

## **ANNEX 3**

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

**Recommendations from the NECD Review 2017, considering revised estimates (RE), technical corrections (TC) and their status of implementation in the inventory submission 2018**

Review year of initial recommendation	Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation made in previous review report	RE or TC in 2017	Assessment of Implementation	RE or TC in 2018	Tier 1 KC	GB 2016 Issue	How recommendations were implemented and where to find related information in the IIR 2019
2017	SI-1A1-2018-0001	Yes	1A1 Energy production, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 2000-2015	For the energy sector, the TERT noted that Slovenia applied the methodology from 2013 EMEP/EEA Guidebook (example: IIR - page 54). The TERT recommends that Slovenia updates this methodology in line with the 2016 EMEP/EEA Guidebook for different energy sectors.	No	The TERT noted that Slovenia has implemented many improvements and updates to apply 2016 EMEP/EEA Guidebook methods /EFs in the 2018 submission, including throughout NFR 1A1, which was identified in the previous NECD review, recommendation SI-1A1-2017-0001. The IIR presents clear information to explain the recalculations, including extensive documentation of the selection of EFs from the 2016 EMEP/EEA Guidebook. The TERT commends the Party for this extensive update and application of the 2016 EMEP/EEA Guidebook factors. The TERT noted that the selection of the default EFs applied to sub-bituminous coal (domestic and imported) for power generation use the defaults from the 2016	No	No	No	Implemented For imported sub-bituminous coal EFs for hard coal was used. EFs were taken from the 2016 EMEP/EEA Guidebook, Energy Industries, Table 3.2, pg. 16. Emission factors are presented in IIR 2019, chapter 3.1.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						<p>EMEP/EEA Guidebook table 3.3, which is intended for use for brown coal / lignite, whereas the recommended table of default EFs for sub-bituminous coal is the 2016 EMEP/EEA Guidebook table 3.2. This may lead to an over-estimate for pollutants such as Cd, Pb and Hg. In response to a question during the review, Slovenia agreed with the TERT, clarifying that the sub-bituminous coal (domestic only, not imported) quality is such (low NCV) that it is classified correctly as brown coal in the inventory calculations. The TERT agreed with the Party's response and recommends therefore that the party revises the EFs applied for the imported sub-bituminous coal to use EFs from the 2016 EMEP/EEA Guidebook table 3.2 across the time series in future submissions, to improve the accuracy of the inventory.</p>				
2017	SI-1A3ai(ii)-2018-0001	No	1A3ai(ii) International aviation cruise (civil) - Memo Item, SO <sub>2</sub> ,	For Memo-Item category 1A3ai(ii) International Aviation Cruise (Civil) the TERT noted that emissions are reported as 'included	No	For category 1A3ai(ii) and all pollutants for all years, the TERT noted that Slovenia partly answered to the previous	No	No	No	Partly implemented Emissions from 1A3ai(ii) outside the national totals were not reported

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

			NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 1990-2015	<p>elsewhere' (notation key 'IE') with no further information given in NFR tables or IIR. In response to a question raised during the review, Slovenia explained that emissions from 1A3ai(ii) are included in category 1A3ai(i) International Aviation LTO (Civil), explaining that this information will be added in chapter 1.5 and chapter 3.3 of the IIR in the next annual submission. The TERT acknowledged the answer provided, noting that including emissions from 1A3ai(ii) in category 1A3ai(i) results in an over-estimate of national total emissions for all relevant pollutants. However, as the contributions of category 1A3ai(i) to the national total emissions reported for NO<sub>x</sub>, NMVOC, SO<sub>x</sub> and PM<sub>2.5</sub> are below 1 per cent, the observed over-estimates themselves are well below the threshold of significance defined as 2 of the national totals. With no technical correction necessary, the TERT nonetheless asks Slovenia to separately report emissions from 1A3ai(ii) outside the national totals as soon as possible in order to improve the correctness, transparency and</p>	<p>recommendation (SI-1A3ai(ii)-2017-0001). The TERT found explanation in the IIR about the use of the 'IE' notation key but the TERT did not find any explanation about planned improvements in reporting separately emissions from 1A3ai(ii) outside the national totals in order to improve the correctness, transparency and comparability of its inventory in its next submissions. In response to a question raised during the review, Slovenia explained that the implementation of the recommended improvement is not planned for next annual submission. Slovenia has to investigate a way how to obtain relevant and reliable data. To ensure time series consistency Slovenia should obtain data for the whole period. Slovenia believes that too much effort with no significant improvement of national totals would be needed for separate reporting emissions from 1A3ai(ii) outside the national totals. The TERT notes that this issue does not relate to an over or</p>				<p>separately. Improvement is not planned since there is no data available.</p>
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INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				comparability of its inventory.		under-estimate and recommends that Slovenia find a way to separate emissions between LTO (for Domestic and International flights to report in national total) and cruise (for Domestic and International flights to report in memo items) in its next submissions in order to improve the correctness, transparency and comparability of its inventory, or at least that Slovenia explain in the IIR whether progress has been made.				
2017	SI-1A3aii(ii)-2018-0001	No	1A3aii(ii) Domestic aviation cruise (civil) - Memo Item, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 1990-2015	For memo-Item category 1A3aii(ii), Domestic Aviation Cruise (Civil), the TERT noted that emissions are reported as 'included elsewhere' (notation key 'IE') with no further information given in NFR tables or IIR. In response to a question raised during the review, Slovenia explained that emissions from 1A3aii(ii) are included in category 1A3aii(i), agreeing that this information will be added in chapter 1.5 and chapter 3.3 of IIR in next annual submission. The TERT acknowledged the answer provided, noting that including emissions from 1A3aii(ii) in category	No	For category 1A3aii(ii) and all pollutants for all years, the TERT noted that Slovenia partly answered to the previous recommendation (SI-1A3ai(ii)-2017-0001). The TERT found an explanation in the IIR about the use of the 'IE' notation key but the TERT did not find any explanation about planned improvements in reporting separately emissions from 1A3aii(ii) outside the national totals in order to improve the correctness, transparency and comparability of its inventory in its next submission. In response to	No	No	No	Partly implemented Emissions from 1A3aii(ii) outside the national totals were not reported separately. Improvement is not planned since there is no data available.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				1A3aii(i) results in an over-estimate of national total emissions for all relevant pollutants. However, as the contributions of category 1A3aii(i) to the national total emissions reported for NO <sub>x</sub> , NMVOC, SO <sub>x</sub> and PM <sub>2.5</sub> are far below 1 per cent, the observed over-estimates themselves are well below the threshold of significance defined as 2 per cent of the national totals. With no technical correction necessary, the TERT nonetheless asks Slovenia to separately report emissions from 1A3aii(ii) outside the national totals as soon as possible in order to improve the correctness, transparency and comparability of its inventory.		a question raised during the review, Slovenia explained that the implementation of the recommended improvement is not planned for next annual submission. Slovenia has to investigate a way to obtain relevant and reliable data. To ensure time series consistency Slovenia should obtain data for the whole period. Slovenia believes that too much effort with no significant improvement of national totals would be needed for separate reporting emissions from 1A3aii(ii) outside the national totals. The TERT notes that this issue does not relate to an over- or under-estimate and recommends that Slovenia find a way to separate emissions between LTO and cruise in its next submissions in order to improve the correctness, transparency and comparability of its inventory, or at least that Slovenia explains in the IIR whether progress has been made.				
2017	SI-1A3dii-2018-0001	No	1A3dii National navigation	For category 1A3dii National Navigation (Shipping) the TERT noted that emissions	No	For category 1A3dii and all pollutants for all years, the TERT noted that Slovenia	No	No	No	Partly implemented Improvement is not planned since

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

			(shipping), SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 1990-2015	are reported as 'included elsewhere' (notation key 'IE') in category 1A3b Road Transport. In response to a question raised during the review, Slovenia explained that these fuels are sold on common petrol stations, making a division between road and marine traffic impossible. Given the minor relevance of category 1A3dii to the overall inventory, the TERT agreed with the explanation provided. However, in order to improve the inventory's transparency and comparability, the TERT recommends Slovenia to continue to explore possibilities to report more disaggregated		could not implement the previous recommendation (SI-1A3dii-2017-0001), because disaggregated data are not available. In response to a question raised during the review, Slovenia explained that the implementation of the recommended improvement is not planned for the next annual submission. Slovenia does not see a possibility to obtain activity data and provide separate reporting for the 2019 submission or a later submission. The TERT agreed with the explanation provided by Slovenia. The TERT understand the difficulty to obtain activity data. The TERT recommends however that Slovenia continue to explore possibilities to report more disaggregated data to enhance transparency and comparability in its next submissions.				disaggregated data are not available.
2017	SI-1A4ai-2018-0001	No	1A4ai Commercial/institutional: Stationary, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 2000	For category 1A4ai Commercial/Institutional: Stationary for year 2000, the TERT noted that the NFR table shows a peak of biomass consumption compared with other years. In response to a question	No	For emissions from 1A4ai, the TERT noted that Slovenia had implemented recalculations in response to a previous review recommendation to revise the historic time series of biomass use. The TERT	No	No	No	Implemented Activity data in Annex were corrected and explanation is included in IIR 2019, chapter 3.4.1.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				<p>raised during the review, Slovenia explained that the availability of relevant data on wood consumption in the residential and commercial sector for the year 2000 and before is quite a problem. Even when data on wood used in tonnes are available, the data in the energy units (TJ) are very uncertain because of the high variability of NCVs which depends on the method and length of wood storage. For this reason, in the NEC inventory, Slovenia has used the same consumption of wood in TJ for the whole period 1990-2000, which was based on a study done in 1998. The TERT notes that this issue is not a case for a technical correction because it concerns only the year 2000 and prior. Due to the high importance of the biomass consumption for the PM emissions estimates in Slovenia, the TERT recommends that Slovenia improves the estimate for biomass consumption.</p>	<p>noted that the recalculations of PM<sub>2.5</sub> appeared to be inconsistent with the activity data recalculations, and that the annex Table 1.16 did not indicate any change in the activity data for solid biomass, presenting the same value for every year in 1990-2000. In response to a question raised during the review, Slovenia provided further details to explain the different biomass and biogas fuels that are used in the sector and also clarified the approach to revise AD in 1990 based on data from the Statistical Office of the Republic of Slovenia, and interpolation of AD for 1991-1999, presenting revised AD for wood biomass from 1990 to 2000. The TERT notes that this issue does not relate to an over or under-estimate, commends Slovenia for implementing significant improvement in methods, EFs and IIR descriptions, and recommends that the Slovenia corrects the reporting of AD in the Annex tables and includes the information provided to the TERT in order to</p>				
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INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						improve the transparency of future submissions.				
2017	SI-1A4bii-2018-0001	No	1A4bii Residential: Household and gardening (mobile), SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 1990-2015	For category 1A4bii Residential: Household and Gardening (Mobile) the TERT noted that emissions are reported as 'included elsewhere' ('IE') in 1A3b Road Transport. In response to a question raised during the review, Slovenia explained that there is no data on fuel used for mobile sources in household and gardening available. Slovenia further explained that, given the amount of fuels used should be rather small, no such data will be collected in the near future. The TERT acknowledged the answer provided by Slovenia, however recommending putting additional effort into making the relevant data available in order to improve the inventory's transparency and comparability.	No	For category 1A4bii and all pollutants for all years, the TERT noted that Slovenia could not implement the previous recommendation (SI-1A4bii-2017-0001), because the statistical office has no intention to collect this data in the near future and because the amount of fuel used for this purpose is very small. In response to a question raised during the review, Slovenia explained that it does not see a possibility to obtain activity data and provide separate reporting in the following years. The TERT agreed with the explanation provided by Slovenia. The TERT recommends however that Slovenia further put additional effort into making the relevant data available in order to improve the inventory's transparency and comparability in its next submissions.	No	No	No	Partly implemented Improvement is not planned since disaggregated data are not available.
2017	SI-1A4cii-2018-0002	No	1A4cii Agriculture/Forestry/Fishing: Off-road vehicles and other machinery,	For category 1A4cii Agriculture/Forestry/Fishing: Off-Road Vehicles and Other Machinery and the key-category pollutants NO <sub>x</sub> and NMVOC, the TERT noted that Tier 3 EFs are	No	For category 1A4cii and NO <sub>x</sub> and NMVOC for all years, the TERT noted that Slovenia took into account the previous recommendation (SI-1A4cii-2017-0002) by	No	No	No	Implemented Explanation is included in IIR 2019, chapter 3.4.3.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

			NO <sub>x</sub> , NMVOC, 1990-2015	<p>applied for emissions from diesel-powered equipment, whereas Tier 1 default EF are applied for two-stroke gasoline equipment. Understanding that most of the NO<sub>x</sub> emissions are likely to result from diesel-powered machinery the TERT further noted that, given the high EF for NMVOC from two-stroke gasoline-equipment, the situation could be different for this pollutant. In response to a question raised during the review, Slovenia explained that there is no precise data available on gasoline powered equipment, further stating that gasoline contributes only about 7 per cent to total fuel consumption in 1A4cii. The TERT acknowledged the answer provided by Slovenia, however recommending putting additional effort into making the relevant data available in order to improve the inventory's correctness and accuracy.</p>		<p>investigating data. In response to a question raised during the review, Slovenia explained that missing information (Part of relevant and linked explanation is already reported in IIR 2018, Chapter 3.4.3 Agriculture/Forestry/Fishing: Off-road vehicles and other machinery (NFR 1A4cii), Category-Specific QA/QC and Verification, pg. 126) will be added in the next submission. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia includes the explanation in the 1A4cii chapter in its next submission.</p>				
2017	SI-1A4cii-2018-0001	No	1A4cii Agriculture/Forestry/Fishing: National fishing, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> ,	<p>For category 1A4cii Agriculture/Forestry/Fishing: National Fishing, the TERT noted that activity data and emissions are reported as 'included elsewhere' ('IE') In</p>	No	<p>For category 1A4cii and all pollutants for all years, the TERT noted that Slovenia took partly into account the previous recommendation (SI-</p>	No	No	No	<p>Partly implemented Improvement is not planned since disaggregated data are not available.</p>

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

			NM VOC, PM <sub>2.5</sub> , 1990-2015	response to a question raised during the review, Slovenia provided additional explanatory information on the national circumstances regarding maritime fishing, also expressing their willingness to include information on where this category is included in chapter 1.5 of the next IIR. The TERT agrees with the explanation provided by Slovenia. However, the TERT recommends Slovenia to include the information provided to the TERT in the IIR and further assess the possibility for separately reporting this category in order to improve the inventory's transparency and comparability.		1A4ciii-2017-0001) by adding information on 'IE' and information on national circumstances regarding fishing in the IIR. In response to a question raised during the review, Slovenia explained that the implementation of the recommended improvement is not planned for next annual submission. Slovenia does not see a possibility to obtain activity data and provide separate reporting in the following years. The TERT agreed with the explanation provided by Slovenia. The TERT understand the difficulty to obtain activity data from fishing. The TERT recommends however that Slovenia further assess the possibility for separately reporting this category in order to improve the inventory's transparency and comparability in its next submissions.				
2017	SI-2A1-2018-0001	No	2A1 Cement production, SO <sub>2</sub> , 1990-2015	For category 2A1 Cement Production and SO <sub>x</sub> , the TERT noted that there was a lack of transparency in the IIR on the driving forces that explains the trend and high inter-annual changes of the SO <sub>x</sub> emission factor, per unit	No	For category 2A1 and SO <sub>x</sub> emissions, for the whole time series, the TERT noted that the recommendation made during the 2017 review on the SO <sub>x</sub> emissions from cement production (SI-	No	No	No	Implemented Information on methodology used for process and combustion emissions is included in IIR

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				<p>of mass of clinker produced. In response to a question raised during the review, Slovenia identified as factors that affect the overall SO<sub>x</sub> emissions, the consumption in one cement plant of a raw material with high content of sulphur, the methodological change in 2002 (to measurement data) and the efficacy of the desulphurisation plant. The TERT recommends that Slovenia includes in the IIR information on the main drivers of the emissions trend and of jumps/dips in the time series.</p>		<p>2A1-2017-0001) has been handled in the Slovenia 2018 submission (IIR and NFR Tables) in a different way from the conclusion of the 2017 recommendation. In response to a question raised during the review, Slovenia explained that before 2018 submission, SO<sub>x</sub> emissions reported in 2A1 were measurement data from plants. SO<sub>x</sub> emissions reported in 1A2f were calculated from activity data on fuel used in cement production and emission factors from the 2013 EMEP/EEA Guidebook. Measurement data from plants do not distinguish between process and combustion emissions. Emissions reported in 2A1 therefore included also combustion emissions. Emissions were double counted. In 2018 submission, SO<sub>x</sub> emissions reported in 1A2f for cement production are calculated from activity data on fuel used in cement production and emission factors from the 2016 EMEP/EEA Guidebook. Measurement data from plants are not used in 1A2f. To avoid double counting and</p>				<p>2019, chapter 4.1 and chapter 3.2.</p>
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INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						ensure time series consistency for the whole period Slovenia adopted the recommended methodology and emission factors from 2016 EMEP/EEA Guidebook. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia includes these clarifications on the methodology used for the calculation of combustion emissions in 1A2f in the IIR for the next submission.				
2017	SI-2D3a-2018-0001	Yes	2D3a Domestic solvent use including fungicides, NMVOC, 1990-2015	For category 2D3a Domestic Solvent Use Including Fungicides the TERT noted that Slovenia applied the methodology from the 2013 EMEP/EEA Guidebook. In response to a question raised during the review, Slovenia stated that the 2016 EMEP/EEA Guidebook Tier 2 methodology will be applied for emission calculations in the next submission. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia updates this methodology in line with the 2016 EMEP/EEA Guidebook in the next submission.	No	For 2D3a Domestic Solvent Use Including Fungicides, for NMVOC, for the entire time series, the TERT noted that the recommendation SI-2D3a-2017-0004 raised during the 2017 review, concerning the use of a Tier 2 methodology proposed in the 2016 EMEP/EEA Guidebook has not been implemented yet. In response to a question raised during the review, Slovenia explained that, as national data on the use of the different products are not available, Slovenia is not planning to use the Tier 2 methodology in the near	No	No	Yes	Not implemented, yet We will try to estimate activity data, using per capita data from similar country (or group of countries) for the next submission.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						future. The TERT notes that this issue may relate to an over- or under-estimate and recommends that Slovenia works to identify a source for AD or estimate AD (i.e. using per capita data relative to a similar country). The TERT also recommends that Slovenia includes a schedule for implementation of the Tier 2 in its next IIR.				
2017	SI-2D3c-2018-0001	No	2D3c Asphalt roofing, NMVOC, PM <sub>2.5</sub> , 2005, 2010, 2015	For category 2D3c Asphalt Roofing the TERT noted that Slovenia applied the methodology from the 2013 EMEP/EEA Guidebook. In response to a question raised during the review, Slovenia stated that the 2016 EMEP/EEA Guidebook methodology will be applied for emission calculations in the next submission. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia updates this methodology in line with the 2016 EMEP/EEA Guidebook in the next submission. For better transparency, the TERT also recommends Slovenia to include the used activity data in the IIR and give a description for	No	For 2D3c, for NMVOC and PM <sub>2.5</sub> , for the entire time series, the TERT noted that the recommendation SI-2D3c-2017-0001 raised during the 2017 review, concerning the use of the 2016 EMEP/EEA Guidebook instead of the 2013 version and the presence of AD in the IIR, has been implemented. The TERT sent an additional question on the reason for the EF chosen for NMVOC. In response to a question raised during the review, Slovenia explained in detail the process that is implemented in Slovenia. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia	No	No	Yes	Implemented The description is included in the IIR 2019, in the Chapter 4.4.4, under Activity data.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				emission trends in the next submission.		add this description in the IIR for its next submission.				
2017	SI-2D3d-2018-0001	Yes	2D3d Coating applications, NMVOC, 2005, 2010, 2015	For category 2D3d Coating Applications, the TERT noted that NMVOC emissions from coating applications in construction and building, domestic use and wood coating activities were not included in the inventory. In response to a question raised during the review, Slovenia explained that in their opinion NMVOC emissions from domestic paint application are included within the Tier 1 methodology in NFR 2D3a Domestic Solvent Use Including Fungicides. Slovenia stated that they already tried to solve the issue on domestic use of paint with hiring an external contractor, but nobody was able to provide reliable data on paint application in domestic use. The TERT noted that according to the 2016 EMEP/EEA Guidebook the domestic paint application is excluded from NFR 2D3a and should be reported under NFR 2D3d. The TERT recommends Slovenia to exclude the amount of paint used in facilities from the amounts of presumably used paint according to the national	No	For category 2D3d, for NMVOC emissions, for the whole time series, the TERT noted that the recommendation raised in the 2017 review (SI-2D3d-2017-0001) relating to the estimate of NMVOC emissions for use of paint, and to the split between domestic use of paint and paint used in construction and building has been partly implemented. In response to a question raised during the review, Slovenia indicated that its priority is to estimate more accurately activity data (for the next submission) and NMVOC emissions. Slovenia also explained that the distinction between domestic and construction/ buildings use of paint is less important as it has no effect on the total emissions, therefore the improvement is not planned for the near future. The TERT agreed with the priority defined by Slovenia and recommends that Slovenia improve the estimation on NMVOC as planned in its next submission, and also recommends including a	No	No	No	Partly implemented Estimation of NMVOC emissions have been improved and description of the new source of data have been included in the IIR 2019, in the Chapter 4.4.5, under Activity data and NMVOC emissions for the period 2011-2016 have been recalculated.  At that moment, we have no data and no reliable methodology to perform a disaggregation between domestic and construction use of paint. As this improvement would have no effect on the total emissions, it is not planned for the near future.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				statistics, i.e. import- export+ production. The TERT agrees that not taking into account the amounts of stock might lead to a bigger uncertainty of how much paint has been used annually, but it is reasonable to assume, in lack of better data, that all the paint that is presumably used is a true value even, if we know that, it is not. When the amounts of apparently used paint is calculated, there is a need for expert opinion to divide those amounts between domestic use of paint and paint used in construction and building, e.g. estimating the size of the construction sector in the country's economy, etc. The 2016 EMEP/EEA Guidebook provides Tier 2 EFs for those activities. The TERT recommends Slovenia to revise the emission estimates in its next submission.		schedule for implementation of the split of emissions in its next IIR.				
2017	SI-2D3g-2018-0003	Yes	2D3g Chemical products, NMVOC, 2005, 2010, 2015	For category 2D3g Chemical Products the TERT asked Slovenia to explain in more detail what kind of improvements Slovenia is planning to implement for the NFR category 2D3g. In response to a question raised during the review, Slovenia explained that the	No	For category 2D3g and NMVOC emissions, for years 2005, 2010, 2015, the TERT noted that the 2017 recommendation SI-2D3g-2017-0003 has been partly implemented in the Slovenia 2018 submission (IIR and NFR Tables). In response to a question	No	No	No	Partly implemented Information related to primary plastics, pharmaceutical products, leather tanning and rubber has been included in the IIR 2019, in the Chapter 4.4.8, under Activity data.



INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				<p>main task of improvement is a sector "Remaking of plastic". Slovenia stated that they will probably exclude this sector from the inventory. Slovenia also said that they are planning to apply for a project to investigate the activities covered with the category 2D3g, if the resources for that will be available. The TERT partly agrees with the explanation provided by Slovenia. The TERT commends Slovenia for trying to improve the inventory. The TERT recommends that Slovenia doesn't exclude the activity "remaking of plastic" from the inventory, if the process produces air emissions and that information is available to Slovenia.</p>		<p>raised during the review, Slovenia provided extensive information. The TERT recommends that Slovenia adds the information related to primary plastics and "Pharmaceutical products" and "Leather tanning" in the IIR in the next submission. Regarding the data used for plastic, the TERT partly agreed with the answer provided by Slovenia. The hypothesis of the equality of monomer and PE produced should be investigated because it does not take into consideration the throughput of the production process. Therefore, it may lead to an over-estimate of emissions. The TERT recommends that Slovenia follows the recommendation from the expert peer-review of the use of NMVOCs measurements and assesses the implementation of this methodology for the next submission. Concerning rubber processing, Slovenia answered that under rubber processing mostly tyre production have been included and</p>				<p>Assessment of TOC measurements from relevant plastics production processes will be performed for the next submission.</p>
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INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						for this reason, the EF for manufacture of tyres has been used. The TERT partly agreed with the answer provided by Slovenia. The TERT agreed that rubber processing for tyre production could represent the majority of rubber processing. However, for completeness reasons, the TERT recommends Slovenia to investigate whether other rubber processes occur, in addition to tyre production, in order to cover the other processes, if any.				
2017	SI-2D3i-2018-0001	No	2D3i Other solvent use, NMVOC, 2000-2015	For category 2D3i Other Solvent Use and pollutant NMVOC for year 2006 the TERT noted that there was a sharp increase of NMVOC emissions in 2006 by 2.8 times compared to the year 2005. In response to a question raised during the review, Slovenia explained that this might be a mistake, but Slovenia can't give a firm answer to that issue. The TERT noted that the issue is below the threshold of significance for a technical correction. The TERT recommends that Slovenia investigates the possible mistake and correct it or give an explanation for emission	No	The TERT reiterates recommendation SI-2D3i-2017-0003 from the 2017 NECD Review regarding providing the explanation of the sharp increase of NMVOC emissions in 2006. During the 2018 NECD Review, Slovenia confirmed that the recommendation would be addressed by the next submission.	No	No	No	Not implemented, yet A reason for the sharp increase was some missing entries in the HOS database for the years 2005, 2006, and 2008. Now, the database is complete, but was not complete at the time of inventory submission on 15 February. Therefore, emissions will be corrected for the next submission.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				trends in the IIR in its next submission.						
2017	SI-2G-2018-0001	No	2G Other product use, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , 1990-2015	For category 2G Other Product Use, the TERT noted that no emissions have been estimated and notation key 'NO' has been used in NFR table. In response to a question raised during the review, Slovenia provided revised estimates for NO <sub>x</sub> , NMVOC and PM <sub>2.5</sub> for year 2015 and stated that the emission estimates are insignificant. For revised estimates from tobacco combustion Slovenia used the 2013 EMEP/EEA Guidebook methodology and for the use of fireworks the GAINS model EF for particulates 0.035 kg/capita, as there is no activity data for fireworks. The TERT disagreed with the explanation and revised estimates provided by Slovenia. The TERT decided not to calculate a technical correction as the issue is below the threshold of significance for a technical correction. The TERT recommends that Slovenia looks for fireworks activity data from the Eurostat Database (CN codes 36041000, 36049000 and PRODCOM codes 20511300, 20511400) and	No	For category 2G Other Product Use and all the relevant pollutants, for the whole time series, the TERT noted that, with reference to the Slovenia 2018 submission (IIR and NFR Tables), the recommendation made during the 2017 review (SI-2G-2017-0001), has been implemented, but needs further clarifications to improve the transparency of the IIR. In response to a question raised during the review, Slovenia stated that the clarifications will be included in the next submission. The TERT agreed with the data provided by Slovenia. The TERT recommends that Slovenia includes ADs figures and sources in the IIR for the next submission.	No	No	No	Implemented ADs and other information are included in the IIR 2019, in Chapter 4.4.10 (Use of Fireworks, Tobacco combustion, Other-Use of pesticides, Airplane de-icing).

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

				apply the 2016 EMEP/EEA Guidebook methodology for the emission calculations from the use of fireworks and tobacco combustion. The TERT recommends that Slovenia includes the emission estimates for these activities within category 2G in its next submission.						
2017	SI-3Da1-2018-0001	Yes	3Da1 Inorganic N-fertilizers (includes also urea application), NO <sub>x</sub> , NH <sub>3</sub> , 1990-2015	For category 3Da1 Inorganic N-Fertilisers and pollutants NO <sub>x</sub> and NH <sub>3</sub> for year 1990-2015 the TERT noted that 2013 EMEP/EEA Guidebook methodology has been used. In response to questions raised during the review, Slovenia indicated that they would update the methodology for the next submission. The TERT recommends that Slovenia updates the methodology in line with the 2016 EMEP/EEA Guidebook in the next submission. The TERT also recommends enhancing the transparency of the IIR by including the AD and EF used by fertiliser type.	No	For category NFR 3Da1 Inorganic N-fertilizers the TERT noted a difference regarding the NH <sub>3</sub> and NO <sub>2</sub> estimate applied in NFR and information given in IIR. In response to a question raised during the review, Slovenia explained that an error in calculation procedure due to NH <sub>3</sub> EF for urea was discovered. The TERT noted that the issue is below the threshold of significance for a technical correction. Regarding the EF NO <sub>x</sub> a conversion was calculated, which is not needed for NO <sub>x</sub> EF in 2016 EMEP/EEA Guidebook but was the case for NO <sub>x</sub> EF in 2013 EMEP/EEA Guidebook. Slovenia stated that it will be corrected in the next submission. The TERT recommends that Slovenia corrects the estimate and	No	No	Yes	Implemented Error in calculation of ammonia emissions from urea application was corrected. On the initiative of reviewers, the NO <sub>x</sub> emission factor, which was previously misinterpreted as 0,040 kg NO per kg of N, was also replaced by a factor 0,040 kg NO <sub>2</sub> per kg of N applied. Corrections are described in IIR (section Recalculations) and when applicable also in methodology. IIR 2019, chapter 5.2.1.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

						reports it in the next submission.				
2017	SI-3Da2b-2018-0001	No	3Da2b Sewage sludge applied to soils, NO <sub>x</sub> , NH <sub>3</sub> , 1990-2015	For category 3Da2b Sewage Sludge Applied to Soils and pollutants NO <sub>x</sub> and NH <sub>3</sub> for years 1990-2015, the TERT noted activity data are not reported and the 2013 EMEP/EEA Guidebook is used. The TERT notes that this issue does not relate to an over- or under-estimate above the threshold of significance. During the review, Slovenia indicated that this will be updated in the 2018 submission. The TERT recommends Slovenia to apply the 2016 EMEP/EEA Guidebook methodology in the next submission and to report the activity data used.	No	For category NFR 3Da2b Sewage Sludge Applied to Soils regarding NH <sub>3</sub> emission 2005-2016, the TERT noted that the calculation was based on the NH <sub>3</sub> EF provided in the 2013 EMEP/EEA Guidebook. In response to a question raised during the review, Slovenia stated that NH <sub>3</sub> EF from the 2016 EMEP/EEA Guidebook will be included in the next submission. The TERT recommends that Slovenia implements the change in the next submission.	No	No	Yes	Implemented The EMEP/EEA (2013) emission factor for ammonia emissions was replaced by an EMEP/EEA (2016) factor (0,13 kg of ammonia nitrogen per kg of total ammonia nitrogen applied by sewage sludge). Corrections are described in IIR (sections Emission factors and Recalculations). IIR 2019, chapter 5.2.3.

**Additional recommendations made during the NECD Review 2018 for NO<sub>x</sub>, NMVOC, SO<sub>x</sub>, NH<sub>3</sub>, PM<sub>2.5</sub> considering revised estimates (RE), technical corrections (TC)**

Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation	RE or TC in 2018	Tier 1 used for a key category	Issue related to use of GB prior to the 2016 version	How recommendations were implemented and where to find related information in the IIR 2019
SI-OB-2018-0001	No	OB National total for compliance assessment, SO <sub>2</sub> , NO <sub>x</sub> , NH <sub>3</sub> , NMVOC, PM <sub>2.5</sub> , PAHs, PCBs, HCB, Cd, Hg, Pb, PCDD/F, 1990-2016	The TERT noted that Slovenia had not reported numerical values for the national total for compliance. In response to a question raised during the review, Slovenia indicated that the information would be provided in the next submission. The TERT recommends Slovenia to report the national total for compliance in the next submission.	No	No	No	Implemented National total for compliance was reported in 2019 submission.
SI-2B6-2018-0001	No	2B6 Titanium dioxide production, SO <sub>2</sub> , 2015	For 2B6 Titanium Dioxide Production, for SO <sub>x</sub> emissions, for 2002-2015, the TERT noted that a recalculation above + 10 % of the sector and + 2% of the total national have been made. In response to a question raised during the review, Slovenia explained that they recalculated SO <sub>x</sub> emissions from activity data on titanium dioxide production and emission factor from 2016 EMEP/EEA Guidebook (Tier 2), for the whole period, to ensure time series consistency (instead of considering REMIS database for 2002-2016 (measurements)). The TERT disagreed with this explanation and asked Slovenia for a revised estimate, considering that using REMIS database (Tier 3) can be a more accurate methodology. Indeed, if abatement technologies were implemented along the whole period, measurements of emissions should reflect this improvement, whereas a Tier 2 default emission factor applied for the whole period does not take into consideration such an improvement, if any. Slovenia provided revised estimates for 2002-2016, considering two options. Slovenia answered that abatement technologies started in the year 1982. The TERT agreed with the option 1 of the revised estimates provided by Slovenia and attached it to the annex of the review report. Option 1 consists in using REMIS measurements from 2002 to 2016, and to apply and average EF from 2002-2016 to the period 1982-2001, and Tier 2	RE	No	No	Implemented Revised estimates were included into 2019 submission. IIR 2019, chapter 4.2.3.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation	RE or TC in 2018	Tier 1 used for a key category	Issue related to use of GB prior to the 2016 version	How recommendations were implemented and where to find related information in the IIR 2019
			EMEP 2016 EF for 1980-1981. The TERT recommends that Slovenia includes the revised estimate in its next submission. Considering the increase in SO <sub>x</sub> measured emissions (from REMIS) during the period 2003-2005, the TERT recommends that Slovenia investigates on the reasons for this increase (it may be due to dysfunction of abatement system for instance).				

**Recommendations from the NECD Review 2018 concerning the first phase of the in-depth review of national emission inventories of POPs and heavy metals**

Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation	Tier 1 used for a key category	Issue related to use of GB prior to the 2016 version	How recommendations were implemented and where to find related information in the IIR 2019
SI-2C3-2018-0004	Yes	2C3 Aluminium production, HCB, 1990, 2005, 2016	For 2C3, Aluminium Production for HCB, for the whole time series, the TERT noted that there may be an under-estimate of HCB emissions. In response to a question raised during the review, Slovenia explained that the exact activity data on secondary aluminium production figures were not easy to find in a short term, but that they plan to obtain them for the next submission. Moreover, contacts with producers led to the information that there was no use of Hexachlorobenzene in secondary aluminium production in the whole period 1990-2016. But they used small amounts of Hexachloroethane for removal unwanted additions in the period 1990-2001. That could cause some small unintentional emissions of HCB in the period 1990-2001. Hexachloroethane was phased out from the production in 2001. Slovenia stated that they plan to obtain activity data on secondary aluminium production, investigate an impact of Hexachloroethane use on HCB emissions and estimate potential HCB emissions for the period 1990-2001 in next annual submission. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia include this improvement in its next submission.	No	No	Implemented HCB emissions were included into 2019 submission. IIR 2019, chapter 4.3.3.
SI-2D3g-2018-0001	Yes	2D3g Chemical products, PAHs, 1990, 2005, 2016	For 2D3g, Chemical Products for PAHs, for the whole time series, the TERT noted that the notation key 'NE' is reported while the 2016 EMEP/EEA Guidebook provides a Tier 2 methodology and a Tier 2 emission factor for benzo(a)pyrene for asphalt blowing (Tables 3-8 to 3-10 in the 2D3g Chemical products 2016 Chapter). In response to a question raised during the review, Slovenia explained that there is no asphalt blowing process in Slovenia and that the total amount of the air-blown bitumen, which is used in the production of asphalt roofing product is imported. The TERT agreed and	No	No	Implemented Notation key NE has been replaced with NO in the NECD Inventory Report 2019.



INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation	Tier 1 used for a key category	Issue related to use of GB prior to the 2016 version	How recommendations were implemented and where to find related information in the IIR 2019
			recommends that Slovenia includes the appropriate notation key ('NO') in the next submission.			
SI-1A3bvi-2018-0001	No	1A3bvi Road transport: Automobile tyre and brake wear, Cd, Pb, 1990-2016	For category 1A3bvi Road Transport: Automobile Tyre and Brake Wear and Pb and Cd for all years, the TERT notes with reference to NFR tables and IIR pages 81-99 that there is a lack of transparency regarding heavy metal emissions. The 1A3bvi-vii chapter of the 2016 EMEP/EEA Guidebook gives HM emission factors, so notation key could not be 'NA'. In response to a question raised during the review, Slovenia explained that it is planning to estimate non-exhaust emissions of Pb and Cd from automobile tyre and brake wear for the whole period 1990-2017 in the next submission (but not Hg as no emission factor is available in the 2016 guidebook). Slovenia agreed with the observation that 'NE' instead of 'NA' should have been used for Pb and Cd in 1A3bvi NFR sector. The TERT agreed with the explanation provided by Slovenia. The TERT recommends that Slovenia estimates Pb and Cd for 1A3bvi sector in its next submission by applying at least the available 2016 EMEP/EEA Guidebook emission factors.	No	No	Implemented Cd and Pb emissions were included into 2019 submission. IIR 2019, chapter 3.3.1.
SI-2B10a-2018-0001	No	2B10a Chemical industry: Other, Hg, 1990, 2005, 2016	For 2B10a, Chemical Industry: Other, for Hg emissions, for the entire time series, the TERT noted that in Slovenia's 2018 NFR Table, the notation key is NA, while there is a 2016 EMEP/EEA Guidebook methodology and a default emission factor for Hg, for chlorine production. In response to a question raised during the review, Slovenia explained that there is a chlorine production in Slovenia. The process applied is a membrane cell electrolysis using NaCl. Emissions have not been estimated since no emission factors are available for this type of process. This process has been used in the whole period. According to 2016 EMEP/EEA Guidebook, 2B Chemical, Table 3.34, page 33 notation key 'NE' instead of 'NA' should have been used for other pollutants. Slovenia stated that they will correct notation keys in next annual	No	No	Implemented Description is included into 2019 submission. IIR 2019, chapter 4.2.4.

INFORMATIVE INVENTORY REPORT 2019 for SLOVENIA

Observation	Key Category	NFR, Pollutant(s), Year(s)	Recommendation	Tier 1 used for a key category	Issue related to use of GB prior to the 2016 version	How recommendations were implemented and where to find related information in the IIR 2019
			submission. The TERT agreed with the explanation provided by Slovenia, notes that this issue does not relate to an over- or under-estimate and recommends that Slovenia includes the description of the process in its next IIR.			
SI-2C1-2018-0001	No	2C1 Iron and steel production, HCB, 1990, 2005, 2016	For 2C1 Iron and Steel Production, for HCB, the TERT noted that there is a lack of transparency regarding the type of iron and steel technologies occurring in Slovenia. In response to a question raised during the review, Slovenia explained that integrated plants in Slovenia occurred until 1987 (pig iron and steel production). Since 1988 till now only electric arc furnace steel plants have been in operation in Slovenia. The TERT notes that this issue does not relate to an over- or under-estimate and recommends that Slovenia includes this description in its next IIR.	No	No	Implemented Description is included into 2019 submission. IIR 2019, chapter 4.3.1.
SI-2C3-2018-0001	No	2C3 Aluminium production, PCDD/F, 1990, 2005, 2016	The TERT notes with reference to Slovenia's 2018 NFR Table, for 2C3 Aluminium Production, for PCDD/F emissions, for the whole time series, that there may be an under-estimate of emissions as PCDD/F from secondary aluminium production have not been reported. In response to a question raised during the review, Slovenia confirmed that there is a secondary aluminium production in Slovenia and indicated that PCDD/F emissions will be estimated and reported in the 2019 submission. The TERT recommends that Slovenia increases the completeness of its inventory by including PCDD/F emissions from 2C3 Aluminium Production in its next submission, and also recommends that Slovenia provide information on secondary aluminium production in Slovenia in its next IIR.	No	No	Implemented Dioxin/ furans emissions were included into 2019 submission. IIR 2019, chapter 4.3.3.