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Report for the Stage 3 in-depth review of emission inventories submitted under the UNECE LRTAP Convention and EU National Emissions Ceilings Directive for:

STAGE 3 REVIEW REPORT ALBANIA

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INTRODUCTION

- 1. The mandate and overall objectives for the emission inventory review process under the LRTAP Convention is given by the UNECE document 'Methods and Procedures for the Technical Review of Air Pollutant Emission Inventories reported under the Convention and its Protocols' (1) hereafter referred to as the 'Methods and Procedures' document.
- 2. This annual review has concentrated on SO_2 , NOx, NMVOC, NH₃, plus PM₁₀ & PM_{2.5} and POPs for the time series years 1990 2010, reflecting current priorities of the EMEP Steering Body and the Task Force on Emission Inventories and Projections (TFEIP). HMs have been reviewed where possible.
- 3. This report covers the stage 3 centralised reviews of the UNECE LRTAP Convention and EU NEC Directive inventories of Albania coordinated by the EMEP emission centre CEIP acting as review secretariat. The review took place from 25th June 2012 to 29th June 2012 in Copenhagen, Denmark, and was hosted by the European Environment Agency (EEA). The following team of nominated experts from the roster of experts performed the review: Generalist Pieter Lodewijks (EU/VITO), Energy Pieter Lodewijks (EU/VITO), Transport Helen Heintalu (Estonia), Industry Julien Jabot (France), Solvents David Kuntze (Germany), Agriculture + Nature Hakam Al-Hanbali (Sweden), Waste Intars Cakaras (Latvia).
- 4. Anne Misra was the lead reviewer. The review was coordinated by Katarina Marečková (EMEP Centre on Emission Inventories and Projections CEIP).

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¹ Methods and Procedures for the Technical Review of Air Pollutant Emission Inventories reported under the Convention and its Protocols. Note by the Task Force on Emission Inventories and Projections. ECE/EB.AIR/GE.1/2007/16 http://www.unece.org/env/documents/2007/eb/ge1/ece.eb.air.ge.1.2007.16.e.pdf

PART A: KEY REVIEW FINDINGS

5. This is Albania's second Informative Inventory Report (IIR) submitted under the Convention. The ERT is pleased to see the progress compared with previous reporting and the effort that has been undertaken for the submission of this IIR. The IIR is well presented, but the executive summary is missing. Therefore we encourage the Party to include an executive summary.

INVENTORY SUBMISSION

- 6. The report is generally in line with the EMEP/EEA inventory guidebook and UNECE reporting guidelines. The authors of the report acknowledge that there are a few shortcomings which will be addressed in subsequent IIRs. It is recommended that priority is given to estimating emissions from sources where data is missing in future years.
- 7. Albania, in its 2012 submission, has reported emissions for the time series 1990 to 2009.
- 8. In the 2012 CLRTAP submission, Albania provided an inventory for NOx, CO, NMVOC, SO_2 , NH₃, PM (PM₁₀, PM_{2.5}), dioxins, heavy metals and POPs in NFR09 categories for the time series from 1990 to 2009. TSP emission estimates are missing in most of the NFR sectors.

KEY CATEGORIES

- 9. The IIR from Albania contains a level Key Category Analysis (KCA) and a Trend Assessment consistent with the EMEP/EEA Guidebook for the pollutants NOx, CO, NMVOC, SO₂, NH₃, PM₁₀ and PM_{2.5}. The ERT encourages Albania to present the key sources also for the other pollutants.
- 10. The ERT encourages Albania to use NFR sector codes for the trend analysis. This will improve the transparency.
- 11. The ERT commends Albania for using a higher threshold for their KCA -consistent with UNFCCC (95%), which is higher than the specified 80% for air pollutants.
- 12. The ERT would like to point out that Tier 2 or 3 methodologies should be applied to all sources identified as key categories. While Albania already applies country-specific methodologies to most of the key sources, higher tier methodologies should also be adopted for NFR codes 1A4a and 1A4b.

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QUALITY

Transparency

- 13. The ERT recognises the level of effort undertaken by Albania in providing an inventory detailed enough to undertake an in-depth review.
- 14. The ERT has observed that the "Other sources and sinks" is a very dominant key source for NMVOC emissions throughout the time series (1990-2009) in Albania (see IIR, page 20, Figure 5). However, it is not explained and no information is given in the IIR what the main source of NMVOC is in this category. The ERT recommends that Albania describes, and gives detailed information of, the main sources of NMVOC emissions from this category in its future inventory submissions to increase transparency.
- 15. The ERT encourages the Party to provide more information on assumptions, activity data trends, data sources, emission drivers and the tier level of methods used for all sectors in the IIR to improve transparency further.
- 16. While the IIR gives good descriptions of the activity indicators and data sources that have been used, no activity data is reported. The ERT encourages the Party to provide more information on activity data.
- 17. While Albania refers to the EMEP/EEA Guidebook 2009 for most of the 'area sources' except for transport, the corresponding emission factors are not always correct, e.g. for 'Industry combustion plants <20 MW (boilers)' on LPG the emission factor for 'gaseous fuels' is used while it should be the emission factor for 'other liquid fuels'. For residential plants the same emission factors are used as for the service sector, while in the Guidebook these are different. For some of the applied emission factors (IIR, Table 14 and 15) no reference is given, thus it is not clear to the ERT where these originate from.

Completeness

- 18. With its 2012 CLRTAP submission, Albania provided an inventory for NOx, CO, NMVOC, SO₂, NH₃, PM (PM₁₀, PM_{2.5}), dioxins, heavy metals and POPs in NFR09 categories for the time series from 1990 to 2009.
- 19. The ERT recommends that future data submissions include also the most up to date year, i.e. 2010 in 2012. Furthermore, the ERT encourages Albania to estimate also emissions of TSP because emission estimates for PM_{10} and $PM_{2.5}$ have already been calculated.
- 20. The IIR (chapter 1.8) lists 40 NFR sub-categories for which no activities are estimated. However, this table does not completely match the reporting template, e.g. category 1A3b iv contains emission estimates, while it is listed as a non-estimated activity. Category 1B1c is missing in the IIR as a non-estimated activity. Most pollutants from category 2A3 are listed as NA in the 'Reporting template', while

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this category is listed as a non-estimated activity in the IIR. The ERT encourages Albania to adjust table 9 of the IIR so that it will match the NFR reporting template.

21. Albania specifies (in Chapter 4 of the IIR) the main missing data sources that are subject to improvement. The ERT encourages the Party to further complete activity data and emission estimates for these sources.

Consistency, including recalculations and time-series

22. In its 2012 IIR submission Albania indicated that 'some new input data were collected' and 'some changes in emission factors were applied' with respect to the previous IIR. A recalculation of the time series has been carried out. The ERT encourages Albania to provide detailed and complete information on recalculations in the next IIR submissions by pollutant, NFR code and year.

Comparability

23. The inventory of Albania is generally comparable with inventories of other reporting parties. The allocation of source categories follows that of the EMEP/EEA Reporting Guidelines.

CLRTAP/NECD comparability

24. Albania does not report emissions under the NEC Directive as a non EU27 country. Albania does not report indirect greenhouse gases compiled under UNFCCC either.

Accuracy and uncertainties

- 25. The ERT is pleased to see that Albania uses a detailed set of higher tier emission factors based on country-specific models, especially for the transport sector. However, we encourage the Party to describe in more detail and compare these emission factors with the latest 2009 EMEP/EEA Emission Inventory Guidebook.
- 26. Albania does not currently perform an uncertainly analysis. The ERT encourages the Party to provide quantitative uncertainty estimates of emissions in its next CLRTAP submission, especially for key sources.
- 27. The ERT has observed that the total emissions of NMVOC in the NFR table for 2009 (27,645 Gg) do not match the total (120000 Mg or 120 Gg) in the IIR (page 20, Figure 5). Albania has mentioned that the value in the IIR also contains natural emissions whereas the value in the NFR table only contains total anthropogenic NMVOC emissions.

Verification and quality assurance/quality control approaches

28. Albania's IIR lists institutional arrangements, the inventory preparation process and the QA/QC processes.

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FOLLOW-UP TO PREVIOUS REVIEWS

29. The current stage 3 centralised review has used outputs from the stage 1 and stage 2 review processes. The ERT encourages Albania to refer to these previous reviews when examining this review report, and when updating its improvement plans.

AREAS FOR IMPROVEMENT IDENTIFIED BY ALBANIA

- 30. Albania lists planned improvements in Chapter 4 of the IIR. The Party specifies the most relevant missing data (detailed by point sources, area sources and mobile sources) that could have a large impact on the emission totals.
- 31. The ERT recognises the level of effort undertaken by Albania to provide an inventory to perform a stage 3 review.

PART B: RECOMMENDATIONS FOR IMPROVEMENT TO THE PARTY

CROSS-CUTTING IMPROVEMENTS IDENTIFIED BY THE ERT

- 32. The ERT recommends that Albania reports all pollutants required und LRTAP Convention.
- 33. The ERT encourages the Party to report the full time series from 1990 to the most recent inventory year (i.e. 2010 for this review period) and to provide emissions for all subsectors.
- 34. The ERT recommends that Albania provides, for each category more information on assumptions, activity data time series, data sources, emission drivers, and tier levels of the method used.
- 35. The ERT encourages the Party to describe in more detail the emission factors and to compare the higher tier emission factors based on country-specific models with the latest 2009 EMEP/EEA Emission Inventory Guidebook.
- 36. The ERT encourages Albania to consider provision of an uncertainty analysis.
- 37. The ERT encourages Albania to list performed improvements and recalculations by sector, year, and pollutant in the IIR as well as to highlight the drivers and prioritisation of improvements.

SECTOR-SPECIFIC RECOMMENDATIONS FOR IMPROVEMENT IDENTIFIED BY ERT

ENERGY

Review Scope

onatanto itorionoa		SO ₂ , NOx, NMVOC, NH ₃ , PM ₁₀ & PM _{2.5}			
Years		1990 – 2009			
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommer dation Provided	
1.A.1.a	public electricity and heat production	NO		X	
1.A.1.b	petroleum refining	X		X	
1.A.1.c	Manufacture of solid fuels and other energy industries	NO			
1.A.2.a	iron and steel	NE		Х	
1.A.2.b	non-ferrous metals	Х		Х	
1.A.2.c	chemicals	NE		Х	
1.A.2.d	pulp, paper and print	NE		Х	
1.A.2.e	food processing, beverages and tobacco	NE		Х	
1.A.2.f.i	Stationary Combustion in Manufacturing Industries and Construction: Other (Please specify in your IIR)	Х		Х	
1.A.2.f.ii	Mobile Combustion in Manufacturing Industries and Construction: (Please specify in your IIR)				
1 A 3 e	Pipeline compressors	NO			
1.A.4.a.i	commercial / institutional: stationary	X			
1.A.4.a.ii	commercial / institutional: mobile				
1.A.4.b.i	residential plants	Х			
1.A.4.b.ii	household and gardening (mobile)				
1.A.4.c.i	Agriculture/forestry/fishing. stationary	Х			
1.A.4.c.ii	off-road vehicles and other machinery?				
1.A.4.c.iii	national fishing				
1.A.5.a	other, stationary (including military)	NE			
1.A.5.b	other, mobile (including military, land based and recreational boats)				
1.B.1.a	coal mining and handling	X			
1.B.1.b	solid fuel transformation	NO			
1.B.1.c	other fugitive emissions from solid fuels)	NE			
1 B 2 a i	Exploration, production, transport	NA			
1 B 2 a iv	Refining / storage	Х			
1B2av	Distribution of oil products	Х			
1B2b	Natural gas	Х			
1 B 2 c	Venting and flaring	NE			
1 B 3	Other fugitive emissions from geothermal energy production , peat and other energy extraction not included in 1 B 2				

Note: Sectors 1.A.2.f.ii, 1.A.4.a.ii, 1.A.4.b.ii, 1.A.4.c.ii, 1.A.5.b have not been reviewed under Energy as they are Transport sources

General recommendations on cross-cutting issues.

38. The CLRTAP submission includes emissions from 1990 to 2009. Some potentially important sectors are not estimated (NE), but for others the emission inventory is generally complete for the main pollutants. The ERT encourages Albania to complete the emission inventory for the sources currently not estimated.

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39. The ERT recommends that Albania enhances the transparency of the Energy sector by including more activity data and more descriptions of methodologies. Specific recommendations are given in the Sub-sector Specific Recommendations section.

Transparency:

- 40. Albania uses zero-values in a number of areas in the reporting tables. The ERT encourages Albania to use the appropriate notation keys (e.g. NO where emissions are "Not Occurring", NE where emissions are "Not Estimates" and IE where emissions are "Included Elsewhere") where emission estimates are not available or occurring.
- 41. Albania has provided tables in its IIR presenting emission factors and activity data sources. However, the transparency can be improved by providing not only the sources of activity data which were used for the calculations, but also figures. The ERT encourages the Party to describe the methodologies used to estimate energy emissions.
- 42. The ERT encourages the Party to describe which tier methodology has been applied where the EMEP/EEA Guidebook has been used as reference value.

Completeness:

- 43. The ERT welcomes the fact that Albania did not only submit emissions of the main pollutants, but also of PM_{10} , $PM_{2.5}$, CO, heavy metals and in some cases POPs.
- 44. The ERT recommends that Albania also estimates TSP emissions where PM_{10} and $PM_{2.5}$ emissions occur. The ERT recognises that the Tier 1 emission factor for TSP from the EMEP/EEA Guidebook cannot be directly applied, due to the use of country-specific emission factors for PM_{10} and $PM_{2.5}$ that are significantly higher than the EFs given in the Guidebook.
- 45. The ERT encourages Albania to provide emission estimates for the NFR sectors 1A2a, 1A2c, 1A2d, 1A2e, 1A5e, 1B1c and 1B2c.

Consistency including recalculation and time series:

- 46. The ERT confirms that a consistent methodology has been applied for all reported years within the Energy sector in the 2012 submission.
- 47. In its 2012 IIR submission Albania indicated that 'some new input data were collected' and 'some changes in emission factors were applied' with respect to the previous IIR. The ERT encourages Albania to provide detailed and complete information on recalculations in the next IIR submissions by pollutant, NFR code and year.

Comparability:

48. The ERT welcomes the fact that Albania applies higher tier emission factors for some energy related emission sources.

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49. Albania uses country-specific emission factors for 'point sources – boilers' (industry boilers < 20 MW, refinery boilers >=50 <300 MW, refinery furnaces) using liquid fuel. The emission factor for NOx for liquid fuel industry boilers is missing in Table 15 of the IIR. The ERT assumes that the Tier 1 EMEP/EEA Guidbook 2009 factor, as mentioned in Table 23 of the IIR, has been used. The ERT recommends describing in detail the reference and application of the emission factors for point sources in the next submission of the IIR.

Accuracy and uncertainties:

- 50. Albania has provided a key source analysis for most pollutants. However, it is not clear what sub-sectors are included in NFR sector '1A2fi Stationary combustion in manufacturing industries and construction: Other'. The ERT recommends specifying, in the next IIR submission, which sectors are included.
- 51. The ERT has noted that no quantitative uncertainty analysis has been done. The ERT encourages Albania to perform an uncertainty analysis for the next submission as planned in the IIR.

Improvement:

52. Albania lists future improvements in Chapter 4 of the IIR. The Party has specified the most relevant missing data (detailed by point source, area source and mobile source) that could have a large impact on the emission totals.

Sub-sector Specific Recommendations.

1A1a (Public electricity and heat production)

53. Albania uses the notation key 'NO' for this sector for 2008 and 2009, although emissions are reported for the previous years. While no activity data is provided, the ERT recommends that more information on methodology and activity data could be provided in the next IIR submission.

1A2a (Stationary combustion in manufacturing industries and construction: Iron and steel)

54. Albania uses the notation key 'NE' for this sector, although the ERT assumes that it would have to be 'IE'. Table 14 of the IIR contains emission factors for NOx, SO_2 , PM_{10} , $PM_{2.5}$ and CO for the 'iron and steel' sector, which are likely to be emission factors for 'stationary energy use'. The ERT recommends that Albania to clarifies the use of emission factors used for 'point sources – processes'.

1A2b (Stationary Combustion in manufacturing industries and construction: Non-ferrous metals)

55. No emissions are reported for this sector for 2000 to 2008. Emissions for 2009 emissions have been reported. While no activity data is provided, the ERT recommends that more information on the methodology and activity data could be provided in the next submission of the IIR.

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1A2fi (Stationary combustion in manufacturing industries and construction: Other)

56. Emissions are reported under NFR code 1A2fi. The ERT recommends specifying, in the next IIR submission, which sectors are included. While no activity data is provided, the ERT recommends that more information on methodology and activity data could be provided in the next submission of the IIR.

Kommentar [R1]: See above

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TRANSPORT

Review Scope

Pollutants Rev		NOx, NMVO HM, POPs	C, SO ₂ , NH ₃ ,	PM _{2,5} , PM ₁₀ , CO	
		1990 – 2009			
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided	
1.A.2.f.ii	Mobile Combustion in manufacturing industries and construction: (Please specify in your IIR)			Х	
1.A.3.a.i.(i)	international aviation (LTO)	Х		Х	
1.A.3.a.i.(ii)	international aviation (cruise)	Х		Х	
1.A.3.a.ii.(i)	civil aviation (domestic, LTO)	NO		Х	
1.A.3.a.ii.(ii)	civil aviation (domestic, cruise)	NE		Х	
1.A.3.b.i	road transport, passenger cars	Х		Х	
1.A.3.b.ii	road transport, light duty vehicles	Х		Х	
1.A.3.b.iii	road transport, heavy duty vehicles	Х		Х	
1.A.3.b.iv	road transport, mopeds & motorcycles	Х		Х	
1.A.3.b.v	road transport, gasoline evaporation	Х		Х	
1.A.3.b.vi	road transport, automobile tyre and brake wear	Х		Х	
1.A.3.b.vii	road transport, automobile road abrasion	Х		Х	
1.A.3.c	Railways	Х		Х	
1.A.3.d.i (ii)	international inland navigation	NO		Х	
1.A.3.d.ii	national navigation	Х		Х	
1.A.4.a.ii	commercial/institutional (mobile)	NE		Х	
1.A.4.b.ii	household and gardening (mobile)	NE		Х	
1.A.4.c	agriculture / forestry / fishing	Х		Х	
1.A.4.c.ii	off-road vehicles and other machinery	Х		Х	
1.A.4.c.iii	national fishing	NE		Х	
1.A.5.b	other, mobile (including military, land based and recreational boats)	NE		Х	
1 A 3 d i (i)	International maritime navigation	NE		Х	
1 A 3	Transport (fuel used)	NE			

Note: Where a sector has been partially reviewed (e.g. some of the NFR codes) please indicate which codes have been reviewed and which have not in the respective columns.

General recommendations on cross-cutting issues.

Transparency:

57. Albania has provided a detailed IIR. However, its transparency can be improved by providing information on activity data which have been used for estimating emissions. To further improve the transparency of the inventory, the ERT encourages Albania to follow the recommended structure of the IIR template².

58. Emission estimates are provided at a detailed level for the years 1990-2009. However, only limited information on the methodology has been provided in the IIR. Based on the information provided in the IIR, Albania uses country-specific methods and/or emission factors to estimate emissions. The ERT recommends that the Party provides clear reference to these and adds more information in the IIR to make the inventory more transparent

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² http://www.ceip.at/reporting-instructions/annexes-to-the-reporting-guidelines/

- 59. Albania uses zero-values in a number of areas in the reporting tables. The ERT encourages the Party to use the appropriate notation keys (e.g. NO where emissions are "Not Occurring", NE where emissions are "Not Estimates" and IE where emissions are "Included Elsewhere") where estimates are not available or do not occur.
- 60. In the "Additional Info" NRF table, no information is provided about the basis for estimating emissions from mobile sources, e.g. fuel sold or fuel used or sectors marked as NE etc. The ERT recommends that the Party provides such information in their next submission.

Completeness:

61. The ERT considers the Transport sector to be generally complete and comprehensive. Nevertheless, there are some gaps regarding TSP emissions. The Party uses also zero-values in a number of areas in the inventory where emissions are likely to occur. The ERT recommends that the Party checks all zero-values and corrects them by estimating actual emissions or use an appropriate notation key instead.

Consistency including recalculation and time series:

- 62. There are some comparisons provided with respect to previous years, but the ERT encourages the Party to be more specific about these and provide as much explanatory information as possible on the emission trends including information on the development of activity data.
- 63. During the review, the ERT noticed that Albania had not used the methods consistently throughout road transport sector. Tier 1 method has been used for calculating emissions for the period 1990-2008 and Tier 3 for the year 2009. Therefore, the ERT encourages the Party to recalculate the complete time series using Tier 3.
- 64. Albania has recalculated only emissions for sector 1A3dii and as a result those emissions have declined by about 97%. During the review, Albania informed the ERT that they had recalculated all the emissions for 1A3dii sector because there were more detailed activity data available and thus the Tier 3 method was used instead of Tier 1. However, the IIR does not include the necessary explanation of the changes made.

Comparability:

- 65. Estimates are provided for most transport sub-sectors and Albania has provided detailed information on emission factors used in calculations. The ERT can conclude that the methods used for the calculation of emissions from railways, agricultural and the industry sector are consistent with the latest version of the 2009 EMEP/EEA Guidebook and other countries.
- 66. However, the ERT could not find any clear reference in Albania's IIR as to whether the Party uses its country-specific methods and emission factors for other

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transport sectors (e.g. road transport, navigation, aviation) and whether they are consistent with the 2009 EMEP/EEA Guidebook. Therefore, the ERT encourages the Party to describe in more detail the methods and emission factors used.

Accuracy and uncertainties:

- 67. Albania has stated in its IIR that uncertainty estimates have not been done yet, but are planned in the future. The ERT encourages the Party to undertake an uncertainty analysis for the Transport sector to help inform the improvement process and to provide an indication of the reliability of the inventory data.
- 68. The Party describes, in its IIR, some basic QA/QC activities. The ERT encourages the Party to implement sector-specific OA/QC procedures in future submissions.

Improvement:

69. Albania has a separate chapter in its IIR for improvements. The Party has a clear overview of the missing data and has already prioritised the more relevant sectors for completing the emission inventory in the future. The ERT commends the Party for its improvement plans and encourages Albania to include recommendations made during the review.

Sub-sector Specific Recommendations.

Category issue 1: All Mobile Sources – All Pollutants

70. The ERT has noted that within the NFR tables the Party uses zero-values in several cases, even for sectors where emissions are likely to occur. Therefore, the ERT recommends that the Party check all zero-values and corrects them by estimating actual emissions, or that it uses an appropriate notation key instead.

Category issue 2: All Mobile Sources - TSP

71. Albania does not report TSP emissions, although there are emission factors provided in the Guidebook. The ERT recommends that Albania includes TSP emissions in the next submission.

Category issue 3: 1.A.3.b: Road transport – NOx, NMVOC, PM_{2,5}, PM₁₀, CO, PCDD/PCDF

- 72. The stage 2 review identified sudden changes in emissions in 2009 compared to 2008. The ERT recommends that the Party checks the calculations and corrects emission data in the next submission if needed.
- 73. The ERT has noticed that there are very high PCDD/PCDF (dioxin) emissions for the period 1990 to 2008 and that a sudden decline occurred in 2009. During the review, Albania replied that there had been a mistake: Albania used the Tier 1 method for the period 1990-2008 and Tier 3 for the year 2009. Since there are no emission factors for dioxin for Tier 1, Albania stated that the correct time series for

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dioxin would be "NE" from 1990 to 2008. The ERT encourages the Party to recalculate emissions for the complete time period using Tier 3.

74. Albania stated that dioxin emissions reported in the NFR tables (1990-2008) are actually related to Indeno(1,2,3-cd)pyrene. The ERT encourages the Party to check the emission data presented in the NFR tables and correct emission data if needed.

Category issue 4: 1.A.3.iv: Road transport – All Pollutants

75. Emissions for 1A3biv are calculated only for 2009. The ERT encourages the Party to calculate emissions for the period 1990 to 2008 in the next submission.

Category issue 5: 1.A.3.b.iv, 1.A.3.a.ii.(ii), 1.A.4.a.ii, 1.A.4.b.ii, 1.A.4.c.iii, 1.A.5.b, 1.A.3.d.i.(i): Mobile sources – All Pollutants

76. The ERT has noted that Albania does not estimate emissions from mobile sources. In the IIR, Albania states that the reason for not calculating emissions from these sectors is a lack of activity data. The ERT encourages the Party to make an effort to obtain the necessary activity data at country level and provide separate emission calculations for these sub-sectors in future submission.

Category issue 6: 1.A.3.a.i.(i), 1.A.3.d.ii, 1.A.3.a.i.(ii)

77. During the review, the ERT identified the absence of emission estimates for the period 1990 to 1992. Albania explained in its IIR that the reason for not estimating the emissions for this period was the lack of activity data. The ERT encourages the Party to make an effort in the future and calculate emissions for these years, e.g. extrapolate a trend for the missing data.

Category issue 7: 1.A.3.b, 1.A.2.f.ii, 1.A.3.c, 1.A.4.c.ii – SO₂

78. In the IIR, there appear to be very big differences between SO_2 EFs provided for Agriculture/Railways and the Industry (Off-road) sector. In addition, the ERT has noted that there is a sudden change in SO_2 emissions for 2009 with respect to 2008 (1A3b sector). However, this kind of reduction is not noticeable in SO_2 emissions for the 1A2fii, 1A3c and 1A4cii sectors. The ERT encourages the Party to check the emission factors used in the calculations and correct emission data if necessary.

Category issue 8: 1.A.3.a.ii.(i), 1.A.3.a.i.(ii), 1.A.3.a.ii.(ii), 1.A.3.a.i.(ii) – All Pollutants

79. The ERT has noticed that emissions are calculated from the international aviation sector and that only activity data for Tirana airport is used for the calculations. Albania has confirmed that Tirana is the only international airport in Albania.

Category issue 9: 1.A.3.d.ii – Hg

80. This is a very minor suggestion, yet relevant, namely that there are emission factors for Hg provided in the Guidebook. Therefore, the ERT encourages the Party to add Hg to the emission calculations.

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INDUSTRIAL PROCESSES

Review Scope

Pollutants			NMVOC, C HM & POPs	O, NH ₃ , TSP,
		1990 – 2010		
Years				
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommend ation Provided
2.A.1	cement production	Х		Х
2.A.2	lime production	X		X
2.A.3	limestone and dolomite use	NE		X
2.A.4	soda ash production and use	NE		
2.A.5	asphalt roofing	NE		Х
2.A.6	road paving with asphalt	NE		Х
2.A.7.a	Quarrying and mining of minerals other than coal	X		X
2.A.7.b	Construction and demolition	NE		X
2.A.7.c	Storage, handling and transport of mineral products	NE		X
2.A.7.d	Other Mineral products (Please specify the source included/excluded in the notes column to the right)			X
2.B.1	ammonia production	Х		
2.B.2	nitric acid production	X		
2.B.3	adipic acid production	X		
2.B.4	carbide production	X		
2.0.1	Other chemical industry (Please specify the source			
2.B.5.a	included/excluded in the notes column to the right)			
2.B.5.b	Storage, handling and transport of chemical produc (Please specify the sources included/excluded in the notes column to the right)	NE		Х
2.C.1	iron and steel production	Х		X
2.C.2	ferroalloys production	X		X
2.C.3	aluminium production	X		
2.C.5.a	Copper Production	NE		
2.C.5.b	Lead Production	X		Х
2.C.5.c	Nickel Production			Х
2.C.5.d	Zinc Production	Х		
2.C.5.e	Other metal production (Please specify the source included/excluded in the notes column to the right)			Х
0054	Storage, handling and transport of metal produc (Please specify the sources included/excluded in the			V
2.C.5.f	notes column to the right)	NE NE		X
2.D.1	pulp and paper food and drink			X
2.D.2		X NE		
2.D.3	Wood processing			X
2.E	production of POPs	X		
2.F	consumption of HM and POPs (e,g. electrical ar scientific equipment)	NE		X
2.G	Other production, consumption, storag transportation or handling of bulk products (Pleas specify the sources included/excluded in the note column to the right)			X
	ere a sector has been partially reviewed (e.g. some of	of the NFR c	odes) please	

Note: Where a sector has been partially reviewed (e.g. some of the NFR codes) please indicate which codes have been reviewed and which have not in the respective columns.

General recommendations on cross-cutting issues

Transparency:

- 81. The ERT notes that the industrial processes inventory lacks transparency and should be more detailed. In the IIR, Albania has provided tables presenting emission factors and tables presenting activity data sources. But the methodologies used to estimate industrial process emissions are not described in detail. Thus, the ERT encourages Albania to describe more precisely the methodologies used.
- 82. The ERT notes that the table presenting the applied emission factors for point sources does not indicate the data reference source. The ERT encourages Albania to add, where possible, the references for activity data and emission factors.
- 83. The ERT notes that emission trends are not described for the sub-sector sections but are only provided in detail for the inventory as a whole and only for few pollutants (NOx, SO₂, PM₁₀, CO and NMVOC). The ERT has also noted dips and jumps for which explanations are missing. The ERT strongly encourages Albania to describe transparently emission trends for each subsector.

Completeness:

- 84. The ERT noticed that Albania's inventory is to a large extent complete in terms of pollutants covered. The ERT commends Albania for submitting emissions of the main pollutants as well as PM₁₀, PM_{2.5}, CO, heavy metals and POPs.
- 85. The ERT noted that PM_{10} and $PM_{2.5}$ emissions had been estimated for the following sub-sectors: 2A2, 2A7a, 2C1, 2C5b, 2C5e. However, TSP emissions are not estimated for those sub-sectors. Indeed, the notation key NE has been used for TSP in the submitted NFR tables. The ERT recommends that Albania also estimates TSP emissions for those sub-sectors. If no specific emission factors are available, the EFs in the EMEP/EEA Guidebook can be used.
- 86. The ERT has noted that emissions of some pollutants from different sectors have been estimated to be equal to 0 for the whole period. It is not clear whether activity data exists or does not exist for those sectors. The ERT recommends that Albania uses notation keys instead of "0". Recommendations are made in the in the "Sub-sector Specific Recommendations" section.
- 87. Albania has not estimated any emission from the following activities: 2A3, 2A4, 2A5, 2A6, 2A7bcd, 2B5b, 2C5f, 2D1, 2D3 and 2F. The ERT recommends that Albania estimates emissions from those activities. Methodologies and emission factors for these activities are available in the 2009 EMEP/EEA Guidebook.

Consistency including recalculation and time series:

88. In the latest IIR submitted, Albania indicates that 'some new input data were collected' and 'some changes in emission factors were applied' with respect to the previous IIR. As no justification or details are provided for these recalculations in the industrial processes chapter, the ERT encourages Albania to provide detailed and

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complete information on recalculations in the next IIR submissions, by pollutant and year, in the industrial processes chapter.

89. Since emission trends are not described transparently in the IIR, the ERT makes recommendations in the "Sub-sector Specific Recommendations" section.

Comparability:

90. As only little information was provided on the methods used for emission estimations, the ERT could not assess or assure the comparability of the reported information.

Accuracy and uncertainties:

91. The ERT has noted that no quantitative uncertainty analysis has been performed by Albania. The ERT recommends that Albania performs an uncertainty analysis for the next submissions as planned in the IIR.

Improvement:

92. Albania's IIR provides an improvement plan including industrial processes. Nevertheless, this improvement plan does not seem to be complete and thus, the ERT recommends that Albania sets up an improvement plan taking into account the review recommendations.

Sub-sector Specific Recommendations.

Category issue 1: 2A1 - Cement production - PM₁₀ & PM_{2.5}

93. The IIR does not provide any description of emission trends for this activity. The ERT strongly encourages Albania to describe in detail emission trends for this sector and to give justifications for the variations observed.

Category issue 2: 2A2 – Lime production – PM₁₀ & PM_{2.5}

94. The IIR does not provide any description of emission trends for this activity. The ERT strongly encourages Albania to describe in detail emission trends for this sector and to give justifications for the variations observed.

Category issue 3: 2C1 – Iron and steel production – All pollutants

- 95. NH_3 , HCB, benzo(b)fluoranthene, benzo(k)fluoranthene and Indeno(1,2,3-cd)pyrene emissions have been estimated to be equal to 0 for the whole period. The ERT recommends that Albania revises these values and changes the notation keys. According to the EMEP/EEA Guidebook, "NA" is the relevant notation key in that case.
- 96. The IIR does not provide any description of emission trends for this activity. The ERT strongly encourages Albania to describe in detail emission trends for this sector and to give justifications for the variations observed.

Category issue 4: 2C2 – Ferroalloys production – PM₁₀, PM_{2.5}, CO

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97. The IIR does not provide any description of emission trends for this activity. The ERT strongly encourages Albania to describe in detail emission trends for this sector, and to explain more precisely the dips observed in 1992, 2000, 2001, 2005 and 2009.

Category issue 5: 2C5b – Lead production –All pollutants/Activity data

98. NO_X , SO_2 , NMCOV, NH_3 , CO, Hg, Cu, Ni, Se, Zn, PAHs, HCB and PCB emissions have been estimated to be equal to 0 for the whole period. The ERT recommends that Albania revises these values and changes the notation keys. According to the EMEP/EEA Guidebook, in that case -depending on the pollutant - "NE" or "NA" are the relevant notation keys.

Category issue 6: 2C5e – Other metal production – All pollutants

99. For this sector, according to the latest submission, emissions have only occurred since 2009. For earlier years, emissions have been estimated to be equal to 0. The ERT recommends that Albania checks these values, describes in detail emission trends for this sector and gives justifications for the variations observed.

Category issue 7: 2D2 – Food and drink production – NMVOC

100. The IIR does not provide any description of emission trends for this activity in the IIR. The ERT strongly encourages Albania to describe in detail emission trends for this sector, and to explain more precisely the jump observed between 1993 and 1994 and the dip between 1996 and 1998.

Category issue 8: 2G – other production, consumption, storage, transportation or handling of bulk products – All pollutants

101. For this sector, emissions have only been estimated for the year 2009. The ERT recommends that Albania estimates emissions from these sectors for the complete time period.

Sector-specific Recommendations

Category issue 1: 2 - Industrial process - All pollutant

102. For the sectors for which emissions have not been estimated (2A3, 2A4, 2A5, 2A6, 2A7bcd, 2B5b, 2C5f, 2D1, 2D3 and 2F), the ERT recommends that Albania estimates emissions using the available emission factors from the EMEP/EEA Guidebook.

Category issue 2: 2 - Industrial process – TSP

103. For the following sectors: 2A2, 2A7a, 2C1, 2C5b and 2C5e, the ERT has noted that PM_{10} and $PM_{2.5}$ emissions have been estimated while TSP emissions have not been estimated. Indeed, for these activities, the notation key NE has been used for TSP in the NFR tables. The ERT recommends that Albania estimates also TSP emissions for these sectors. Emission factors given in the EMEP/EEA Guidebook can be used.

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SOLVENTS

Review Scope

Pollutants	Reviewed	NMVOC			
Years		1990 – 2010			
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendati on Provided	
3.A.1	Decorative coating application	Х		Х	
3.A.2	Industrial coating application	Х		Х	
	Other coating application (Please specify the sources included/excluded in the notes column to the right)			X	
	Degreasing	X		X	
3.B.2	Dry cleaning	Х		Х	
3.C	Chemical products,	Х		Х	
	Printing	Х		Х	
3.D.2	Domestic solvent use including fungicides	X		X	
3.D.3	Other product use	Х		Х	
Note: Whe	re a sector has been partially reviewed (e.a. some of t	he NFR code	s) please indicate	

General recommendations on cross-cutting issues

which codes have been reviewed and which have not in the respective columns.

Transparency:

104. Albania uses zero values in a number of areas in the reporting tables. During the review Albania informed the ERT that all zeros should be 'NA'. The ERT encourages Albania to use the appropriate notation keys (e.g. 'NO' where emissions are "Not Occurring", 'NE' where emissions are "Not Estimated", and 'IE' where emissions are "Included Elsewhere") where estimates are not available or not occurring. The ERT recommends that Albania replaces 0 with the appropriate notation key in the next submission.

105. Albania has not provided a chapter for the Solvents sector. The ERT strongly encourages the Party to report, in a separate chapter in the IIR, emissions from the Solvents sector and recognises the fact that Albania plans to do this in the next submission.

Completeness:

106. The ERT considers the Solvents sector to be incomplete. Albania reports 'NE' for the sectors 3A3, 3B1, 3B2 and 3C. Albania informed the ERT during the review that data on paint, solvent and ink consumptions were not available and that therefore only data included in the UN database had been used for estimating the related emissions. Therefore there is a big uncertainty associated with this sector and it is possible there is an underestimation of consumption/emissions. The ERT encourages Albania to collect activity data and to report emissions.

107. The total amount of emissions from NFR 3 compared with other sectors is very small. In the IIR (page 20, figure 5) the NMVOC emissions for all sectors are reported. The most dominant sector is "Other sources and sinks". The text that goes with the figure does not explain which emissions sources are included in this category. During the review Albania informed the ERT that other sources and sinks

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contain natural emissions from forests and man-made fires, and that the majority of NMVOC emissions come from vegetation. ERT encourages Albania to report this information and the methods in the IIR (see Agriculture and Nature).

108. In general, no activity data are provided for the Solvents sector. The ERT recommends reporting the activity data in the NFR tables and in the IIR.

Consistency including recalculation and time series:

- 109. The ERT has not been able to identify if any recalculation was performed. The ERT strongly recommends reporting detailed documentation of all recalculations in the next submission.
- 110. The time series for 3A2 shows a steep decline from 2008 (2,158 Gg) to 2009 (783 Gg). Albania reported during the review that this was a mistake. The ERT recommends correcting the data and documenting this in the IIR.
- 111. For 3D3 the NMVOC emissions from 1991 to 1993 are very low compared to 1990 and 1994 onwards. Albania informed the ERT that data on this sector are not available in the country. Therefore, data on recent years had been taken from the UN database. The historical time series was estimated using the GDP over the past years; therefore it follows the fluctuations in economic activities. The ERT proposes an expert judgement for the years 1991-1993 to develop a time series more independent of GDP data. Data of other comparable countries could be used.

Comparability:

112. In the IIR there is no chapter for the Solvent sector and there is no activity data provided in the NFR tables. Thus the ERT cannot judge whether the methods used are comparable with the Guidebook. The ERT very strongly encourages Albania to document the necessary information in the IIR in a separate Solvents sector chapter.

Accuracy and uncertainties:

- 113. The ERT encourages Albania to undertake an uncertainty analysis for the Solvents sector in order to help inform the improvement process and to provide an indication of the reliability of the inventory data.
- 114. The ERT recognises the fact that Albania undertakes a general QA/QC process but encourages the Party to implement sector-specific OA/QC procedures for the Solvent sector.

Improvement:

115. The ERT strongly encourages the Party to include a separate chapter for the Solvents sector in the IIR and to further replace 0 with the correct notation key in the NFR tables, to deliver activity data and to explain in the separate chapter the methods used, the activity data and the EFs used for more transparency. The ERT cannot judge if Albania has reported emissions in accordance with the Guidebook due to the lack in transparency in the IIR.

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<u>Sub-sec</u>	ctor Specific Recon	nmendations.		
	here are no separ for the Solvent sector			for
			_	
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AGRICULTURE

Review Scope

Pollutante		NOx, NMVOC PM _{2.5.}	C, NH ₃ , HM,	and PM ₁₀ &
Years 1990 – 2009				
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommen dation Provided
4B1a	Cattle dairy	X		X
4 B 1 b	Cattle non-dairy	X		X
4 B 2	Buffalo	X		X
4 B 3	Sheep	X		X
4 B 4	Goats	X		X
4 B 6	Horses	X		X
4 B 7	Mules and asses	X		X
4 B 8	Swine	Х		Х
4 B 9 a	Laying hens	X		X
4 B 9 b	Broilers	X		X
4 B 9 c	Turkeys	X		X
4 B 9 d	Other poultry	X		Х
4 B 13	4 B 13 Other	X		Х
4 D 1 a	Synthetic N fertilisers	X		X
4 D 2 a	Farm-level agricultural operations including storage, handling and transport of agricultural products Off-farm storage, handling and transport of bulk			
4 D 2 a	agricultural products			
4 D 2 c	N excretion on pasture range and paddock unspecified (Please specify the sources included/excluded in the notes column to the right)			
4 F	Field burning of agricultural wastes	x		
4 G	Agriculture other(c)	x		Х
11 A	(11 08 Volcanoes)			
11 B	Forest fires			

Note: Where a sector has been partially reviewed (e.g. some of the NFR codes) please indicate which codes have been reviewed and which have not in the respective columns.

General recommendations on cross-cutting issues

117. The 2012 Agriculture inventory submission from Albania includes emissions for the time series 1990 to 2009. The emission inventory is generally complete for the main pollutants. Emission trends for many pollutants from other sectors are presented in the report, except the Agriculture sector in which NH₃ is missing. The ERT recommends that the Party reports emissions for the most recent year, i.e., 2010. Specific recommendations are given in the *Sub-sector Specific Recommendations* section.

Transparency:

118. The IIR includes a good description of the activity indicators and data sources but no activity data is reported. The ERT encourages the Party to provide detailed

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⁽a) Reviewed main pollutants, PM₁₀ and PM_{2.5}

information on the activity data used in the estimation of pollutants in the next submission.

- 119. The ERT also recommends that Albania enhances the transparency of the Agriculture sector by including more data and more descriptions of methodologies.
- 120. The use of notation keys in the NFR templates can be further improved. The ERT recommends that the Party uses appropriate notation keys to enhance the transparency of the inventory.

Completeness:

121. The CLRTAP submission of Albania includes emissions from 1990 to 2009. The emission inventory for the Agriculture sector is generally complete for the main pollutants. However, emission from NMVOC from 4.B (manure management) and 4.D (synthetic N fertilisers) are reported as zero or 'NE' in the NFR templates. The ERT recommends that Albania estimates NMVOC emissions or at least uses appropriate notation keys in the next submission.

Consistency including recalculation and time series:

- 122. Albania indicated that the recalculation of the time series was performed as part of the 2009 inventory. However, it is unclear whether the Agriculture inventory was included in the recalculation or not. The ERT encourages Albania to undertake annual recalculations of the Agriculture inventory and to provide detailed and complete information on recalculations in future IIR submissions.
- 123. Albania has presented emission trends for most pollutants from other sectors but the trend of NH₃ was not presented. The ERT recommends that Albania includes emission estimates for NH₃ in the next submission.

Comparability:

124. The inventory of Albania is generally comparable with those of other reporting parties. The allocation of source categories follows that of the EMEP/EEA Reporting Guidelines.

Accuracy and uncertainties:

125. The ERT asked Albania during the review process to clarify the reason for the jumps and dips in NH_3 emissions from 4.B 6 (horses). Albania has provided activity data on horses and confirmed that there is a variability of the number of horses in the time series. The ERT recommends that Albania undertakes an uncertainty analysis for the Agriculture sector and provides an indication of the reliability of the inventory data.

Improvement:

126. No plans for improvements will be undertaken for the Agriculture sector as indicated in the IIR. The ERT encourages Albania to undertake some improvements

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such as providing additional information on activity data e.g. 4.B (manure management) and 4.D (synthetic N fertilisers) as well as explanations of emission trends and including documentation of planned and expected improvements in the IIR in future submissions to improve the quality of the emissions inventory.

Sub-sector Specific Recommendations.

4.B (Manure management)

- 127. The ERT has recognised that there are dips and jumps in NH₃ and PM emissions for the time series (1990 to 2009). The ERT recommends that Albania provides more information to clarify these trends and includes all types of activity data that is used in the calculation of emissions in the next submission.
- 128. Albania has provided activity data on horses during the review process. The ERT recommends that Albania includes all types of activity data used in the emission calculation in the next submission in order to enhance the transparency of the inventory.

4.D (Synthetic N fertilisers)

129. The ERT has observed that no information is given regarding activity data on mineral fertilisers although emissions of NH₃ and PMs are reported. The ERT recommends that Albania includes activity data and provides detailed information on the breakdown of national fertiliser consumption and the relevant compounds in use in the future submissions.

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WASTE

Review Scope:

Pollutant	Pollutants Reviewed All					
Years		1990 – 200	1990 – 2009			
CRF_NFR Name NFR Code		Reviewed	Not Reviewed	Recommendat ion Provided		
6.A	solid waste disposal on land	Х		Х		
6.B	waste-water handling	Х		Х		
6Ca	6 C a Clinical waste incineration (d)		Х	Х		
6 C b	Industrial waste incineration (d)		Х	Х		
6 C c	Municipal waste incineration (d)		Х	Х		
6 C d	Cremation		Х			
6 C e	Small-scale waste burning		Х	Х		
6.D	other waste (e)		Х	Х		

Note: Where a sector has been partially reviewed (e.g. some of the NFR codes) please indicate which codes have been reviewed and which have not in the respective columns.

General recommendations on cross-cutting issues.

130. Albania reports emissions only for sector 6A. Other sectors contain notation keys or "0" values. Activity data are not provided for sector 6A. The ERT encourages Albania to review the use of "0" and to develop a data collection system to limit the use of notation key "NE".

Transparency:

131. The IIR does not provide clear explanations of the methodologies used to calculate emissions under 6A. Activity data are not provided for the sector. The ERT encourages the Party to explain in more detail the calculation methods and activity data sources. The IIR format does not clearly show how emissions are calculated. The ERT recommends that the Party uses the IIR template.

Completeness:

132. Albania reports emissions in 1 out of 8 waste sub-sectors. The methodologies used to calculate emissions are not provided in the IIR. Activity data are not provided in the NFR table. The ERT encourages the Party to add the necessary information to the IIR and the NFR tables. Albania reports "NE" for 5 subsectors. The ERT recommends developing an activity data collection system to calculate these emissions.

Consistency, including recalculation and time series:

133. The time series for 6A is consistent for the years 1990 to 2009. Sector-specific recalculations for the waste sector are not mentioned in the IIR. There is no information as to which sectors have been recalculated in the 2012 submission. The ERT encourages the party to provide clear explanations in the IIR for the recalculations in each sector. Explanations about activity data and methodology changes should be added in each sector chapter.

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Comparability:

134. Albania provides the "Techne Consulting on IPCC" model as a reference for emissions factors. These factors are not comparable with the 2009 EEA/EMEP Guidebook factors. The ERT encourages the Party to provide detailed explanations of emissions factors from the "Techne Consulting on IPCC" model.

Accuracy and uncertainties:

135. No specific QA/QC procedures for CLARTAP calculations are performed in Albania. The ERT encourages the Party to explain in more detail the QA/QC procedures in place or planned for the waste sector. An uncertainty analysis has not been done. The ERT encourages the Party to develop uncertainty assessments for the waste sector.

Improvement:

136. Improvements are mentioned in Albania's 2012 IIR. Improvements are described at an aggregated level. The ERT encourages the Party to improve the availability of waste activity data and EF comparability.

Sub-sector Specific Recommendations.

6A - solid waste disposal on land

137. Albania does not report CH₄ emissions from SWD to the UNFCCC and no activity data is available; thus it is difficult to compare the IEF of NMVOC from solid waste disposal with data of other countries. More detailed explanations of the methodology ("Techne Consulting on IPCC" model) should be provided. Zero values in NFR tables should be replaced with the appropriate notation keys (i.e. NO, NE or NA). It is not clear what kind of methodology is used to estimate NH₃ and CO emissions. Other countries do not report these pollutants for sector 6A. The ERT encourages Albania to explain in more detail how these emissions are calculated.

6B- Waste-water handling

138. Albania does not provide emissions for this sector. The ERT encourages the Party to collect data on waste water treatment in Albania to help calculate emissions from sector 6B. Zero values in NFR tables should be replaced with emissions or the appropriate notation keys (i.e. NO, NE or NA).

6Ca, 6Cb, 6Cc – Waste incineration (clinical, industrial, municipal)

139. Albania does not report emissions for these subsectors. The Party reports "NE" for all pollutants. The ERT recommends developing a data collection system for waste incineration. A general assessment of incinerated wastes could be used as a starting point. If waste incineration takes place in Albania and it is possible to determine the amount of waste incinerated, the ERT recommends calculating these emissions using the 2009 EEA/EMEP Guidebook emission factors. Albania confirmed that they currently do not have waste incineration plants in Albania.

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6Cd Cremation

140. Albania does not report emissions for this sub-sector. "NO" is used.

6Ce Small-scale waste burning

141. Albania reports 6Ce emissions as "NE". The ERT encourages the Party to review the use of notation keys. The ERT recommends that the Party further investigates whether this activity occurs.

6D Other wastes

142. Albania reports 6Cd emissions as "NE". The ERT encourages the Party to review the use of notation keys. The ERT recommends that the Party further investigates whether this activity occurs.

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LIST OF ADDITIONAL MATERIALS PROVIDED BY THE COUNTRY DURING THE REVIEW

Response to questions raised during the review:

General

No additional information provided

Energy

No additional information provided

Transport

Albania-Transport-21.06.2012-Q2_A.doc

Industrial processes

No additional information provided

Agriculture

Albania_Initial questions_ Agriculture & Nature_A.doc

Solvents

Albania-Solvents use-2012-06-19-Q7_A.doc

Waste

Albania-Wastes-22-06-2012-Q1_A.doc

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