

**UNITED
NATIONS**

Distr.
GENERAL

CEIP/S3.RR/2012/SERBIA
31/10/2012

ENGLISH ONLY

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

SERBIA

CONTENT

INTRODUCTION	3
PART A: KEY REVIEW FINDINGS.....	4
Inventory Submission	4
Key categories.....	4
Quality.....	4
Transparency	4
Completeness	5
Consistency, including recalculations and time-series	5
Comparability	5
CLRTAP/NECD comparability	6
Accuracy and uncertainties	6
Verification and quality assurance/quality control approaches	6
Follow-up to previous reviews	6
Areas for improvements identified by Serbia	6
PART B: RECOMMENDATIONS FOR IMPROVEMENTS TO THE PARTY ..	7
Cross cutting improvements identified by the ERT	7
Sector specific recommendations for improvements identified by ERT	8
Energy	8
Transport.....	11
Industrial Processes	16
Solvents	19
Agriculture.....	22
Waste.....	25
List of additional materials provided by the Country during the Review.....	28

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 SO₂, NO_x, NMVOC, NH₃, plus PM₁₀ & PM_{2.5} and POPs for the time series years 1990 – 2010, reflecting current priorities from 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 Serbia 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 – Melanie Hobson (United Kingdom), 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).

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. Serbia submitted an inventory in 2012 covering the years 2000 to 2010. The Party participated actively in the stage 3 review process providing further information and data when requested, with a fast turnaround. Based on the additional information provided by the Party, the ERT was able to review the Serbian inventory within the time provided. Overall, the Serbian CLRTAP inventory is partly in line with the EMEP/EEA Guidebook, incorporating the main processes and procedures.

INVENTORY SUBMISSION

6. In the 2012 submission, Serbia provides a national inventory in NFR09 categories from 2000 to 2010. Serbia states that they plan to update the time series back to 1990 before the end of 2012 as well as to calculate emissions for sub-sectors under 3 A 1. The ERT recommends the Party to update the full time series back to 1990 and provide emissions for all sectors where applicable.

7. The IIR presents the information by NFR source in a clear structure, providing the data sources used for the majority of sources.

8. Activity data are present in the IIR but not the NFR tables. The ERT encourages Serbia to provide the activity as part of the NFR templates as well as to provide the units in all the activity tables in the IIR.

9. Further improvements suggested during this review are presented in part B of this report.

KEY CATEGORIES

10. The ERT commends Serbia for providing a Key Category Analysis (KCA) consistent with the EMEP/EEA Guidebook for all reported pollutants in its IIR, listing the NFR codes only. The ERT encourages Serbia to present the key sources as trends as well as percentage contributions to total emissions. The ERT would like to point out that Tier 2 or 3 methodologies should be applied to all sources identified as key categories; this would thus apply to all sources listed in table 1.1.

QUALITY

Transparency

11. Serbia explained that the organisation responsible for compiling the inventory changed in 2011. As a result of this change, the data sources used and the level of detail provided in the inventory were significantly improved. Serbia's economy has also experienced a significant change over the last 10 years with very low activity levels in 2004 and a strong increase from 2007 onwards, which explains some of the trends identified.

12. The IIR includes key trends by pollutant over the reported time series. Tier 1 and 2 are applied throughout the inventory. Most of the information is provided at aggregated level; however, in each sector more information on assumptions, activity

data trends, data sources and emission drivers used could be included in the IIR to improve transparency further.

13. Information on recalculations and performed improvements are not covered in the IIR. The ERT encourages Serbia to list the improvements undertaken and the recalculations by sector, year, and pollutant in the IIR and to highlight the drivers and prioritisation of planned improvements.

14. The ERT encourages Serbia to provide information in the 'Additional Info' category in the reporting template, providing NFR codes for sectors with notation keys. Information on the use of 'IE' is already given in the IIR.

15. Serbia does not mention sector '1 A 3 a ii (i) Civil aviation (Domestic, LTO)' in the IIR but reports emissions in the NFR tables. The ERT has encouraged Serbia to provide further information on assumptions, methodologies, activity data trends, data sources, and emission drivers for all sources in the IIR.

16. A few minor typographical errors have been found in the text in the IIR. These include the paragraph on cement production activity data on page 27 (it is written "concerning glass production" instead of cement), as well as NFR 2C5b on page 37 (the text refers to table 3.3 instead of table 3.10), and NFR 2D2 in the methodology section on page 38 (it is written "calculation for lead production" instead of food and drink).

Completeness

17. Serbia currently does not report emissions from 1990 to 1999. The party does not report separate emissions for 1 A 2 f ii, 1 A 3 d i (ii), 1 A 4 a ii, 1 A 4 b ii, 1 A 4 c iii, 1 A 5 b, 2 C 5 f, 4 B 1 a and 4 D 2 c. Emissions for these sectors are included elsewhere. The Party has mentioned that they will report more disaggregated emissions for NFR code 3A1. The ERT encourages Serbia to do so and to report more disaggregated emissions for the other sectors as well.

Consistency, including recalculations and time series

18. The IIR does not provide any explanation on recalculations. However, during the review process some explanation was provided. The ERT encourages Serbia to provide detailed and complete information on recalculations in the next submission of the IIR by pollutant, source, and year.

Comparability

19. The ERT commends Serbia for the detail provided in their inventory submission. The Serbian inventory is to a large extent comparable with those of other reporting parties. The allocation of source categories follows that of the EMEP/EEA Reporting Guidelines.

20. The ERT encourages Serbia to provide further information on the assumptions and the underlying drivers used for compiling emissions.

CLRTAP/NECD comparability

21. Serbia does not report emissions under the NEC Directive as it is a non-EU Party. The Party does not report indirect greenhouse gases compiled under the UNFCCC to the CLRTAP either.

Accuracy and uncertainties

22. The ERT commends Serbia for using the latest 2009 EEA/EMEP Guidebook for all sectors apart from waste. The ERT encourages Serbia to use the latest EEA/EMEP Guidebook throughout the inventory compilation.

23. The Party currently does not perform an uncertainty analysis. The ERT encourages Serbia to provide quantitative uncertainty estimates of emissions in their next CLRTAP submission, especially for key sources.

24. The ERT encourages Serbia to provide further documentation of the trend analysis to verify that identified dips and jumps are not due to over or underestimations of emissions in certain years.

Verification and quality assurance/quality control approaches

25. The IIR lists the Institutional arrangements, defined roles and responsibilities for inventory compilation and inventory preparation processes.

26. The IIR does not cover QA/QC processes or an improvement plan. The ERT encourages Serbia to list the QA/QC process and an improvement plan in the IIR.

27. The ERT recognise the level of effort undertaken by Serbia in providing an inventory. Any questions issued by the ERT to the Party were addressed promptly and descriptive responses were provided, enabling good communication during the review process.

FOLLOW-UP TO PREVIOUS REVIEWS

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

AREAS FOR IMPROVEMENTS IDENTIFIED BY SERBIA

Serbia mentioned the following planned improvements in their IIR:

29. NFR 1 A 1 a; development of the energy balance for the period from 1990 to 2011.

30. NFR 3 A 1; in the next period all subcategories will be covered.

NFR 3 A 2, NFR 3 B 2 and NFR 3 C; it is planned to establish a relevant database for data gathered to calculate emissions of pollutants for this category in the next period.

PART B: RECOMMENDATIONS FOR IMPROVEMENTS TO THE PARTY

CROSS-CUTTING IMPROVEMENTS IDENTIFIED BY THE ERT

The ERT has identified the following cross-cutting issues for improvement:

31. The ERT encourages the Party to update the full time series back to 1990 and to provide emissions for all sub-sectors.
32. The ERT encourages Serbia to use the latest 2009 EEA/EMEP Guidebook throughout the inventory compilation.
33. The ERT encourages Serbia to provide the activity as part of the NFR templates as well as to provide the units in all the activity tables in the IIR.
34. The ERT encourages Serbia to provide information on assumptions, activity data trends, data sources, and emission drivers in the IIR.
35. The ERT encourages Serbia to present the key sources as trends as well as percentage contributions to total emissions.
36. The ERT encourages Serbia to list performed improvements and recalculations by sector, year, and pollutant in the IIR and to highlight the drivers and prioritisation of planned improvements.
37. The ERT encourages Serbia to list the QA/QC process and improvement plan in the IIR.
38. The ERT encourages Serbia to provide information in the 'Additional Info' category in the reporting template, providing NFR codes for sectors with notation keys.
39. The ERT encourages Serbia to provide further documentation of the trend analysis to verify that identified dips and jumps are not due to over or underestimations of emissions in certain years.

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}		
Years		2000 – 2010 + (Protocol Years)		
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided
1.A.1.a	public electricity and heat production	X		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	X		X
1.A.2.b	non-ferrous metals	X		X
1.A.2.c	chemicals	X		
1.A.2.d	pulp, paper and print	X		
1.A.2.e	food processing, beverages and tobacco	X		
1.A.2.f.i	Stationary Combustion in Manufacturing Industries and Construction: Other (Please specify in your IIR)	X		
1 A 3 e	Pipeline compressors ?	NO		
1.A.4.a.i	commercial / institutional: stationary	X		X
1.A.4.b.i	residential plants	X		
1.A.4.c.i	Agriculture/forestry/fishing, stationary	NE		
1.A.5.a	other, stationary (including military)	NE		
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)	NO		
1 B 2 a i	Exploration, production, transport	X		
1 B 2 a iv	Refining / storage	X		
1 B 2 a v	Distribution of oil products	X		
1 B 2 b	Natural gas	X		X
1 B 2 c	Venting and flaring	X		X
1 B 3	Other fugitive emissions from geothermal energy production , peat and other energy extraction not included in 1 B 2	NO		

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.

40. The CLRTAP submission includes emissions from 2000 to 2010. The emission inventory is generally complete for the main pollutants. The Energy sector is well organized and activity data are generally described in detail.

Transparency:

41. Serbia included detailed activity data and references to the EMEP/EEA Emission Inventory Guidebook 2009 in their IIR for most of the sectors.

42. However, the units (e.g. Gg) that are used for the activity data cannot always be linked to the emission factors (e.g. g/m³) that are applied.

43. Serbia mentions the use of Tier 1 emission factors from the 2009 EMEP/EEA Emission Inventory Guidebook. However, in some cases Tier 2 factors are applied.

44. For some methodology descriptions there are copy/paste errors in which the sector does not match the sub-sector title (e.g. 1B2a iv, 1B2a v, 1B2c). Furthermore some sub-sector titles or the description of emission sources are missing (e.g. 1A4a i, 1B2c).

45. The ERT encourages Serbia to make the IIR more transparent so that sub-sectors match the methodology description and activity data units match the applied emission factors.

Completeness:

46. The ERT considers the Energy sector to be almost complete and commends Serbia for providing a good level of detail in its methodology description. Serbia does not report emissions for sector 1A5a, although during the review Serbia noted that this sector is included in 1A4ai. The ERT recommends changing the 'notation key' in the 'Reporting Template' to IE.

47. Sectors 1A2a, 1A2b also have PM and heavy metal emissions, but due to the use of the Tier 2 methodology, these emissions are included under 'Industrial Processes'. The ERT recommends changing the 'notation key' in the 'Reporting Template' to IE.

Consistency including recalculation and time series:

48. Serbia did not perform recalculations of the time series for the current submission. Serbia has mentioned that they will recalculate the emissions for the NFR sector 1A1a in their next version of the emission inventory. The ERT encourages Serbia to provide detailed and complete information on recalculations in the next IIR submissions by pollutant, NFR code and year.

49. The ERT encourages Serbia to include a description of trends for the key Energy sources in the IIR.

Comparability:

50. The methods used for the calculations of the Energy sector emissions are consistent with the EMEP/EEA Guidebook.

51. The ERT encourages Serbia to use a higher Tier (2 or 3) methodology for the key energy source sectors (e.g. 1A1a, 1A2a, 1A4bi)

Accuracy and uncertainties:

52. The ERT encourages Serbia to undertake an uncertainty analysis for the Energy Sector in order to help inform the improvement process and to provide an indication of the reliability of the inventory data.

53. Serbia mentions (on p. 14 in the IIR) that the chapter on Energy contains information on QA/QC, but this information cannot be found. The ERT encourages Serbia to develop and implement sector-specific QA/QC procedures for the Energy sector.

Improvement:

54. Serbia has mentioned that for the NFR sector 1A1a the Ministry of Energy will complete the development of their energy balance for the period 1990 to 2011 during the year 2012. The ERT commends Serbia for their efforts. For the other NFR energy sectors, no improvements are planned.

55. The ERT encourages the Party to improve reporting and the IIR according to the suggestions made during this review.

Sub-sector Specific Recommendations.

1A1b (Petroleum refining)

56. The ERT encourages Serbia to include activity data for sector 1A1b in the next submission of the IIR. Serbia did provide explanations during the review on the activity data; this information can be included.

1A2a and 1A2b (Stationary combustion in manufacturing industries and construction: Iron and steel, Non-ferrous metals)

57. Serbia uses the 'notation key' NA for PM and heavy metal emissions, although these emissions occur and are included under 'Industrial processes' 2C1, 2C3, 2C5a and b. The ERT encourages Serbia to change the 'notation key' in the 'Reporting Template' to IE and to indicate this fact also in the IIR.

1A4ai (Commercial / institutional: Stationary)

58. The description of Methodology, Emission factors and Activity data is missing for this sector in the IIR - although it is stated in the IIR that sector 1A5a is also included in NFR sector 1A4ai. The ERT encourages Serbia to describe in more detail the methodology, activity data and emission factors used in the IIR.

1B2b (Natural gas)

59. During the review the ERT highlighted the use of a duplicate table for 1B2ai and 1B2b in the IIR. Serbia responded that the activity data table for 1B2b was wrong and provided us with new activity data in 'cubic metres' (as unit). The Party states that the correct data was used for the calculations. The ERT recommends that this issue is looked at carefully for the submission of the next IIR.

1B2c (Venting and flaring)

60. During the review the ERT highlighted the use of Gg (as unit) for activity data, while the applied emissions factors are in g/m³. Serbia responded that indeed a wrong estimation was made for the emissions. The ERT recommends that this issue is looked at carefully for the submission of the next IIR.

TRANSPORT

Review Scope

Pollutants Reviewed		NO _x , NMVOC, SO ₂ , NH ₃ , PM _{2.5} , PM ₁₀ , TSP, CO, HM		
Years		2000 – 2010		
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)	IE		X
1.A.3.a.i.(i)	international aviation (LTO)	X		X
1.A.3.a.i.(ii)	international aviation (cruise)	IE		X
1.A.3.a.ii.(i)	civil aviation (domestic, LTO)	X		X
1.A.3.a.ii.(ii)	civil aviation (domestic, cruise)	X		X
1.A.3.b.i	road transport, passenger cars	X		X
1.A.3.b.ii	road transport, light duty vehicles	X		X
1.A.3.b.iii	road transport, heavy duty vehicles	X		X
1.A.3.b.iv	road transport, mopeds & motorcycles	X		X
1.A.3.b.v	road transport, gasoline evaporation	X		X
1.A.3.b.vi	road transport, automobile tyre and brake wear	X		X
1.A.3.b.vii	road transport, automobile road abrasion	X		X
1.A.3.c	Railways	X		X
1.A.3.d.i (ii)	international inland navigation	IE		X
1.A.3.d.ii	national navigation	X		X
1.A.4.a.ii	commercial/institutional (mobile)	IE		X
1.A.4.b.ii	household and gardening (mobile)	IE		X
1.A.4.c	agriculture / forestry / fishing	NE		
1.A.4.c.ii	off-road vehicles and other machinery	NE		X
1.A.4.c.iii	national fishing	IE		X
1.A.5.b	other, mobile (including military, land based and recreational boats)	IE		X
1 A 3 d i (i)	International maritime navigation	NO		
1 A 3	Transport (fuel used)			

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:

61. The ERT commends Serbia for providing a detailed and generally transparent Transport sector emission inventory. However, transparency can be improved because only limited information on activity data and emission factors used for the estimation of emissions has been provided in the IIR. To further improve the transparency of the inventory, the ERT encourages Serbia to include more information on the sector description, time series of emissions and explanations, activity data and emission factors used.

62. In the NFR table “Additional Info”, no information has been provided regarding the basis for estimating emissions from mobile sources e.g. fuel sold or used, use of notation key IE/NE.

63. Estimates are not provided for all mobile sources. Instead, the notation key IE has been used frequently with only very limited information provided in the IIR. Therefore, the use of notation keys is consistent but not explained in sufficient detail. The ERT encourages the Party to provide more detailed information on the use of notation keys in both the NFR table "Additional Info" and in the IIR, explaining the reasons as well as providing information on possible plans to improve the inventory and allow the sources to be reported separately.

Completeness:

64. The ERT considers the Transport sector to be rather complete and comprehensive for all pollutants. Nonetheless, there are some data gaps regarding TSP as well as for heavy metal emissions and POPs. The ERT encourages Serbia to provide a description of plans for correcting or estimating these pollutants (*see also: Sub-sector Specific Recommendations below*) and to improve the completeness of the inventory.

65. In addition, due to the frequent use of the notation key "IE" in the Party's inventory, the ERT recommends that Serbia reduces the use of IE by separately reporting as many sub-sectors as the data allow, or at least that it provides all necessary explanations for the use of this notation key.

66. In addition, the Party's submission seems to include some overestimations (see sub-sector specific remarks on 1A3dii). The ERT asks the Party to clarify this issue and provide correct data.

Consistency including recalculation and time series:

67. The time series include emission data for the period 2000-2010. No comparison to previous years is provided in the IIR.

68. Since no emission calculations had been made for the Transport sector in the previous submission, the recalculations made in 2012 did not influence the Transport sector.

Comparability:

69. The methods used for the calculation of the Transport sector emissions are consistent with the EMEP/EEA Guidebook. However, Serbia has provided only limited data on the activity data and/or emission factors used for the emission calculations. Emissions from sector 1A3dii seem to be overestimated for heavy metals (see sub-sector specific remarks on 1A3dii). The ERT warmly recommends that the Party checks the estimated emissions and provides more detailed information on a sub-sector level.

70. The COPERT 4 version 7.1 software has been used for calculating emissions from the road transport sector. Although not fully consistent with the latest version of the Guidebook, it is not thought that this has introduced any significant errors in the submitted inventory. The ERT welcomes Serbia's intention to use the latest version of COPERT for the next submission.

71. Many of the mobile sources have been included in other sub-sectors and marked as IE in NFR tables, which could lead to over- or underestimations for some of the pollutants. The ERT encourages the Party to put an effort into this area and make separate calculations for these sub-sectors.

Accuracy and uncertainties:

72. Serbia did not provide information about the availability of a QA/QC system or a QA/QC plan.

73. Serbia did not provide an uncertainty analysis. The ERT encourages the Party to undertake an uncertainty analysis and to use it as a tool for prioritizing improvements in the inventory and for providing an indication of the reliability of the inventory data.

Improvement:

74. Serbia has stated in its IIR that there are no planned improvements in the next period. Nevertheless, during the review, the Party flagged its willingness to improve its inventory in several ways. The ERT warmly recommends this plan, encouraging the Party to put an effort into inventory improvement.

75. The ERT welcomes Serbia's intention to use the latest version of COPERT 4 and to include TSP, PCDD/PDCF, PAHs and heavy metal (1A3bvi) emission calculations in the next submission.

Sub-sector Specific Recommendations.

Category issue 1: 1.A.3.a.ii.(i), 1.A.3.a.i.(i), 1.A.3.a.ii.(ii) – CO, PM₁₀, TSP

76. The ERT has found that no CO emissions were included in the NFR table although CO EFs are provided in the Guidebook. The ERT encourages the Party to fill this gap in future submissions.

77. The ERT noted that no PM₁₀ or TSP emissions were included in the NFR tables although there were emissions provided for PM_{2.5}. The ERT acknowledges that there are no detailed EFs provided in the Guidebook, but there is a note below table 3-3 (2009 EMEP/EEA Guidebook, Chapter: Aviation, p 18) which states that PM_{2.5}=PM₁₀. It is evident that PM_{2.5} is a substantial part of PM₁₀ and PM₁₀ is a part of TSP. And since there is no better source of information, the ERT encourages the Party to submit emissions for PM₁₀ and TSP in the same way as for PM_{2.5}.

Category issue 2: 1.A.3.a.i.(ii) – All Pollutants

78. The ERT has noted that emissions from 1A3ai(ii) are included in 1A3aii(ii). During the review Serbia stated that they would improve activity data to provide separate emissions in future submissions. The ERT warmly welcomes this plan.

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

79. Emissions from the LTO cycle are calculated using the Guidebook's Tier 1 method which takes into account the number of LTO cycles. During the review, the

question was raised whether Serbia's statistics counted one landing or one take-off as one operation, or according to the guidebook methodology which presumes that both landing and take-off define a full LTO cycle. There is a possibility that Serbia might overestimate its emissions from LTO cycles. This issue should be checked over by the Party.

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

80. Serbia has stated in its IIR that statistics have been available since 1990. The ERT encourages the Party to submit emissions for the years 1990 to 2010 for all the sub-sectors and provide all the necessary activity data in the IIR (fuel consumption data by fuel types, sulphur and lead content of fuels, detailed activity data etc.). During the stage 3 review Serbia stated that there is a plan to prepare NFR tables for the whole period. The ERT commends Serbia for the planned improvements and acknowledges all the effort made so far.

Category issue 5: 1.A.3.bi-iv: Road Transport – TSP, PCDD/PDCF, PAHs, Heavy Metals

81. The ERT noted that Serbia had not estimated emissions of TSP, PCDD/PCDF and PAHs from the road transport sector. Serbia uses the COPERT model for calculations, which has the necessary EFs for these pollutants. The ERT encourages Serbia to estimate TSP, PCDD/PDCF, PAHs emissions from the road transport sector in future submissions.

82. The stage 2 review identified a sudden decline in Cd emissions in 2001 compared to 2000. During the review, Serbia stated that mistakes were made in reporting Cd emissions and provided corrected emission values. The ERT encourages the Party to correct these values in the next submission.

83. In addition, the ERT noted that Cu emissions are twice as high as Zn emissions in the NFR tables, although - according to the Guidebook (Chapter: road transport, table 3-97) – the Zn emissions should be higher. Serbia stated that they would try to use the new version of COPERT with its updated EFs and recalculate emissions for all the years in the next submission. The ERT encourages the Party to further investigate this issue and commends Serbia for its improvement plans.

Category issue 6: 1.A.3.b.vi Road transport: Automobile tyre and brake wear – heavy metals

84. The ERT noted that Serbia had not estimated heavy metal emissions from this sector. Since road transport is a key source for most pollutants, the ERT suggests that the Party also calculates these emissions. Serbia has indicated in its IIR that the COPERT 4 model (version 7.1) has been used for emission calculations. Several improvements have been made such as updated emission factors, added by an exporting module which maps directly to the NFR table etc. Therefore, the ERT encourages Serbia to use the latest version of COPERT to calculate its national inventory. During the review Serbia stated that there is a plan to start using the latest version of COPERT for the future submission.

Category issue 7: 1.A.3.c: Railways – SO₂, PCDD/PCDF, B(k)f, I(1,2,3-cd)p

85. The ERT noted that no SO₂, PCDD/PCDF, B(k)f, I(1,2,3-cd)p emissions were included in the NFR tables. Serbia should have the best knowledge of the sulphur content of fuel in Serbia. Since there are no B(k)f, I(1,2,3-cd)p and PCDD/PCDF emission factors available – specifically for railway emissions - in the 2009 EMEP/EEA Guidebook, there is a recommendation for using values corresponding to those for old technology heavy duty vehicles from Exhaust Emissions from the Road Transport chapter (1.A.3.b.iii). During the review Serbia informed the ERT that they would make efforts to fill these gaps and provide such data in future submissions. The ERT warmly welcomes this plan.

Category issue 8: 1.A.3.d.ii: National navigation (shipping) – SO₂, PCDD/PCDF (dioxin), HCB, PCB

86. During the review the ERT noted that no SO₂, heavy metals, PCDD/PCDF (dioxins), HCB or PCB emissions were reported in the NFR tables. Serbia should have the best knowledge of the sulphur content of fuel in Serbia. The necessary EFs for PCDD/PCDF (dioxins), HCB and PCB are available in the Guidebook. Therefore, the ERT encourages the Party to further improve its national inventory. During the review Serbia stated that they would fill these gaps in future in order to improve the national inventory. The ERT warmly welcomes this plan.

Category issue 9: 1.A.3.d.ii: National navigation (shipping) – Heavy Metals

87. During the review, the ERT had the impression that there might have been some errors in calculating heavy metal emissions from the navigation sector (i.e. As, Cu etc.). Serbia provided a document during the review describing the EFs which were used for emission calculations. The EFs presented in the table were linked to an older version of the Guidebook (published in June 2009). Since there was a change in emission factors in the navigation sector in the Guidebook (update March 2011) due to a mistake made with heavy metal EF units, the ERT warmly encourages Serbia to use the improved and more realistic EFs.

Category issue 10: 1.A.4.c.ii – All Pollutants

88. During the review the ERT asked whether there was a plan to estimate emissions from the Agriculture/Forestry/Fishing (1A4cii) sector, since it is marked as NE in this year's NFR tables. Serbia stated that no calculations had been carried out due to a lack of activity data. The ERT acknowledges the answer provided, and recommends that the Party improves the level of activity data in order to improve its national inventory.

Category issue 11: 1.A.2.f.ii, 1.A.3.d.i(ii), 1.A.4.a.ii, 1.A.4.b.ii, 1.A.4.c.iii – All Pollutants

89. During the review, the ERT asked Serbia to explain why emissions from these sectors are included in other sub-sectors. Serbia stated that for all these categories there are no separate data on fuel consumption. The ERT acknowledges the detailed answer provided and encourages the Party to develop a more detailed data collection system in order to improve its national inventory.

INDUSTRIAL PROCESSES

Review Scope

Pollutants Reviewed		SO ₂ , NO _x , NMVOC, CO, NH ₃ , TSP, PM ₁₀ , PM _{2.5} , HM (Heavy metals) & POP		
Years		2000 – 2010		
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided
2A	Industrial processes	X		X
2.A.1	cement production	X		
2.A.2	lime production	X		
2.A.3	limestone and dolomite use	X		
2.A.4	soda ash production and use	X		
2.A.5	asphalt roofing	X		
2.A.6	road paving with asphalt	X		
2.A.7.a	Quarrying and mining of minerals other than coal	X		
2.A.7.b	Construction and demolition	X		
2.A.7.c	Storage, handling and transport of mineral products	X		
2.A.7.d	Other Mineral products (Please specify the sources included/excluded in the notes column to the right)	X		
2.B.1	ammonia production	X		
2.B.2	nitric acid production	X		
2.B.3	adipic acid production	X		
2.B.4	carbide production	X		
2.B.5.a	Other chemical industry (Please specify the sources included/excluded in the notes column to the right)	X		X
2.B.5.b	Storage, handling and transport of chemical products (Please specify the sources included/excluded in the notes column to the right)	X		
2.C.1	iron and steel production	X		
2.C.2	ferroalloys production	X		
2.C.3	aluminium production	X		
2.C.5.a	Copper Production	X		
2.C.5.b	Lead Production	X		X
2.C.5.c	Nickel Production	X		
2.C.5.d	Zinc Production	X		
2.C.5.e	Other metal production (Please specify the sources included/excluded in the notes column to the right)	X		
2.C.5.f	Storage, handling and transport of metal products (Please specify the sources included/excluded in the notes column to the right)	X		
2.D.1	pulp and paper	X		
2.D.2	food and drink	X		
2.D.3	Wood processing	X		
2.E	production of POPs	X		
2.F	consumption of HM and POPs (e.g. electrical and scientific equipment)	X		X
2.G	Other production, consumption, storage, transportation or handling of bulk products (Please specify the sources included/excluded in the notes column to the right)	X		
<p>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.</p>				

General recommendations on cross-cutting issues

Transparency:

90. The ERT noted that the industrial processes inventory is partly transparent and could be more detailed. The methodology descriptions are very brief referencing the Guidebook while it should be more descriptive. Thus, the ERT encourages Serbia to describe the methodologies used in more detail.

91. Sources of emission factors are given in the IIR for all activities but emission factors are not provided at that detailed level. Emission factors that have been used are default emission factors based on the EMEP/EEA Guidebook Tier 1 or Tier 2 depending on the activity. The ERT encourages Serbia to include tables presenting emission factors in the IIR.

92. The ERT noted that the sub-sector sections of the IIR do not list the relevant emitted pollutants. Since emissions factors are not detailed, it is difficult to understand which pollutants are considered in the sub-sector sections.

93. Activity data is given in the IIR for all activities. Nevertheless emissions are not described and a short explanation of the emission trends is missing. The ERT encourages Serbia to include at least some explanation of the time-series activity data given in each sub-sector section.

Completeness:

94. The ERT noticed that Serbia's inventory is complete in terms of pollutants. Indeed, Serbia not only submitted emissions from the main pollutants but also from particles, CO, heavy metals and POPs. Thus, the ERT commends Serbia for its effort.

95. Serbia only submitted emission tables from the year 2000 onwards to CLRTAP. After consultation, Serbia confirmed that it is planned, possibly as early as before the end of this year, to calculate emissions for the whole period and to report emissions for 1990 to 2010. The ERT welcomes Serbia's plans and encourages them to do so.

96. The ERT noted that there is no improvement planned in the methodology section used to estimate emissions from industrial processes. Recommendations are made in the improvement section.

Consistency including recalculation and time series:

97. The ERT noted that, since it is the first inventory report made by the Environmental Protection Agency, Serbia did not perform any recalculation.

98. Emissions trends are not described transparently in the IIR. The ERT noticed some inconsistencies in the time-series activity data given in the IIR, especially for the year 2004. The Party provided explanations for these inconsistencies and they are dealt with in the generalist chapter.

Comparability:

99. Serbia has reported its emission inventory according to the reporting requirements. The ERT noted that the methodologies used are based on the latest version of the 2009 EMEP/EEA Guidebook. Only Tier 1 or Tier 2 methodologies are used to estimate emissions from industrial processes. The ERT encourages Serbia to collect more country-specific data and to implement a higher tier methodology, especially for key categories.

Accuracy and uncertainties:

100. The ERT notes that no quantitative uncertainty analysis has been made by Serbia. The ERT recommends that Serbia performs an uncertainty analysis and implements sector specific QA/QC procedures for the industrial sector for the next submission.

Improvement:

101. The ERT notes that no improvements have been planned by Serbia for the next submission. The ERT recommends that Serbia sets up an improvement plan according to the review recommendations.

Sub-sector Specific Recommendations.**Category issue 1: 2B5a – Other chemical Industry – Notation key**

102. After consultation, the Party confirmed that black carbon and titanium dioxide productions do not occur in Serbia. The ERT recommends changing the notation key for NO_x from “NA” to “NO”.

Category issue 2: 2C5b – Lead production –Emission factors

103. In this section in the IIR, the table (which shows the emissions factors used) is not clearly referenced. The ERT recommends that Serbia corrects this reference.

Category issue 3: 2F – Consumption of HM and POP

104. This activity is not considered in Serbia’s IIR while emissions are nonetheless estimated. The ERT recommends that Serbia includes this activity in the IIR. The methodology which has been provided by Serbia to the ERT should be included in a specific section.

Sector-specific Recommendations**Category issue 1: 2 - Industrial process – Improvement plan**

105. The ERT notes that no improvements have been planned for the next submission. The ERT recommends that Serbia sets up an improvement plan for the industrial process inventory according to the review recommendations. As improvement, the ERT particularly encourages Serbia to collect, as much as possible, specific emission data from facilities so as to develop specific EFs and implement a higher tier methodology, especially for key categories.

SOLVENTS

Review Scope

Pollutants Reviewed		NMVOC, NH ₃ , NO _x , CO, PM _{2.5} , PM ₁₀ , TSP, Pb, Cd, Hg, As, Cr, Cu, Ni, PCDD/F, BaP, benzo(b) fluoranthene, benzo(k) fluoranthene, Indeno (1,2,3-cd) pyrene, PAHs Total 1-4		
Years		2000 - 2010		
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided
3.A.1	Decorative coating application	X		
3.A.2	Industrial coating application	X		X
3.A.3	Other coating application (Please specify the sources included/excluded in the notes column to the right)	X		X
3.B.1	Degreasing	X		
3.B.2	Dry cleaning	X		
3.C	Chemical products,	X		X
3.D.1	Printing	X		X
3.D.2	Domestic solvent use including fungicides	X		X
3.D.3	Other product use	X		X
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:

106. Serbia has provided an emissions inventory which is partly transparent but shows some gaps. There is no information on performed recalculations. The ERT encourages Serbia to include more detail in the IIR and to report the activity data in the form of tables in the IIR for more transparency, as well as to describe the methods and EFs used to calculate NMVOC, NH₃, NO_x, CO, PM_{2.5}, PM₁₀, TSP, Pb, Cd, Hg, As, Cr, Cu, Ni, PCDD/F, BaP, benzo(b) fluoranthene, benzo(k) fluoranthene, Indeno (1,2,3-cd) pyrene and PAHs Total 1-4, especially for the sectors 3C and 3D3. The ERT encourages Serbia to report the activity data in the NFR templates.

Completeness:

107. The ERT considers the Solvents sector to be of good quality but not complete. Serbia reports NE for 3A2 and 3A3. The ERT encourages Serbia to calculate emissions for these sectors.

108. In the key category analysis of the CLRTAP stage 2 test, the emissions from 3B1 and 3D2 are key categories. But they are the smallest key categories based on their % contribution to overall emissions. The emissions in sectors 1B1, 1A4bi, 1A3bi, 2D2 and 1A3bv are much higher than in these two categories. In general, NMVOC emissions from NFR 3 are very often the most important ones compared to other sectors. The ERT encourages Serbia to collect new activity data for 3D2 and 3B1 so as to obtain comprehensive and complete emissions for these sectors.

109. The ERT encourages Serbia to report data for other sub-source categories apart from rubber processing, asphalt blowing, paints manufacturing and leather tanning in 3C.

110. In NFR sector 3D3 Serbia reports emissions for each of the four PAHs (BaP, benzo(b) fluoranthene, benzo(k) fluoranthene, Indeno (1,2,3-cd) pyrene). But emissions of the four PAHs are missing in the 1-4 total. ERT suggests adding up the emissions in the NFR template for the sake of completeness.

Consistency including recalculation and time series:

111. Serbia gives no information on recalculation. ERT strongly encourages the Party to give such information on recalculation for NFR 3.

Comparability:

112. Serbia reports that the methods used are in accordance with the EMEP/EEA Emission Inventory Guidebook. And for several sectors Serbia reports that they use default EFs from the Guidebook. But the methods are not described in the IIR and the EF is not written in the IIR. As a consequence, the ERT cannot check if Serbia has indeed used the default EF and the indicated tier method, making it difficult to check the comparability with other inventory submissions.

Accuracy and uncertainties:

113. The ERT encourages Serbia to undertake an uncertainty analysis for the Solvents sector to help inform the improvement process and to provide an indication of the reliability of the inventory data.

114. The ERT encourages the Party to implement sector-specific QA/QC procedures for the Solvents sector.

Improvement:

115. The ERT encourages Serbia to continue with its plan to establish a database to gather data to calculate emissions of pollutants for this category. The ERT notes the Party's intention to improve the sub-sector 3A2. The ERT encourages the Party to improve also the sub-sectors 3A3 and 3C, and to improve the transparency of the IIR, especially for 3D and 3C.

Sub-sector Specific Recommendations.

Category issue 1: 3.C. Chemical Products, Manufacture & Processing:- All Pollutants

116. The ERT encourages Serbia to provide further details as part of the next submission with respect to the following information given to the ERT as part of the stage 3 review process. *"...the emission of PAHs is high, due to high volume of asphalt production. During the last 5 – 6 years, we have had a lot of road reconstruction in Serbia, including street rehabilitation and highway rebuilding and maintenance, and related activities of Corridor X development."*

Category issue 2: 3D3 Other Product Use - All Pollutants

117. The ERT encourages Serbia to address the following information given to the ERT as part of the stage 3 review process in the next submission: “For 3D3 data are given below. For this we used the Tier 2 methodology EMEP/EEA 2009. It consists of only 3 sub-categories. For others sub-categories we do not have data.”

Fat, edible and non edible oil extraction	Kg
2000	239866000
2001	203855000
2002	298055000
2003	331489000
2004	302671000
2005	323647000
2006	276803891
2007	229948151
2008	307228359
2009	345421300
2010	257666000
Creosote	
2000	1078920
2001	878980
2002	515000
2003	549400
2004	1009730
2005	577440
2006	475680
2007	366790
2008	695830
2009	260510
2010	470460
Tobacco smoking	
2000	13264
2001	12539
2002	14247
2003	14375
2004	15107
2005	17324
2006	18267
2007	21304
2008	20873
2009	20482
2010	21906

AGRICULTURE

Review Scope

Pollutants Reviewed		NO _x , NMVOC, NH ₃ , PM ₁₀ & PM _{2.5}		
Years		2000–2010		
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided
4 B 1 a	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	X		X
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		X
4 B 13	4 B 13 Other			X
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			
4 D 2 a	Off-farm storage, handling and transport of bulk 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			
4 G	Agriculture other(c)			
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.

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

General recommendations on cross-cutting issues

118. The CLRTAP submission includes emissions from 2000 to 2010. The emission inventory is generally complete for the main pollutants. The Agriculture sector is short and organised but the transparency can be improved. The ERT recommends that Serbia enhances the transparency of the Agriculture inventory by including more activity data and a description of methodologies. The ERT encourages Serbia to provide further documentation of the trend analysis in the next submission.

Transparency:

119. Serbia has provided activity data for mineral fertilisers during the review process. The ERT recommends that Serbia includes these activity data in the NFR tables or in the IIR and provides more details where necessary.

Completeness:

120. The inventory of the Agriculture sector is relatively complete with respect to the most important sources of emissions.

Consistency including recalculation and time series:

121. The IIR does not provide any recalculations for the Agriculture sector. The ERT encourages Serbia to provide detailed and complete information on recalculations in the next IIR submissions.

Comparability:

122. Serbia has prepared the agriculture inventory in accordance with the recommendations given in the EMEP/EEA 2009 Guidebook. The ERT notes that the inventory of Serbia is to a large extent comparable with those of other reporting Parties. The ERT encourages Serbia to continue with this approach.

Accuracy and uncertainties:

123. Serbia has provided a clear picture of the key sources for the Agriculture sector in its IIR. However, the uncertainty analysis was not provided. The ERT encourages the Party to undertake an uncertainty analysis for the Agriculture sector and to provide an indication of the reliability of the inventory data.

Improvement:

124. Serbia indicated in its IIR that no plans for improvements would be undertaken for the Agriculture sector. The ERT encourages Serbia to undertake some improvements such as providing additional information on activity data e.g., 4.D (Synthetic N fertilisers), explanations of emission trends and the inclusion of documentation of the planned and expected improvements in the IIR in future submissions.

Sub-sector Specific Recommendations.**4. B (Manure management)**

125. The ERT observed that emissions of NMVOC from 4.B (Manure management) are reported using the notation key NA "not applicable". The ERT recommends that Serbia completes its inventory by preferably estimating emissions of NMVOC, although these emissions of NMVOC are relatively small, or at least use a proper notation key (NE, "not estimated") in future submissions.

4. D (Synthetic N fertilisers).

126. The ERT observed that no information is given for 4.D (Synthetic N fertilisers). However, Serbia has provided activity data on mineral fertilisers during

the review process (see Table below). The ERT recommends that Serbia describes emission calculations from this category and provides detailed information on the breakdown of national fertiliser consumption into the relevant compounds in use, which are accounted for in emission estimates under 4.D1 (Direct soil emissions). The ERT also recommends that Serbia includes activity data on fertilisers in the next submissions.

Total amount of N fertilisers used in Serbia.

TOTAL AMOUNT OF FERTILISERS in tons												Amount of N in fertiliser
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Ammonium nitrate	106000	135000	255894	213811	273063	293374	244323	363899	263476	367390	385000	0.34
Ammonium sulphate				5899	935	347	11807	14252	40843	51321	52200	0.21
Calcium ammonium nitrate	192862	159132	212351	129799			24802			24977		0.24
Diammonium phosphate (DAP)					178	118	4542	9491	9380	33202		0.2
Monoammonium phosphate (MAP)					78470	75580	58701	91333	47748	52349	52600	0.11
NPK							145009	110503	191199	220469		0.19
Other nitrogen & phosphorus compounds							23402	25063	17472	18372	18000	0.42
Potassium nitrate					76	151	144	200	195	122		0.13
Urea	155000	162000	168817	167500	165000	181126	172103	179003	190054	194639	198000	0.45
AMOUNT OF N IN FERTILISERS in kg												
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Ammonium nitrate	36040000	45900000	87003960	72695740	92841420	99747160	83069820	123725660	89581840	124912600	130900000	
Ammonium sulphate	0	0	0	1238790	196350	72870	2479470	2992920	8577030	10777410	10962000	
Calcium ammonium nitrate	46286880	38191680	50964240	31151760	0	0	5952480	0	0	5994480	0	
Diammonium phosphate (DAP)	0	0	0	0	35600	23600	908400	1898200	1876000	6640400	0	
Monoammonium phosphate (MAP)	0	0	0	0	8631700	8313800	6457110	10046630	5252280	5758390	5786000	
NPK	0	0	0	0	0	0	27551710	20995570	36327810	41889110	0	
Other nitrogen & phosphorus compounds	0	0	0	0	0	0	9828840	10526460	7338240	7716240	7560000	
Potassium nitrate	0	0	0	0	9880	19630	18720	26000	25350	15860	0	
Urea	69750000	72900000	75967650	75375000	74250000	81506700	77446350	80551350	85524300	87587550	89100000	
TOTAL N u kg	152076880	156991680	213935850	180461290	175964950	189683760	213712900	250762790	234502850	291292040	244308000	

WASTE

Review Scope:

Pollutants Reviewed		All		
Years		2000 – 2010		
NFR Code	CRF_NFR Name	Reviewed	Not Reviewed	Recommendation Provided
6.A	solid waste disposal on land	x		x
6.B	waste-water handling	x		x
6 C a	6 C a Clinical waste incineration (d)	x		x
6 C b	Industrial waste incineration (d)	x		x
6 C c	Municipal waste incineration (d)	x		x
6 C d	Cremation	x		
6 C e	Small scale waste burning	x		x
6.D	other waste (e)		x	

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.

127. Serbia reports emissions in NFR sectors 6A, 6B, 6Cd. The activity data is missing in the NFR table. The ERT recommends that Serbia adds the activity data for these sectors where the emissions are calculated. For sectors where no emission occur, the notation key “NO” should be used.

Transparency:

128. Serbia gives a very brief description of their emission calculations and gives some general references to activity data and EF sources. The ERT encourages the Party to explain in more detail the calculation methods and EFs used.

Completeness:

129. Serbia reports emissions in 3 (out of 8) waste sub-sectors. The ERT encourages the Party to review the activity data availability for the NFR sectors 6Ca, 6Cb, 6Cc, 6Ce and, if it is possible, provide details on the methodologies used to calculate emissions.

Consistency, including recalculation and time series:

130. The time series for 6Cd is consistent for the years 2000 to 2010. No recalculations are mentioned in the IIR.

131. NH₃ emissions from sector 6B start in 2008, but in the IIR it is mentioned that data are available from 2007 onwards. The ERT encourages the party to develop the complete the time series for the “No of inhabitants that used latrines” back to 2000. The proportion of the total population against the “No of inhabitants that used latrines” for the years 2007 to 2010 could be used.

132. Emissions of NMVOC from waste water handling have been calculated since 2005, but in the IIR it is mentioned that data are available from 2004 onwards. The ERT encourages Serbia to develop a time series for the amount of waste water back to 2000 and calculate NMVOC emissions.

Comparability:

133. Serbia's calculated emissions are comparable with other countries, since the EMEP/EEA Guidebook 2007 has been used. The ERT recommends that the Party starts using the "EMEP/EEA emission inventory guidebook 2009".

Accuracy and uncertainties:

134. No specific QA/QC procedures for CLARTAP calculations have been made in Serbia. The ERT encourages the Party to explain in more detail what kind of QA/QC procedures have been introduced for the waste sector. For activity data default uncertainties could be used.

Improvement:

135. Serbia states in its IIR that it does not intend to perform any improvements in this sector. The ERT encourages the Party to consider sub-sector recommendations as mentioned in the section below.

Sub-sector Specific Recommendations.

6A - Solid waste disposal on land

136. NMVOC emissions have been calculated since 2000. It is not clear which emission factors are used to recalculate emissions from CH₄ to NMVOC. The ERT recommends that the Party provides more detailed information on NMVOC calculations from solid waste disposal. The proportion between CH₄ and NMVOC emissions will be useful to verify the accuracy of the calculations.

6B- Waste-water handling

137. Serbia provides emissions in this sector. The ERT recommends that Serbia develops an activity data time series back to 2000 and calculates NH₃ and NMVOC emissions from that year onwards. The calculation methods are acceptable for NFR sector 6B.

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

138. Serbia does not report emissions in these sub-sectors. The notation key "NO" is used. The ERT recommends that Serbia investigates the situation of waste incineration.

6Cd Cremation

139. Serbia reports emissions in this sub-sector. The calculation method and activity data are acceptable. The ERT recommends that Serbia describes in the IIR how the activity data are collected.

6Ce Small-scale waste burning

140. Serbia does not report emissions in these sub-sectors. The notation key "NO" is used. The ERT encourages Serbia to review sector 6Ce "Small-scale burning" activities and if it is possible – to calculate emissions.

6D Other wastes

141. Serbia does not report emissions in these sub-sectors. The notation key "NO" is used.

LIST OF ADDITIONAL MATERIALS PROVIDED BY THE COUNTRY DURING THE REVIEW

Response to questions raised during the review:

General

Serbia-General-27062012-Q1.doc

Energy

Serbia_Energy-1.docx

Serbia_Energy-1_NIS refineries.xlsx

Serbia_Energy-280612.docx

Transport

Serbia-Transport-25-06-2012-Q2.doc

Industrial processes

Serbia-Industry-22062012-Q1.doc

Serbia-Industry-25062012-Q2.doc

Agriculture

Serbia-Agriculture and Nature-18_06_2012.doc

Serbia-Agriculture and Nature-26_06_2012.doc

Solvents

Serbia-Solvents Use-2012-06-19-Q1.doc

Serbia-Solvents Use-2012-06-26.doc

Waste

Serbia-Wastes-22-06-2012-Q1.doc