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SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

Tenth session

Bonn, 31 May - 11 June 1999

Item 4 (a) of the provisional agenda

SUBSIDIARY BODY FOR IMPLEMENTATION

Tenth session

Bonn, 31 May - 11 June 1999

Item 3 of the provisional agenda

**NATIONAL COMMUNICATIONS FROM PARTIES INCLUDED  
IN ANNEX I TO THE CONVENTION**

**Comments from Parties on methodological issues related to possible clarifications,  
additions and amendments to the inventory section of the revised guidelines for  
the preparation of national communications by Annex I Parties\***

**Note by the secretariat**

1. At its ninth session, the Subsidiary Body for Scientific and Technological Advice (SBSTA) concluded that the options identified in document FCCC/SBSTA/1998/8 could serve as a starting point to resolve the methodological issues identified by Parties and by the secretariat while processing greenhouse gas inventories included in second national communications. The SBSTA invited Parties to submit initial information related to the options addressed in document FCCC/SBSTA/1998/8 by 1 December 1998 and additional information by 1 March 1999, for compilation into a miscellaneous document (FCCC/SBSTA/1998/9, para. 51 (g)).
2. Six submissions have been received.\*\* In accordance with the procedure for miscellaneous documents, these submissions are attached and are reproduced in the language in which they were received and without formal editing.

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\* Comments from Parties on a draft of the inventory section of the revised guidelines for the preparation of national communications by Annex I Parties (FCCC/SBSTA/1999/INF.1/Add.1) are also included in this miscellaneous document.

\*\* In order to make these submissions available on electronic systems, including the World Wide Web, these contributions have been electronically scanned and/or retyped. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

**FCCC/SB/1999/MISC.5**

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PAPER NO.1: AUSTRIA  
(ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES)

**OPTIONS AND RELATED QUESTIONS INCLUDED IN FCCC/SBSTA/1998/8**

Austria on behalf of the European Union and its Member States submits preliminary views on options and related questions included in paragraphs 18 to 30 of document FCCC/SBSTA/1998/8. This submission is intended to facilitate the discussion on the workshop in Bonn organised by the secretariat from 9 to 11 December 1998. Where possible at this stage an indication is also given of the preferred options. These are initial views and the EU plans to submit a revised submission after the workshop.

**18. Options related to the use of different methods/data by Parties**

One standard method (i.e. one calculation procedure with fixed emission factors or other parameters) per source category is probably not feasible because of variation in national circumstances. The EU believes that Parties applying the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories<sup>1</sup> should be able to use methods of their choice as long as „good practice“ in implementing the methods is fulfilled.

The concept of good practice should have three main elements in the context of emissions inventories:

*Good practice* on inventory estimates should give guidance (for example by the use of decision trees) on selection of calculation methodology and choice of emission factors and activity data to deliver unbiased reporting of emissions and quantification on uncertainties

*Good practice* on inventory management should allow tracking and auditing of the information needed to estimate emissions and identify where the responsibility lies for each step in the estimates. This might include formal quality assessment and quality control (QA/QC) procedures using for example ISO 9000 as a basis but possibly extended to take account of the particular circumstances of emission inventories.

*Good practice* in inventory verification should include expert review and comparison with relevant international data sources and empirical data although empirical comparisons can raise the costs of GHG emission inventory work significantly.

Following this concept criteria need to be established to assess whether or not an inventory is in compliance with respect to *good practice* and what to do if it is not.

From the four options mentioned in document FCCC/SBSTA/1998/8 option 4 would

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<sup>1</sup> The Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories are referred to as the IPCC Guidelines in this submission.

probably correspond best to the view expressed by the EU although option 2 should also be considered at the workshop if best methods can be defined.

### **19. Options related to the recalculation of the base year**

This is a difficult question, which has strong policy implications, as the emissions of the base year are the basis to calculate the assigned amounts of a Party. The answer to this question is usually driven by two considerations:

- a.) The desire to fix the emissions for the base year in a legal sense similar to the route as followed in Article 25 of the Kyoto Protocol for the CO<sub>2</sub> estimates used in calculations about entry into force
- b.) The wish to continue recalculate the emissions for the base year according the best and latest knowledge

The EU does not indicate a preference between a.) and b.) since this problem needs further discussion and assessment.

The underlying principle for both a.) and b.) is that base year estimates and inventory calculation procedures must be kept consistent. If the base year estimates (and hence the assigned amounts) were fixed first and recalculation of inventories allowed subsequently, then Parties would (potentially) have great flexibility in appearing to meet their commitments by methodological changes.

Under a) base year emissions would not be recalculated (except perhaps in exceptional circumstances) for the first commitment period once they had been calculated using the IPCC Guidelines and taking account of any good practice guidelines which should be agreed under the provisions of Art 5 of the Kyoto Protocol. *Exceptional circumstances* could include, for example, discovery of an arithmetical error in the inventory calculation.

Under b), recalculation of the emissions of the base year would be possible in principle to allow for methodological improvements in inventory calculations whilst retaining a consistent time series. Parties may and should always try to reduce the uncertainty of their emission data. To avoid misuse of this possibility guidelines on good practice for recalculation of the emissions of the base year should be developed as soon as possible to enable Parties to apply those guidelines. It should be kept in mind, that activity data are usual final after a certain period of time.

### **20. Options related to the level of detail of supporting information as a function of the importance of different GHG emissions from various source categories**

The provision of data according to standard data formats is necessary for comparability of data, and variation of the level of detail according to the importance of the source must not

interfere with this. Although *supporting information* has not been defined, it might (for example) refer to documentation on how methods, emission factors and parameter values, and data sources were chosen within the good practice framework. This could vary with the importance of the source, so long as we can define *importance*. Such a definition would depend not only on the absolute amount and share of the source in the national inventory, but also on its rate of change, its uncertainty, its GWP and lifetime in the atmosphere. A feature of formal QA/QC procedures (if agreed) could be to ensure the accessibility of documentation that might be required for reference, even if all this documentation was not supplied automatically as a mandatory requirement for minor sources.

From the two options mentioned in document FCCC/SBSTA/1998/8 option 2 would probably correspond best to the view expressed by the EU given that a definition of *importance* can be agreed.

## **21. Options related to the level of detail of the supporting information as a function of years**

The *supporting information* mentioned in the question has not been defined, although the response to para 20 above gives a possible definition. Repetitive submission of unchanging data is redundant and unnecessary. Features of a possible QA/QC system could be a) to identify changes in data and parameter values that needed new documentation and b) to ensure regular review of data and parameter values that might be subject to change. Additional supporting information should be provided for years with significant changes in methodologies, emissions factors or activity data. As a concrete example, the emission factors for natural gas vary to some extent with the source and one would expect inventory calculations undertaken in the context of good practice to be sensitive to this variation. The role of the QA/QC procedure in this example would be to ensure recognition of the need to vary the emission factor.

The EU's view is closer to option 1 but without the need to deliver redundant information.

## **22. Options related to the formats for presenting inventory data in a transparent way**

The EU believes that IPCC standard tables should be provided. The IPCC may need to be requested to work on the design and provision of worksheets as part of the guidelines for good practice, in order to ensure that the requirements to submit data are not unreasonable and that the data called for best matches the needs of transparency and comparability. Electronic exchange of data is likely to be increasingly important and the overriding need will be to meet the standard format. To allow for efficient work the format should follow the format of other international inventories.

The EU's view is neither met by option 1 nor by option 2.

### **23. Options related to the comparison of estimates**

Comparative emissions estimates for all *important* categories of emissions should be required under good practice guidelines. For comparison and verification purposes *important* should be defined along the lines pointed out in the answer to paragraph 20 above. The results could be given as percentage differences with respect to the main (good practice) emissions estimate, in order to avoid the appearance of countries having dual emissions estimates.

From the three options mentioned in document FCCC/SBSTA/1998/8 option 3 would probably correspond best to the view expressed by the EU.

### **24. Options related to supplementary information on methods, emission factors and activity data used for ensuring transparency.**

Paper FCCC/SBSTA/1998/8 is unclear on the difference (if any) between *supplementary* and *supporting* information.

Paragraph 20 above offers a definition of *supporting* information and suggests it should be provided for all sources meeting an agreed definition of *important*, leaving the QA/QC procedure to guarantee access to supporting information for other sources (i.e. those not meeting the criteria of *importance*) if called for. Supporting information in the context would need to show how the application of best practice guidelines lead to the final choice of calculation methods and associated numerical data. Decision trees (if adopted as a way to decide on good practice) themselves would provide a natural way to structure this information, including as a minimum information about the source of emission factors and activity data as well as a rationale for the selection of the particular emission factors, and upon request this background information should be made available to the review team or the secretariat also. Supporting information should include data on uncertainty of data (by activity), documentation for independent auditing and verification, expert review, openness, comparison with international data sources and other methods for objective assessment of data quality.

To avoid confusion *supplementary* information should probably only be referred to in the context of the information called for to demonstrate compliance under the provisions of Art 7 of the Kyoto Protocol. This would include information called for by the Protocol commitments but not provided by the IPCC Guidelines, for example the information necessary to identify activities included under Art.3.3, or to separate certain categories of military emissions, as required by para 5 of decision 2/CP3.

The EU sees the need to provide some format structure to information and this is closer to option 2.

## **25. Options related to the reporting of CO<sub>2</sub> equivalent emissions**

Taking into account decision 2/CP.3 (para 3), reporting of CO<sub>2</sub> equivalent emissions should become a mandatory requirement, calculated using the 1995 IPCC GWP values. Countries should continue to report emissions in mass units, as required by the IPCC Guidelines because this information is necessary for transparency, international comparisons and domestic analysis.

From the two options mentioned in document FCCC/SBSTA/1998/8 option 2 corresponds to the view expressed by the EU.

## **26. Options related to estimating and reporting HFC, PFC and SF<sub>6</sub> emissions**

In line with decision 2/CP.3 reporting of actual emissions disaggregated by chemical species and source category should be mandatory and reporting of potential emissions should be encouraged. Priority should be given to improving the methodologies for reporting actual emissions. Data on potential emissions show the size of the release of the atmosphere of these gases which might eventually occur, and help to increase the transparency of the calculations for actual emissions. If no record is being made of potential emissions now it might be difficult to estimate them later on.

A special assessment of methods and data used by Parties in reporting these emissions could be useful and should be carried out by the secretariat with a view to encourage good practice. This is an area in which the secretariat should consider the availability and use of international sources.

From the three options mentioned in document FCCC/SBSTA/1998/8 option 2 would probably correspond best to the view expressed by the EU with the exception that at this stage reporting of potential emissions should not be mandatory but encouraged.

## **27. Options related to the reporting of bunker emissions**

Current reporting guidelines are probably adequate until the issue of allocation of emissions from international aviation and shipping has been resolved. In view of the EU the question of allocation of GHG emissions from international bunker fuels should be resolved as soon as possible. Based on such a decision a common method and reporting framework will have to be developed as an addition to the existing guidelines.

The *good practice guidelines* being developed in the context of the IPCC 96 Revised Guidelines will need to deal with the separation of international bunker fuels from fuels used for domestic aviation and shipping, which are included in national emissions totals. Little advice is available at present on this. Also the provisions of Decision 2/CP3 para 5 mean separate reporting of emissions from certain military activities will be required, and the

guidelines for supplementary information to be developed under the provisions of Art 7 of the Kyoto Protocol will need to allow for this.

### **28. Options related to the reporting of ozone precursors and SO<sub>2</sub> emissions**

Since these gases are included under the Convention and affect the climate system, Parties should continue to report these gases using the IPCC Guidelines (or best available national methodologies consistent with them).

### **29. Options related to the special needs of EITs**

The EU believes that the special needs of countries with economies in transition should be assessed and proposes that the secretariat prepare such a report based on submissions by EITs.

From the two options mentioned in document FCCC/SBSTA/1998/8 option 2 corresponds best to the view expressed by the EU.

### **30. Options related to uncertainties**

Parties should report uncertainties according to the provisions of *good practice* guidelines on uncertainties being developed under the IPCC inventories programme. The purpose of this information is e.g. to keep track of the uncertainty associated with the *good practice* emissions estimates in order to prioritise work to improve emissions estimates and to increase the usefulness of national inventory data for scientific and other applications.

The EU's view is neither met by option 1 nor by option 2.



PAPER NO. 2: CANADA

**METHODOLOGICAL ISSUES RELATED TO GREENHOUSE GAS  
EMISSION INVENTORIES**

At the ninth session of the Subsidiary Body for Scientific and Technological Advice in Buenos Aires, Argentina, in November 1998, Parties agreed in FCCC/SBSTA/1998/9, paragraphs f and g respectively,:

*2) that the SBSTA invite Parties to submit initial information related to the options addressed in document FCCC/SBSTA/1998/8 by 1 December 1998 and additional information by 1 March 1999, for compilation into a miscellaneous document.*

**Additional Methodological Work (*Uncertainties and Assigned Amounts*)**

Canada, like many Parties, places great importance on the work of the IPCC in developing methodologies for estimating and reporting emissions and removals of greenhouse gases. As such, Canada supports the current inventory work program of the IPCC that is establishing good practice guidelines. The IPCC's current program has two components:

- (1) to develop better ways to assess and communicate uncertainty and
- (2) to develop sector and/or source specific "*good practice guidelines*" to enhance implementation of the current inventory methodologies. While the results of this work will undoubtedly be of relevance to the Parties on issues related to assessing compliance, emissions trading, and other Kyoto Mechanisms, it is unclear what the ultimate IPCC product will be, or how it will be included under the Kyoto Protocol.

Canada has provided its views on dealing with uncertainties in previous submissions. Given the fact that the IPCC is currently examining this issue, the following is offered to guide the work of the Parties in establishing Inventory Guidelines. Given the time-frames involved though, it is doubtful that improvements in methods and data alone will resolve the concerns surrounding the large inequities and verification difficulties that characterise the single basket alternative embraced by the Kyoto Protocol, particularly when modalities and guidelines are yet to be developed and agreed to, for many interrelated mechanisms.

Canada had previously suggested the establishment of a set of accounting rules which attempt to address the problem of inequity between inventories of varying uncertainties. A fundamental requirement to this approach is that the statistical uncertainty (precision) associated with the estimates, by gas and by sector, be known.

As such, Canada would urge Parties to adopt guidelines that not only require the reporting of uncertainties on an aggregate GHG basis, but that also mandate that quantitative estimates of uncertainties in both emission factors and underlying data on a gas-by-gas basis for individual source categories be provided. A resulting benefit would be that the system would promote improvement in data quality.

The current work of the IPCC Inventories Program is not examining the land-use, land-use change and forestry categories. While it may be somewhat premature for SBSTA to discuss the methodological issues related to good practice in these categories, it is extremely important that SBSTA begin the process of developing guidelines to deal with the various levels of uncertainty in greenhouse gas inventories, both as they pertain to the sinks issue and the overall inventory. It is Canada's view that with respect to land-use and land-use change activities, the current IPCC reporting guidelines are incompatible with the recent decisions of the Parties and are inadequate and must be improved to help in monitoring compliance. As such, SBSTA must not only continue to provide guidance to the IPCC and other bodies, but it must also establish clear guidelines on establishing assigned amounts.

PAPER NO. 3: GERMANY  
(ON BEHALF OF THE EUROPEAN COMMUNITY AND ITS MEMBER STATES)

**DRAFT OF THE INVENTORY SECTION OF THE GUIDELINES FOR THE  
PREPARATION OF NATIONAL COMMUNICATIONS BY PARTIES  
INCLUDED IN ANNEX I OF THE CONVENTION**

Germany on behalf of the European Community and its Member States thanks the secretariat for preparing document FCCC/SBSTA/1999/INF.1/Add.1 which contains a draft of the inventory section of the guidelines for the preparation of national communications by Parties included in Annex I of the Convention to be adopted at COP5<sup>1</sup>. This document reflects the outcome of the UNFCCC Workshop on Methodological Issues Related to Greenhouse Gas Inventories (Bonn, 9-11 December 1998) and will facilitate the discussions at the UNFCCC Workshop on Guidelines for the Preparation of National Communications by Annex I Parties (Bonn, 17-19 March 1999).

This submission contains views of the EU on the above mentioned draft of the inventory section. It should be read in conjunction with the EU's previous submissions on options and related questions included in FCCC/SBSTA/1998/8 and on the scope of third national communications and on the questionnaire by the secretariat on clarifications, additions and/or amendments to the revised guidelines for the preparation of national communications by Parties included in Annex I of the Convention<sup>2</sup>.

With respect to the timing of the application of the inventory section, the EU believes that it should be applied at the latest for the inventory which is due 15 April 2001. However, if a recommendation by SBSTA/SBI for a draft decision of the COP could be agreed at SBSTA/SBI 10, it could be applied for the first time for the inventory which is due 15 April 2000.

## **1. Suggestions for changes**

### **1.1 General comments**

The EU believes that the 1999 FCCC Reporting Guidelines should meet the needs of the Convention and take into account, to the extent appropriate, the needs of the Kyoto Protocol. Therefore the EU is in favour of lifting the square brackets in paras. 1 (a), 4 (under *Transparency*) and 6.

The title of section **B.** should read **Principles and definitions.**

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<sup>1</sup> Abbreviated as 1999 FCCC Reporting Guidelines

<sup>2</sup> Abbreviated as 1996 FCCC Reporting Guidelines

1.2 Specific comments by paragraph number in document FCCC/SBSTA/1999/INF.1/Add.1

1. (c): Replace „technical/expert review“ by „technical assessment and expert review“.
3. Footnote 2, line 3: Replace „among other information“ by „inter alia advice on choice of methodology, emission factors, activity data, on uncertainties and“.
4. Definition of *transparency*: Rephrase the end of the first sentence beginning in line 1: „...used for national inventories should be easily understood and that national inventories should be replicable by users of the reported information.

Definition of *consistency*: The term „target years“ in line 3 is not clear (also used in para. 11, line 6). Replace end of sentence by „...base and all subsequent years for which inventories are being reported“.

Definition of *completeness*: the square brackets should be lifted. Replace „of emissions“ by „and sinks as well as all gases“ in line 1.

Definition of *accuracy*: the text should be replaced by:

„*Accuracy* means that estimates of emissions and removals reported by Parties should be accurate in the sense that they are neither over estimates nor under estimates of true emissions and removals so far as can be judged, and that the uncertainties are reduced as far as practicable. Appropriate methodologies conforming to good practice standards should be used to promote accuracy in national inventories.“

7. Insert „instead of the base year or period of years pursuant to para. 6“ after „1995“ in line 1.
10. The square brackets should be lifted. Replace „SBSTA“ by „COP“ to be consistent with para. 3. Rephrase end of the sentence: „...in order to improve transparency, consistency, comparability, completeness and accuracy.“
11. Both sets of text in square brackets should be deleted.

Rephrase the beginning of the first sentence: „Recalculations of annual inventories, including the base year inventory, as presented in previously submitted annual inventories are allowed...“.

Replace „and/or target years in line 6 by „...and all subsequent years for which inventories are being reported“.

The following sentences should be added to the end of the paragraph:

„Occasionally activity data may be missing for some historical years, including the base year. In this case proxy activity data may be calculated to ensure methodological consistency with the rest of the time series. These proxy activity data should be reported in a transparent manner. The relationship between the proxy activity data and actual

activity data should be demonstrated using an overlap during which both proxy and actual activity data are available. Parties should use any available good practice guidance on this matter.“

Add „taking account of any good practice guidelines“ at the end of the sentence.

Rephrase end of footnote 4: „...due to the fact that good practice guidelines for estimating and reporting on uncertainties are currently under development by the IPCC and may be agreed upon by the COP at a future session.“

15.The square brackets should be lifted.

16.Replace „substance“ in line 2 by „chemical species (e. g. HFC-143a)“. Delete „as a subset“ in line 5.

17.Rephrase the second sentence: „Parties are further encouraged to report emissions of other greenhouse gases in mass units.“

18.Rephrase the second sentence of footnote 5: „Until the completion of that work by the IPCC and its adoption by the COP, Parties are requested to use the current reporting format of the IPCC to provide information on this sector.“

19bis Insert new para.: „Confidential data should only be used on the most disaggregated level of source/sink categories with respect to industrial and military sources of GHG. The data should be reported in a more aggregate source/sink category.“

20.Replace the second sentence by: „Recalculations of annual inventories, including the base year inventory, should be justified as an improvement of the accuracy of the inventory.“

21.(c): The definition seems not to be clear. Replace text by „NA" (not applicable) for activities in a given source category that do not result in emissions (e.g. because of the nature of the chemical process involved).“

(d): Replace „supposed“ by „expected“ in line 2. Add at the end of the paragraph: „Where IE is used in an inventory the Party should indicate by means of a footnote where in the inventory the emissions from the displaced source category have been included and the Party should give the reasons for this inclusion deviating from the expected category, inter alia because of the confidentiality of data.“

(e): Replace text by: „0" for sources which are estimated to be less than one half the unit being used to record the inventory table, and which therefore appear as zero after rounding. The emissions amount should still be included in the national totals and any relevant subtotals. Calculation procedures in the worksheets of IPCC guidelines should be reported at the level of detail indicated in the calculation software and/or the respective worksheets.“

This definition should have a footnote as follows: „The level of detail appropriate to very small source categories is under consideration by the IPCC in its work on good practice and Parties should use any guidance which is subsequently agreed by the COP“.

22. Insert „or of gases“ before „which are“ in line 1.

23. Insert „Self“ before „verification“ in line 1 and in the title.

Insert at the end of the paragraph: „Parties are also encouraged to report on any independent peer review of their inventory conducted nationally.“

24. Both sets of square brackets should be lifted and the word „also“ inserted before „encouraged“ in line 5.

Rephrase the end of the last sentence: „...for annual estimates and for time series within the reporting period.“

In footnote 7 replace „requested by the SBSTA“ by „adopted by the COP“.

25. Insert „, for example“ after „adjustments“ in line 1.

26. Delete para. 26, since the first sentence of para. 26 is repeated in para. 30 (line 3) and para. 31 (second sentence). Add the second sentence of para. 26 to the end of para. 31.

27.(d) Footnote 10: Rephrase at the end: „adopted by the COP, who may wish to take into account the ongoing work of the IPCC on good practice guidelines.“

30. Delete the third sentence in line 3, since it seems to be superfluous.

31. Add the second sentence of para. 26 to the end of para. 31.

32. Add „unless necessary for reasons of transparency“ to the end of the final sentence.

33. Replace „entire period covered“ in line 2 by „period from the base year up to the last but one year prior to the year of submission“

34. Delete „to national communications“ in title before para. 34.

It is not clear in which cases a need mentioned in the second sentence could arise and who would bring the need to the attention of SBSTA/SBI.

35. Replace the first sentence by: „The detailed information to be submitted in such years should be provided as an official supplement to the annual inventory or to the national communication.“

36. Rephrase the end of the second sentence: „...the necessary information to establish

transparency of the annual inventories for all years from the base year to the last but one year prior to the year of submission.“ and add the following sentences: „Submissions should update all detailed information provided in prior submissions if substantial changes have occurred. Reporting unchanged data should be avoided unless necessary for reasons of transparency.“

37.(a): The square brackets should be lifted. Replace „two“ in line 2 by „one“.

(b): Insert „including any national methodology used by the Party“ before „used“ in line 1 and stop the sentence after „applied“ in line 2.

(d): Stop sentence after „data“ in line 2 and insert a new d(bis) „A rationale for the selection of emission factors and activity data;“

(e): Delete „presentation“ in line 1.

(g): Replace „internal“ by „self“ in line 1.

Delete „and“ after „collection“ and insert „and any independent peer review conducted nationally“ after „procedures“ in line 2.

Delete „used to check the reliability and accuracy of the inventory data“, since this text seems to be superfluous.

38 to 41.: The EU generally supports the content of these paragraphs, however they should be deleted here. With respect to paras 38 and 39, the EU notes that these provisions are not directed to Parties but to the secretariat. They could be included in the relevant COP decision dealing with these guidelines. With respect to paras 40 and 41 the EU notes that they could be included in a relevant COP decision dealing with the review process.

42. Insert „inter alia“ after „inventory“ in line 4.

It is not clear what is referred to by „complete inventory information“ in the last sentence.

Annex II: Add the following text at the end: „taking into account any available information from the work of IPCC on good practice guidelines“.

## **2. Suggestions for editorial changes**

### **2.1 General comments**

It is suggested to include a table of contents in the 1999 FCCC Reporting Guidelines itself.

Pursuant to paras. 5 and 8 emissions by sources and removals by sinks should be reported. However, in many places of the draft inventory section only emissions are referred to which should be corrected:

- Sometimes the word „emission(s)“ could be deleted (e. g. in para. 3, line 1, para. 4 under *Transparency*, line 4, para. 23, line 9, para. 27, line 2, para. 31, line 1, para. 33, line 1).
- Sometimes „and removal(s)“ could be inserted after „emission(s)“ (e. g. in para. 9, line 5, para. 15, line 2, para. 17, lines 1 and 6, para. 21 (c), line 1, para. 22, line 1, para. 24, line 1, para. 28, line 3, para. 30, line 2, para. 31, line 3, para. 37 (a), line 3, 37 (e), line 1).
- Sometimes „emission estimate(s)“ could be replaced by „estimate(s) of emissions and removals“ (e. g. in the title before para. 13, para. 20, line 1, para. 23, line 8, para. 42, line 6).
- The terms „emission sources“ in para. 21 (a) and (b), „sources“ in para. 21 (d) and „sources of emissions“ in para. 21 (e) could be replaced by „emissions by sources and removals by sinks of greenhouse gases“.
- The term „source/sink category“ should be used instead of „source category“.

The term „greenhouse gas“ should be used instead of GHG in all places or the other way round (with an explanation).

It is not clear why some terms are printed in *italics* (see para. 4 and sectors, e.g. *energy*). It is suggested to use *italics* in a consistent manner (e. g. for terms for which a definition is provided) or not to use *italics*.

The EU notes that good practice in connection with inventory methodologies is defined in footnote 2. It is suggested to use the term good practice guidelines instead of good practice standards. Sometimes good practice is surrounded by inverted commas in the text, sometimes not. The EU suggests that inverted commas should not be used in this case.

## 2.2 Specific comments by paragraph number in document FCCC/SBSTA/1999/INF.1/Add.1

1. Line 4: Insert „FCCC“ before „inventory guidelines“ to avoid possible confusion with the 1996 IPCC Guidelines.
1. (b): Replace „the inventory data contained in annual submissions and“ by „annual national inventories and national inventories included“ to use the same formulation as in para. 5, lines 2-3.
6. Pursuant to decision 9/CP.2, 1989 is the base year for Bulgaria.
23. The first sentence could stop after „reference approach“ in line 3. The rest of this sentence seems superfluous.
- 27.(a): The word „separately“ in footnote 9 seems to be superfluous.  
  
(c): Rephrase the beginning: „A table for presenting the comparison of the IPCC reference approach for carbon dioxide emissions from fuel combustion providing worksheet 1-1 of the 1996 IPCC Guidelines with national estimates...“.
- 37.(c): Replace „29“ by „20“.



PAPER NO. 4: REPUBLIC OF UZBEKISTAN

**COMMENTS TO THE OPTIONS ON METHODOLOGICAL MATTERS**

The process of the development of corrections and amendments to the guidelines for preparation of the national communication can be based on the principles of necessity and sufficiency of their introduction reflecting the experience of the analysis of the preceding communications and methodological needs, following the Kyoto Protocol. Let us present some comments to the options presented in document FCCC/SBSTA/1999/8.

- Flexibility

Item 18. Taking in mind that the guidelines under consideration will be the basis of the practical activities of Parties, we think, that the “standard methods” should be the prior ones. At the same time, it is necessary to strive for the wide application of the “best methods” basing their predominance in comparison with the other methods and having developed the criteria of their comparability.

Item 19. Any initiatives of the Parties aimed at the improvement of the assessment of greenhouse gases emissions should be successively encouraged. The criteria of the re-calculation of the basic year inventories and the relevant rules should be worked out.

- Reporting

Item 20. The selective approach to the emission sources is more preferable. In our opinion, the degree of the reporting information detalization should correspond to the statistical value of the emission source and not depend on the reporting period.

Item 21. The representativeness of the basic year and starting and final years of the data inventory period can be quite sufficient, and can be regarded as the grounding of the selective approach preference.

Item 22. When presenting with the data it is possible to present the “working pages” for the most important sectors using the standard data tables for the less significant sectors.

Item 23. It is desirable that the presented data should correspond to the comparability criteria for all categories of the emission sources. At least, the transparency should be intensified for the most significant greenhouse gases.

Item 24. It is more preferable to use the standard format of reporting providing for the acceptable level of the data transparency on the greenhouse gases inventory.

Item 25. The application of the global potential warming potential should be based on IPCC recommendations. The use of the common reporting formatting should be obligatory for the provision of the reports comparability and successive data interpretation.

Item 26. The real emissions should be included into the aggregated greenhouse gases emissions. The reporting on fluorides should be unified.

Item 27. For the estimation of the bunker emission the general methods should be coordinated as well as the standard reporting formats.

Item 28. The reporting on the ozone precursors and SO<sub>2</sub> precursors should be preserved in order to satisfy further FCCC requirements.

Item 29. The differential approach should be applied alongside with the respective assistance when assessing the specific needs of the countries with the economy in transition.

- Uncertainties

Item 30. The parties should strive for the revealing of any uncertainties in the inventory and present the additional information on these issues.

PAPER NO. 5: SWITZERLAND

**METHODOLOGICAL ISSUES RELATED TO GREENHOUSE GAS  
INVENTORIES**

In response to the call at the ninth session of the Subsidiary Body for Scientific and Technological Advice for comments on document FCCC/SBSTA/1998/8 and the outcome of the workshop on methodological issues held in Bonn in December 1998, Switzerland presents the following views.

1. Switzerland would like to thank the secretariat for organising a workshop on methodological issues related to GHG inventories on the basis of experience gained in reviewing, compiling and synthesising national communications and inventories. In addition, the workshop was useful in enabling an initial discussion at expert level of reporting issues arising in the context of the Kyoto Protocol.
2. Switzerland strongly welcomes the proposed steps to standardise basic reporting requirements by means of a common reporting format. This is a necessary prerequisite to provide for the most essential and basic inventory data needs of the Convention in a uniform manner. The inventory guidelines and other reporting guidance should be explicit in indicating the particular status of minimum information required in the common reporting format with a view to issues of compliance. Considerations on how the lack of mandatory minimum information could be handled in the Convention process, e.g. within the compliance regime, should be addressed in parallel with finalising the reporting guidelines.
3. Regarding the recalculation of base year data, Switzerland would not limit their scope if improved accuracy, methodological consistency and full transparency are confirmed and approved by the review process. Any open issues regarding fulfilment of these criteria would have to be resolved in the context of the compliance regime under the Kyoto Protocol. A time limit for recalculations and related changes in the handling of data as well as for the addition of new source or sink categories should be set well before the beginning of the first commitment period (e.g. 2005) in order to conclusively define the framework in which Parties meet their emission reduction commitments under the Kyoto Protocol.
4. Reporting requirements on HFC, PFC and SF<sub>6</sub> emissions must give adequate consideration to accuracy and feasibility. If potential emissions are more easily accounted for, if estimates are more reliable, if their determination is better suited for Parties that do not dispose of the necessary technical expertise, and if experience within the Montreal Protocol indicates clear advantages in the use of potential emissions as a means to establish inventory data and assess trends, this issue should receive further attention in the process of revising reporting guidelines.

5. With regard to possible double counting or non-counting of bunker fuel emissions, in addition to the more transparent allocation to the relevant sectors (marine/aviation/national/international), methods in estimating bunker fuel emissions should be reported following the same standards of "good practice" as in any other sector of the inventory. If not available, corresponding standards should be developed for this sector as part of IPCC's ongoing work in this area.

PAPER NO. 6: UNITED STATES OF AMERICA

**DRAFT REVISED TEXT OF THE UNFCCC GUIDELINES FOR  
REPORTING INVENTORY DATA BY ANNEX I PARTIES**

The United States is pleased to submit these comments on the Secretariat's "Draft Revised Text of the UNFCCC Guidelines for Reporting Inventory Data by Annex I Parties." Given the importance of inventory reporting, the US believes that these guidelines must be clear and specific. We think that the Secretariat has done a good job of incorporating input from the SBSTA Workshop on Methodological Issues Related to Greenhouse Gas Inventories, held in Bonn in December 1998. We offer the following comments on specific elements of the draft guidelines.

Para 1 (a): The US recommends amending the bracketed phrase to reflect the fact that the Kyoto Protocol has not yet entered into force. We suggest the following:

[and in preparation to meet *possible future* commitments under Articles 3, 5, and 7 of the Kyoto Protocol]

Para 3: The US notes that the IPCC is preparing good practice *guidance*, and that the manner in which this guidance will be used by SBSTA has not yet been determined. Thus, we believe that it is premature to refer to "good practice *standards*". We recommend deleting the word "standards" throughout the draft text, so as to maintain flexibility concerning the ultimate form in which the IPCC's good practice guidance is adopted. The last sentence of #3 should thus be revised to read:

". . . and any good practices ~~standards~~ that may be agreed upon by the COP at a future session."

For the same reason, the US also recommends that footnote #2 be revised to read:

*In response to a request from SBSTA 8*, the IPCC currently has under development "good practice" *guidance* ~~standards~~ as part of its work related to uncertainties in GHG inventories. ~~These standards~~ *This guidance* may be available for consideration by SBSTA in 2000. Good practice *guidance* ~~standards~~ may include among other information a series of quality assessment and quality control procedures to be applied during the preparation of national inventories.

Para 4: The US believes that several of the definitions should be clarified, as follows:

- Transparency: The bracketed phrase should be deleted, since it is premature to mention assessing compliance with Kyoto, especially since the FCCC's inventory reporting guidance will likely be revised to deal with specific elements of the Protocol in the future.
- Consistency: This definition should be revised to clarify that internal consistency is what is desired, since Parties may modify their approaches between years in order to

improve estimates. It should also reflect that consistency may require more than just using the same method over the time series. The US proposes the following language:

“Consistency means that a national inventory should be *internally* consistent in all its elements. *Examples of an internally consistent inventory include use of with inventories of other years.* ~~An inventory is consistent if the same methodologies are used for to estimate the base and subsequent and/or target years, and use of consistent data sets to estimate emissions from related sources.~~

- Accuracy: The last sentence, referring to the IPCC’s work on good practices should be revised to clarify that this effort may not result in the identification of “appropriate methodologies”. The US proposes the following revision of the last sentence:

“Therefore, to promote the accuracy of national inventories to the extent possible, *the appropriate implementation of inventory* methodologies [conforming to “good practice” standards] should be used.

Para 6: Revise to read: “According to the provisions of Article 4.2(b) of the Convention, the year 1990 should be the base year for the estimation and reporting of national inventories of greenhouse gas emissions and removals. According to the provisions of Article 4.6 of the Convention and ....” (follow remainder of paragraph).

Para 7: Revise to read: “Taking into account possible future commitments of the Kyoto Protocol, parties should note the relevant base years under Articles 3.4, 3.5, 3.7, and 3.8 of the Protocol.”

Para 8: As currently written, the last sentence of paragraph 8 implies that Parties cannot develop national methodologies in the future. Given the importance of developing the best estimates possible, the US does not believe that Parties should be precluded from developing national methodologies in the future if these would result in better estimates and they are well documented. Thus, the last sentence should be revised to read:

“*In accordance with the IPCC guidelines, Parties ~~that already have established and comparable~~ can also use national methodologies ~~which are believed to better reflect their national situation, could continue to use them,~~ provided that they are compatible with the IPCC Guidelines and better reflect their national situation and are well documented.*”

Para 10: Revise the title to read: “Good Practices” (delete the word “standards”). Also revise the text of paragraph 10 by deleting the word “standards” and phrasing the objective of the good practices in the positive: “... in order to *increase confidence in inventory quality* ~~ensure that a minimum level of quality is met by all Parties.~~”

Para 11: The US does not support inclusion of the optional bracketed text. Given the importance of continuously striving to improve inventory quality, it is critical to ensure that bad data or methods are not locked in for any source as a result of restrictions on recalculations. There may be legitimate reasons to allow recalculations in both of the situations covered by the bracketed clauses. In the case of CO<sub>2</sub> emissions from fuel combustion, for example, improvements in the data set of more disaggregated information

could become available. Similarly, prohibiting changes in activity data after five years could make it difficult for Parties to move toward more accurate, disaggregated estimation methodologies in the future.

In the US view, the paragraph clearly outlines three criteria for allowable recalculation - improved accuracy, methodological consistency, and transparency. If these criteria are met, additional restrictions on recalculation are not necessary at this time.

Para 13: Given the importance of reporting on the 6 listed greenhouse gases and the more limited usefulness of reporting on CO, Nox and NMVOC emissions, the US recommends revising the paragraph slightly. Revise the second sentence to read: “~~At a minimum~~, National inventories ~~shall should~~....” Revise the last sentence to read: “Parties ~~should~~ *are encouraged* to also provide...”

Para 14: To improve transparency, the US suggests requesting further disaggregation of HFC and PFC reporting, by adding an additional sentence at the end of the paragraph:

*“For HFCs and PFCs, emissions should be reported on a disaggregated basis for each relevant chemical in the category, taking into account that a minimum level of aggregation may be required to protect confidential business information.”*

Para 16: The paragraph is not clear as written, and could imply that Parties do not need to report anything for these gases if they don't report actual emissions. In addition, the request to report potential emission estimates should be clarified since these estimates are not relevant and should not be required for all emission sources of HFCs, PFCs, and SF<sub>6</sub> (such as HFC-23 emission from HCFC-22 production). To address these issues, the US recommends the following revision:

*Consistent with Decision 4/CP.3, Parties should report actual emissions of HFCs, PFC, and SF<sub>6</sub> where data are available, providing disaggregated data by substance in mass units (~~Gg~~) and in CO<sub>2</sub> equivalent using 1995 IPCC GWP values, as indicated in Annex I to these inventory guidelines. Parties should make every effort to develop the necessary sources of data for reporting *actual* emissions, *and if they do not have the necessary data, Parties should report potential emissions for these substances.* ~~In addition to reporting actual emissions,~~ Even when Parties report actual emissions, *they* should also report potential emissions ~~as a subset~~ *for the relevant sources of these gases*, for reasons of transparency and comparability.*

Para 17: In order to ensure transparency in reporting, it is important that Parties report emissions of all greenhouse gases in a sector, even if some do not have 1995 IPCC GWPs. In recent years, for example, several new chemicals have been developed for use in various sectors, and many have GWPs developed after 1995. Particularly in some sectors, it will be difficult to assess the quality of a Party's inventory if the uses of these newer chemicals are not reported along with those listed in the 1995 IPCC report.

For this reason, the US recommends two revisions to this paragraph. First, the second sentence should be revised to strengthen the request for reporting of these newer chemicals,

as follows: “Parties ~~should also be further encouraged to~~ report emissions of greenhouse gases for which GWP values are available in mass and carbon equivalent units.” The US also recommends including a table with these new chemicals and their GWPs in Annex I.

Para 21: The proposed definitions of the terms are not clearly differentiated, which has been a persistent problem with their use. To simplify reporting, the US recommends that the term “NA” should not be an option for Parties, but should be used by the Secretariat to indicate areas where no reporting is required. (Or a shaded block could replace the letters.) The term “NO” should be used by Parties when emissions do not occur for a particular gas or source within a country. In addition, rather than using “0” to denote emissions that are insignificant or close to zero, Parties should use “+”. Such a standard would clearly indicate that emissions are small but measurable. In addition, the definition should clearly indicate that such emissions should be included in national totals.

Para 23: The US believes that verification is an important part of the inventory guidelines, and should be expanded. Thus in addition, to the current text of paragraph 23, we would recommend adding additional paragraphs covering QA/QC and national response to in-depth reviews. With respect to paragraph 23, the request for doing comparisons of default and alternative methodologies is not focused enough. The paragraph should clearly state whether Parties are requested to undertake such comparisons for certain years (i.e., base year, current year) or all years in the time series. The paragraph should also be clear as to how often Parties are requested to do such comparisons. Given the resources required to prepare such comparisons, and the lack of certainty regarding how useful these comparisons will be on an annual basis, the US recommends that Parties be asked to prepare such comparisons one time, for the base year and current year. They can then evaluate the information provided and make recommendations regarding future requests of this type,

Para 25: In the US view, annual inventories should not be adjusted, although such analysis may provide useful information that could be included in the “national circumstances” section of national communications. The US recommends two revisions to the paragraph:

- First, the second sentence should be revised to clarify that adjustments are supplemental information: “If Parties carry out such adjustments to inventory data, they should be reported separately, *supplemental to unadjusted data*, and in a transparent manner, with clear indications of the method followed.”
- Second, the last three sentences of the paragraph refer to a related topic, and should be placed in a separate paragraph.

The US also recommends inserting a new paragraph after paragraph 25, as follows:

Response to inventory assessment: Parties should report on questions raised in the annual Synthesis and Assessment of greenhouse gas inventories and periodic National Communication in-depth reviews, and should provide adequate information to demonstrate that these questions have been resolved.

Para 27: The US supports the development of an improved Common Reporting Format,



subject to two important qualifications:

- First, the schedule for developing the CRF should be sufficient to allow full review and assessment of the tables. We are concerned that such a review cannot be completed by SBSTA 10, and recommend that the schedule allow for revisions and finalization of the CRF at SBSTA 11. For this reason, we recommend that footnote #10 be clarified to reflect this schedule.
- Second, it should be clearly stated that the CRF will be reviewed and updated as necessary over the coming years to incorporate the outcome of the IPCC work on good practice guidance and LUCF, as well as other requirements of the Kyoto Protocol. This point should be made explicitly in a new paragraph, inserted after paragraph 30.

Para 31: The US does not agree with the recommendation that information that has not changed from previous years should not be reported. In our view, the importance of transparent inventories cannot be overstated, and for this reason each inventory submission should be a stand-alone document that contains all the necessary information to assess the inventory contained therein. The provision of unchanging information from year to year should not pose an undue burden on Parties, since it is by definition unchanged, and providing such information will facilitate greatly the review and assessment of inventory information by third parties. If unchanged information is not provided, in contrast, it may be difficult for third parties to retrieve necessary references and assess inventory quality. Perhaps in the future, when the quality of inventory reporting is improved across Parties, streamlining the provision of information could be considered. At this point, however, it is premature to take such actions.

For this reason, the US recommends significantly rewriting the paragraph:

*Each annual inventory submission should be a stand-alone document, containing detailed and complete information in order to ensure transparency of the inventory. This information should include:*

*(a)... (h) as listed under paragraph 37.*

Section 4: This section concerns what Parties should submit for inventories during years when national communications are reported; as written it establishes more extensive reporting requirements for these years. Consistent with the US position outlined above, we recommend that annual inventories contain all necessary supporting information and that inventories prepared for national communication would not need to be more extensive than that. The US recommends that Section 4 be substantially revised, to reflect the fact that there should not be a different level of inventory reporting required for annual inventories and national communication inventories.

Para 38/41: The US proposes that the Secretariat prepare an annual Synthesis and Assessment of greenhouse gas inventories. Such a report would build on the current compilation and Synthesis document prepared by the Secretariat and would continue to report information synthesized from Parties inventory reports. In addition, the Synthesis and Assessment report would address individual Parties' application of reporting guidelines and identify issues, outliers and inconsistencies in individual inventories, including inadequate transparency. This expansion of the inventory review process should be noted in the section G. Uses of inventory data.

We also propose that a paragraph be added under Reporting Section F, that requests Parties to address how issues and questions raised in annual inventory Synthesis and Assessments and in the in-depth reviews of National Communication have been resolved.

Para 43: The US proposes that specific reference to the IPCC's work on good practice and LUCF be added at the end of the paragraph.

Annex I: Include two tables: (I) 1995 IPCC GWP Values with 100-Year Time Horizon; and (2) Post-1995 IPCC GWP Values with 100-Year Time Horizon for New Chemicals.

Annex II: As noted previously, the US recommends that Parties be provided with ample time to review and assess the common reporting format. Thus the text under this Annex should be revised to clarify that the CRF should not be finalized at SBSTA 10, but should be finalized at SBSTA 11.

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