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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**

CONTENT

INTRODUCTION.....	3
PART A: KEY REVIEW FINDINGS	4
INVENTORY SUBMISSION	4
KEY CATEGORIES	5
QUALITY.....	5
Transparency	5
Completeness	6
Consistency, including recalculations and time-series	6
Comparability	6
CLRTAP/NECD comparability	6
Accuracy and uncertainties.....	6
Verification and quality assurance/quality control approaches	7
FOLLOW-UP TO PREVIOUS REVIEWS	7
AREAS FOR IMPROVEMENTS IDENTIFIED BY ALBANIA	7
TECHNICAL CORRECTIONS CONSIDERED AND OR CALCULATED BY THE ERT.....	8
PART B: RECOMMENDATIONS FOR IMPROVEMENTS TO THE PARTY.....	9
CROSS CUTTING IMPROVEMENTS IDENTIFIED BY THE ERT	9
SECTOR SPECIFIC RECOMMENDATIONS FOR IMPROVEMENTS IDENTIFIED BY ERT.....	10
ENERGY	10
TRANSPORT	14
SOLVENTS.....	22
AGRICULTURE	25
WASTE.....	30
LIST OF ADDITIONAL MATERIALS PROVIDED BY THE COUNTRY DURING THE REVIEW.....	34
REFERENCES.....	35
ANNEX I POTENTIAL TECHNICAL CORRECTIONS	36

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. This year an updated version² of the “Methods and procedures” document proposed by the Task Force on Emission Inventories and Projections (TFEIP) was tested.
2. This annual review, has concentrated on SO_x, NO_x, NMVOC, NH₃, plus PM₁₀ & PM_{2.5} for the time series years 1990 – 2015 reflecting current priorities from EMEP Steering Body and the Task Force on Emission Inventories and Projections (TFEIP). Heavy metals (HMs) and persistent organic pollutants (POPs) have been reviewed to the extent 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 19th June 2017 to 23th June 2017 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 – Ms. Elo Mandel (Estonia), Energy - Mr. GJ Venhuis (Netherlands), Transport - Ms. Antonella Bernetti (Italy), Industry - Ms. Maria Purzner (Austria), Solvents - Ms. Mirela Poljanac (Croatia), Agriculture - Mr. Juan José Rincón Cristóbal (Spain), Waste - Mr. Dirk Wever (Netherlands).
4. Ms. Kristina Saarinen (Finland) was the lead reviewer. The review was coordinated by Ms. Katarina Marečková, (EMEP Centre on Emission Inventories and Projections - CEIP).

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.ceip.at/fileadmin/inhalte/emep/review/review_guidelines.pdf

² Proposal for updating the 'Methods and procedures' document laying down the process for the EMEP emission inventory review Available at: http://www.unece.org/fileadmin/DAM/env/documents/2016/AIR/EMEP/Informal_Document/3_Methods_Procedures_update_proposal_May2016_ISSUE1_TFEIP.pdf

PART A: KEY REVIEW FINDINGS

5. The ERT notes that Albania applies methods from the EMEP/EEA Inventory Guidebook (hereafter Guidebook) and the EMEP/UNECE Reporting Guidelines (hereafter Reporting Guidelines). Transport emissions are reported based on fuel sold.
6. Emission data in NFR tables and the Informative Inventory Report (hereafter IIR) were submitted in a timely manner with respect to the timeframe set in the Reporting Guidelines.
7. During the review the ERT did not specify technical corrections for the inventory.
8. Unfortunately, Albania's participation in the 2017 CLRTAP Stage 3 In-Depth review was limited. The late response to the many questions raised by the ERT during the review reflected that the whole inventory preparation process needs to be started over. Albania explained that the information provided in the Informative Inventory Report (hereafter IIR) originates mainly from the Institute of Statistics (INSTAT) but that compliance monitoring and instrumentation suffer from budget constraints and that there is little information available for the preparation of inventories, for example on existing technologies, on the use of substances and the state of various activities. Given the scarce documentation available, it was challenging for the ERT to undertake an in-depth review of the Albanian inventory.

INVENTORY SUBMISSION

9. Albania submitted NFR tables under the CLRTAP on 13th February 2017 by the deadline of 15th February and made a resubmission on 21th February.
10. In the 2017 submission Albania reported emissions in the old NFR version 2009-1 format including NO_x, CO, NMVOC, SO_x, NH₃ and PM₁₀ from 1990 to 2015 (the most recent year), PM_{2.5} and TSP from 2000 to 2009, PM₁₀ from 2000 to 2015 and PCDD/F, heavy metals and POPs from 1990 till 2009. TSP emissions were reported from 2005 to 2009 as national totals. Albania did not report activity data in the NFR tables. In the 2017 submission Albania additionally reported emissions for NO_x and SO_x for the years 1980 and 1987 for which effort the ERT commends Albania. The ERT recommends Albania to follow the Reporting Guidelines for (1) reporting the emissions in NFR 2014-2 format and (2) presenting the full time series for all pollutants.
11. The IIR was submitted on 15th March 2017 within the deadline of 15th March.
12. The submission did not include data on projections, large point sources (LPS) emission data or gridded emissions data. The ERT recommends Albania to include data on projections, LPS and gridded emissions in its future submissions.

KEY CATEGORIES

13. Albania has carried out a level Key Category Analysis (KCA) consistent with the Guidebook for SO_x, NO_x, NMVOC, NH₃, PM₁₀ and CO. However, from the IIR it is not clear what methodology (Tier 1, 2 or 3) was used to identify the key categories. For key categories a Tier 2 or higher Tier method should be used to calculate the emissions.

14. Albania does not specify in the IIR if the results of the KCA are used to identify priorities for improvements of the inventory. The ERT recommends that Albania uses the results to prioritise improvements of the inventory.

QUALITY

Transparency

15. Albania provides brief information about the trends of the main pollutants in its IIR, a table on key categories and information on the completeness of the inventory. Only for some sectors information is provided on how the emissions are estimated. The ERT encourages Albania to provide emission factors and activity data used in the calculation of emissions and more detailed information on the methodologies used, as well as to provide references to the sources of this information. The ERT encourages the Party to provide more information on assumptions made for the calculations, activity data and emission trends and information on the drivers of the trends, to further improve transparency.

16. The ERT reiterates the encouragement from the previous CLRTAP S3 in-depth review to include activity data in the NFR tables and/or the IIR.

17. Albania states in its IIR that methodologies from the EMEP/EEA Guidebook 2012 and 2009 versions are applied. The ERT noted, however, that the reference to the 2012 EMEP/EEA Guidebook cannot be correct in many cases, because the EFs stated in the IIR differ from the ones provided in the 2012 Guidebook. The ERT recommends Albania to provide the correct sources of EFs and in the first place to use the most recent EMEP/EEA Guidebook 2016.

18. The ERT commends Albania for reducing the use of zero values in the NFR tables as recommended in the 2012 CLRTAP S3 in-depth Review Report. However, in the energy, solvent and agriculture sectors Albania still uses zero values for some pollutants. 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" for reporting where estimates are not available or necessary according to the definitions of notation keys in the Reporting Guidelines.

Completeness

19. Albania uses the notation key “NE” (Not estimated) in a number of areas, and an explanation is provided in the 2017 IIR in the chapter of general assessment of completeness. However, instead of using the notation key “NE” the ERT recommends Albania to check the time series, paying attention to consistency issues, to implement corrections if needed and to calculate and report the missing values according to the 2016 EMEP/EEA Guidebook. The ERT also encourages Albania to transparently document the recalculations in the IIR.

20. Albania reports emissions of PM_{2.5}, heavy metals and POPs only until 2009. The ERT recommends the Party to report the whole time series in the next submission.

Consistency, including recalculations and time-series

21. The ERT noted several inconsistencies in the inventory as explained under the Sub-sector Specific Recommendations below.

22. Albania did not provide information on recalculations for the solvent use sector in the IIR. The ERT encourages Albania to report information on recalculations in the next submission and if no recalculations have been performed, the ERT encourages Albania to also document that in the IIR.

Comparability

23. The ERT notes that the inventory of Albania is not completely comparable with those of other reporting Parties, because (1) Albania submitted data in the old NFR09 (Version 2009-1) format and (2) Albania uses older versions of the Guidebook than the most recent one. The ERT recommends Albania to follow the Reporting Guidelines and to report future submissions in NFR 2014-2 format and to use the 2016 EMEP/EEA Guidebook the estimation of emissions.

CLRTAP/NECD comparability

24. Albania is not an EU country and therefore does not report emissions under the EU National Emission Ceilings (NEC) Directive.

Accuracy and uncertainties

25. The ERT noted that Tier 2 or higher methodologies have been applied only to some of the key categories. The ERT encourages Albania to use higher Tier methods for all key categories in line with the Reporting Guidelines in order to increase the accuracy of the inventory.

26. Albania did not perform an uncertainty analysis as part of the 2017 submission. The ERT recommends the Party to carry out an uncertainty analysis, at least for key categories, and encourages the Party to describe the quantification of uncertainties and the results in the IIR.

Verification and quality assurance/quality control approaches

27. The IIR does not provide information on verification of the inventory.

28. The quality control and quality assurance (QA/QC) procedures carried out for the air pollutant inventory are briefly described in the IIR. Common statistical quality checks are carried out. However, sector specific checks are not documented in the IIR. The ERT encourages the Party to provide information on sector specific QA/QC procedures and their results in future submissions.

FOLLOW-UP TO PREVIOUS REVIEWS

29. Results from Stage 1 and Stage 2 reviews on the 2015 emission data were used in this Stage 3 review. The ERT invites Albania also to refer to these previous reviews when examining this review report and when updating its improvement plans.

30. Compared to the 2012 CLRTAP S3 in-depth review Albania has improved the inventory by limiting the use of zero-values in the NFR tables.

31. The ERT identified issues in the general issues as explained above and in sub-sector specific areas as explained in Part B, which should be further considered by the Party.

AREAS FOR IMPROVEMENTS IDENTIFIED BY ALBANIA

32. The ERT welcomes the information provided by the Party during the in the review that they consider reviewing and recalculating the inventory taking into account the results of this review in future submissions.

TECHNICAL CORRECTIONS CONSIDERED AND OR CALCULATED BY THE ERT

33. The ERT noted that Albania plans to recalculate whole emission inventory before next submission and did not prepare technical corrections for the inventory of Albania.

PART B: RECOMMENDATIONS FOR IMPROVEMENTS TO THE PARTY

CROSS CUTTING IMPROVEMENTS IDENTIFIED BY THE ERT

34. The ERT identifies the following cross-cutting issues for improvement in the Albanian inventory:
- (a) The ERT recommends that Albania provides a complete time series from 1990 onwards (for particles from 2000).
 - (b) The ERT recommends that Albania reports future submissions in NFR 2014-2 format.
 - (c) The ERT recommends Albania to present activity data in the NFR tables.
 - (d) The ERT recommends Albania to provide more detailed information on emission factors, activity data and a description of the methodologies in its IIR.
 - (e) The ERT recommends Albania to undertake a trend assessment in the key category analysis for all pollutants.
 - (f) The ERT recommends Albania to investigate the relevance of sources currently reported as "NE" and to estimate and report the occurring emissions or to assess the quantitative importance of emission from these sources, to provide a description of the source in the IIR and to document whether the activity existed in a certain year or not, or under which NFR category it was included.
 - (g) The ERT encourages Albania to perform and present an uncertainty analysis and use it to as tool to focus on planned improvements for the key categories.
 - (h) The ERT recommends Albania to use Tier 2 or higher methods for all key categories.
35. Recommended improvements relating to specific source categories are presented in the relevant sector sections of this report.

SECTOR SPECIFIC RECOMMENDATIONS FOR IMPROVEMENTS IDENTIFIED BY ERT

ENERGY

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, NH ₃ , PM ₁₀ & PM _{2.5} , Cd, Hg, Pb, Dioxin, PAHs		
Years		1990 – 2015		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
1A1a	Public electricity and heat production	NO		X
1A1b	Petroleum refining	NO		X
1A1c	Manufacture of solid fuels and other energy industries	NO		
1A2a	Iron and steel	NE		X
1A2b	Non-ferrous metals	X		X
1A2c	Chemicals	NE		X
1A2d	Pulp, Paper and Print	NE		X
1A2e	Food processing, beverages and tobacco	NE		X
1A2f	Stationary combustion in manufacturing industries and construction: Non-metallic minerals	-		X
1A2gviii	Stationary combustion in manufacturing industries and construction: Other	X		X
1A3ei	Pipeline transport	NE		X
1A3eii	Other	NE		X
1A4ai	Commercial/institutional: Stationary	X		X
1A4bi	Residential: Stationary	X		X
1A4ci	Agriculture/Forestry/Fishing: Stationary	NO		X
1A5a	Other stationary (including military)	NE		X
1B1a	Fugitive emission from solid fuels: Coal mining and handling	NE		X
1B1b	Fugitive emission from solid fuels: Solid fuel transformation	NO		X
1B1c	Other fugitive emissions from solid fuels	NE		X
1B2ai	Fugitive emissions oil: Exploration, production, transport	NE		X
1B2aiv	Fugitive emissions oil: Refining / storage	NO		X
1B2av	Distribution of oil products	NE		X
1B2b	Fugitive emissions from natural gas (exploration, production, processing, transmission, storage, distribution and other)	NO		X
1B2c	Venting and flaring (oil, gas, combined oil and gas)	NE		X
1B2d	Other fugitive emissions from energy production	NE		X

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

General recommendations on cross cutting issues

Transparency

36. The ERT commends Albania for limiting the use of zero values in the NFR tables as recommended in the previous CLRTAP Stage 3 review report from 2012. However, in NFR 1A2b Albania still uses zero values for some pollutants. The ERT recommends Albania to use the appropriate notation key "NO" where the source does not exist.

37. The ERT commends Albania for using a sectoral approach for describing methodologies used. To further enhance the transparency of the IIR the ERT encourages the Party to use a sectoral approach also for describing the sources of emissions, emission factors used to calculate emissions, emission trends and planned improvements.

38. The ERT notes that the Party reports a key category analyses for the main pollutants in the IIR. However, from the IIR it is not clear which Tier level was used to calculate emissions for key categories. The ERT notes that for key categories a Tier 2 or a higher method should have been used. The ERT recommends that Albania uses the appropriate methodologies as described in the 2016 EMEP/EEA 2016 Guidebook.

Completeness

39. The ERT notes that the Party does not provide activity data in the IIR and the NFR. Emission factors and emissions, however, are presented in the IIR and the NFR for some sectors and pollutants, so activity data has to be present. The ERT recommends that Albania includes activity data and emission factors in future submissions of the IIR and NFR.

40. The ERT notes that the Party does not report activity data and emissions for the sectors in 1B. The ERT recommends that Albania includes activity data in future submissions where present, or use the notation keys NA or IE where appropriate, or NO where absent. See also the paragraph on sub-sector specific recommendations.

Consistency including recalculation and time series

41. The ERT notes that the Party does not report PM_{2.5}, heavy metals and POP's since 2010. In the IIR it is not explained why these pollutants are not reported any more. The ERT recommends Albania to include these emissions again in future submissions and to complete the time series.

42. The ERT notes that the Party does not report TSP and in the IIR it is not explained why this pollutant is not reported. The ERT recommends that Albania also estimates TSP emissions where PM₁₀ and PM_{2.5} emissions occur, includes this information in future submissions and completes the time series.

43. The ERT notes that in the times series for sector 1A4bi there is a significant increase in emissions of NMVOC and CO in 2013, but not for PM₁₀. For PM₁₀ there is a significant increase in 2015, whereas an increase in 2013 was expected. The ERT

recommends Albania to include information on this subject in future submissions of the IIR.

Comparability

44. The ERT notes that the Party states in the IIR (chapter 1) that emission factors used are based on the EMEP/EEA 2016 Guidebook (and the IPCC 2006 Guidelines), but in table 18 the Party reports that EMEP 2012 and EMEP-EEA 2009 are used as data source. The ERT recommends that Albania uses the EMEP/EEA 2016 Guidebook for future submissions.

45. The ERT notes that the Albania still uses the old NFR categories 1A2fi instead of 1A2gviii, and 1B3 instead of 1B2d. The ERT recommends the use of the appropriate NFR codes in future submissions of the IIR and NFR, in accordance with the EMEP/EEA Guidebook 2016.

Accuracy and uncertainties

46. The Party describes some basic and general QA/QC activities in its IIR. The ERT recommends the Party to implement sector specific QA/QC procedures in future submissions, encourages Albania to document them in the IIR and to report on the results of them in the IIR.

Improvement

47. The ERT notes that the Party did not include a paragraph on planned improvements for the energy sector in the IIR. The ERT recommends Albania to include such a paragraph in future submissions, and encourages Albania follow up on planned improvements.

Potential Technical Corrections

48. The ERT did not prepare potential technical corrections for Albania's energy sector inventory.

Sub-Sector Specific Recommendations

Category issue 1: 1.A – Not occurring

49. The ERT notes that Albania reports the notation key "NO" (Not Occurring) for NFRs 1A1a since 2008 and for NFR 1A1b since 2010. The ERT suspects that this is because of the transition to hydroelectric power, but this is not explained in the IIR. The ERT encourages Albania to include information on this subject in future submissions of the IIR.

Category issue 2: 1.A.2.a, 1.A.2.c, 1.A.2.d, 1.A.2.e Industrial Combustion - Stationary Engines – All pollutants

50. The ERT notes that Albania reports the notation key "NE" for NFRs 1A2a, 1A2c, 1A2d and 1A2e, whereas for the NFRs 1A2b and 1A2fi (= 1A2gviii) emissions are reported. It is not clear from the IIR whether or not emissions from these sectors

are really not estimated (“NE”) or if they may have been included elsewhere (“IE”). The ERT recommends Albania to check and correct the notation keys and to include explanations of their use in the IIR.

Category issue 3: 1.B Fugitive emissions – All pollutants

51. The ERT notes that Albania does not report activity data for NFR 1B but that the notation key not applicable (“NA”) is used instead. However for the NFRs 1B1b, 1B2aiv and 1B3 (= 1B2d) Albania reports the notation key “NO” for all pollutants. The ERT recommends that Albania reports “NO” for these sectors also for the activity data, if these sources do not exist in the country.

52. The ERT notes that Albania does not report activity data for NFR 1B but uses the notation key not applicable (“NA”) instead and that all emissions are reported as “NE” (NFRs 1B1a, 1B1c, 1B2ai, 1B2av, 1B2b, 1B2c). The ERT recommends that Albania uses the notation key “NA” for sources where emissions are not to be expected. If the source does not exist in Albania, both activity data and emissions should be reported as “NO”.

Category issue 4: Consistency between IIR and NFR

53. The ERT notes that in Table 9 of the IIR Albania states that emissions from NFRs 1A1b, 1A1c, 1A4ci, 1B1b, 1B2aiv, 1B3 are not estimated (“NE”). However tables 11 to 16 in the IIR, and in the NFR tables these sectors are labelled as not Occurring (“NO”). The ERT recommends Albania to report consistent notation keys in the IIR and in the NFR tables.

Category issue 5: Consistency between IIR and NFR

54. The ERT notes that in Table 9 of the IIR Albania states that for NFR 1B2ai the notation key is not Estimated (“NE”). However in the NFR tables emissions from this sector are reported as Not Applicable (“NA”). The ERT recommends Albania to report consistent notation keys in the IIR and in the NFR tables.

TRANSPORT

Review Scope

Pollutants Reviewed		All		
Years		1990 – 2015		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
1A2gvii	Mobile Combustion in manufacturing industries and construction	X		X
1A3ai(i)	International aviation LTO (civil)	X		X
1A3ai(ii)	International aviation cruise (civil)	X		X
1A3aii(i)	Domestic aviation LTO (civil)	X		X
1A3aii(ii)	Domestic aviation cruise (civil)	X		X
1A3bi	Road transport: Passenger cars	X		X
1A3bii	Road transport: Light duty vehicles	X		X
1A3biii	Road transport: Heavy duty vehicles and buses	X		X
1A3biv	Road transport: Mopeds & motorcycles	X		X
1A3bv	Road transport: Gasoline evaporation	X		X
1A3bvi	Road transport: Automobile tyre and brake wear	X		X
1A3bvii	Road transport: Automobile road abrasion	X		X
1A3c	Railways	X		X
1A3di(ii)	International inland waterways	X		X
1A3dii	National navigation (shipping)	X		X
1A4aii	Commercial/institutional: Mobile	X		X
1A4bii	Residential: Household and gardening (mobile)	X		X
1A4cii	Agriculture/Forestry/Fishing: Off-road vehicles and other machinery	X		X
1A4ciii	Agriculture/Forestry/Fishing: National fishing	X		X
1A5b	Other, Mobile (including military, land based and recreational boats)	X		X
1A3di(i)	International maritime navigation	X		X
1A3	Transport (fuel used)	X		X

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

General recommendations on cross cutting issues

Transparency

55. The ERT notes that the transport sector inventory is not transparent. In order to better assess the quality of the estimations, an exhaustive and detailed description of the applied methodology, activity data, parameters and emission factors used, should be reported distinctly by category, providing the correct reference to information sources. Also the choice of the notation keys should be adequately explained. The ERT notes that in Table 18 of the IIR “Emission factors by activity”, the model used, “Sets”, is quoted, but the methodology applied is not described in

the IIR. The ERT strongly recommends Albania to provide an exhaustive description of methods used to calculate emissions in the IIR.

56. Emission trends are described with references to national total emissions and not regarding subsectors. The ERT detected emissions fluctuations, dips and jumps, missing estimates and discordances regarding the use of notation keys. The ERT recommends Albania to provide explanations on the emission trends and the drivers behind the trends in the IIR.

57. In response to questions by the ERT the Party sent a general response where for the transport sector it was explained that data are missing for aviation, railways and navigation subsectors for several years, and this issue needs to be further investigated, as well as some pollutants not being reported, and that critical issues about completeness, consistency and transparency have to be clarified. In this regard, the ERT strongly recommends Albania to verify and update the Transport sector inventory's time series according to the 2016 EMEP/EEA Guidebook, and encourages the Party to document all the related information in a transparent and comprehensive way, in particular on recalculations, in the IIR.

Completeness

58. The ERT considers the Transport sector to be incomplete due to the many emission sources reported as "NE" throughout the time series, as for the examples below;

- (a) emissions from NFR 1A3ai(i) international aviation (LTO), are not reported from 1990 to 1992, while emissions are reported from 1993 to 2015.
- (b) emissions from NFR 1A3ai(ii) international aviation (Cruise) (Memo Item) are estimated only from 1993 to 2008.
- (c) for the road transport sector, HM emissions since 2010 are not estimated.
- (d) for NFR 1A3biv road transport: mopeds & motorcycles" emissions data are estimated only for 2009.
- (e) for NFR 1A3bv road transport: gasoline evaporation NMVOC emissions data are estimated only from 1990 to 2009.
- (f) for NFR 1A3bvi road transport: automobile tyre and brake wear, and NFR 1A3bvii road transport: automobile road abrasion, PM_{2.5} and PM₁₀ emissions are estimated from 1990 to 2009 only.
- (g) for NFR 1A3c railways emission values are reported until 2009.
- (h) for NFR 1A3dii national navigation (Shipping) emissions have been estimated only from 1993 to 2009.
- (i) for memo items, emissions from NFR 1A3di(i) international maritime navigation are not estimated.
- (j) for TSP emissions from transport are not calculated

The ERT recommends the Party to estimate and report all the missing emissions and years on basis of the 2016 EMEP/EEA Guidebook.

Consistency including recalculation and time series

59. The ERT found inconsistencies in the transport sector inventory of Albania regarding both the emission values and notation keys throughout the time series, as described below:

- (a) Regarding PCDD/F emissions, a dip in the time series data was observed in 2009 for NFR 1A3b road transport (lacking values in 2010-2015). During the 2012 CLRTAP S3 in-depth review, regarding consistency issues, Albania replied to have used the Tier 1 method for the period 1990-2008 and the Tier 3 method for the year 2009 and that PCDD/F emissions reported in the NFR tables for 1990-2008 were actually related to Indeno(1,2,3-cd)pyrene.
- (b) Large variability over the years in the Pb time series from NFR 1A3bi road transport: passenger cars (estimated until 2009) and for NFR 1A3bii road transport: light duty vehicles” (estimated until 2008).
- (c) A general decline in emissions from NFRs 1A3bi and 1A3bii in 2009 compared to 2008.
- (d) Regarding Cd emissions from NFR 1A3bii road transport: light duty vehicles: a high value observed in 1990 in comparison to the values of the other years which were constant until 2008.
- (e) For NFR 1A3bii road transport: heavy duty vehicles: inconsistencies detected related to CO, NO_x, NMVOC, PM_{2.5}, PM₁₀, HM and PCDD/F emissions.
- (f) For 1990-2009 emission values are reported from NFR 1A2fii mobile combustion in manufacturing industries and construction based on general diesel consumptions in the industrial sector, as specified, but since 2010 the notation key “NO” is reported instead.
- (g) For NFR 1A3e pipeline compressors 1990-2009 emissions are reported as “NO” and since 2010 as “NE”.
- (h) For NFR 1A3cii agriculture/forestry/fishing: off-road vehicles and other machinery, emission values are reported until 2009; since 2010 the notation key “NO” is reported for all pollutants.

60. The ERT strongly recommends Albania to check the time series, paying attention to consistency issues, to implement corrections if needed and to calculate and to report the missing values according to the 2016 EMEP/EEA Guidebook, particularly taking into account the review findings. The ERT also encourages Albania to transparently document the recalculations in the IIR.

Comparability

61. The ERT notes that the transport sector inventory is not fully comparable with other reporting Parties due to the not consistent use of emission calculation methodologies and allocation of emissions under the NFR categories. The ERT therefore strongly recommends Albania to revise and update the emissions estimates, according to the latest version of the Guidebook, and to harmonize the methodologies applied over the years, and also to revise the allocation of data according to the reporting Guidelines.

Accuracy and uncertainties

62. The ERT noted that no quantitative uncertainty analysis has been performed by Albania. The ERT encourages Albania to perform an uncertainty analysis for the transport sector as part of the revision and update plan of the inventory.

63. The Party has described in the IIR some basic QA/QC checks in the IIR. The ERT recommends the Party to implement source specific QA/QC procedures for the transport sector and encourages the Party to document these as well as the results of the QA/QC checks in the IIR.

Improvement

64. During the review the Party communicated the plan to revise the whole emissions time series. The ERT strongly recommends the Party to revise and update the whole transport sector time series, using at least Tier 2 methods from the 2016 EMEP/EEA Guidebook for pollutants for which the transport sector sub-categories are key categories, and to transparently document the recalculations in the IIR.

Potential Technical Corrections

65. The ERT did not prepare any technical corrections for the transport sector inventory of Albania.

Sub-Sector Specific Recommendations

66. The ERT strongly recommends Albania, on the basis of the review findings, to review and update the Transport data historical time series, completing the inventory, paying attention to consistency issues related to both emissions values and notation keys, for the whole data time series, with reference to all the relevant pollutants and emission source categories of the territory, according to the 2016 EMEP/EEA Guidebook. The ERT also encourages Albania to provide an exhaustive and transparent documentation about recalculations in the IIR, for the next submission.

Category issue 1: 1.A.3.a – All Pollutants

67. The ERT recommends Albania to check and update the aviation time series, in particular to complete the emissions from NFR 1A3ai(i) international aviation (LTO) and from NFR 1A3ai(ii) international aviation (Cruise), paying attention to consistency and comparability issues, according to the 2016 EMEP/EEA Guidebook, and encourages the Party to provide transparent and comprehensive documentation in the IIR.

Category issue 2: 1.A.3.b – All Pollutants

68. The ERT recommends Albania to check and update the road transport time series, according to the 2016 EMEP/EEA Guidebook, and encourages Albania to provide transparent and comprehensive documentation in the IIR.

69. The ERT recommends Albania to complete particulate matter and heavy metals time series for mopeds and motorcycles; NMVOC emissions from gasoline evaporation; as well as non-exhaust particulate matter emissions from automobile tyre and brake wear and road abrasion.

70. The ERT also recommends Albania

- (a) to check and to solve consistency issues, regarding both the emission values and notation keys, in particular with reference to PCDD/F emissions.
- (b) to complete the whole time series for 1A3bi and 1a3bii, showing a general decline in emissions in 2009 compared to 2008.
- (c) to correct the inconsistencies in the Pb emissions time series for passenger cars and light duty vehicles.
- (d) to correct the inconsistencies in the Cd emissions time series for light duty vehicles.
- (e) to correct the inconsistencies related to CO, NO_x, NMVOC, PM_{2.5}, PM₁₀, HM, PCDD/F emissions from heavy duty vehicles.

Category issue 3: 1.A.3.c – All Pollutants

71. The ERT recommends Albania to update the historical railway data , according to the to the 2016 EMEP/EEA Guidebook, providing transparent and comprehensive documentation in the IIR.

Category issue 4: 1.A.3.d – All Pollutants

72. The ERT recommends Albania to check and to update the navigation data time series. In particular, the ERT recommends Albania to complete the time series of NFR 1A3dii national navigation (Shipping) and to estimate emissions from NFR 1A3di(i) international maritime navigation, according to the to the 2016 EMEP/EEA Guidebook, and encourages Albania to provide transparent and comprehensive documentation in the IIR.

INDUSTRIAL PROCESSES

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, NH ₃ , PM ₁₀ & PM _{2.5}		
Years		1990 – 2015 + (Protocol Years)		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
2A1	Cement production	X		X
2A2	Lime production	X		X
2A3	Glass production	X		X
2A5a	Quarrying and mining of minerals other than coal	X		X
2A5b	Construction and demolition	X		X
2A5c	Storage, handling and transport of mineral products	X		X
2A6	Other mineral products	X		X
2B1	Ammonia production	X		X
2B2	Nitric acid production	X		X
2B3	Adipic acid production	X		X
2B5	Carbide production	X		X
2B6	Titanium dioxide production	X		X
2B7	Soda ash production	X		X
2B10a	Chemical industry: Other	X		X
2B10b	Storage, handling and transport of chemical products	X		X
2C1	Iron and steel production	X		X
2C2	Ferroalloys production	X		X
2C3	Aluminium production	X		X
2C4	Magnesium production	X		X
2C5	Lead production	X		X
2C6	Zinc production	X		X
2C7a	Copper production	X		X
2C7b	Nickel production	X		X
2C7c	Other metal production	X		X
2C7d	Storage, handling and transport of metal products	X		X
2D3b	Road paving with asphalt	X		X
2D3c	Asphalt roofing	X		X
2H1	Pulp and paper industry	X		X
2H2	Food and beverages industry	X		X
2H3	Other industrial processes	X		X
2I	Wood processing	X		X
2J	Production of POPs	X		X
2K	Consumption of POPs and heavy metals (e.g. electrical and scientific equipment)	X		X
2L	Other production, consumption, storage, transportation or handling of bulk products	X		X

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

General recommendations on cross cutting issues

Transparency

73. The ERT notes that the Industrial processes emission inventory lacks transparency and should be more detailed. In the IIR, some emission factors used to calculate emissions are given, however, their indicated source, the 2012 EMEP/EEA Guidebook, cannot be correct in many cases, because the EFs presented in the IIR do not match those in the source referred to, i.e. the 2012 EMEP/EEA Guidebook. As no activity data is presented in the IIR, but only the reference to the source of the data, the quality of the estimations cannot be fully assessed. The ERT strongly encourages Albania to provide the missing information on the methods, EFs and activity data used, including the sources of these, and to use the 2016 EMEP/EEA Guidebook.

74. Emission trends are not described for the sub-sector sections, but are only provided in detail for the inventory as a whole. The ERT has noted fluctuating emissions from some sources, no explanation is given. The ERT thus recommends Albania to provide transparent explanations for each subsector.

Completeness

75. The ERT notes that Albania's inventory is to a large extent incomplete, with many emissions sources reported as "NE". The ERT recommends Albania to calculate emissions, using the methods provided in the 2016 EMEP/EEA Guidebook. The ERT provides recommendations for some subsectors below and recommends Albania to collect activity data and calculate emissions for the sources of the list in the IIR indicating missing activity data.

Consistency including recalculation and time series

76. As the IIR does not provide information on recalculations and no information on methods, emission factors and activity data regarding the time series is presented, the ERT could not assess the consistency of the time series. During the review, Albania responded to the questions of the ERT that the inventory would need to be started over. The ERT strongly recommends Albania to pay attention to that all information included in the recommendations of the ERT will be included in a new inventory.

Comparability

77. As the IIR does not provide information on the methods used, comparability to the inventories of other reporting Parties cannot be assessed. The ERT strongly recommends Albania to calculate emissions according to methods used in the 2016 EMEP/EEA Guidebook and to provide information on methods and data used in the IIR.

78. Albania's inventory is not comparable to other reporting Parties in terms of sectors reported because Albania uses the old NFR table instead of the NFR 2014 table, which shall be used according to the current Reporting Guidelines.

Accuracy and uncertainties

79. The ERT noted that no quantitative uncertainty analysis has been performed by Albania. The ERT recommends that Albania performs an uncertainty analysis when recalculating emissions.

Improvement

80. As response to questions presented during the review Albania responded to consider the recalculation of emissions. The ERT recommends Albania to use the 2016 EMEP/EEA Guidebook for the recalculations and to document the recalculations in the IIR.

Potential Technical Corrections

81. The ERT did not prepare any technical corrections for the industrial processes sector of Albania.

Sub-Sector Specific Recommendations

82. During the review, Albania provided the ERT a general answer referring to all the questions of the ERT that they would need to recalculate the whole inventory and rewrite the IIR. Some general information on some subsectors was given that could be an explanation to emission trends. The ERT strongly recommends Albania to recalculate the inventory according to the 2016 EMEP/EEA Guidebook and encourages Albania to rewrite the IIR simultaneously with the recalculations. The ERT also strongly recommends Albania to ensure that all default EFs available in the Guidebook are used, the source correctly cited, and where country specific EFs are used, the source and the values documented.

SOLVENTS

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, NH ₃ , PM ₁₀ & PM _{2.5}		
Years		1990 – 2015 + (Protocol Years)		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
2D3a	Domestic solvent use including fungicides	X		X
2D3d	Coating applications	X		X
2D3e	Degreasing		NE	X
2D3f	Dry cleaning		NE	X
2D3g	Chemical products		NE	X
2D3h	Printing	X		X
2D3i	Other solvent use	X		X
2G	Other product use	X		X
Note: Where a sector has been partially reviewed (e.g. some of the NFR codes please indicate which have and which have not in the respective columns.				

General recommendations on cross cutting issues

Transparency

84. The ERT noted that Albania uses zero values in the NFR tables for the period 1990 – 2009. In addition, Albania has not reported activity data for the period 1990 – 2015. However, the ERT noticed progress since the last review regarding the reporting of NFR tables for the solvent sector. The ERT recommends Albania to use the appropriate notation keys in cases where emission estimates are not available or necessary: “NO” where emissions are “Not Occurring”, “NE” where emissions are “Not Estimated” and “IE” where emissions are “Included Elsewhere”. The ERT recommends Albania to also report activity data.

85. The ERT noted that the IIR includes a chapter for the industrial processes and product use sector (NFR 2) but does not provide any information on emissions from solvent use. The ERT reiterates the encouragement from the previous review to provide information on the activities covered in the reporting and to document the methodology, emission factors and activity data in the IIR.

Completeness

86. The ERT considers the solvent sector to be incomplete as several sources are reported as “NE”. The ERT recommends Albania to calculate all missing emissions by using the 2016 EMEP/EEA Guidebook. The ERT provides some recommendations under the sub-sector specific recommendations below.

87. Albania does not report activity data for the solvent sector in the IIR nor in the reporting tables. The ERT encourages Albania to report activity data in the NFR tables and/or in the IIR.

88. Albania does not report emissions from the solvent sector for the period 2010 to 2015 in the NFR tables. The ERT recommends Albania complete the time series for the missing years.

Consistency including recalculation and time series

89. The ERT could not assess the consistency of reporting because in the IIR 2017 or in the NFR tables there is no information on the time series of activity data for the solvent use categories.

90. Albania has not provided information on recalculations for the solvent use sector in the IIR. The ERT encourages Albania to report information on recalculations in the next submission and if no recalculations have been performed, the ERT encourages Albania to also document that in the IIR.

Comparability

91. The ERT cannot assess the comparability of the inventory to other reporting Parties as no information is available on the methods used to calculate the emissions. To ensure comparability, the ERT strongly recommends Albania to use the methods provided in the 2016 EMEP/EEA Guidebook and to document the methods and data used in the IIR.

92. Albania reports the emissions in the NFR 2009 format. To enable comparability to other reporting Parties the ERT strongly recommends Albania to use the NFR 2014 format as requested in the Reporting Guidelines.

Accuracy and uncertainties

93. The ERT notes that neither a quantitative nor a qualitative uncertainty analysis has been provided in the IIR. The ERT recommends Albania to carry out an uncertainty analysis for the solvent sector in order to help inform the improvement process and to provide an indication of the reliability of the inventory data.

94. The ERT notes that information on QA/QC checks for the solvent sector has not been included in the IIR. The ERT recommends Albania to include some basic QA/QC checks for the solvent sector and to document them in the IIR and to also report results from the QA/QC procedures.

Improvement

95. The ERT notes that Albania has not carried out improvements for the solvent sector since the last review. The ERT recommends Albania to improve the inventory reporting for the air pollutants under LRTAP Convention for the solvent sector. The ERT encourages Albania to develop an improvement plan for the solvent sector, based on the findings included in this report and to include information about this improvement plan in the next IIR submission.

Potential Technical Corrections

96. The ERT did not prepare technical corrections for the solvent use sector inventory for Albania.

Sub-Sector Specific Recommendations

Category issue 1: 2.D.3, 2.G Other solvent and product use

97. The ERT noted that in the Albanian IIR 2015, there is no information on the methodology, emission factors and activity data used for calculation of emissions from NFRs 2D3i and 2G. The ERT encourages Albania to include all relevant information regarding source categories in the IIR according to Annex II (Recommended Structure for Informative Inventory Report) of the revised 2014 Reporting guidelines (ECE/EB.AIR.125)

98. Albania reports only NMVOC emissions from NFRs 2D3i and 2G. However, the ERT considers that in Albania, as in almost all countries, there are activities like: SNAP 060404 fat, edible and non-edible oil extraction, SNAP 060405 application of glues and adhesives, SNAP 060406 preservation of wood, SNAP 060601 use of fireworks, SNAP 060602 use of tobacco and SNAP 060603 use of shoes. According to the 2016 EMEP/EEA Guidebook these activities are mainly sources of NMVOC emissions, and some of them can be sources of TSP, PM₁₀, PM_{2.5}, PAHs, PCDD/F, SO₂, CO, NO_x and HM emissions. The ERT recommends Albania to collect data and to use the methodology provided in the Guidebook and to calculate and report all relevant air pollutant emissions from these activities.

99. The ERT recommends Albania to report activities separately under NFR categories 2D3i and 2G. To enable that the ERT suggests Albania to use the mapping table linking different reporting formats, that is available on the CEIP homepage (http://www.ceip.at/ms/ceip_home1/ceip_home/reporting_instructions/), which provides information on how SNAP and NFR codes are linked e.g. to NACE, E-PRTR, GAINS, IPCC and CRF codes.

100. The ERT noted that emissions from NFRs 2D3i and 2G have not been calculated for the period 2010 - 2015. The ERT recommends Albania to complete the time series by calculating emissions for the missing years.

Category issue 2: 2 Industrial processes and product use

101. In the previous 2012 CLRTAP S3 in-depth review the ERT encouraged Albania to replace emissions reported as zero (0) by the appropriate notation key. The ERT noticed that Albania has taken the effort and that this has been carried out for the period 2010-2015 and commends Albania for that. The ERT recommends Albania to make further efforts and to replace emissions reported as zero with the appropriate notation key also for the years 1990 – 2009.

AGRICULTURE

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, NH ₃ , PM ₁₀ & PM _{2.5}		
Years		1990 – 2015 + (Protocol Years)		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
3B1a	Dairy cattle	X		X
3B1b	Non-dairy cattle	X		X
3B2	Sheep	X		X
3B3	Swine	X		X
3B4a	Buffalo	X		
3B4d	Goats	X		X
3B4e	Horses	X		X
3B4f	Mules and asses	X		X
3B4gi	Laying hens	X		X
3B4gii	Broilers	X		X
3B4giii	Turkeys	X		X
3B4giv	Other poultry	X		X
3B4h	Other animals	X		X
3Da1	Inorganic N-fertilizers (includes also urea application)	X		X
3Da2a	Animal manure applied to soils	X		X
3Da2b	Sewage sludge applied to soils	X		X
3Da2c	Other organic fertilisers applied to soils (including compost)	X		X
3Da3	Urine and dung deposited by grazing animals	X		X
3Da4	Crop residues applied to soils	X		X
3Db	Indirect emissions from managed soils	X		X
3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products	X		X
3Dd	Off-farm storage, handling and transport of bulk agricultural products	X		X
3De	Cultivated crops	X		X
3Df	Use of pesticides	X		X
3F	Field burning of agricultural residues	X		X
3I	Agriculture other	X		
11A	Volcanoes	X		
11B	Forest fires	X		X
Note: Where a sector has been partially reviewed (e.g. some of the NFR codes please indicate which have and which have not in the respective columns.				

General recommendations on cross cutting issues

Transparency

102. The inventory is generally not transparent as no activity data was included in the NFR tables or in the IIR and there is no transparent information about methodology descriptions and trends provided in the IIR. The ERT encourages the Party to include activity data, emission factors and a description of the methodologies

used in the calculation of emissions in its IIR. This recommendation was already included in 2012 review.

103. Albania uses zero values in the reporting tables for NO_x, NMVOC and SO_x emissions from NFRs 4B1a cattle dairy, 4B1b cattle non-dairy, 4B3 sheep, 4B6 horses, 4B8 swine, 4B9a laying hens and 4D1 a synthetic N-fertilizers. The ERT recommends Albania to use the appropriate notation keys in cases where estimates are not available or necessary: “NO” where emissions are “Not Occurring”, “NE” where emissions are “Not Estimated” and “IE” where emissions are “Included Elsewhere”.

Completeness

104. The ERT considers the agriculture sector to be partially complete. However, there are many categories and pollutants not covered by the current reporting as explained under sub-sector specific recommendations below. The ERT recommends Albania to complete the inventory by estimating and reporting the missing sources.

Consistency including recalculation and time series

105. Albania has not provided any information on recalculations in the IIR. The ERT encourages Albania to provide detailed explanation of any recalculations, including the rationale, the impact on the sector and implication on trends for the agriculture sector in its IIR, or also to indicate if no recalculations have been carried out.

106. The ERT considers that the time series of the agriculture sector is not completely consistent. In particular, emissions from NFRs 4B4 goats, 4B7 mules and asses, 4B9b broilers, 4B9c turkeys, 4B9d other poultry are not reported from 2010 onwards and there is no explanation in the IIR for this. Additionally, PM_{2.5} emissions are also not reported from 2010. The ERT recommends Albania to ensure the consistency of the time series and also encourages the Party to include detailed information about the time series consistency of the agriculture sector in its IIR.

Comparability

107. Albania reports emissions using the former NFR format instead of NFR2014 tables as required in the Reporting Guidelines. For the agriculture sector, this implies a major change in the NFR categories to be reported. The ERT considers the inventory of Albania not to be comparable to other reporting Parties because the allocation of emissions into the NFR2014 sub-sectors is not provided.

108. The methods used in the inventory seem to be partially consistent with the 2013 EMEP/EEA Guidebook. However, Albania does not provide reference to the methodology used. The ERT recommends Albania to use methods from the 2016 EMEP/EEA Guidebook, as according to the Reporting Guidelines the Parties shall as a minimum use the methodologies in the latest version of the Guidebook.

Accuracy and uncertainties

109. The ERT notes that most of the emission estimates seem to be based on Tier 1 methodologies. However, Albania does not provide a reference to the methodological approach used. Some sub-sectors in the agriculture sector are key categories for ammonia emissions. The ERT recommends the Party to apply Tier 2 or higher methodologies for all key sources.

110. Albania has not provided an uncertainty analysis for the agriculture sector emissions. The ERT encourages Albania to undertake an uncertainty analysis for the agriculture Sector in order to help inform the improvement process and to provide an indication of the reliability of the inventory data.

111. Albania has not provided information on the QA/QC procedures in place. The ERT recommends Albania to implement sector specific OA/QC procedures and to include information on the checks and their results in the IIR.

Improvement

112. Albania does not present information on planned improvements in the IIR. The ERT encourages the Party to include information regarding planned improvements.

Potential Technical Corrections

The ERT did not prepare any technical corrections for the agriculture sector inventory for Albania.

Sub-Sector Specific Recommendations

NOTE: The NFR codes included in this chapter correspond to the NFR codes of 2009 reporting format used by Albania in its submission.

Category issue 1: 4 Agriculture - NO_x, NMVOC and PM_{2.5}

113. The ERT noted that the NO_x and NMVOC emissions are reported as “NE” or zero for NFR 4 agriculture subcategories without an explanation in the IIR. Additionally, PM_{2.5} emissions are not reported from 2010 to 2015 although they are reported for the earlier years. During the review, the Party did not provide any further explanation about this completeness issue. The ERT strongly recommends Albania to estimate and report NO_x, NMVOC and PM_{2.5} emissions for the whole time series 1990-2015 in its next submission to improve the completeness of the inventory.

Category issue 2: 4.B Manure management – NH₃ and PM₁₀

114. The ERT noted that NH₃ and PM₁₀ emissions from NFRs 4B4 goats, 4B7 mules and asses, 4B9b broilers, 4B9c turkeys, 4B9d other poultry are reported as “NE” from 2010 to 2015. The ERT also noted that these emissions were estimated for 1990 - 2009. During the review, the Party did not provide any further explanation about this completeness issue. The ERT strongly recommends Albania to estimate and report in its next submission the NH₃ and PM₁₀ emissions from 4B4 goats, 4B7 mules and asses, 4B9b broilers, 4B9c turkeys, 4B9d other poultry for the whole time

series 1990-2015 in its next submission to improve the completeness of the inventory.

Category issue 3: 4.B.6 Manure management - Horses– NH₃

115. The ERT noted that the trend of NH₃ emissions from Horses does not follow the same trend as the number of animals. Therefore, the IEF varies across the time series and, in some years, does not match the EMEP/EEA EF. This issue was already raised by the ERT in the 2012 CLRTAP S3 in-depth review. Additionally, in Albania's IIR table 22 (p. 37) it is reported that the EF used for horses is 11.4285714 g/hd as included in the 2009 EMEP/EEA Guidebook. In fact, the EF included in the 2009 Guidebook is 14.8 kg/hd which matches Albania's IEF of some, but not all, years in the series. The ERT recommends Albania to check and re-estimate if needed the NH₃ emissions from 4.B.6 manure management – horses in its next submission.

Category issue 4: 4.D.2.c N-excretion on pasture range and paddock - NH₃ and NO_x

116. Albania reports the emissions from NFR 4D2c N-excretion on pasture range and paddock as “NE” or “NA” for NH₃ and NO_x for all years. In the IIR, there is no explanation to support these notation keys. This is not in line with the 2016 EMEP/EEA Guidebook methodology that provides EFs for these pollutants. The ERT strongly recommends Albania to estimate these emissions and report them in its next submission.

Category issue 5: 4.D Agricultural soils

117. Albania uses the former NFR format in the reporting instead of the NFR2014. Therefore, the completeness of the emission estimates of the new NFR categories under NFR 3D cannot be reviewed. During the review, the Party did not provide any further explanation about this completeness issue. The ERT strongly recommends Albania to estimate and report the emissions from all sources included in the new NFR codes in the appropriate NFR category in its next submission (3Da1 inorganic N-fertilizers, 3Da2a animal manure applied to soils, 3Da2b sewage sludge applied to soils, 3Da2c other organic fertilisers applied to soils (including compost), 3Da3 urine and dung deposited by grazing animals, 3Da4 crop residues applied to soils, 3Db indirect emissions from managed soils, 3Dc farm-level agricultural operations including storage, handling and transport of agricultural products, 3Dd off-farm storage, handling and transport of bulk agricultural products, 3De cultivated crops and 3Df use of pesticides).

Category issue 6: 4.F Field burning of agricultural residues

118. Albania reports emissions from NFR 4F field burning of agricultural residues as “NO” for all pollutants and years. In the IIR, there is no explanation to support this notation key. Additionally, in “Table 2.5: National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors (year 2005)” of the Third National Communication of Albania (p. 80), emissions from field burning are reported, and they are also included in FAOSTAT reports. The ERT strongly

recommends Albania to estimate these emissions and report them in its next submission.

WASTE

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, NH ₃ , PMs, heavy metals and POPs		
Years		1990 – 2015 + (Protocol Years)		
Code	Name	Reviewed	Not Reviewed	Recommendation Provided
5A	Solid waste disposal on land	X		X
5B1	Biological treatment of waste - Composting	X		X
5B2	Biological treatment of waste - Anaerobic digestion at biogas facilities			
5C1a	Municipal waste incineration	X		X
5C1bi	Industrial waste incineration	X		X
5C1bii	Hazardous waste incineration	X		X
5C1biii	Clinical waste incineration	X		X
5C1biv	Sewage sludge incineration	X		X
5C1bv	Cremation	X		X
5C1bvi	Other waste incineration	X		X
5C2	Open burning of waste	X		X
5D1	Domestic wastewater handling	X		X
5D2	Industrial wastewater handling	X		X
5D3	Other wastewater handling	X		X
5E	Other waste	X		X
Note: Where a sector has been partially reviewed (e.g. some of the NFR codes please indicate which have and which have not in the respective columns.				

General recommendations on cross cutting issues

Transparency

119. The ERT noted that the IIR does not provide a description of emission sources included or clear explanations of the methodologies used to calculate emissions. Furthermore, the Party does not report activity data for the waste sector. The ERT reiterates the encouragement from the 2012 CLRTAP S3 in-depth review to describe the sources and to provide the methodology and the activity data used in the emissions calculations.

Completeness

120. In the 2012 CLRTAP S3 in-depth review the ERT noted that no activity data is reported in the NFR tables and encouraged the Party to add the information to the IIR and the NFR tables. The ERT notes that in the 2017 submission no activity data is reported in the NFR-tables. The ERT reiterates the recommendation to report activity data in the IIR and/or the NFR tables.

121. In the 2012 CLRTAP S3 in-depth review the ERT noted that the Party reported emissions from only 1 of the 8 waste sub-sectors and used the notation key "NE" for 5 subsectors. The 2012 ERT recommended the Party to develop an activity data collection system to calculate these emissions. Since then, a new version of the Guidebook is adopted and in the 2016 EMEP/EEA Guidebook there are now 15

Waste sub-sectors. The ERT notes that the Party reports emissions for only 1 out of the 15 waste sub-sectors in the 2017 submission and that only 1 subsector is reported as “NO” while the other subsectors are reported as “NE”. The ERT strongly recommends to develop an activity data collection system to calculate these emissions.

Consistency, including recalculation and time series

122. The ERT notes that the Party reports emissions from only one waste sub-sector and that there is no further information regarding this sub-sector in the IIR. The ERT was not able to review the consistency of the inventory. The ERT encourages the Party to provide a clear description of the sources, the methodologies, activity data and emission factors used to calculate the emissions for each sub-sector in the next submission. In addition, the ERT encourages Albania to include information on recalculations, or also to indicate if no recalculations were carried out, in the IIR.

Comparability

123. The ERT noted that the inventory of Albania is not comparable with other reporting Parties as Albania uses an old version of the Guidebook. The ERT recommends the Party to use the methodologies provided in the 2016 EMEP/EEA Guidebook.

Accuracy and uncertainties

124. In the 2012 CLRTAP S3 in-depth review the ERT noted that no QA/QC procedures are performed by the Party and encouraged the Party therefore to explain in more detail the QA/QC procedures in place or planned for the waste sector, in the IIR. The ERT notes that in the IIR there is a general description of the QA/QC performed but that no sector/source specific QA/QC procedures are reported for the waste sector. The ERT recommends the Party to describe the QA/QC procedures carried out and their results in the IIR of the next submission.

125. In the 2012 CLRTAP S3 in-depth review the ERT noted that an uncertainty analysis had not been carried out and encouraged the Party to develop an uncertainty analysis for the waste sector. The ERT recommends the Party to carry out an uncertainty analyses and to report on the results in the IIR of the next submission.

Improvement

126. The ERT notes that the Party does not report planned improvements in the IIR. The ERT recommends the Party to include an inventory improvement plan and to report on the progress in the IIR of the next submission.

Potential Technical Corrections

127. The ERT did not prepare any technical corrections for the waste sector inventory of Albania.

Sub-Sector Specific Recommendations

Category issue 1: 5.A Solid waste disposal – All pollutants

128. The ERT notes that the Party reports emissions of NMVOC, NH₃ and CO (only as of 1999) for the whole time series. Furthermore, the ERT notes that as the Party gives no source description in the IIR it is unclear what methodology and emission factors are used. Additionally, the ERT notes that the 2016 EMEP/EEA Guidebook only provides emission factors for NMVOC, TSP, PM₁₀ and PM_{2.5} for the Tier 1 method. The Guidebook also describes which notation keys should be used for the other pollutants. The ERT recommends the Party to use the 2016 EMEP/EEA Guidebook and to present a full description for this source including methodology and emission factors used in the next submission. Furthermore, the ERT recommends the Party to use the correct notation keys and to recalculate the emissions where necessary.

129. The ERT notes that Albania reports zero (0) values in the NFR tables for 1990-2010 for all pollutants with the exception of NMVOC, NH₃, CO, TSP, PAH-4 and PCBs. However, for 2011-2015 the Party reports the notation key “NE” for these pollutants. As the Party gives no source description in the IIR it is unclear what methodology and emission factors are used. The ERT recommends the Party to assess the validity of the use of zero (0) values and the notation key “NE” and to include an explanation on these in the next submission.

The ERT notes that the Party mentions in the IIR that activity data on waste disposal on land is not available (table 8). However, the ERT notes that Party apparently has activity data to its disposal, as emissions of this source are calculated and reported in the NFR tables and Party reports waste stream information to Eurostat. On the website of Eurostat can be seen that for instance in 2015 the amount of municipal waste deposited in landfills is 970,000 tonnes. Additionally, waste activity data for 2003-2010 can for instance be found in the ETC/SCP report “Municipal waste management in Albania”, 2013. The Party also reported activity data in its National Communication Report (NC3). The ERT recommends the Party to assess the available activity data and to report these in the next submission.

Category issue 2: 5.B.1 Biological treatment of waste – NH₃

The ERT noted that Albanian government aimed at composting 25% of the municipal solid waste by 2015 (Albanians: National Strategy and National action Plan of Waste Management). This suggests that there are composting facilities in operation. However, the ERT notes that no emissions are reported from this source. The ERT recommends the Party to make an inventory of the amount of composting that takes place, to calculate emissions coming from this process and to report on this in the IIR and NFR tables in the next submission.

Category issue 3: 5.C.1.a, 5.C.1.b.i, 5.C.1.b.ii, 5.C.1.b.iii, 5.C.1.b.iv, 5.C.1.b.vi and 5.C.2 Waste incineration – All pollutants

The ERT notes that the 2012 CLRTAP S3 in-depth review recommended Albania to develop an activity data collection system. The ERT notes that in the 2017 submission no emissions are reported from waste incineration activities due to

missing data. The ERT strongly recommends the Party to collect activity data on waste incineration and to calculate emissions from these sources and to report these emissions in the next submission.

Category issue 4: 5.C.1.b.v Cremation – All pollutants

The ERT notes that Albania reports “NO” for NFR 5C1bv (Cremation). The ERT understands that no cremation of human remains takes place. However, the ERT notes that under this sector, besides emissions of the cremation of human remains, also the emissions of incineration of animal carcasses and animal by products (ABPs) should be reported. The ERT recommends the Party to collect activity data and to calculate emissions from this source using the Guidebook and to report on the emissions in the next submission.

Category issue 5: 5.D Wastewater handling – NMVOC and NH₃

Albania does not provide emissions for this sector. Furthermore, the ERT notes that there are municipal waste water treatment plants in Albania (according to Eurostat) and that at least 28% of the population is connected to such a facility. Additionally, the ERT notes that thus maximum 72% of the population must rely on the use of latrines, septic tanks or others. The ERT recommends the Party to collect data on waste water treatment and on the number of inhabitants that are not connected to waste water treatment plants and have to make use of latrines and cesspits, and to calculate the emissions coming from this source using the Tier 1 methodology of the Guidebook and to report on this in the next submission.

Category issue 6: 5.E Other waste – All pollutants

The ERT notes that the Party does not report waste emissions from accidental house, industry and car fires. The ERT recommends the Party to collect data and to estimate and report emissions according to the Guidebook methodology.

MATERIALS USED BY THE REVIEW TEAM

1. Albanian Inventory - Annex I emissions 1990-2015 (Excel file)
2. Informative Inventory report 2010-2015_final_MF_20-02-17 (Word file)

3. Albania's Stage 2 S&A report
4. Albania's Stage 1 report 2017
5. Data and tools developed by CEIP (<http://unece-stage3.wikidot.com/data-analysis>)

LIST OF ADDITIONAL MATERIALS PROVIDED BY THE COUNTRY DURING THE REVIEW

1. Response to preliminary questions raised prior to the review (wiki)
2. Response to questions raised during the review (wiki)

REFERENCES

- EMEP/EEA, 2016. EMEP/EEA air pollutant emission inventory guidebook – 2016. EEA Technical report No 21/2016. Available at: www.eea.europa.eu/publications/emep-eea-guidebook-2016
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- UNECE, 2014. Guidelines for Reporting Emissions and Projections Data under the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/125). Available at: www.ceip.at/fileadmin/inhalte/emep/reporting_2009/Rep_Guidelines_ECE_EB_AIR_97_e.pdf

ANNEX I POTENTIAL TECHNICAL CORRECTIONS

The ERT did not specify technical corrections for the inventory of Albania.