU) 2018/841.

b) to assist countries in improving the quality of their GHG inventories.

Procedures

The scope of the 2025 comprehensive review is presented in Table A-1. The checks carried out during the 2025 comprehensive review are presented in Annex II.

The initial checks were carried out by the EEA with support from the ETC/CM. All findings from the initial checks that were partly resolved or not resolved within the initial check phase were followed up in the comprehensive review.

The EEA LULUCF experts consisted of the following experts:

- Sector experts: Raul Abad-Viñas and Peter Iversen (EEA)
- Quality coordinator: Lucia Perugini (EEA)

The comprehensive review 2025 was performed by a Technical Expert Review Team (TERT) under service contract **No 3502/B2025/EEA.60384** implementing Framework service contract No EEA/CET/24/002of the European Environment Agency. The scope of the service contract covers Iceland and Norway. The lead reviewers and sector review experts did not review emission inventories of countries 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.

The TERT consisted of the following experts:

- Iordanis Tzamtzis, Lora Stoeva, Rosie Brook, Carmen Schmid, Boštjan Mali, Andis Lazdiņš, Sven van Baren, Bradley Matthews, Valentin Bellassen, Aldis Butlers, Mattias Lundblad, Juan José Rincón Cristóbal, Etienne Mathias, Erwin Moldaschl and Mélanie Juillard;
- Lead reviewers: Peter Weiss, Kevin Black, Sandro Federici and Marina Vitullo.

The comprehensive review was coordinated by Bernd Gugele and Justin Goodwin.

The EEA review secretariat consisting of Claire Qoul, Lærke Callisen, Peter Iversen and Roxy Cottey prepared and coordinated the comprehensive review as foreseen in Article 30 of Commission Implementing regulation (EU) No 2020/1208 and Article 42 of the Governance Regulation (EU) 2018/1999.

The comprehensive review was performed on the basis 15 April submissions of GHG emission data and the national inventory document (NID) under the Governance Regulation.

Where relevant, the TERT calculated technical corrections for over- or under-estimates identified in a mandatory category in the countries' GHG inventories that exceed the threshold of significance. Technical corrections have been calculated only for the years 2016-2018 and 2021-2023. If the technical correction exceeds the threshold of significance for at least one year of the inventory under review (2021-2023) but not for all the years, the technical correction was calculated only for those years where the technical correction exceeds the threshold of significance.

Table A-1: Scope of the comprehensive review 2025

Element	Scope	Further information
Countries	EU geographical coverage of the Member States, Norway and Iceland	
Years	2016, 2017, 2018, 2021, 2022 and 2023	According to GovReg Article 38(1a) According to LULUCF Article 4(4)
Gases	CO_2, CH_4 and N_2O	
Sectors	LULUCF	

Annex II: Checks carried out during the 2025 initial checks and review

The checks carried out during the 2025 initial checks are pursuant to Article 37(4) of Regulation (EU) 2018/1999 and Article 6 of Commission Delegated Regulation (EU) 2020/1044 and the comprehensive review following Article 38(1a) of Regulation (EU) 2018/1999 and Article 30 of the Commission Implementing Regulation (EU) No 2020/1208

Initial checks may include:

1. Assessment whether all emission source categories and gases required under Regulation (EU) No 2018/841 are reported;
2. Assessment whether emissions data time series are consistent;
3. Assessment whether implied emission factors across Member States/countries 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 point 32 of the Annex to Decision 18/CMA.1;
5. Analysis of recalculations performed for the inventory submission, including whether the recalculations are based on methodological changes;
6. Assessment whether issues from earlier Union initial checks and reviews as well as recommendations from UNFCCC reviews have been implemented by the Member State;
7. Assessment of the accuracy of Member States' emissions by sources and removals by sinks estimates in relation to Union key categories;
8. Assessment of the transparency and completeness of the methodological descriptions reported by Member States for the Union key categories;
9. Assessment of monitoring and reporting of emissions by sources and removals by sinks in the land use, land use change and forestry (LULUCF) sector pursuant to Part 3 of Annex V to Regulation (EU) 2018/1999, including the assignment of key categories, Tier methodology applied, and a comparison of reported land use and land use change activity data with information derived from the Union and Member State programmes and surveys.

Comprehensive 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 where recommendations have not been implemented;
3. Detailed analysis of the justification provided by the Member State for not implementing them;
4. Detailed assessment of the time series consistency of the greenhouse gas emissions estimates;
5. 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 greenhouse gas inventory guidelines;
6. Follow-up on the results of the initial checks 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; -
7. Other relevant checks complementing the initial checks;
8. Check that all gases and pools are reported under LULUCF.