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Report on the technical expert review of the first biennial transparency report of Latvia*

Addendum

Summary

This addendum to the report on the technical expert review of the first biennial transparency report of Latvia, conducted by a technical expert review team in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement, contains the results of the review of the consistency of the information submitted by the Party with those modalities, procedures and guidelines. The review took place from 12 to 16 May 2025 in Riga.

* In the symbol for this document, 2024 refers to the year in which the biennial transparency report was submitted, not to the year of publication.

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Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
2019 Refinement to the 2006 IPCC Guidelines	*2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
BTR	biennial transparency report
CH_4	methane
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
CRT	common reporting table
CTF	common tabular format
DE	digestible energy
DE%	digestible energy expressed as a percentage of gross energy
EU	European Union
Eurostat	statistical office of the European Union
FAO	Food and Agriculture Organization of the United Nations
GE	gross energy intake
GHG	greenhouse gas
HWP	harvested wood products
IE	included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	industrial processes and product use
LULUCF	land use, land-use change and forestry
ME	metabolizable energy required for maintenance and growth
MPGs	modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement
N	nitrogen
N_2O	nitrous oxide
NA	not applicable
NDC	nationally determined contribution
NE	not estimated
NFI	national forest inventory
NID	national inventory document
NO	not occurring
PaMs	policies and measures
TERT	technical expert review team
UE%	urinary energy expressed as a percentage of gross energy
Y_m	methane conversion rate
Y_m%	gaseous energy expressed as a percentage of gross energy

Areas of improvement[1] identified during the technical expert review of the Party's first biennial transparency report

Tables 1–20 present the results of the review of the consistency with the MPGs[2] of the information submitted by Latvia in its BTR1. All recommendations and encouragements contained in the tables are for the next BTR or national inventory report, unless otherwise specified.

A. General reporting provisions

Table 1
Areas of improvement relating to general reporting provisions

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

B. Greenhouse gas emissions and removals

Table 2
Areas of improvement relating to general findings on greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 3
Areas of improvement of the reporting on greenhouse gas emissions and removals – energy sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
3.E.1	Specified in paragraph 40 of the MPGs 1.A.3.b Road transport – CO_2	Latvia reported in its NID (table 3.33) a drop in the amount of biofuel-blending component in liquid fuels between 2021 and 2022 of more than 13.8 per cent for gasoline (491 to 423 TJ) and more than 85 per cent for diesel oil (1,429 to 210 TJ), resulting in 67.7 per cent lower avoidance of CO_2 emissions from road transport in 2022 than in 2021. However, the Party did not provide a detailed explanation for this drop. During the review, the Party explained that its Government decided that, from 1 July 2022 to 31 December 2023, biofuel blending would be voluntary, instead of the mandatory biofuel blending, in place since 1 January 2020, of at least 9.5 per cent bioethanol by volume in gasoline (octane rating of 95) and 6.5 per cent biodiesel by volume in diesel fuel, with exemptions for winter diesel use (November–April) and marine transport. This decision was driven by the sharp increase in fuel prices in late 2021 and particularly after February 2022, in the context of rising global energy prices and the geopolitical situation in the region, resulting in a 65.7 per cent decline in biofuel consumption in 2021–2022. The TERT recommends that Latvia explain, in the NID, as clarified during the review, the reason for the fluctuation in the AD for amount of biocomponent in liquid fuels between 2021 and 2022.

Table 4
Areas of improvement of the reporting on greenhouse gas emissions and removals – industrial processes and product use sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

[1] As referred to in paras. 7, 8, 146(d) and 162(d) of the MPGs, contained in the annex to decision 18/CMA.1.

[2] Decision 18/CMA.1, annex.

Table 5
Areas of improvement of the reporting on greenhouse gas emissions and removals – agriculture sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.1	Specified in paragraph 40 of the MPGs 3. General (agriculture) – CH_4 and N_2O	In its NID (p.280), Latvia stated that the primary sources of data on its livestock and poultry populations are the official statistics of Latvia (see https://stat.gov.lv/en/statistics-themes/business-sectors/agriculture) and the 2023 agricultural statistical report of the Central Statistical Bureau of Latvia. The TERT reviewed the 2023 agricultural statistical report and noted that the data on livestock and poultry populations are provided as at the end of the year (e.g. for broilers and market swine). Therefore Latvia's approach to estimating GHG emissions from livestock categories with short production cycles is not in line with the 2006 IPCC Guidelines (vol. 4, chap. 10.2.2), which specify that, since certain subcategories of growing livestock are alive for only part of the year, the average annual population should be used to calculate the relevant GHG emissions. During the review, Latvia explained that, owing to data limitations, it calculated average annual livestock populations for categories with short production cycles (e.g. broilers and market swine) only for a few reporting years. Latvia further clarified that additional calculations carried out by the Party indicate that the end-of-year livestock population data do not differ significantly from the average annual population values and, upon request by the TERT, provided the results of these calculations. The TERT reviewed the documentation provided by Latvia and agreed with the Party's approach to estimating emissions from these livestock subcategories using end-of-year population data as a proxy for average annual populations. The TERT recommends that Latvia provide supporting data and estimates to demonstrate that end-of-year population data for categories of livestock with a lifespan of less than 1 year do not differ significantly from average annual population values. Including this information in the NID would enhance transparency and demonstrate that Latvia's relevant GHG emission estimates (e.g. for CH_4 and N_2O emissions from enteric fermentation and manure management) are calculated consistently with the methodology in the 2006 IPCC Guidelines (vol. 4, chap. 10.2.2) for livestock with a lifespan of less than 1 year.
5.A.2	Specified in paragraph 40 of the MPGs 3.A.1 Cattle – CH_4 and N_2O 3.B.5 Indirect N_2O emissions – N_2O	In its NID (pp.291, 302 and 308), Latvia stated that it estimated CH_4 emissions from enteric fermentation, and indirect N_2O emissions from manure management of non-dairy cattle for seven subcategories according to age and production type (i.e. growing cattle: young dairy and beef cattle aged under 1 year, and young dairy and beef cattle aged 1–2 years; and mature cattle aged over 2 years: bulls, heifers and other cows). The information on performance parameters and CH_4 emissions was further aggregated into the three main groups (3.A.1.a.i mature dairy cattle, 3.A.1.a.ii other mature cattle and 3.A.1.a.iii growing cattle) under option B in CRT 3.A. The TERT noted that Latvia reported "NE" for performance parameters such as milk yield per head of cattle and pregnancy rate. The TERT also noted that category 3.A.1.a.ii other mature cattle may also include suckling cows or cows used to produce offspring for meat, as defined in the 2006 IPCC Guidelines (vol. 4, chap. 10, table 10.1). For this cattle category, performance parameters such as milk yield and pregnancy rate should be considered when calculating GE and the associated enteric fermentation emission factors, volatile solids values and N excretion rates throughout the time series. During the review, Latvia clarified that suckling cows were considered under the subcategory other cows aged over 2 years (3.A.1.a.ii other mature cattle in CRT 3.A) and provided the calculations performed to determine GE for this cattle category. Latvia confirmed that performance parameters such as milk yield and pregnancy rate were considered when calculating the estimates of GE for this cattle category. The TERT recommends that Latvia improve the transparency of its reporting by including information on the composition of other cows subcategory and by including the relevant performance parameters (e.g. milk yield and pregnancy rate) used to determine GE and enteric CH_4 emission factors, volatile solids and N excretion rates for the suckling cows category for the entire time series. The TERT also recommends that Latvia report the population (or share) of suckling cows that included other cows aged over 2 years (3.A.1.a.ii other mature cattle in CRT 3.A).

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
5.A.3	Specified in paragraph 20 of the MPGs 3.B.3 Swine – CH_4	In its NID (p.303), Latvia presented the equation used to estimate GE in MJ/day for swine as the ratio of ME (in MJ/day) to DE%. The TERT noted that DE% in the 2006 IPCC Guidelines (vol. 4, chap. 10.2.2) is defined as the proportion of GE not excreted in faeces, while urinary energy is treated separately as a fraction of GE in equation 10.24 and Y_m is defined in equation 10.21 as the percentage of GE converted to CH_4. By calculating GE as the ratio of ME to DE% without accounting for UE% and Y_m% in the denominator, Latvia did not explicitly incorporate urinary and gaseous energy losses in the derivation of GE for swine. Consequently, its approach is not consistent with the 2006 IPCC Guidelines. During the review, Latvia referred to studies on feed energy evaluation for growing pigs and dietary energy for swine that explain the parameters primarily used to evaluate GE. The TERT reviewed the studies cited by Latvia, which both state that the DE of feed ingredients is calculated from the difference between GE in the diet and GE excreted in the faeces. For DE in diets, therefore, energy that is consumed by the animal and is not excreted in the faeces is assumed to be absorbed and available to pigs, and that the ME of a diet is calculated by subtracting energy excreted in urine and gas from DE. The TERT noted that the studies that Latvia cited clearly distinguish DE from ME, and explicitly state that ME is obtained by subtracting urinary and gaseous energy from DE. However, Latvia misinterpreted these definitions when calculating GE by dividing ME only by DE% instead of by DE% minus UE% and Y_m%. The TERT recommends that Latvia derive GE from ME for swine by explicitly accounting for urinary and gaseous energy losses, using documented country-specific or scientifically justified parameters, and recalculate CH_4 emissions from manure management of swine for the entire time series.
5.A.4	Specified in paragraph 40 of the MPGs 3.H Urea application – CO_2	The TERT noted significant inter-annual changes in the amount of urea applied to agricultural soils between 2001 and 2003, specifically from 2,528 t in 2001 up to 6,078 t in 2002 and down to 1,942 t in 2003. However, the NID does not clarify the drivers behind these changes. During the review, Latvia clarified that the use of urea in agriculture can be influenced by several factors, including economic and agronomic ones. The most important driver is economic circumstances, particularly the price of urea and the cost of alternatives. Farmers may choose to use urea depending on its relative cost and availability. Agronomic factors also play a role, especially weather conditions. In years with drought or floods, farmers may adjust crop plans, which can increase the need for fertilizer. For example, after winter frost damage, some winter crops must be replaced with faster-growing crops (such as spring crops), which often require more N. Urea is applied when crops need to rapidly uptake N. Latvia specified that data on urea consumption are collected and provided by the Central Statistical Bureau of Latvia. The methodology for data collection is described in the NID (chap. 5.1). The TERT recommends that Latvia include background information in the NID to explain the significant inter-annual changes in the amount of urea applied to agricultural soils in order to improve the transparency of the reporting.
5.A.5	Specified in paragraph 40 of the MPGs 3.D.1.b.iii Other organic fertilizers applied to soils – N_2O	In its NID (table 5.30), Latvia provided data on composted waste applied to agricultural soils starting from 2010 and it calculated the associated direct and indirect N_2O emissions for 2010–2022 under subcategory 3.D.1.b.iii other organic fertilizers applied to soils. However, the TERT noted that table 6.7 of *Latvia's Informative Inventory Report 1990–2023* indicates that household waste composting activities were taking place prior to 2010, with relatively stable amounts of composted household waste reported for 1990–2009 (e.g. 166.89 kt in 1990, 156.41 kt in 1995 and 164.91 kt in 2005). The NID does not explain how composted household waste was managed in 1990–2009, nor does it clarify why emissions associated with the application of compost to agricultural soils were not estimated for that period. As a result, the TERT concluded that direct and indirect N_2O emissions from composted waste applied to agricultural soils may have been underestimated for the years prior to 2010. During the review, Latvia explained that composting activities were carried out, without application to soils, from 1990 to 2009. The TERT inquired about the use of compost in 1990–2009 and requested clarification of what triggered the application of compost to agricultural soils starting in 2010 (e.g. a legal act). Latvia specified

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		that between 1990 and 2010 composting activities were primarily undertaken as a waste management practice. During this period, agricultural practices involved synthetic fertilizers and livestock manure as the main nutrient sources. The use of compost in agriculture was minimal, owing partly to a limited regulatory framework, lack of economic incentives and a general preference for nutrient inputs that were more immediately available and concentrated. Compost may have been used by households in allotment gardens, but such use was likely informal and limited in scale. After 2010, rising costs of synthetic fertilizers prompted a shift in farming practices. Latvian farmers increasingly recognized the economic and environmental benefits of using alternative nutrient sources. As a result, some began using compost, including vermicompost, as a viable supplement to or substitute for conventional fertilizer. Compost gained attention as a cost-effective and environmentally friendly option for improving soil fertility. Moreover, Latvia specified that the amounts of compost applied to soils include composted sewage sludge in addition to composted household waste (see ID# 5.A.10). However, the TERT noted that this was not clarified in the NID. The TERT recommends that Latvia do the following in order to improve transparency: (a) If compost was not applied to soils (under any land-use type) between 1990 and 2009, provide documentation (e.g. a case study with full references) demonstrating how composted household waste was used and what actions led to compost being applied to agricultural soils starting in 2010; (b) If such documentation cannot be provided, estimate N_2O emissions from composted waste applied to agricultural soils and report them under category 3.D.1.b.iii other organic fertilizers applied to soils. If compost was applied to land subject to other uses, the associated direct and indirect N_2O emissions should be reported in CRT 4(I) for 1990–2009. See also the recommendations under ID#s 5.A.10 and 5.A.11.
5.A.6	Specified in paragraph 39 of the MPGs 3.B Manure management – N_2O	In its NID (table 5.22), Latvia reported country-specific N excretion rates for livestock categories other than cattle (e.g. goats, sheep). However, the TERT noted that the information on N excretion rates is not properly supported by references, with Latvia specifying only “national studies” as the source of the values. During the review, Latvia provided a link to a relevant study (in Latvian). The TERT recommends that Latvia provide a full reference for the study cited during the review and brief background information on how the country-specific N excretion rates were developed.
5.A.7	Specified in paragraph 21 of the MPGs 3.A.1 Cattle – CH_4	In its NID (p.289), Latvia reported that calves are fed milk or milk substitutes up to the age of 3 months and, on this basis, it assumed a Y_m of 5.5 per cent for young growing cattle (aged under 1 year) for 2022. The TERT considers that this assumption may not be valid for the entire population of calves, particularly given the differences in feeding practices: milk only and milk with supplemental solid feed (as typical practices for dairy and beef cattle calves). During the review, Latvia confirmed that the same assumption was applied for both dairy and beef cattle calves. However, the TERT identified country-specific literature (namely an article on meat cattle farming in Latvia) indicating that beef cattle calves in Latvia may begin consuming additional feed, including roughage, from an early age and are fed diets similar to their mothers, which could result in different enteric fermentation characteristics from those of dairy cattle calves. Consequently, the TERT could not confirm whether assuming the same Y_m for all calves aged under 1 year is justified and not in line with the 2006 IPCC Guidelines (vol. 4, chap. 10, p.10.30): “A CH_4 conversion factor of zero is assumed for all juveniles consuming only milk.” During the review, Latvia provided an updated Y_m for cattle calves fed with supplementary feed; however, it was not clear whether this updated value was applied in the relevant emission calculations for the time series. Consequently, the TERT could not confirm whether assuming the same Y_m for all calves aged under 1 year is justified. Moreover, the Party clarified that beef cattle calves in Latvia are predominantly born in spring and are therefore housed indoors during the first months of life with limited or no access to pasture. During this period, maternal milk is the dominant food source, while solid feed intake remains limited as the rumen develops gradually. Consequently, enteric fermentation and associated CH_4 production are low during the early milk-dominant stage; however, it

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		was not clear whether this updated value was applied in the relevant emission calculations for the time series. The TERT recommends that Latvia improve the transparency of its reporting by providing supporting studies or other evidence on feeding practices for dairy and beef cattle calves, including the duration of the milk-only or milk-dominant period and, where applicable, the estimated share of calves receiving supplementary solid feed. The TERT also recommends that Latvia transparently document how these feeding practices are reflected in the Y_m assumptions and emission calculations for the entire time series.
5.A.8	Specified in paragraph 39 of the MPGs 3.F Field burning of agricultural residues – CH_4 and N_2O	Latvia reported emissions from field burning of agricultural residues as "NO" for the entire time series. In its NID (p.324), Latvia clarified that legislative measures and agricultural residue management practices prohibit field burning of agricultural residues, as explained in section 179 of the Latvian Administrative Violations Code. However, the NID does not specify the period during which this regulation has been in force, nor does it clarify whether the prohibition was applied consistently over the time series. As a result, the transparency of the justification for reporting "NO" for all years could not be fully assessed. During the review, Latvia presented a list of relevant regulations that were in force for different periods over the time series: (a) 1990–1997: Latvian Administrative Violations Code, section 179; (b) 1997–2004: Cabinet regulation no. 440 of 30 December 1997 on fire safety; (c) 2005–2020: Fire Safety and Fire-fighting Law and Cabinet regulation no. 238 of 19 April 2016 on fire safety regulations; (d) 2021 to present: regulation 2021/2115 of the European Parliament and of the Council of 2 December 2021, annex 3. The TERT recommends that Latvia transparently report detailed information on the legislative measures prohibiting the field burning of agricultural residues in the country, including the relevant provisions and their periods of validity, in order to justify reporting the category as "NO" for the entire time series.
5.A.9	Specified in paragraph 39 of the MPGs 3.D.1.d Crop residues – N_2O	In its NID (p.319), Latvia stated that experts from the Latvia University of Life Sciences and Technologies estimated that approximately 30 per cent of above-ground residues of all main crops (wheat, oats, barley and rye) are removed from agricultural fields annually for purposes such as feeding, bedding and construction. The percentage of crop residues removed was set at 70 per cent for 1990–2000, with a rapid decrease until 2010. Until 2000, above-ground crop residues were widely used for bedding and feeding. It was not clear to the TERT whether Latvia's approach aligns with that described in the 2006 IPCC Guidelines (vol. 4, chap. 10.5.4) with respect to ensuring that N in managed manure applied to soils is correctly estimated. Specifically, since organic bedding materials such as straw, sawdust and wood chippings are used in Latvia, the N contained in the bedding material should also be considered part of the N in managed manure applied to soils. During the review, in response to a question regarding the quantity of N in crop residues removed from agricultural fields, Latvia explained that there are no statistical data on the exact amounts of residues used for bedding or feeding. However, Latvia assessed the amount of N in crop residues removed from agricultural fields and subsequently used for feeding and bedding. In particular, Latvia stated that in 2022 approximately 4,391.8 t N contained in removed crop residues was used for these purposes. This amount of N was distributed across various livestock groups, including dairy cattle, non-dairy cattle, sheep, goats, rabbits and fur animals. It is estimated that around 20 per cent of this N was associated with bedding material, while the remaining 80 per cent was primarily used for feeding, and Latvia clarified that this estimate was not based on expert judgment, but on a stepwise calculation. First, the total amount of crop residues removed from fields for feeding and bedding was estimated. Then, the amount of bedding required was determined by the proportion of livestock managed under solid manure systems. As deep bedding systems are not practised in Latvia, only limited use of residues for bedding was assumed. Since the calculations indicate that approximately 20 per cent of the removed residues are likely used for bedding, the remaining 80 per cent of the removed fraction is attributed to feeding, as this is considered the most likely alternative use.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT recommends that Latvia document and report the expert judgment and methodological basis used to determine the fraction of above-ground crop residues removed annually for purposes such as feeding, bedding and construction for the entire time series, in accordance with the guidance provided in the 2006 IPCC Guidelines (vol. 1, chap. 2, annex 2A.1) and provide a detailed description of the approach used to calculate the amount of N contained in crop residues that are removed from fields and subsequently used for feeding and bedding. Furthermore, the TERT recommends that Latvia improve transparency by reporting N flows from crop residues in tabular format or as a flow chart, which should include clear representation of the total crop residues produced, amounts left on the field and amounts removed for feeding, bedding or any other use (e.g. as feedstock or construction material, as applicable).
5.A.10	Specified in paragraph 40 of the MPGs 3.D.1.b.ii Sewage sludge applied to soils – N_2O	The TERT observed that data reported by Eurostat (see https://ec.europa.eu/eurostat/databrowser/view/env_ww_spd__custom_16034203/default/table?lang=en) demonstrate that a substantial portion of the sewage sludge generated in Latvia is used for agricultural purposes, and a significant share is also used for compost production, but the NID does not include information on sewage sludge used for composting, nor does it clarify whether the resulting compost is applied to agricultural soils or other categories of land. During the review, in response to a request for clarification of the total amount of sewage sludge generated, the quantities used in agriculture (both as raw material and composted sludge) and other types of use or disposal, Latvia provided data for 2023 on managed sewage sludge from table DRU080 of the Official Statistics Portal of Latvia and noted that such data are available for 2004 onward. In 2023, a total of 19,433 t of managed sewage sludge was reported, of which 1,651 t was applied in agriculture, 1,797 t was composted, 1,490 t was incinerated, 1 t was landfilled, 9,541 t was temporarily stored, 28 t was applied to green areas and 4,925 t was managed through other treatment or disposal methods. Furthermore, Latvia clarified that the amount of sewage sludge composted is included in the amount of compost applied to agricultural soils, reported under subcategory 3.D.1.b.iii other organic fertilizers applied to soils. Regarding 'greening' activity, Latvia explained that this includes using sewage sludge for urban landscaping purposes, such as in parks, on green belts or lawns, or for roadside vegetation or the revegetation of degraded land. With respect to the subsequent use of sewage sludge categorized as temporarily stored or under "other" treatment and use, Latvia confirmed that it will investigate the final uses of such sewage sludge for the next submission. The TERT recommends that Latvia improve transparency by investigating the final uses of sewage sludge that is temporarily stored or categorized under "other" treatment and use, and reporting N flows (in kt) related to sewage sludge management in tabular format or as a flow chart, clearly indicating where the respective quantities of N and associated emissions are accounted for.
5.A.11	Specified in paragraph 40 of the MPGs 3.D.1.b.iii Other organic fertilizers applied to soils – N_2O	The TERT observed that the amount of N reported as applied to agricultural soils under subcategory 3.D.1.b.iii other organic fertilizers applied to soils is significantly different from the reported amount of N handled for the digesters manure management system in CRT 3.B(b) across the time series. For example, for 2012, 648,837.50 kg N/year was reported for other organic fertilizers applied to soils in CRT 3.D, but 3,332,465.93 kg N/year was reported for total N handled for the digesters manure management system in CRT 3.B(b); and for 2022, 3,640,730.00 kg N/year in CRT 3.D and 5,528,334.03 kg N/year in CRT 3.B(b) respectively. Furthermore, the TERT noted that the amount of N reported under subcategory 3.D.1.b.iii includes the N in compost (see ID# 5.A.5) as well as the N in composted sewage sludge (see ID# 5.A.10) applied to agricultural soils. During the review, Latvia explained that, since statistical data on the use of digestate in agriculture are provided by the Central Statistical Bureau of Latvia (see https://admin.stat.gov.lv/system/files/publication/2024-06/Nr_16_Latvijas_Lauksaimnieciba_2024_%2824_00%29_LV_EN_0.pdf), these data were used in the calculations of N inputs to agricultural soils from organic fertilizers. Latvia clarified that digestate applied in agriculture is primarily produced from manure processed in biogas plants. However, Latvia stated that official statistics on the amount of manure processed at each biogas plant are not available, and efforts are ongoing to address

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		this data gap. At present, data on the quantities of manure processed and the resulting digestate production are estimated on the basis of site observations and surveys of biogas facilities. Furthermore, Latvia noted that not all digestate produced is used in agriculture, for several reasons. First, there are regulatory restrictions in Latvia on the application of digestate to agricultural land. From a logistical standpoint, digestate is bulky and has a high water content, making transportation over long distances from a biogas plant not cost-effective. In addition, not all digestate meets the nutrient requirements of soils or crops, and some digestate may suffer from quality issues. Application of digestate can also produce unpleasant odours, leading to public dissatisfaction. Further, farmers must have the appropriate equipment and storage infrastructure, which is not universally available. Latvia clarified that some survey results indicate that some biogas plants use digestate to produce organic fertilizer for export and therefore these amounts of digestate (and the associated GHG emissions) were not considered in the inventory. For example, one of the largest biogas producers in Latvia, EGG ENERGY (see https://www.eggenergy.eu/en/about-us/), uses poultry-based digestate to produce organic fertilizer and reports that almost all of its products are exported. The TERT enquired about the feedstock used in manure-based biogas production facilities. In response, Latvia provided data for 2023, which demonstrate that silage is used as a feedstock in digesters alongside manure. The TERT considers that Latvia's approach to estimating N_2O emissions from organic fertilizers applied to soils is not consistent with the 2006 IPCC Guidelines (vol. 4, chap. 10.5.4), as the national statistical data on the amounts of organic fertilizer produced (especially for digestate, as mentioned above) used for estimating emissions from manure management and agricultural soils are not comprehensively collected and therefore do not provide a complete picture. The TERT recommends that Latvia improve transparency and ensure that the total N amount in organic fertilizer is tracked and consistently reported to avoid under- or overestimation of the associated emissions over the time series by documenting how N associated with manure-derived and non-manure-derived digestate (silage-based feedstock), bedding materials, compost (see ID# 5.A.5) and sewage sludge (see ID# 5.A.10) is allocated between manure management and application to soils, export and other uses and providing clear evidence of such uses, supported by statistical data, case studies or other verifiable information. This approach ensures that associated emissions are estimated without omissions or double counting for the entire time series.

Table 6
Areas of improvement of the reporting on greenhouse gas emissions and removals – land use, land-use change and forestry sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
6.L.1	Specified in paragraph 31 of the MPGs Land representation	The Party reported in CRT 4.1 "NA" for total area of forest land (unmanaged) and grassland (unmanaged), and in the NID (p.339) that it considers all forest land, grassland, cropland and settlements to be managed. The Party did not explain why "NA" was reported for forest land (unmanaged) and grassland (unmanaged) or why it considers all forest land, grassland, cropland and settlements to be managed. During the review, the Party explained that it will replace "NA" with "NO" in the next NID to indicate that there is no unmanaged forest land or grassland in the country. The Party also explained that it follows the definition of managed land provided in the 2006 IPCC Guidelines (vol. 4, chap. 1.2.2), which includes: (a) Land where activities such as silviculture, grazing, mowing, planting, reforestation, drainage or conservation occur; (b) Land subject to fire management, pest control or recreation infrastructure development. It considers all such land managed, because for grassland to remain in the grassland category under the national conditions it must be managed, otherwise it would naturally rapidly transform into forest land (i.e. if grassland is identified it cannot exist unmanaged, and all forests are considered managed owing to a legal requirement for landowners to conduct a stand-wise inventory at least once every 20

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		years). The Party explained that it will include in the next NID the following quote from section 29 of the Latvian Law on Forests: "A forest owner or lawful possessor shall ensure the first forest inventory in its ownership or lawful possession and submit the data thereof to the State Forest Service, as well as re-perform the forest inventory at least every 20 years and in other cases specified in laws and regulations". The TERT recommends that the Party correct the notation key reported for unmanaged forest land and grassland in CRT 4.1 and provide information, to the extent possible, about the basis for considering all forest land and grassland to be managed.
6.L.2	Specified in paragraph 40 of the MPGs 4.A Forest land	The Party reported in its NID (p.347) that the increasing rate of harvesting and the ageing of forests are the main reasons for forest land becoming a net source of GHG emissions in the country. The Party did not report information on changes in annual harvested area, annual replantation area or forest area by age class. During the review, the Party provided information on, inter alia, the structure and development of its forest areas, the year-on-year harvesting rates and registration of areas designated for regeneration after harvesting. The Party further clarified that it will provide information on changes in the distribution of forest area across age classes in the next submission. The TERT recommends that the Party provide information, to the extent possible, about changes over the entire time series in annual harvested area, annual replantation area and forest distribution by age group.
6.L.3	Specified in paragraph 40 of the MPGs 4.A.1 Forest land remaining forest land	The Party reported in its NID (pp.355–356) that it used age of stands and tree-dimension-specific (e.g. diameter and height class) gross increment equations to estimate the annual increment of the most common tree species, and values specific to birch (biomass expansion factor of 1.19 for stem biomass to crown biomass and 0.31 for stem biomass to below-ground biomass) were used for estimating the annual increment of other tree species. The Party did not explain why values specific to birch were used for other tree species. During the review, the Party explained that it has species-specific allometric equations for calculating merchantable stem volume of above- and below-ground biomass for the most common tree species in the country, such as aspen, pine, spruce, birch, black alder and grey alder. The rest of the species in the country are generally deciduous species with similar growth characteristics to birch according to the results of the NFI, and since they account for only 2 per cent of the country's area, species-specific allometric equations have not been elaborated for them. The Party explained that it will include information on the characteristics and justification for grouping these remaining species with birch (e.g. similarities in growth patterns and biomass allocation factors) in the next submission. The TERT recommends that the Party provide documentation that justifies its decision to use biomass expansion factors and related parameters derived from birch for estimating biomass increment of other tree species, as well as the results of the allometric equations used to estimate above- and below-ground biomass for the most common tree species in the country.
6.L.4	Specified in paragraph 39 of the MPGs 4.A.1 Forest land remaining forest land	The Party reported in its NID (p.355) that the GHG inventory team obtains from the NFI team plot-level data on merchantable volume, biomass and carbon stock per NFI plot, which are derived from field measurements and subsequently extrapolated to represent the national forest area. The Party did not report the methodology used to extrapolate the NFI plot data to the country area. During the review, the Party explained that each of the approximately 16,000 NFI plots represents an area of about 400 ha forest land. Measurements of individual tree are aggregated to calculate average values of stand characteristics for each sample plot, and these plot-level averages are then used to derive area-weighted average stand characteristics for the national forest area. The stand characteristics (e.g. volume, biomass and carbon stock) used as AD for the GHG inventory are weighed by area according to factors such as soil type, dominant tree species, soil drainage status and stand type. The NFI team applies country-specific allometric equations to convert tree measurements into estimates of biomass (above- and below-ground) and

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		carbon stock. In practice, the GHG inventory team receives data from the NFI team that have already been extrapolated to the national level. The TERT recommends that the Party provide a transparent description of the methodology used to extrapolate NFI plot data to the national forest area, including the procedures for the weighting, aggregation and application of allometric equations.
6.L.5	Specified in paragraph 39 of the MPGs 4.D Wetlands	The Party reported in its NID (table 6.29) the assumptions used for calculating carbon stock change in living and dead biomass in wetlands. The Party did not explain the factors behind the increase in gross increment of living biomass and natural mortality of biomass from 1990 to 2007, which was followed by a decrease from 2018 to 2020 and then a temporary increase in 2021. During the review, the Party explained that, in general, values for gross increment of living biomass and natural mortality in wetlands have high uncertainty and thus variation between years can be misleading. The Party is planning methodological improvements to address the high uncertainty of the values for gross increment and natural mortality in wetlands. These improvements are planned as part of an alignment of national inventory methodologies with the EU LULUCF regulation (2023/839) and aimed at enhancing accuracy in estimating carbon stock changes in significant pools by updating biomass estimation methods and integrating improved national data, particularly by implementing methods that combine NFI data and remote sensing data. In addition, research to improve the AD (e.g. biomass increment and mortality data used for estimating carbon stock changes in wetlands) is proposed within the scope of a research programme on wetlands under the Just Transition Fund. The TERT recommends that the Party provide a transparent explanation of the observed trends in gross increment of living biomass and natural mortality for wetlands, and describe the planned methodological improvements and data enhancements intended to address the high uncertainty associated with these values.
6.L.6	Specified in paragraph 44 of the MPGs 4(IV) Biomass burning	The Party reported in its NID (p.403) that the uncertainty of the AD (area of wildfire on grassland and forest land) for biomass burning was estimated at ±10 per cent on the basis of expert judgment. The Party did not report the basis for this expert judgment or provide any documentation or justification to support the expert judgment in accordance with the 2006 IPCC Guidelines (vol. 1, chap. 6.2.5). During the review, the Party explained that the ±10 per cent uncertainty applied for biomass burning AD is broadly consistent with the assumptions used by the Central Statistical Bureau of Latvia for national agricultural and forestry statistics, where no direct uncertainty quantification is published for biomass burning. Although the Central Statistical Bureau has not published a document that defines the ±10 per cent uncertainty for biomass burning specifically, the value reflects: (a) The expected reliability of national-level estimates based on structured annual surveys, remote sensing analysis and data validation routines; (b) Comparability with uncertainty ranges reported in Eurostat quality reports (e.g. sampling and non-sampling error estimates for land-cover and land-use data); (c) Internal discussions and expert consultations with statistical data compilers, who advised that ±10 per cent reflects conservatively realistic uncertainty for reporting on fire activity in the LULUCF sector under Latvian conditions. The Party explained that, to enhance transparency, it will include a short annex to or table in its next NID describing the basis for the expert judgment on this uncertainty estimate, citing the general data quality procedures of the Central Statistical Bureau and indicating alignment with Eurostat practices. The TERT recommends that the Party provide documentation and justification to support the expert judgment on the uncertainty estimate for the AD (area of wildfire) used for estimating emissions from biomass burning.
6.L.7	Specified in paragraph 31 of the MPGs Land representation	The Party reported in CRT 4.1 “NA” for total area of unmanaged land for wetlands (unmanaged). The TERT noted that this is not in accordance with footnote 3 to CRT 4.1, according to which “IE” should be indicated in the total column in CRT 4.1 for wetlands (unmanaged) as areas are reported under individual wetlands (unmanaged) categories.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, the Party explained that it will in the next submission report "IE" for total area of unmanaged land for wetlands (unmanaged), thereby resolving this issue. The TERT recommends that the Party correct the notation key reported for total area of unmanaged land under wetlands (unmanaged) in CRT 4.1.
6.L.8	Specified in paragraph 40 of the MPGs 4.G HWP	For subcategory 4.G.1 solid wood, the TERT noted that Latvia did not follow the reporting guidance in footnote 7 to CRT 4.Gs1; in particular, Latvia reported aggregated information for HWP under the subcategory without further disaggregation using the available predefined drop-down menus and category definitions to ensure comparability. In addition, Latvia reported values under subcategory 4.G.2.a other in CRT 4.Gs1 without specifying the nature of the product, as requested by the "please specify" instruction. During the review, the Party explained that the structure of the corresponding CRT caused confusion, since there is no separate data entry field for subcategory 4.G.2 paper and paperboard; while subcategory 4.G.2.a other is included within the summary table for reporting HWP (CRT 4.Gs2). As a result, data for paper and paperboard were reported under subcategory 4.G.2.a other. The Party noted that it can provide clarification by specifying that the values reported under subcategory 4.G.2.a other relate to paper and paperboard. The TERT recommends that the Party report information on HWP under subcategory 4.G.1 solid wood using the predefined drop-down menus in CRT 4.Gs1 where data are available, and apply the predefined category definitions, to the extent possible, to enhance transparency and comparability. In addition, the TERT recommends that Latvia specify the product types reported under subcategory 4.G.2.a other, as requested in the same CRT, or otherwise report the associated emissions under the appropriate predefined categories in accordance with the reporting guidance.
6.L.9	Specified in paragraph 40 of the MPGs 4.G HWP	The Party reported information in CRT 4.Gs1 for category 4.G total HWP from domestic harvest and reported the equation used in the NID (p.407, equation 6.10) to calculate the share of HWP that originated locally. The Party did not provide information in CRT 4.Gs1 on HWP produced and consumed domestically or in CRT 4.Gs2 on HWP produced and exported (e.g. industrial roundwood), as per the guidance in footnote 9 to CRT 4.Gs1. During the review, the Party explained that it applies the production approach to estimate CO_2 emissions and removals from HWP, as described in the *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. Under this approach the Party excludes HWP produced from exported industrial roundwood from the estimation of emissions and removals from HWP in the national inventory to avoid potential double counting of removals that may be reported by the importing country. This decision to exclude exported industrial roundwood from the national HWP pool is due to limited availability and high uncertainty of data regarding the fate of exported wood and related carbon retention over time. The Party further explained that AD on exports of industrial roundwood and derived products used in HWP are not sufficiently detailed to allow for robust disaggregation between exported and domestically consumed HWP, and therefore these are reported in an aggregated manner. However, efforts are ongoing to improve relevant country-specific data, including by: (a) Enhancing tracking of industrial roundwood flows (i.e. flows of industrial roundwood between domestic use and export); (b) Linking trade data with production data at species and product level; (c) Developing methods to estimate the share of exported HWP that meets the criteria for continued carbon storage consistently with IPCC definitions. As part of future inventory improvements, the Party will evaluate the feasibility of separately reporting on domestically produced and consumed HWP and domestically produced and exported HWP. The Party clarified that the industrial roundwood exports excluded from the estimation of emissions and removals from HWP include coniferous and non-coniferous industrial roundwood (according to the FAO classification). The import and export data for these two industrial roundwood categories are used to calculate

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		the proportion of domestically originating HWP (the share of industrial roundwood used for the domestic production of HWP originating from domestic forests) using equation 6.10. This equation is also applied to adjust the inflow of carbon into the national HWP pool by excluding the fraction of industrial roundwood that is exported and therefore not contributing to the domestic HWP pool. The Party noted that the exported wood products included in the estimation of emissions and removals from HWP comprise coniferous and non-coniferous sawnwood, veneer sheets, plywood, particle board (including oriented strand board), hardboard, medium-density fibreboard, compressed fibreboard, insulating board, and paper and paperboard (according to the FAO classification). The Party stated that, to increase transparency, in its next NID it will include additional information on the types of wood products considered in the estimation of emissions and removals from HWP, including an explanation of the difference between industrial roundwood and processed wood (i.e. sawnwood is a HWP produced from industrial roundwood), as well as on exported industrial roundwood, which is excluded from the calculation of CO_2 emissions or removals from HWP, and on imports and exports of roundwood. The TERT recommends that the Party provide information, to the extent possible, in CRT 4.Gs1 on HWP produced and consumed domestically and in CRT 4.Gs2 on HWP produced and exported, or justify why it chose not to report on these separately.

Table 7
Areas of improvement of the reporting on greenhouse gas emissions and removals – waste sector

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

C. Information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

Table 8
Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
8.1	Specified in paragraph 62 of the MPGs	Latvia reported in its BTR1 (section 2.1.3, p.61) information on legal, institutional, administrative and procedural arrangements for domestic implementation, monitoring, reporting and archiving of information related to the implementation and achievement of the NDC. However, the BTR1 does not include information on relevant stakeholder engagement. During the review, Latvia acknowledged that the BTR1 does not include a section explicitly describing stakeholder engagement related to the implementation and achievement of the NDC. Latvia explained that stakeholder consultation and involvement are integral components of Latvia's climate policy development and implementation processes. It provided information on how stakeholders are engaged in the design, implementation and monitoring of NDC-related policies and actions; and about the way forward for continued collaboration between government, businesses and non-governmental organizations as well as enhanced public awareness campaigns in relation to the NDC. The TERT recommends that Latvia report the information provided during the review on stakeholder engagement related to the implementation and achievement of the NDC.

Table 9
Areas of improvement of the description of the nationally determined contribution under Article 4 of the Paris Agreement, including updates

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 10
Areas of improvement of the reporting of the information necessary to track progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
10.1	Specified in paragraph 75(b) of the MPGs	Latvia (as part of the EU) reported in its BTR1 (p.209) on the IPCC guidelines used for the preparation of its GHG inventory. Specifically, Latvia reported using the 2006 IPCC Guidelines and the 2019 Refinement to the 2006 IPCC Guidelines for estimating GHG emissions for some source categories. While recognizing that using the 2019 Refinement to the 2006 IPCC Guidelines is voluntary, to improve transparency the TERT noted that Latvia could report for which source categories the 2019 Refinement was applied. During the review, Latvia explained that it did not use the 2019 Refinement to the 2006 IPCC Guidelines for preparing its GHG inventory. It clarified that the reference to the 2019 Refinement was included because as an EU member State it contributes to the joint EU NDC, and some EU member States may apply the 2019 Refinement voluntarily for selected categories. The TERT recommends that Latvia clarify that the reference to the use of the 2019 Refinement to the 2006 IPCC Guidelines may apply to other EU member States, but does not apply to the preparation of Latvia's GHG inventory.

Table 11
Areas of improvement of the reporting on mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.1	Specified in paragraph 80 of the MPGs	Latvia provided information on actions and PaMs that support the implementation and achievement of the NDC, without specifying which have the most significant impact on GHG emissions or removals and those that have an impact on emissions or removals for key categories in the national GHG inventory. During the review, Latvia clarified that the most significant actions and PaMs supporting the achievement of the NDC relate primarily to the LULUCF, energy, agriculture and waste sectors, which together comprise the main key categories in the national GHG inventory. Latvia highlighted LULUCF measures addressing forest management and other land-use subcategories, noting that 33 LULUCF subcategories are identified as key categories in the 2024 national GHG inventory and that associated PaMs are delivering substantial emission reductions. In the energy sector, Latvia identified measures for improving energy efficiency and increasing the share of renewable energy in total energy consumption and energy production, including providing support for biomass-based district heating, improving energy efficiency in residential, public and industrial buildings, promoting renewable energy technologies, enforcing biofuel-blending obligations, increasing uptake of electric vehicles and green public procurement. In the agriculture sector, Latvia identified measures for promoting low-emission dairy farming and providing support for fertilization planning to reduce emissions from enteric fermentation and managed soils. In the waste sector, Latvia reported measures aimed at reducing emissions from managed waste disposal on land by decreasing the biodegradable fraction of disposed waste. The TERT recommends that Latvia specify which PaMs have the most significant impact on GHG emissions or removals as well as those that have an impact on emissions and removals for key categories in the national GHG inventory, as identified during the review.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
11.2	Specified in paragraph 83(a) of the MPGs	Latvia did not provide cost information for most PaMs, instead reporting "NE" (see BTR1 annex 3, table 5; and CTF table 5). During the review, Latvia explained that it provided information on costs of PaMs in CTF table 5, but "NE" was reported for individual PaMs for which, at the time of reporting, comprehensive and disaggregated data on costs were not available. The TERT encourages Latvia to report information, as provided during the review, on the challenges it faces in reporting on costs for all PaMs.
11.3	Specified in paragraph 85 of the MPGs	Latvia reported estimates of expected GHG emission reductions for 43 PaMs (64 per cent of the total reported PaMs) and reported "NE" for the rest of the PaMs. In addition, considering the 28 PaMs that started before 2020, Latvia reported an estimate of achieved GHG emission reductions for the biofuel-blending obligation (136.00 kt CO_2 eq in 2020). During the review, Latvia explained that it did not estimate expected and achieved GHG emission reductions for some PaMs and instead reported "NE" because no quantitative estimates (including ex post estimates) are available. Latvia further explained that several factors contributed to this limitation, for example: (a) Lack of detailed monitoring and evaluation for earlier PaMs, which makes retrospective quantification of impact difficult; (b) The overlapping or synergistic nature of multiple PaMs, making it challenging to isolate the effect of individual measures; (c) Its focus on ex ante impact assessment in support of forward-looking climate planning rather than ex post evaluation; (d) Resource and capacity constraints related to the development of detailed ex post GHG emission reductions. The Party clarified that more quantitative assessments of the mitigation impact of PaMs (linked to GHG inventory improvements) are in progress. The TERT recommends that the Party provide estimates of expected and achieved GHG emission reductions for its PaMs, to the extent possible, or describe the challenges faced in doing so (or other reasons for not estimating the emission reductions) as well as ongoing efforts to provide more estimates of expected and achieved GHG emission reductions for its PaMs.
11.4	Specified in paragraph 86 of the MPGs	Latvia described the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy or measure related to the LULUCF sector. However, Latvia did not describe such methodologies and assumptions for each action, policy or measure in other sectors. During the review, Latvia explained that, owing to the complexity of the LULUCF sector, the methodologies and assumptions used to estimate GHG emission reductions and removals are reported at the level of individual actions and PaMs for that sector. For other sectors, Latvia applies broadly similar modelling approaches, methodologies and assumptions across all sectoral PaMs for its estimations; therefore, relevant information is reported collectively at the sector level in the BTR1 (chap. 2.6.8), rather than at the level of individual PaMs. The TERT recommends that Latvia describe the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy or measure, to the extent available, for sectors other than the LULUCF sector.
11.5	Specified in paragraph 89 of the MPGs	Latvia stated for each of the PaMs described in table 5 of annex 3 to the BTR1 that the policy or measure contributes to achieving the targets set out in the Climate Neutrality Strategy 2050. However, Latvia did not provide information about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals. During the review, Latvia clarified that it is enhancing the use of scenario-based modelling tools to project the effects of current and planned PaMs on long-term emissions trajectories. According to Latvia, PaMs included in the BTR1 contribute to achieving the targets set out in the Climate Neutrality Strategy 2050, thus modifying longer-term trends in GHG emissions and removals. Latvia indicated that

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		many of the PaMs are designed to initiate systemic shifts that will help to reduce emissions in the long term. The TERT encourages Latvia to provide information, to the extent possible, about how its actions and PaMs are modifying longer-term trends in GHG emissions and removals.

Table 12
Areas of improvement of the summary of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

Table 13
Areas of improvement of the projections of greenhouse gas emissions and removals

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
13.1	Specified in paragraph 96(a) of the MPGs	Latvia provided information in its BTR1 (chap. 2.6) on models and approaches and key underlying assumptions and parameters used for projecting GHG emissions and removals. Latvia used different modelling approaches for each sector as described in the BTR1 (chap. 2.6.8 and annex 6). However, certain information was observed by the TERT to be missing; specifically, CTF table 11 does not include information on assumptions used for the projections for IPPU sector scenarios. The text of the BTR1 indicates that these assumptions for projecting AD and emissions in the IPPU sector are linked to the overall growth in gross domestic product and sectoral value added growth rates. During the review, Latvia explained that the IPPU sector projections are linked to macroeconomic scenarios (e.g. growth in gross domestic product, population). Hence, the projections of value added growth rates in construction and certain industrial sectors have been used to calculate projections of AD, such as the amount of cement or clinker produced, and the amount of asphalt and bitumen produced, which serve as the basis for calculating emission projections for the IPPU sector. Latvia provided information on average value added growth rates for construction and non-metallic mineral production for 2021–2030, 2031–2040 and 2041–2050. The TERT encourages Latvia to enhance the transparency of its reporting by clearly describing the assumptions, such as sectoral value added growth rates, used for the projections.

Table 14
Areas of improvement of other information relevant to tracking progress in implementing and achieving the nationally determined contribution under Article 4 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
NA	NA	No areas of improvement identified

D. Financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

Table 15
Areas of improvement of the reporting on national circumstances and institutional arrangements

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
15.1	Specified in paragraph 119(c–d) of the MPGs	Latvia did not report some of the required information on national circumstances and institutional arrangements relevant to reporting on the provision and mobilization of support, namely on experience and good practices related to public policy and regulatory frameworks that incentivize private climate finance and investment, and on efforts to improve the comparability and accuracy of information on financial support provided and mobilized through public interventions, including

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		through the use of international standards and harmonization with other countries, institutions and international systems. During the review, Latvia explained that it has yet to establish robust mechanisms or accumulate sufficient experience in public policy and regulatory frameworks to incentivize private climate financing and investment. Latvia clarified that it will include the required information in the BTR2. The TERT encourages Latvia to report the required information on national circumstances and institutional arrangements relevant to reporting on the provision and mobilization of support, including on experience and good practices related to public policy and regulatory frameworks that incentivize private climate finance and investment, and on efforts to improve the comparability and accuracy of information on financial support provided and mobilized through public interventions, including through the use of international standards and harmonization with other countries, institutions and international systems.
15.2	Specified in paragraph 120 of the MPGs	Latvia did not report in its BTR1 information on national circumstances and institutional arrangements relevant to reporting on the provision of technology development and transfer, and capacity-building support. During the review, Latvia clarified its existing national circumstances and institutional arrangements in this regard, such as that Cabinet regulation no. 675, on procedures for establishing and maintaining the GHG inventory system, the projection system and the system for reporting on adaptation to climate change, sets out requirements for reporting on the provision of financial support and technology transfer to developing countries in the field of climate change. The TERT encourages Latvia to report information in textual format on national circumstances and institutional arrangements relevant to reporting on the provision of technology development and transfer, and capacity-building support.

Table 16
Areas of improvement of the reporting on underlying assumptions, definitions and methodologies relating to financial, technology development and transfer, and capacity-building support provided under Articles 9–11 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
16.1	Specified in paragraph 121(l), (m), (n), (p), (q), (r), (s) and (t) of the MPGs	Latvia did not describe the underlying assumptions, definitions and methodologies used to identify and report: (a) Support provided as being climate-specific; (b) Information on efforts to avoid double counting of support; (c) The definition of public and private finance, in particular where entities or funds are mixed; (d) How it seeks to ensure that support provided through public interventions effectively addresses the needs and priorities of developing country Parties for the implementation of the Paris Agreement, as identified in country-driven strategies and instruments, such as BTRs, NDCs and national adaptation plans; (e) How it seeks to ensure that support provided through public interventions is in line with the long-term goals of the Paris Agreement; (f) An indication of what new and additional financial resources have been provided, and how it has been determined that such resources are new and additional; (g) How the information provided reflects a progression from previous levels in the provision and mobilization of finance under the Paris Agreement; (h) Information on reporting on multilateral finance. During the review, Latvia informed the TERT that the policy for supporting developing country Parties in implementing climate change activities that is under development foresees a broad and more structured approach to the provision of climate finance, capacity-building and technology transfer, and is expected to enable, to the extent possible, more comprehensive and transparent reporting in accordance with the MPGs. Latvia clarified that it will include all the information required by paragraph 121 of the MPGs in its BTR2.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT encourages Latvia to describe underlying assumptions, definitions and methodologies used to identify and report on financial, technology development and transfer, and capacity-building support provided in accordance with all elements of paragraph 121 of the MPGs.
16.2	Specified in paragraph 122 of the MPGs	Latvia provided information in its BTR1 (chaps. 4.4–4.5) on technology development and transfer, and capacity-building support provided. However, the TERT noted that neither the BTR1 nor CTF table III.4 includes information on the underlying assumptions, definitions and methodologies used to provide information on technology development and transfer, and capacity-building support provided, or for the classification presented in the column entitled "Type of support" of CTF table III.4 (see footnote b to CTF table III.4). Further, in CTF table III.5, the Party did not report the underlying assumptions, definitions and methodologies used for the classification presented in the column entitled "Type of support" (see footnote b to CTF table III.5). During the review, Latvia informed the TERT that, in its BTR2, it will provide a more structured and detailed description of the underlying assumptions, definitions and methodologies used for its reporting on technology development and transfer, and capacity-building support provided. The classification of technology development and transfer activities reported in CTF table III.4 and of capacity-building activities reported in CTF table III.5 was based on the main thematic focus and intended outcomes of each activity, with activities primarily targeting GHG emission reductions classified as mitigation, and activities addressing both mitigation and adaptation objectives or broader enabling and capacity-building functions classified as cross-cutting, in line with the MPGs. The TERT encourages Latvia to report information on the underlying assumptions, definitions and methodologies used to provide information on technology development and transfer, and capacity-building support provided, and for the classification presented in the column entitled "Type of support" of CTF tables III.4 and III.5.

Table 17
Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – bilateral, regional and other channels

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
17.1	Specified in paragraph 123(h) of the MPGs	Latvia did not report in CTF table III.1 (in accordance with footnote c to the table) information on how it classified the financial support reported in the relevant column of the table as being for adaptation, mitigation or cross-cutting activities. During the review, Latvia explained that the classification of the type of support reported in CTF table III.1 was based on project descriptions and stated objectives under the State budget grant programme, with support classified as relating to mitigation where the primary objective of projects was reducing GHG emissions, and as cross-cutting where projects addressed multiple thematic areas and outcomes could not be attributed exclusively to mitigation or adaptation. The TERT encourages Latvia to provide the underlying assumptions, definitions and methodologies, as applicable, used to classify the financial support reported in CTF table III.1 as being for adaptation, mitigation or cross-cutting activities.

Table 18
Areas of improvement of the information on financial support provided under Article 9 of the Paris Agreement – multilateral channels

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
18.1	Specified in paragraph 124 of the MPGs	Latvia did not report any of the required information in table CTF III.2 related to financial support provided through multilateral channels. Latvia clarified that in 2021, owing to limited national financial resources, it did not provide voluntary financial contributions through multilateral channels. It also clarified that it did not report such contributions for 2022 because information was not available at the time of reporting.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		During the review, Latvia provided updated information for CTF table III.2 for 2022 in an independent table, which indicated USD 86,359 in financial support provided in 2022 through multilateral channels. The TERT encourages Latvia to report information on financial contributions provided through multilateral channels in CTF table III.2 for 2021–2022.

Table 19
Areas of improvement of the information on technology development and transfer support provided under Article 10 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
19.1	Specified in paragraph 126(b–f) of the MPGs	Aside from the information provided in CTF table III.4 on the support that Latvia provided for technology development and transfer, it did not report information on the following in textual format: (a) Support provided at different stages of the technology cycle; (b) Support for the development and enhancement of endogenous capacities and technologies of developing country Parties; (c) Efforts to encourage private sector activities related to technology development and transfer and how such efforts support developing country Parties; (d) Efforts to accelerate, encourage and enable innovation, including research, development and deployment efforts, and collaborative approaches to research and development; (e) Knowledge generated. During the review, Latvia informed the TERT that it will, to the extent possible, report information in accordance with paragraph 126(b–f) of the MPGs in its BTR2. The TERT encourages Latvia to report, to the extent possible, in textual format all elements of the required information on support for technology development and transfer provided under Article 10 of the Paris Agreement.

Table 20
Areas of improvement of the information on capacity-building support provided under Article 11 of the Paris Agreement

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
20.1	Specified in paragraph 128(b–e) of the MPGs	Aside from the information provided in CTF table III.5 on the support that Latvia provided for capacity-building, Latvia did not report information on the following in textual format: (a) How capacity-building support that was provided responds to the existing and emerging capacity-building needs, priorities and gaps identified by developing country Parties in the areas of mitigation, adaptation, and technology development and transfer; (b) Policies that promote capacity-building support; (c) Involvement of stakeholders; (d) How support for capacity-building actions in developing country Parties that was provided promotes the sharing of lessons learned and best practices. During the review, the Party explained that the available information on capacity-building support for 2021–2022 was limited, but that bilateral and multilateral support was designed to respond to developing country Parties' identified needs through targeted project selection mechanisms, guided by national development cooperation policies and EU regulatory frameworks; involved eligible stakeholders via annual grant calls; promoted stakeholder participation and knowledge transfer; and supported the sharing of lessons learned and good practices as part of project implementation and reporting. Latvia indicated its intention to improve the transparency of its reporting for this requirement in its BTR2.

ID#	*Reporting requirement*	*Description of area of improvement with recommendation or encouragement*
		The TERT encourages Latvia to report, to the extent possible, in textual format all elements of the required information on support for technology development and transfer provided under Article 11 of the Paris Agreement.

Annex

Documents and information used during the review

A. Reference documents

BTR1 of Latvia. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 CTF tables of Latvia. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 of the EU. Available at https://unfccc.int/first-biennial-transparency-reports.

BTR1 CTF tables of the EU. Available at https://unfccc.int/first-biennial-transparency-reports.

CRTs of Latvia. Available at https://unfccc.int/first-biennial-transparency-reports.

"Guidance for operationalizing the modalities, procedures and guidelines for the enhanced transparency framework referred to in Article 13 of the Paris Agreement". Decision 5/CMA.3. FCCC/PA/CMA/2021/10/Add.2. Available at https://unfccc.int/documents/460951.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

IPCC. 2014. *2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol*. T Hiraishi, T Krug, K Tanabe, et al. (eds). Geneva: IPCC. Available at https://www.ipcc.ch/publication/2013-revised-supplementary-methods-and-good-practice-guidance-arising-from-the-kyoto-protocol/.

IPCC. 2014. *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands*. T Hiraishi, T Krug, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc.ch/publication/2013-supplement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories-wetlands/.

IPCC. 2019. *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories*. E Buendia, K Tanabe, et al. (eds.). Geneva: IPCC. Available at https://www.ipcc-nggip.iges.or.jp/public/2019rf/.

"Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement". Annex to decision 18/CMA.1. FCCC/PA/CMA/2018/3/Add.2. Available at https://unfccc.int/documents/184700.

NDC of Latvia. Available at https://unfccc.int/NDCREG.

NDC of the EU. Available at https://unfccc.int/NDCREG.

NID of Latvia. Available at https://unfccc.int/first-biennial-transparency-reports.

Report on the technical expert review of the BTR1 of the EU. FCCC/ETF/TERR.1/2024/EU and Add.1. Available at https://unfccc.int/first-biennial-transparency-reports.

B. Additional information provided by the Party

Responses to questions during the review were received from Agita Gancone (Ministry of Climate and Energy of Latvia), including additional material. The following references were provided by Latvia and may not conform to UNFCCC editorial style as some have been reproduced as received:

Central Statistical Bureau of Latvia. 2023. *The collection of statistics Agriculture of Latvia*. Riga. Available at https://admin.stat.gov.lv/system/files/publication/2023-06/Nr_17_Latvijas_Lauksaimnieciba_2023_%2823_00%29_LV_EN.pdf.

Holden, P.J., Shurson, G.C. and Ewan, R.C. 2015. *Dietary Energy for Swine*. Iowa State University and University of Minnesota. Available at https://porkgateway.org/wp-content/uploads/2015/07/dietary-energy-for-swine1.pdf.

Kil D, Kim B, Stein H. Feed Energy Evaluation for Growing Pigs. Animal Bioscience 2013. 26(9):1205-1217. DOI: https://doi.org/10.5713/ajas.2013.r.02. Available at https://www.animbiosci.org/journal/view.php?number=4761.

Latvia University of Agriculture. 2016. *Development of Methodology for GHG Emission Calculation and Data Analysis in the Agricultural Sector Using Modelling Tools Integrating Climate Change (Final Report) (In Latvian).* Available at https://ppdb.mk.gov.lv/wp-content/uploads/2023/06/petijums_VARAM_2017_Lauksaimn_SEG_emisij_aprek_metodolog_un_datu_analiz_ar_model_riku_izstrad_integrej_klim_mainas.pdf.

Latvian Environment, Geology and Meteorology Centre. 2025. *Latvia's Informative Inventory Report 1990–2023.* Available at https://cdr.eionet.europa.eu/lv/un/clrtap/iir/envabilaq/IIR_2025_LV_30042025.pdf.

Latvian Environment, Geology and Meteorology Centre. 2025. Official Statistics Portal of Latvia, table DRU080, *Generation and management of sewage sludge in State cities and municipalities by river basin district and economic activity (NACE Rev. 2), 2020–2024.* Available at https://stat.gov.lv/en/statistics-themes/environment/nature-resources/tables/dru080-generation-and-management-sewage.

Ministry of Climate and Energy. 2024. *QA/QC Procedures Programme Annual Greenhouse Gas, Greenhouse Gas Inventory and Greenhouse Gas Projections*. Riga. Available at https://www.kem.gov.lv/lv/media/1842/download?attachment.

Pilvere, I., Proskina, L. and Nipers, A. 2016. *Technological and Economic Aspects of Meat Cattle Farming in Latvia*. Latvia University of Agriculture. Available at https://www.iitf.lbtu.lv/conference/proceedings2016/Papers/N087.pdf.