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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Subsidiary Body for Scientific and Technological Advice
Thirty-third session
Cancun, 30 November to 4 December 2010

Item 6 (c) of the provisional agenda
Methodological issues under the Convention
Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention

Views on the revision of the UNFCCC Annex I reporting guidelines

Submissions from Parties

1. The Subsidiary Body for Scientific and Technological Advice, at its thirty-second session, invited Parties to submit to the secretariat, by 15 September 2010, additional views on the revision of the UNFCCC Annex I reporting guidelines, including the common reporting format tables, and areas in which the secretariat can initiate work on these tables (FCCC/SBSTA/2010/6, para. 71).

2. The secretariat has received four such submissions. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the languages in which they were received and without formal editing.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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* This submission is supported by Albania, Bosnia and Herzegovina, Montenegro, Serbia and the former Yugoslav Republic of Macedonia.

Paper no. 1: Canada

SUBMISSION BY THE GOVERNMENT OF CANADA

UNFCCC Reporting Guidelines for Annex I Parties

15 September 2010

Background

At its 26th session, the Subsidiary Body for Scientific and Technological Advice (SBSTA) encouraged Parties in a position to do so to gain experience with the 2006 IPCC Guidelines. It also invited Parties to submit to the secretariat, by 15 February 2009, information on their experience, further considerations related to the future revision of the UNFCCC reporting guidelines for Annex I Parties and the considerations related to the 2006 IPCC Guidelines (the "Guidelines"). In its February 2009 submission, Canada's acknowledged improvements related to methodological consistency and clarity brought about by the 2006 guidelines. However, Canada also noted concerns related to: limitations of the estimation approach in the LULUCF sector; inclusion in the reported estimates of GHGs produced by the atmospheric oxidation of emitted methane and non-methane volatile organic compounds (NMVOCs); and, extending the estimation of indirect N_2O emissions to all sources of atmospheric NO_x and NH_3.

At its 32nd session, SBSTA again invited Parties to submit, by September 15, 2010, additional views on the revision of the UNFCCC Annex I reporting guidelines, including the CRF tables, and areas in which the secretariat can initiate work on these tables, to be compiled into a miscellaneous document for consideration by the SBSTA at its thirty-third session.

This submission builds on the February 2009 document, and elaborates on options to address, through the revision of the UNFCCC reporting guidelines and its CRF tables, the three primary concerns to Canada. Canada's perspectives draw from the primary purposes of the UNFCCC reporting guidelines on annual inventories, stated in FCCC/CP/2002/8, to which it fully subscribes:

- To assist Parties in tracking progress against mitigation objectives through the production of national inventories of anthropogenic emissions by sources and removals by sinks; and
- To facilitate the consideration of annual inventories, their review and assessment.

In this context, the purpose of 2006 IPCC Guidelines is to provide methods to estimate these anthropogenic emissions by sources and removals by sinks, ensure these estimates are unbiased, and reduce their uncertainty as far as practicable. Canada believes that the transparency, consistency, accuracy and comparability of inventory estimates, as well as their policy relevance, depend on the close alignment of estimation approach, reporting format, and intended use.

Recommended revision of the UNFCCC reporting guidelines:

(1) Options to address limitations of the estimation approach in the LULUCF sector

Experience with IPCC estimation methodology in the LULUCF sector since the 2006 inventory submission has led Canada to conclude that implementing the IPCC approach (the "managed land proxy") results in reporting as "anthropogenic" very large, unpredictable and highly variable fluxes of greenhouse gases that are primarily driven by natural and indirect drivers, such as natural disturbances and ecosystem responses to climate change itself; further, the approach also fails to separate the role of age-class legacy from that of mitigation actions in the managed forest. Canada has demonstrated in numerous scientific and policy fora how its reported LULUCF estimates could effectively mask the real, and additional effects of mitigation actions in the managed forest.

These shortcomings, and the need to refine the current approach, have been acknowledged in the recent IPCC report on the "managed land proxy"[1[1]]. As stated in the report, experts noted that improved separation of anthropogenic and non-anthropogenic fluxes can be obtained through a variety of techniques involving "higher-tiered representations of ecosystem dynamics" (section 7 of the report). The report lists several of these techniques, but comes short of formally recommending (a) specific one(s).

Canada welcomes these scientific advances and believes they could assist in substantially improving the policy relevance of inventory estimates, in line with the overall purpose of the UNFCCC reporting guidelines. The guidelines could in fact encourage countries to include such refinements where appropriate in their inventories, and identify to the extent allowed by their scientific and technical capabilities the contribution of various drivers to the overall GHG balance of their managed lands. Of note, a clearer separation of the respective contributions to GHG emissions and removals of anthropogenic and indirect or natural drivers, would considerably reduce the uncertainty about anthropogenic emissions and removals in the land-based sectors.

Overall, the categorization of sources and sinks and the grouping of the related estimates should be closely aligned with their intended use, and provide a meaningful basis for comparison between inventories. In practice, Canada proposes the following:

- Allow, within each land category, the identification of emissions and removals driven by natural events, climate feedback and legacy. This would *de facto* involve discontinuing the current practice of reporting emissions from biomass burning outside of the land categories;
- Maintain the separation between sectors, source and sinks categories that have a different accounting status;

Canada firmly believes that these improvements would enhance the transparency and comparability of the components of the overall C budget of each land category and reduce the risk of double-counting of carbon.

2. Options to address concerns related to indirect Greenhouse Gas Estimates Derived from Precursors and Other Gas Sources

The 2006 IPCC Guidelines provide methods for calculating (a) carbon dioxide from atmospheric emissions of CO, CH_4 and NMVOCs and (b) nitrous oxide from atmospheric deposition of NO_x and NH_3on soils and waters. From a reporting perspective, such estimates are problematic for Canada. All of the gases used to calculate these indirect GHG emissions, save CH_4 are determined by methods which are not controlled by the IPCC guidelines. Furthermore, for Annex 1 countries, the methodologies for determining CO, NMVOCs, NO_x and NH_3 do not have to meet Good Practice, are not required to be developed using approved National Systems and are not subject to review by expert review teams.

2(a) Indirect CO_2 estimates derived from CO, CH_4 and NMVOC emission estimates

The 2006 IPCC Guidelines discuss the overlap of CO_2 and the other carbon-based gases, i.e. CO, CH_4 and NMVOCs, in the Overview chapter, Section 7.2.1.5[2]. Elements of this discussion tie in well with other, well-established methodologies in the Guidelines. For instance, it is stated that "In some cases the emissions of these non-CO_2 gases contain very small amounts of carbon compared to the CO_2 estimate and it may be more accurate to base the CO_2 estimate on the total carbon."

1[1] IPCC 2010, Revisiting the Use of Managed Land as a Proxy for Estimating National Anthropogenic Emissions and Removals, eds: Eggleston H.S., Srivastava N., Tanabe K., Baasansuren J. Meeting Report, 5 -7 May, 2009, INPE, São José dos Campos, Brazil, Pub. IGES, Japan 2010

2 Volume 1, chapter 7, section 7.2.1.5

This general description fits in with an already-accepted Tier 1 approach, detailed in later sections of the Guidelines, where CO_2 emissions can be reasonably calculated without a detailed knowledge of other carbon-containing gases, by using IPCC default factors. There may be a small, unavoidable double-counting of carbon using this method, but this is considered acceptable for Tier 1.
In the progression from this Tier 1 to sector-specific Tier 2 and Tier 3 methodologies, the Guidelines promote country- and technology-specific CO_2 emission factors. Such factors attempt to eliminate the double-counting of carbon emissions through, for example, the use of oxidation factors along with higher-tiered CH_4 estimates.

However, section 7.2.1.5 of the Overview chapter also provides a new, simplified method for developing estimates of indirect CO_2 produced by the atmospheric oxidation of emitted methane and NMVOCs. Since no standardized global warming potentials have as yet been developed for CO or NMVOCs, the method presented estimates CO_2 emissions from the total carbon contained in these gases. Canada's difficulty with this addition stems from the fact that there is a lack of clarity with respect to what conditions this method should be used under, what Tier such estimates should be classed as, or how to avoid significant double-counting.

As stated in its February, 2009 submission, it is Canada's view that the 2006 IPCC Guidelines do not provide sufficient clarity that such instances are limited to conditions where immediate atmospheric oxidation occurs (e.g. during the year of emission and typically from combustion sources). Barring these conditions, the inclusion of these indirect emissions in national totals not only increases the inaccuracy of a national inventory, but is also inconsistent with the purpose of an annual national inventory; that is, to attribute an emission to a specific source and a specific time.

Although section 7.2.1.5 of the Overview chapter of the 2006 IPCC Guidelines attempts to provide some guidance as to what sectors this method should be used for, this guidance is not clear. For Canada, the implementation of this approach would significantly increase the uncertainty associated with estimates of fugitive emissions from the coal mining, and oil and gas sectors, for example, where discharges of methane and NMVOCs are of a comparable magnitude to those of carbon dioxide. Depending on how this approach is used, it may also result in double-counting emissions. If reliable and relatively accurate emission estimates for CO, CH_4 and NMVOCs are available, it would be counter-productive to double-count significant amounts of carbon in national totals.

Canada therefore wishes to see additional clarity provided in the reporting guidelines on the conditions under which Parties might ever report indirect carbon dioxide emissions based on estimates of other gases.

In Canada's view, the reporting of reliable, accurate and comparable emissions totals are essential and therefore indirect emissions of CO_2 derived from CO, CH_4 or NMVOCs should not be included in national totals. If Parties want to estimate such emissions via the method provided in the Overview chapter of the IPCC Guidelines, this should be voluntarily reported.
In order to achieve this outcome, Canada recommends the addition of a new paragraph in the revised UNFCCC Annex 1 reporting guidelines (that will accompany Parties' use of the 2006 IPCC Guidelines). This paragraph would be added under General Guidance, close to the paragraph on the reporting of ozone and aerosol precursors:

> Parties' national totals of greenhouse gases shall include only direct CO_2 emissions and not those calculated from atmospheric emissions of CO, CH_4 or NMVOCs. If desired, Parties can *voluntarily* report CO_2 estimates from emissions of these other gases. The calculation of CO_2 from CO, CH_4 or NMVOC can be conducted by the method provided in the 2006 IPCC Guidelines, Overview Chapter, Section 7.2.1.5 and if reported, this carbon dioxide should be included with estimates of other indirect greenhouse gases.

2(b) Draft text on Indirect N_20 emissions

As stated in its February 2009 submission, Canada is concerned with the extension of reporting indirect N_2O emissions to all domestic sources of atmospheric NO_x and NH_3 for several reasons:

- There is no approach recommended by the IPCC for estimating the precursors, which creates a difficulty for the review of these estimates.
- These indirect emissions can occur anywhere and at unspecified time horizons; measurement-based validation of sector-specific estimate is impossible; there are currently no verifiable means to relate these indirect N_2O emissions to their ultimate sources.
- The IPCC method applies "where data on NO_x and NH_3 emissions from these sources are available" (Vol. 1, Chapter 7, Section 7.3.1); however the Guidelines fail to clarify how to handle situations where such data are not available. Hence, there is ambiguity on who should report these emissions.

Overall, the credibility and relevance of these estimates for tracking emission reductions is very low and will remain so in the foreseeable future. Canada therefore believes that indirect N_2O emissions in the industrial sectors should be reported on a voluntary basis only, and not be included in the calculation of national totals. Such dispositions should be clearly stated in the revised UNFCCC Annex 1 reporting guidelines**.**

[Translation as submitted]

Canada

SOUMISSION DU GOUVERNEMENT DU CANADA

Lignes directrices sur la production des inventaires annuels de la CCNUCC pour les Parties visées à l'Annexe I

Le 15 septembre 2010

Contexte

Lors de sa 26e séance, l'Organe subsidiaire chargé de fournir des avis scientifiques, techniques et technologiques a encouragé les Parties, dans la position de le faire, d'acquérir de l'expérience avec les *Lignes directrices du Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC)* de 2006. Il a également invité les Parties à soumettre au Secrétariat, avant le 15 février 2009, des réflexions portant sur leur expérience, sur la révision future des lignes directrices pour la déclaration des inventaires annuels de la Convention-cadre des Nations Unies sur les changements climatiques (CCNUCC) pour les Parties visées à l'Annexe I ainsi que leurs considérations relativement aux *Lignes directrices du GIEC* de 2006 (les « lignes directrices »). Dans le cadre de sa soumission de février 2009, le Canada a reconnu les améliorations concernant la cohérence des méthodes et la clarté fournies par les lignes directrices de 2006. Cependant, le Canada a aussi noté des préoccupations relativement à ceci : les limites de l'approche d'estimation dans le secteur de l'affectation des terres, changement de l'affectation des terres et foresterie (LULUCF); l'intégration aux estimés déclarés des gaz à effet de serre (GES) produits par l'oxydation atmosphérique de composés organiques volatils (COVNM) méthaniques et non méthaniques; et élargir l'estimation d'émissions indirectes du N_2O à toutes les sources des NO_x et du NH_3 atmosphériques.

Au cours de sa 32e séance, l'Organe subsidiaire chargé de fournir des avis scientifiques, techniques et technologiques a convié de nouveau les Parties à présenter, d'ici le 15 septembre 2010, d'autres points de vue à propos de la révision des lignes directrices sur la production des inventaires annuels à l'Annexe I de la CCNUCC, y compris les tableaux du cadre uniformisé de présentation des rapports (CUPR), et des secteurs dans lesquels le Secrétariat peut entreprendre le travail sur ces tableaux, qui sera compilé en un document divers pour l'étude de l'Organe à sa 33e séance.

Cette soumission se fonde celle de février 2009 et développe des options en vue d'aborder les trois préoccupations principales du Canada par le biais de la révision des lignes directrices sur la production des inventaires annuels de la CCNUCC et ses tableaux du CUPR. Les perspectives du Canada puisent parmi les objectifs principaux des lignes directrices sur la production des inventaires annuels de la CCNUCC, énoncés dans le document FCCC/CP/2002/8, auxquels il souscrit entièrement:

- Aider les Parties à suivre les progrès vers les objectifs d'atténuation au moyen de la production des inventaires nationaux d'émissions par les sources et du piégeage par les puits de nature anthropique.
- Faciliter la prise en compte des inventaires annuels, leur examen et leur évaluation.

Dans un tel contexte, les *Lignes directrices du GIEC* de 2006 visent à fournir les méthodes d'estimation des émissions par les sources et du piégeage par les puits de nature anthropique, veiller à ce que ces estimations soient objectives et réduire leur incertitude dans la mesure du possible. Le Canada croit que la transparence, l'uniformité, l'exactitude et la comparabilité des estimations d'inventaires, ainsi que leur pertinence politique, dépend de l'harmonisation étroite de l'approche d'estimation, du format de la production des inventaires et de leur usage prévu.

Révision recommandée des lignes directrices sur la production des inventaires annuels de la CCNUCC

(1) Options afin d'aborder les limites de l'approche d'estimation dans le secteur de LULUCF

L'expérience des méthodes d'estimation du GIEC dans le secteur de LULUCF depuis la déclaration de l'inventaire de 2006 a permis au Canada de conclure que la mise en oeuvre de l'approche du GIEC (la « représentation par les terres aménagées ») entraîne une déclaration de flux de gaz à effet de serre dits « anthropiques » très importants, imprévisibles et variables qui sont principalement le résultats de processus naturels et indirects, comme les perturbations naturelles et les réactions de l'écosystème aux changements climatiques en soi; de plus, l'approche omet également d'isoler le rôle de l'héritage des classes d'âge de celui des mesures d'atténuation dans la forêt aménagée. Le Canada a démontré dans de nombreux forums scientifiques et politiques de quelle manière ses estimations déclarées de LULUCF peuvent effectivement masquer les effets réels et supplémentaires des mesures d'atténuation dans la forêt aménagée.

Ces lacunes, et le besoin de peaufiner l'approche actuelle, ont été reconnus dans un rapport récent du GIEC sur la « représentation par les terres aménagées »[1] [1]. Comme on le mentionne dans ce rapport, les experts ont remarqué qu'une meilleure séparation des flux de sources anthropique et non anthropique est possible à l'aide de différentes techniques utilisant des « représentations à un niveau supérieur de la dynamique des écosystèmes » (section 7 du rapport). Le rapport énumère plusieurs de ces techniques, mais il omet d'en recommander officiellement (une) en particulier.

Le Canada apprécie ces progrès scientifiques et estime qu'ils pourraient aider à améliorer considérablement la pertinence politique des estimations d'inventaires, en harmonie avec l'objectif général des lignes directrices sur la production du CCNUCC. Les lignes directrices pourraient, en fait, encourager les pays à incorporer de telles améliorations, le cas échéant, dans leurs inventaires et déterminer, dans la mesure permise par leurs capacités scientifiques et techniques, la contribution de différents processus à l'ensemble du budget des GES de leurs terres aménagées. Il faut prendre note qu'une séparation plus claire des contributions respectives des processus anthropiques, indirects ou naturels aux émissions et au piégeage des GES réduirait considérablement l'incertitude au sujet des émissions et du piégeage anthropiques des GES dans les secteurs terrestres.

Dans l'ensemble, la classification des sources et des puits ainsi que le regroupement des estimations correspondantes doivent s'harmoniser étroitement avec leur utilisation prévue et fournir un fondement pertinent aux fins de la comparaison entre les inventaires. En pratique, le Canada fait les propositions suivantes :

- Permettre, à l'intérieur de chaque catégorie, une séparation des émissions et des puits à la suite d'événements naturels, d'une rétroaction avec le climat et d'héritage. Cela comprendrait *de facto* l'arrêt de la pratique actuelle de déclaration des émissions provenant du brûlage de la biomasse à l'extérieur des catégories de terre.
- Maintenir la séparation des secteurs, sources et catégories de puits ayant une comptabilisation différente.

Le Canada croit fermement que ces améliorations favoriseraient la transparence et la comparabilité des composantes de l'ensemble du budget C pour chaque catégorie de terres et réduiraient le risque de double-comptage des émissions de carbone.

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[1] [1] GIEC 2010, *Réexamen de l'Utilisation des terres gérées par Procuration pour l'Estimation des Émissions et des Absorptions anthropiques nationales*, éd. H.S. Eggleston, N. Srivastava, K. Tanabe et J. Baasansuren. Rapport de la réunion, 5 au 7 mai 2009, INPE, São José dos Campos, Brésil, Pub. IGES, Japon 2010.

2. Options afin d'aborder les préoccupations liées aux estimations de gaz à effet de serre indirects provenant de précurseurs et d'autres sources

Les *Lignes directrices du GIEC* de 2006 fournissent les méthodes de calcul (a) du dioxyde de carbone provenant d'émissions atmosphériques du CO, du CH_4 et des COVNM et (b) d'oxyde de diazote à la suite du dépôt des NO_x et du NH3 atmosphériques dans les sols et les eaux. Du point de vue de la déclaration, de telles estimations posent problème pour le Canada. Tous les gaz utilisés pour calculer ces émissions indirectes de GES, sauf le CH4, sont établis par des méthodes que les lignes directrices du GIEC ne contrôlent pas. En outre, concernant les pays de l'Annexe 1, les méthodes de calcul du CO, des COVNM, des NO_x et du NH_3 ne sont pas tenues de respecter les bonnes pratiques, d'être conçues à l'aide des systèmes nationaux approuvés et ne sont pas assujetties à l'examen par les équipes d'experts.

2(a) Estimations des émissions indirectes de CO_2 provenant du CO, du CH_4 et des COVNM

Les *Lignes directrices du GIEC* de 2006 abordent le chevauchement du CO_2 et des autres gaz carboniques, p. ex. le CO, le CH_4 et les COVNM, dans le chapitre Aperçu, section 7.2.1.5[2]. Les éléments de cette discussion concordent bien avec d'autres méthodes réputées des lignes directrices. Par exemple, on y mentionne que « dans certains cas, les émissions de ces gaz autres que le CO_2 contiennent des quantités très minimes de carbone en comparaison de l'estimation de CO_2 et qu'il est exact de fonder l'estimation de CO_2 sur la quantité totale de carbone ».

Cette description générale correspond à une approche de niveau 1 déjà acceptée, détaillée dans les dernières sections des lignes directrices, dans laquelle les émissions de CO_2 se calculent de façon légitime sans connaissances détaillées d'autres gaz carboniques, à l'aide des facteurs par défaut du GIEC. Il peut y avoir un double comptage inévitable du carbone au moyen de cette méthode, mais cela est jugé acceptable au niveau 1.

Au cours de l'évolution de ce niveau 1 aux méthodes de niveaux 2 et 3 propres au secteur, les lignes directrices encouragent les facteurs d'émissions de CO_2 par pays et par technologie. Ces facteurs tentent d'éliminer le comptage double des émissions de carbone, par exemple, au moyen de l'utilisation des facteurs d'oxydation ainsi que des estimations de CH_4 au niveau supérieur.

Pourtant, la section 7.2.1.5 du chapitre Aperçu propose aussi une nouvelle méthode simplifiée de calcul d'estimations d'émissions indirectes de CO_2 produites par l'oxydation atmosphérique du méthane et de COVNM. Puisqu'aucun potentiel de réchauffement de la planète normalisé n'a encore été mis au point pour le CO ou les COVNM, la méthode présentait des estimations d'émissions de CO_2 de la quantité totale de carbone contenue dans ces gaz. Le problème du Canada au sujet de cet ajout réside dans le manque de clarté en ce qui a trait aux conditions permettant l'utilisation de cette méthode, la classification du niveau de telles estimations ou la manière d'éviter un comptable double important.

Comme l'indique sa soumission de février 2009, le Canada est d'avis que *Lignes directrices du GIEC* de 2006 ne sont pas assez claires à l'effet que de tels exemples se limitent aux conditions d'oxydation atmosphérique immédiate (p. ex. durant l'année des émissions et normalement à partir de sources de combustion). Sauf dans ces conditions, l'intégration de ces émissions indirectes aux quantités totales nationales augmente non seulement l'inexactitude d'un inventaire national, mais elle est incohérente avec l'objectif d'un inventaire national annuel qui est d'attribuer une émission à une source et un moment précis.

Bien que la section 7.2.1.5[2] du chapitre Aperçu des *Lignes directrices du GIEC* de 2006 tente de fournir des conseils quant aux secteurs pour lesquels cette méthode est utile, ces conseils demeurent vagues. En ce qui concerne le Canada, la mise en oeuvre de cette approche augmenterait considérablement l'incertitude liée aux estimations d'émissions fugitives des secteurs de l'exploitation des mines de charbon, pétrolier et gazier,

[2] Volume 1, chapitre 7, section 7.2.1.5.

aux estimations d'émissions fugitives des secteurs de l'exploitation des mines de charbon, pétrolier et gazier, notamment, où les rejets de méthane et de COVNM sont d'une ampleur comparable à ceux du dioxyde de carbone. Selon la façon d'utiliser cette approche, elle peut entraîner un double comptage des émissions. Lorsqu'il existe des estimations fiables et relativement exactes d'émissions de CO, de CH_4 et de COVNM, il s'avérerait contre-productif de compter en double des quantités notables de carbone en totaux nationaux.

Ainsi, le Canada souhaite voir une plus grande clarté dans les lignes directrices sur la production des inventaires annuels concernant les conditions dans lesquelles les Parties pourraient déclarer des émissions indirectes de dioxyde de carbone à partir des estimations d'autres gaz.

Du point de vue du Canada, la déclaration d'émissions totales fiables, exactes et comparables est essentielle et, donc, les émissions indirectes de CO_2 provenant du CO, du CH_4 ou des COVNM ne doivent pas figurer dans les quantités totales nationales. Si les Parties veulent estimer de telles émissions à l'aide d'une méthode proposée dans le chapitre Aperçu des *Lignes directrices du GIEC* de 2006, elles doivent les déclarer volontairement.

Dans le but d'atteindre ce résultat, le Canada recommande l'ajout d'un nouveau paragraphe aux lignes directrices revues de l'Annexe I de la CCNUCC (qui accompagnera l'utilisation des *Lignes directrices du GIEC* de 2006 par les Parties). Ce paragraphe s'ajouterait sous l'Orientation générale, près du paragraphe sur la déclaration des précurseurs de l'ozone et des aérosols:

> Les quantités nationales totales de gaz à effet de serre des Parties comprennent seulement les émissions directes de CO_2, mais pas celles calculées à partir des émissions atmosphériques de CO, de CH_4 ou de COVNM. Si elles le souhaitent, les Parties peuvent déclarer *volontairement* les estimations de CO_2 provenant d'émissions à partir de ces autres gaz. Le calcul du CO_2 provenant du CO, du CH_4 ou des COVNM peut se fier sur la méthode fournie dans les *Lignes directrices du GIEC* de 2006, chapitre Aperçu, section 7.2.1.5, et si déclaré, ce dioxyde de carbone doit être incorporé aux estimations d'autres émissions indirectes de gaz à effet de serre.

2(b) Texte provisoire sur les émissions indirectes de N_2O

Comme on le mentionne dans la soumission de février 2009, le Canada se préoccupe de l'élargissement de la déclaration d'émissions indirectes de N_2O à toutes les sources domestiques des NO_x et le NH_3 atmosphériques pour plusieurs raisons, notamment les suivantes :

- Le GIEC ne recommande pas d'approche pour estimer les précurseurs, ce qui pose un problème pour la révision de ces estimations.
- Ces émissions indirectes peuvent survenir partout et dans tout horizon temporel; la validation par des mesures de l'estimation d'un secteur est impossible; il n'existe à ce jour aucun moyen vérifiable de relier ces émissions indirectes de N_2O à leurs sources ultimes.
- La méthode du GIEC s'applique « où des données sur les émissions de NO_x et de NH_3 provenant de ces sources existent » (vol. 1, chapitre 7, section 7.3.1); toutefois, les lignes directrices ne clarifient pas comment aborder les situations où de telles données ne sont pas disponibles. Ainsi, l'obligation de déclarer ces émissions reste ambiguë.

Dans l'ensemble, la crédibilité et la pertinence de ces estimations pour le contrôle des réductions d'émissions sont très faibles et le demeureront dans un avenir prévisible. Le Canada croit donc que les émissions indirectes de N_2O dans les secteurs industriels doivent être déclarées volontairement seulement et ne pas faire partie du calcul des quantités totales nationales. Les lignes directrices revues de l'Annexe I de la CCNUCC doivent énoncer clairement ces dispositions.

Paper no. 2: Belgium and the European Commission on behalf of the European Union and its member States

SUBMISSION BY BELGIUM AND THE EUROPEAN COMMISSION ON BEHALF OF THE EUROPEAN UNION AND ITS MEMBER STATES

This submission is supported by Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia.

Brussels, 15 September 2010

Submission with additional views on the revision of the UNFCCC Annex I reporting guidelines, including the CRF tables, and areas in which the secretariat can initiate work on these tables

I. General

This draft submission includes a proposal for specific changes to the legal text of the UNFCCC guidelines for Annex I GHG inventories and specific proposals for changes to the CRF. The background and reasons for these revisions have been explained in the submission of the EU on Intergovernmental Panel on Climate Change guidelines for national greenhouse gas inventories (SBSTA) submitted in February 2010.

The work plan agreed at SBSTA 32 foresees further methodological work in a number of areas, inter alia

- effects of using higher-tier methods on the emissions estimate;
- on methodological and reporting issues related to harvested wood products, wetlands and nitrous oxide emissions from soils;
- issues concerning the AFOLU sector, including the managed land proxy as a basis to estimate emissions, and the related issue of factoring out of non-anthropogenic emissions from emissions and removals estimates and the treatment of inter-annual variability.

As this work is still outstanding, these areas are not addressed in the proposed changes to the text of the reporting guidelines or to the CRF tables in this submission. The EU hopes for additional clarifications and input from the planned IPCC expert meetings and UNFCCC workshops and further changes may arise when this methodological work will further advance.

In addition to the EU's previous views this submission contains the following additional changes:

Indirect CO_2 and N_2O emissions

The previous submissions related to this issue show some potential for disagreement among Parties with regard to the treatment of indirect CO_2 and N_2O emissions. In the EU's view this disagreement is not related to problems with the reporting of indirect emissions because the reporting is rather straightforward and uses multiplication factors for emissions already included in the inventory. Different views seem to relate to the accounting of indirect emissions as part of emission reduction

commitments. The UNFCCC reporting guidelines for national GHG inventories should as far as possible not preempt any accounting decisions related to emission reduction commitments decided under AWG-LCA and AWG-KP. Therefore the EU proposes a clarification of the reporting of indirect CO_2 emissions and indirect N_2O emissions. These indirect emissions could be reported in a separate table for indirect emissions. Consequently indirect emissions would not be part of the sectoral tables and sectoral background tables as related information would be reported in the tables on indirect emissions. Summary tables could either

1. present only direct emissions.
2. present indirect emissions in separate rows

The presentation of national total emissions (e.g. in summary table 2) could be done using the following aggregates:

- Total direct CO_2 equivalent emissions without LULUCF
- Total direct and indirect CO_2 equivalent emissions without LULUCF
- Total direct CO_2 equivalent emissions with LULUCF
- Total direct and indirect CO_2 equivalent emissions with LULUCF[1]

Such separation of indirect emissions in the reporting format would be more neutral with regard to any more specific decisions related to the accounting of indirect emissions as decided in the future under AWG-LCA or AWG-KP.

Streamlining with energy statistics

Parties are producing energy statistics and energy balances using standardized industrial branch classifications (ISIC international classification and NACE classification in the EU). If the CRF category classification is getting more in line with the classification framework of energy statistics, this will avoid duplication of work in future and allow for easy combinations of emissions data and economic and other statistical data. The revised energy classification in the 2006 IPCC Guidelines is a step in this direction and the EU therefore welcomes the changes proposed in the reporting tables related to energy combustion.

Streamlining of reporting guidance related to the national inventory report

At the moment paragraphs 38 to 43 provide guidance related to the content of the NIR. In addition Annex I provides a structure for the NIR and an appendix with additional guidance on sectoral reporting to be included in corresponding section of the NIR. The secretariat has also prepared a more recent annotated outline of the NIR. There is significant duplication of the guidance, some parts seem outdated. The EU proposes to streamline the guidance related to the NIR and to use the annotated outline as a basis for the NIR guidance while deleting all the other parts.

Guidance related to QA/QC and to the national system

In accordance with the EU's submission from February, additional sections related to the national system are proposed in part II which are taken from the guidelines for national systems under the Kyoto Protocol. There is some overlap between this guidance and existing requirements related to

[1] Coverage regarding reported indirect emissions from LULUCF defined in this document in section 2, para 18.

QA/QC. These areas could be further streamlined and merged which has not yet been performed in this version of the proposed revised text.

II. Specific Proposals for the revision of Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories

The following section presents specific legal proposals (highlighted in red) for the revision of UNFCCC reporting guidelines for GHG inventories based on the issues addressed in the EU submission on this issue from February 2010.

Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part I: UNFCCC reporting guidelines on annual inventories

A. Objectives

1. The objectives of the UNFCCC reporting guidelines on annual inventories are:

(a) To assist Parties included in Annex I to the Convention (Annex I Parties) in meeting their commitments under Articles 4 and 12 of the Convention [and to assist Annex I Parties to the Kyoto Protocol in preparing to meet commitments under Articles 3, 5 and 7 of the Kyoto Protocol;]

Comment: The second part of (a) should refer to the commitments that will be agreed under AWG-KP and AWG-LCA

Add the following indent:

(b) To contribute to ensure the transparency of emission reduction commitments;

(c) To facilitate the process of considering annual national inventories, including the preparation of technical analysis and synthesis documentation;

(d) To facilitate the process of verification, technical assessment and expert review of the inventory information.

Add the following indent:

(e) To assist Parties included in Annex I to ensure and/or improve the quality of their inventories.

B. Principles and definitions

2. National greenhouse gas inventories, referred to below only as inventories, should be transparent, consistent, comparable, complete and accurate.

3. Inventories should be prepared using comparable methodologies agreed upon by the Conference of the Parties (COP), as indicated in paragraph 9 below.

4. In the context of these UNFCCC reporting guidelines on annual inventories:

Add new sentence at the end of the paragraph on transparency:

Transparency means that the data sources, the assumptions and methodologies used for an inventory should be clearly explained to facilitate replication and assessment of the inventory by

users of the reported information. The transparency of inventories is fundamental to the success of the process for the communication and consideration of information**. The use of the common reporting format and the preparation of a structured NIR contribute to transparency of the information and facilitate national and international reviews.**

Consistency means that an inventory should be internally consistent in all its elements **across sectors and categories and** with inventories of other years. An inventory is consistent if the same methodologies are used for the base and ~~**all**~~ subsequent years and if consistent data sets are used to estimate emissions or removals from sources or sinks **across sectors and throughout the whole time series.** Under certain circumstances referred to in paragraphs 15 and 16, an inventory using different methodologies for different years can be considered to be consistent if it has been recalculated in a transparent manner, in accordance with the **2006** Intergovernmental Panel on Climate Change (IPCC) **Guidelines for ~~Good Practice Guidance and Uncertainty Management in~~** National Greenhouse Gas Inventories[2] **~~and Good Practice Guidance for Land Use, Land-Use Change and Forestry~~**;

Comparability means that estimates of emissions and removals reported by Annex I Parties in inventories should be comparable among Annex I Parties. For this purpose, Annex I Parties should use the methodologies and formats agreed by the COP for estimating and reporting inventories. The allocation of different source/sink categories should follow the **common reporting format tables provided in Annex II of this document ~~Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories,[2] and the IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry~~**, at the level of its summary and sectoral tables;

Completeness means that an inventory covers all sources and sinks, as well as all gases, **for which methodologies are provided** in the IPCC Guidelines **~~as well as other existing relevant source/sink categories which are specific to individual Annex I Parties and, therefore, may not be included in the IPCC Guidelines~~**. Completeness also means full geographic coverage of sources and sinks of an Annex I Party;[3]

Accuracy is a relative measure of the exactness of an emission or removal estimate. Estimates should be accurate in the sense that they are systematically neither over nor under true emissions or removals, as far as can be judged, and that uncertainties are reduced as far as practicable. Appropriate methodologies should be used, in accordance with the **IPCC Guidelines**, to promote accuracy in inventories.

5. In the context of these guidelines, definitions of common terms used in greenhouse gas inventory preparation are those provided in the **IPCC Guidelines**.

C. Context

6. These UNFCCC reporting guidelines on annual inventories cover the estimation and reporting of greenhouse gas emissions and removals in both annual inventories and inventories included in national communications, as specified by decision 11/CP.4 and other relevant decisions of the COP.

Insert new paragraph 6bis on national system:

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[2] **In this document the term IPCC Guidelines is used to refer to the 2006 IPCC Guidelines for National GHG inventories.**

[3] According to the instrument of ratification, acceptance, approval or accession to the Convention of each Annex I Party.

6bis. These UNFCCC reporting guidelines on annual inventories also cover the establishment of a national inventory system for the purpose of a continued preparation of timely, consistent, comparable, accurate and transparent inventories.

7. An annual inventory submission shall consist of a national inventory report (NIR) and the common reporting format (CRF) tables, **as included in Annex II** described ~~**in paragraphs 38 through 43 and 44 through 50, respectively**~~.

D. Base year

8. The year 1990 should be the base year for the estimation and reporting of inventories. According to the provisions of Article 4, paragraph 6 of the Convention and decisions 9/CP.2 and 11/CP.4, the following Annex I Parties that are undergoing the process of transition to a market economy are allowed to use a base year or a period of years other than 1990, as follows:

Bulgaria: 1988

Hungary: the average of the years 1985 to 1987

Poland: 1988

Romania: 1989

Slovenia: 1986

Insert following additional sentence. This is related to the suggested deletion in paragraph 22:

For the reporting of fluorinated gases Annex I Parties may use 1995 as the base year

Comment: The EU is open to discuss different base years for the reporting of new fluorinated gases.

Comment: For new and additional fluorinated gases more recent base years may be applicable for the reporting as production of some of these gases started recently or may start in the future.

E. Methods

Methodology

9. Annex I Parties shall use the **methodologies provided in the** IPCC Guidelines to estimate anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol. ~~**In preparing national inventories of these gases, Annex I Parties shall also use the IPCC good practice guidance in order to improve transparency, consistency, comparability, completeness and accuracy.**~~

10. In accordance with the IPCC Guidelines, Annex I Parties may use different methods (tiers) included in those guidelines, giving priority to those methods which, according to the decision trees in the IPCC **Guidelines**, produce more accurate estimates. In accordance with the IPCC Guidelines, Annex I Parties may also use national methodologies which they consider better able to reflect their national situation, provided that these methodologies are compatible with the IPCC Guidelines and are well documented and scientifically based.

11. For categories[4] that are determined to be key categories, in accordance with IPCC **Guidelines** guidance, and estimated in accordance with the provisions in paragraph 13 below, Annex I Parties should make every effort to use a recommended method, in accordance with the corresponding decision trees of the IPCC **Guidelines**. Annex I Parties should also make every effort to develop and/or select emission factors, and collect and select activity data, in accordance with the IPCC **Guidelines**.

12. ~~**For most categories, t**~~The IPCC Guidelines provide a default methodology which includes default emission factors and in some cases default activity data references **for the categories to be reported**. ~~**Furthermore, the IPCC good practice guidance provides updated default emission factors and default activity data for some categories and gases.**~~ As the assumptions implicit in these default data, factors and methods may not be appropriate for specific national contexts, it is preferable for Annex I Parties to use their own national emission factors and activity data, where available, provided that they are developed in a manner consistent with the IPCC **Guidelines**, are considered to be more accurate, and reported transparently. ~~**The updated default activity data or emission factors provided in the IPCC good practice guidance should be used, where available, if Annex I Parties choose to use default factors or data due to lack of country-specific information.**~~ **If Annex I Parties lack country specific information, they could also use emission factors or other parameters provided in the IPCC emission factor database, where available, provided that these parameters are considered to be appropriate in the specific national context and are considered to be more accurate than the default data provided in the IPCC guidelines.**

Comment: A future COP decision on the revised guidelines could encourage IPCC to further maintain and develop the IPCC EFDB

Key category determination

13. Annex I Parties shall identify their national key categories for the base year and the latest reported inventory year, as described in the IPCC **Guidelines**, using the tier 1 or tier 2 level and trend assessment.

Uncertainties

14. Annex I Parties shall quantitatively estimate the uncertainties in the data used for all source and sink categories using at least the tier 1 method, as provided in the IPCC **Guidelines, and report uncertainties at least for the base year and the latest reported inventory year**. Alternatively, Annex I Parties may use the tier 2 method in the IPCC **Guidelines** to address technical limitations in the tier 1 method. Uncertainty in the data used for all source and sink categories should also be qualitatively discussed in a transparent manner in the NIR, in particular for categories that were identified as key categories.

Recalculations

15. The inventor**y**~~**ies of an entire**~~ time series, including the base year and ~~**all**~~ subsequent years for which inventories have been reported, should be estimated using the same methodologies, and the

[4] The term "categories" refers to **both source and sink categories as addressed in IPCC guidelines**.

underlying activity data and emission factors should be obtained and used in a consistent manner **ensuring that changes in emission trends are not introduced due to changes in estimatin methods or assumptions**. Recalculations should ensure consistency of the time series and shall be carried out only to improve accuracy and/or completeness **and to implement higher tier methods in accordance with IPCC guidelines**. Where the methodology or manner in which underlying activity data and emission factors are gathered has changed, Annex I Parties should recalculate inventories for the base and subsequent years. Annex I Parties should evaluate the need for recalculations relative to the reasons provided by the IPCC **Guidelines**, in particular for key categories. Recalculations should be performed in accordance with IPCC **Guidelines** and the general principles set down in these UNFCCC guidelines.

16. In some cases it may not be possible to use the same methods and consistent data sets for all years due to a possible lack of activity data, emission factors or other parameters directly used in the calculation of emission estimates for some historical years, including the base year. In such cases, emissions or removals may need to be recalculated using alternative methods not generally covered by paragraphs 9 through 12. In these instances, Annex I Parties should use one of the techniques provided by the IPCC **Guidelines** (e.g., overlap, surrogate, interpolation, and extrapolation) **or other equivalent methods** to determine the missing values. Annex I Parties should document **and report the methodologies used for the entire** ~~**and demonstrate in the NIR that the**~~ time series~~**. is consistent, wherever such techniques are used**~~.

Quality assurance/quality control (QA/QC)

17. Each Annex I Party shall elaborate an inventory QA/QC plan and implement general inventory QC procedures (tier 1) in accordance with its QA/QC plan following the IPCC **Guidelines**. In addition, Annex I Parties should apply category-specific QC procedures (tier 2) for key categories and for those individual categories in which significant methodological changes and/or data revisions have occurred, in accordance with IPCC **Guidelines**. ~~**The implementation of tier 2 QC may be more efficiently implemented in conjunction with the evaluation of uncertainties in data sources.**~~ In addition, Annex I Parties should implement QA procedures by conducting a basic expert peer review (tier 1 QA) of their inventories in accordance with IPCC **Guidelines**.

Comment: Paragraph 17 should be merged with the new paragraphs on the national system. For improved clarity, the EU decided not to implement such further streamlining of the text at this stage.

National inventory system

17bis. Each Annex I Party shall implement and maintain a national system for the estimation of anthropogenic greenhouse gas emissions by sources and removals by sinks. A national system includes all institutional, legal and procedural arrangements made within an Annex I Party for estimating anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and for reporting and archiving inventory information.

17ter. National systems should be designed and operated

(a) to ensure the transparency, consistency, comparability, completeness and accuracy of inventories as defined in paragraph 4 above.

(b) to ensure the quality of the inventory through planning, preparation and management of inventory activities. Inventory activities include collecting activity data, selecting methods and emission factors appropriately, estimating anthropogenic GHG emissions by sources and removals by sinks, implementing uncertainty assessment and quality assurance/quality control (QA/QC) activities, and carrying out procedures for the verification of the inventory data at the national level, as described in these guidelines.

(c) to enable Parties included in Annex I to consistently estimate anthropogenic emissions by all sources and removals by all sinks of all GHGs, as covered by the IPCC Guidelines.

17quater. In the implementation of its national system, each Party included in Annex I shall perform the following general functions:

(a) Establish and maintain the institutional, legal and procedural arrangements necessary to perform the functions defined in paragraphs 21 to 26 below, as appropriate, between the government agencies and other entities responsible for the performance of all functions defined in these guidelines;

(b) Ensure sufficient capacity for timely performance of the functions defined in these guidelines for national systems, including data collection for estimating anthropogenic GHG emissions by sources and removals by sinks and arrangements for technical competence of the staff involved in the inventory development process;

(c) Designate a single national entity with overall responsibility for the national inventory;

(d) Prepare national annual inventories and in a timely manner in accordance with these guidelines and relevant decisions of the COP and provide information necessary to meet the reporting requirements defined in these guidelines and in accordance with the relevant decisions of the COP.

In addition each Party included in Annex I shall undertake specific functions relating to inventory planning, preparation and management.

Inventory planning

17quinquies. As part of its inventory planning, each Party included in Annex I shall:

(a) Define and allocate specific responsibilities in the inventory development process, including those relating to choice of methods, data collection, particularly activity data and emission factors from statistical services and other entities, processing and archiving, and QC and QA. This definition shall specify the roles of, and cooperation between, government agencies and other entities involved in the preparation of the inventory, as well as the institutional, legal and procedural arrangements made to prepare the inventory;

(b) Elaborate an inventory QA/QC plan which describes specific QC procedures to be implemented during the inventory development process, facilitate the overall QA procedures to be conducted, to the extent possible, on the entire inventory and establish quality objectives;

(c) Establish processes for the official consideration and approval of the inventory, including any recalculations, prior to its submission and to respond to any issues raised by the inventory review process.

17sexies. As part of its inventory planning, each Party included in Annex I should consider ways to improve the quality of activity data, emission factors, methods and other relevant technical elements of inventories. Information obtained from the implementation of the QA/QC programme, the inventory review process and other verification activities should be considered in the development and/or revision of the QA/QC plan and the quality objectives.

Inventory preparation

17septies. As part of its inventory preparation, each Party included in Annex I shall:

(a) prepare annual inventory estimates in accordance with the requirements defined in these guidelines;

(c) Collect sufficient activity data, process information and emission factors as are necessary to support the methods selected for estimating anthropogenic GHG emissions by sources and removals by sinks;

(d) Compile the national inventory report in accordance with these guidelines;

(g) Implement general inventory QC procedures (tier 1) in accordance with its QA/QC plan following the IPCC Guidelines.

17octies. As part of its inventory preparation, each Party included in Annex I should:

(a) Apply source-category-specific QC procedures (tier 2) for key source categories and for those individual source categories in which significant methodological and/or data revisions have occurred, in accordance with the IPCC Guidelines;

(b) Provide for a basic review of the inventory by personnel that have not been involved in the inventory development, preferably an independent third party, before the submission of the inventory, in accordance with the planned QA procedures referred to in paragraph 17quanquies (b) above;

(c) Provide for a more extensive review of the inventory for key categories, as well as source categories where significant changes in methods or data have been made, in accordance with the IPCC Guidelines;

(d) Based on the reviews described in subparagraphs (b) and (c) above and periodic internal evaluations of the inventory preparation process, re-evaluate the inventory planning process in order to meet the established quality objectives referred to in paragraph 17quinquies (b).

Inventory management

17novies. As part of its inventory management, each Party included in Annex I shall:

(a) Archive all relevant inventory information for the reported time series and this information shall include all disaggregated emission factors, activity data, and documentation about how these factors and data have been generated and aggregated for the preparation of the inventory. This information shall also include internal documentation on QA/QC procedures, external and internal reviews, documentation on annual key categories and key category identification and planned inventory improvements;

(b) Provide review teams with access to all archived information used by the Party to prepare the inventory through the single national entity, in accordance with relevant decisions of the COP and/or COP/MOP;

(c) Respond to requests for clarifying inventory information resulting from the different stages of the review process of the inventory information, and information on the national system, in a timely manner.

F. Reporting

1. General guidance

Estimates of emissions and removals

18. Article 12.1(a) of the Convention requires that each Party shall communicate to the COP, through the secretariat, inter alia, a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. As a minimum requirement, inventories shall contain information on the following greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6**) and nitrogen trifluoride (NF_3).** Annex I Parties should report anthropogenic emissions and removals of any other greenhouse gases whose 100-year global warming potential (GWP) values have been identified by the IPCC **and which are listed in table 1 ~~and adopted by the COP~~**. Annex I Parties should also provide information on the following indirect greenhouse gases: carbon monoxide (CO), nitrogen oxides (NO_X) and non-methane volatile organic compounds (NMVOCs), as well as sulphur oxides (SOx). **Annex I Parties shall report indirect CO_2 emissions from the atmospheric oxidation of CH_4, CO_2 and NMVOCs[5] and indirect N_2O emissions resulting from nitrogen deposition of all anthropogenic sources of NO_x and NH_3 In reporting indirect emissions Annex I Parties should avoid double counting and report indirect CO_2 emissions only for those source categories which the carbon is not already covered by the assumptions and approximations made in estimating CO_2 emissions.**

Comment: Correspondingly, the EU proposes a separate reporting table for indirect emissions. Fluorinated ethers should be reported in an aggregate column in the CRF and the NIR shall provide more thorough information on the specific chemical species included in the inventory. Indirect CO_2 and N_2O to be reported in separate table can be calculated from reported CH_4, CO

[5] **Indirect CO_2 emissions should be reported in a separate column in the CRF for enhanced transparency.**

and NMVOC emissions using the factors provided in Box 7.2 of chapter 7 in 2006 IPCC Guidelines. Indirect N_2O emissions from the atmospheric deposition of nitrogen can be estimates based on the methodologies provided in section 7.3 of chapter 7 in 2006 IPCC Guidelines.

19.. Greenhouse gas emissions and removals should be presented on a gas-by-gas basis in units of mass with emissions by sources listed separately from removals by sinks, except in cases where it may be technically impossible to separate information on sources and sinks in the areas of land use, land-use change and forestry. For HFCs and PFCs, emissions should be reported for each relevant chemical in the category on a disaggregated basis, except in cases where paragraph 27 below applies.

20. In addition, consistent with decision 2/CP.3, Annex I Parties should report aggregate emissions and removals of greenhouse gases, expressed in CO_2 equivalent terms at summary inventory level,[6] using GWP values provided by the IPCC in its **Fourth**~~**Second**~~ Assessment Report, referred to below as ~~**1995**~~**2007** IPCC GWP values, based on the effects of greenhouse gases over a 100-year time horizon. A list of these values is given in table 1 at the end of these guidelines. ~~**Table 1 on page 15 will be amended to include any additional greenhouse gases and their 100-year GWP values, once the GWP values have been adopted by the COP. CO_2 equivalent emissions should be provided at a level of category disaggregation similar to that specified in table Summary 1.A of the common reporting format.**~~

21. ~~**Consistent with decision 2/CP.3,**~~ Annex I Parties **shall**~~**should**~~ report actual emissions of HFCs, PFCs, NF3 and SF_6 , providing disaggregated data by chemical and source category in units of mass and in CO_2 equivalents**.** ~~**Annex I Parties should make every effort to develop the necessary sources of data for reporting actual emissions. For the source categories where the concept of potential emissions applies, and Annex I Parties do not yet have the necessary data to calculate actual emissions, Annex I Parties should report disaggregated potential emissions. Annex I Parties reporting actual emissions should also report potential emissions for the sources where the concept of potential emissions applies, for reasons of transparency and comparability**~~.

~~**22. Any Annex I Party that is a Party to the Kyoto Protocol and that in accordance with Article 3, paragraph 8 of the Kyoto Protocol chooses to use 1995 as its base year for HFCs, PFCs and SF_6 for the purposes of calculating assigned amounts pursuant to Article 3, paragraphs 7 and 8 of the Kyoto Protocol, should indicate this in its NIR and in the documentation boxes of the relevant tables of the CRF. Irrespective of the base year chosen for these gases for the purpose of the Kyoto Protocol, such Annex I Parties should report, to the extent that data are available, emission estimates and trends for these gases from 1990 onward, in accordance with the provisions of these guidelines.**~~

Comment: see change to base year paragraph in paragraph 8 above.

23. Annex I Parties are strongly encouraged to also report emissions and removals of additional greenhouse gases for which 100-year GWP values are available, **from the IPCC** ~~**but not yet adopted by the COP**~~. These emissions and removals should be reported separately from national totals. The GWP value and reference should be indicated.

[6] CO_2 equivalent emissions should be provided at a level of category disaggregation similar to that specified in table Summary 1.A of the common reporting format.

24. In accordance with the IPCC Guidelines, international aviation and marine bunker fuel emissions should not be included in national totals but should be reported separately. Annex I Parties should make every effort to both apply and report according to the IPCC **Guidelines** method for separation between domestic and international emissions. Annex I Parties should also report emissions from international aviation and marine bunker fuels as two separate entries in their inventories.

25. Annex I Parties should clearly indicate how feed stocks and non-energy use of fuels have been accounted for in the inventory, in the energy or industrial processes sector, in accordance with the IPCC **Guidelines**.

~~**26. If Annex I Parties account for effects of CO_2 capture from flue gases and subsequent CO_2 storage in their inventory, they should indicate in which source categories such effects are included, and provide transparent documentation of the methodologies used and the resulting effects.**~~

Comment: Paragraph is superfluous as CO_2 capture, transport and storage will be addressed in the revised CRF separate category.

27. Emissions and removals should be reported at the most disaggregated level of each source/sink category, taking into account that a minimum level of aggregation may be required to protect confidential business and military information.

Completeness

28. Where methodological or data gaps in inventories exist, information on these gaps should be presented in a transparent manner. Annex I Parties should clearly indicate the sources and sinks not considered in their inventories but which are included in the IPCC Guidelines, and explain the reasons for such exclusion. Similarly, Annex I Parties should indicate the parts of their geographical area, if any, not covered by their inventory and explain the reasons for their exclusion. In addition, Annex I Parties should use the notation keys presented below to fill in the blanks in all the tables in the CRF.[7] This approach facilitates assessment of the completeness of an inventory.

The notation keys are as follows:

(a) "NO" (not occurring) for activities or processes in a particular source or sink category that do not occur within a country;

(b) "NE" (not estimated) for existing emissions by sources and removals by sinks of greenhouse gases which have not been estimated. Where "NE" is used in an inventory for emissions or removals of CO_2, N_2O, CH_4, HFCs, PFCs, SF_6 or NF_3, the Annex I Party should indicate in both the NIR and the CRF completeness table why emissions or removals have not been estimated;[8]

(c) "NA" (not applicable) for activities in a given source/sink category that do not result in emissions or removals of a specific gas. If categories in the CRF for which "NA" is applicable are shaded, they do not need to be filled in;

[7] If notation keys are used in the NIR they should be consistent with those reported in the CRF.

[8] Even if emissions are considered to negligible, Parties should either report the emission estimate if calculated or use the notation key "NE".

(d) “IE” (included elsewhere) for emissions by sources and removals by sinks of greenhouse gases estimated but included elsewhere in the inventory instead of the expected source/sink category. Where “IE” is used in an inventory, the Annex I Party should indicate, using the CRF completeness table, where in the inventory the emissions or removals from the displaced source/sink category have been included and the Annex I Party should explain such a deviation from the expected category;

(e) “C” (confidential) for emissions by sources and removals by sinks of greenhouse gases which could lead to the disclosure of confidential information, given the provisions of paragraph 27 above.

29. **Annex I Parties are encouraged to report emissions and removals from source or sink categories for which estimation methods in the IPCC Guidelines are in appendices, but it is not mandatory to estimate these emissions and removals. Annex I Parties are encouraged to identify and to provide information in the NIR on additional sources of GHG emissions and to develop methodologies for such sources**. If Annex I Parties estimate and report emissions and removals from country-specific sources or sinks or of gases which are not part of the IPCC Guidelines, they should explicitly describe what source/sink categories or gases these are, as well as what methodologies, emission factors and activity data have been used for their estimation and provide the references for these data **and report these emissions and removals under “other” CRF categories. However, it is not mandatory to estimate GHG emissions from sources for which no methodologies are provided by IPCC Guidelines.**

Key categories

30. Annex I Parties shall estimate and report the individual and cumulative percentage contributions from key categories to their national total, with respect to both level and trend. The emissions should be expressed in terms of CO_2 equivalents using the methods provided in the IPCC **Guidelines**. As indicated in paragraphs 41 and 47 below, this information should be included in the NIR using tables **4.1** of the IPCC **Guidelines** adapted to the level of category disaggregation that the Annex I Party used for determining its key categories.

Verification

31. In accordance with the IPCC Guidelines, as well as for verification purposes, Annex I Parties should compare their national estimates of carbon dioxide emissions from fuel combustion with those estimates obtained using the IPCC reference approach, and report the results of this comparison in the CRF and NIR. Annex I Parties are also encouraged to report on any peer review of their inventory conducted nationally.

Uncertainties

32. Annex I Parties shall report, in the NIR, uncertainties estimated as indicated in paragraph 14 above, as well as methods used and underlying assumptions, with the purpose of helping to prioritize efforts to improve the accuracy of national inventories in the future and guide decisions on methodological choice. This information should be presented using table **3.3**. of the IPCC

Guidelines. ~~**In these tables, the term "national total" refers to the absolute value of emissions by sources minus the magnitude of removals by sinks.**~~ In addition, Annex I Parties should indicate in these tables those categories that have been identified as key categories in their inventory. ~~**If the methods used to estimate the level of uncertainty depart from the IPCC Guidelines, these methods should be described**~~.

Recalculations

33. Recalculations of previously submitted estimates of emissions and removals as a result of changes in methodologies, changes in the manner in which emission factors and activity data are obtained and used, or the inclusion of new sources or sinks which have existed since the base year but were not previously reported, should be reported for the base year and subsequent years up to the year in which the recalculations are made.

34. Recalculations should be reported in the NIR, with explanatory information including justification for recalculations, and in the relevant CRF tables. ~~**Annex I Parties should also provide explanations for those cases in which they have not recalculated an estimate when such a recalculation is called for in the IPCC good practice guidance.**~~ If notation keys are used in the NIR they should be consistent with those reported in the CRF. Even if emissions are considered to negligible, Parties should either report the emission estimate if calculated or use the notation key "NE". Information on the procedures used for performing the recalculations, changes in the calculation methods, emission factors and activity data used, and the inclusion of sources or sinks not previously covered, should be reported with an indication of the relevant changes in each source or sink category where these changes have taken place. ~~**For key categories, Annex I Parties should include this information in the NIR, as indicated in paragraph 41 below**~~.

35. Annex I Parties should report any other changes in estimates of emissions and removals, ~~**regardless of magnitude,**~~ and clearly indicate the reason for the changes compared with previously submitted inventories, e.g., error correction, statistical or editorial changes or reallocation of categories, using the corresponding CRF table, as ~~**indicated in paragraph 47 below and**~~ outlined in the annex II to these guidelines. **Small differences, e.g. due to rounding of estimates, should not be considered as recalculations.**

Comment: Paragraph 36 only refers to the reporting in the NIR which should be part of the paragraphs 38 onwards . The guidance related to the NIR should be generally streamlined.

~~**Quality assurance/quality control (QA/QC)**~~

~~**36. Annex I Parties shall report in the NIR on their QA/QC plan and give information on QA/QC procedures already implemented or to be implemented in the future.**~~

~~Adjustments~~ Corrections[9]

37. Inventories are to be reported without ~~**adjustments**~~ **corrections** relating, for example, to climate variations or trade patterns of electricity. If Annex I Parties, in addition, carry out such ~~**adjustments**~~

[9] The **corrections** referred to here relate, for example, to climate variations or trade patterns of electricity. They do not refer to adjustments under Article 5, paragraph 2, of the Kyoto Protocol.

corrections to inventory data, they should be reported separately and in a transparent manner, with clear indications of the method followed.

2. National inventory report

38. Annex I Parties shall submit to the COP, through the secretariat, an NIR containing detailed and complete information on their inventories. The NIR should ensure transparency and contain sufficiently detailed information to enable the inventory to be reviewed. This information should cover the ~~entire~~ time series, from the base year to the latest inventory year, and any changes to previously submitted inventories.

39. Each year, an updated NIR shall be electronically submitted in its entirety to the COP, through the secretariat, in accordance with the relevant decisions of the COP; ~~in instances where Annex I Parties have produced published hard copy versions of their NIR, they are also encouraged to submit copies to the secretariat.~~

40. The NIR should **be reported in accordance with the annotated outline contained in annex I.**

~~include annual inventory information, submitted in accordance with paragraph 38 above.~~

~~41. The NIR should include:~~

~~(a) Descriptions, references and sources of information of the specific methodologies, assumptions, emission factors and activity data, as well as the rationale for their selection. It also should include an indication of the level of complexity (IPCC tiers) applied and a description of any national methodology used by the Annex I Party, as well as information on anticipated future improvements. For key categories, an explanation should be provided if the recommended methods from the appropriate decision tree in the IPCC good practice guidance are not used. In addition, activity data, emission factors and related information should be documented in accordance with the IPCC good practice guidance.~~

~~(b) A description of the national key categories as indicated in paragraph 30,[12] including:~~

~~(i) Reference to the key category tables in the CRF;~~

~~(ii) Information on the level of category disaggregation used and its rationale;~~

~~(iii) Additional information relating to the methodology used for identifying key categories;~~

~~(c) With regard to possible double counting or non-counting of emissions, an indication in the corresponding sectoral part of the NIR:~~

~~(i) Whether feedstocks and non-energy use of fuels have been accounted for in the inventory, and if so, where they have been accounted for in the energy or industrial processes sector;~~

~~(ii) Whether CO_2 from biomass burning has been estimated and where it has been accounted for in the sectoral background data tables of the CRF (tables 5.A-5.F, and table 5(V));~~

~~(iii) Whether emissions of CO_2 corresponding to atmospheric oxidation of CO, NMVOCs and CH_4 emissions from non-combustion and from non-biogenic processes,~~

~~such as solvent use, coal mining and handling, venting and leakages of fossil fuels, have been accounted for in the inventory;~~

~~(iv) Information on source or sink categories excluded or potentially excluded, including efforts to develop estimates for future submissions;~~

~~(d) Information on how the effects of CO_2 capture from flue gases and subsequent CO_2 storage are accounted for in the inventory;~~

~~(e) Information on uncertainties, as requested in paragraph 32 above;~~

~~(f) Information on any recalculations relating to previously submitted inventory data, as requested in paragraphs 33 to 35 above, including changes in methodologies, sources of information and assumptions, as well as recalculations in response to the review process;~~

~~(g) Information on changes from previous years, not related to recalculations, including the changes in methodologies, sources of information and assumptions, as well as changes in response to the review process;~~

~~(h) Information on QA/QC as requested in paragraph 36 above, describing the QA/QC plan, and the QA/QC activities implemented for the entire inventory as well as for individual categories, in particular key categories, and the entire inventory performed internally, as well as on the external reviews conducted, if any. Key findings on the quality of the input data, methods, processing and archiving and how they have been addressed, should be described;~~

~~(i) A description of the institutional arrangements for inventory preparation.~~

42. If any of the information required **in Annex I** ~~**under paragraph 41 (a) to (h) above**~~ is provided in detail in the CRF, Annex I Parties should indicate in the NIR where in the CRF this information is provided.

~~**43. The NIR should be reported in accordance with the outline contained in the annex I to these guidelines, ensuring that all information requested in paragraph 41 above is included.**~~

3. Common reporting format

44. The common reporting format (CRF) is designed to ensure that Annex I Parties report quantitative data in a standardized format and to facilitate comparison of inventory data and trends ~~**among Annex I Parties**~~. Explanation of information of a qualitative character should mainly be provided in the NIR rather than in the CRF tables. Such explanatory information should be cross-referenced to the specific section of the NIR.

45. Annex I Parties shall submit annually to the COP, through the secretariat, the information required in the CRF as contained in annex II to these guidelines. This information shall be electronically submitted on an annual basis in its entirety to the COP, through the secretariat, in accordance with the relevant decisions of the COP.

46. The CRF is a standardized format for reporting estimates of greenhouse gas emissions and removals and other relevant information. The CRF allows for the improved handling of electronic submissions and facilitates the processing of inventory information and the preparation of useful technical analysis and synthesis documentation.

~~47. The CRF consists of:~~

~~(a) Summary, sectoral and trend tables for all greenhouse gas emissions and removals;~~

~~(b) Sectoral background data tables for reporting implied emission factors[13] and activity data, including:~~

~~(i) IPCC worksheet 1-1 containing estimates of CO_2 emissions from fuel combustion using the IPCC reference approach and a table for comparing estimates under this reference approach with estimates under the sectoral approach, as well as providing explanations of any significant differences;[14]~~

~~(ii) Tables for reporting fossil fuel consumption for non-energy feedstocks, international bunkers and multilateral operations;~~

~~(c) Tables for reporting, inter alia, key categories, recalculations and completeness of the inventory.~~

48. The CRF should be reported in accordance with the tables included in annex II to these guidelines, ~~ensuring that all information requested in paragraph 47 above is included~~. In completing these tables Annex I Parties should:

(a) Provide the full CRF for **the base year, 1990, 1995, 2000, 2005** ~~the latest inventory year~~ and **subsequently** for **all years up to the latest inventory year** ~~year those years for which any change in any sector has been made~~. ~~For years where no changes are made, resubmission of full CRF tables is not necessary, but a reference should be made to the inventory submission in which the unchanged data were reported originally~~. Annex I Parties should ensure that a full and time-series consistent set of CRF tables is annually available for the ~~entire~~ **years mentioned above** ~~time series from the base year onwards~~;

~~(b) Provide the CRF trend tables covering inventory years for the entire time series in one submission only, that is, in the CRF for the last inventory year;~~

(c) Provide completeness tables **for the latest year** ~~in one submission~~ only if the information applies to all years. If the information in these tables differs for each reported year, then either the tables or information on the specific changes must be provided for each year in the CRF;

(d) Use the documentation boxes provided at the foot of the sectoral report and background data tables to provide cross-references to detailed explanations in the NIR, or any other information, as specified in those boxes.

49. Annex I Parties should provide the information requested in the additional information boxes. Where the information called for is inappropriate because of the methodological tier used by the Annex I Party, the corresponding cells should be completed using the notation key “NA”. In such cases, the Annex I Parties should cross-reference in the documentation box the relevant section in the NIR where equivalent information can be found.

50. Annex I Parties should use the notation keys, as specified in paragraph 28 above, in all tables of the CRF, to fill in the cells where no quantitative data are directly entered. Using the notation keys in this way facilitates the assessment of the completeness of an inventory. Specific guidance is provided on how notation keys should be used in each CRF table where qualitative information is required.

G. Record keeping

Comment: paragraph 51 should be merged with the new section on the national system

51. Annex I Parties should gather and archive all relevant inventory information for each year **of the reported time series**, including all disaggregated emission factors, activity data and documentation on how these factors and data were generated, including expert judgement where appropriate, and how they have been aggregated for reporting in the inventory. This information should allow reconstruction of the inventory by the expert review teams, inter alia. Inventory information should be archived from the base year and should include corresponding data on the recalculations applied. The "paper trail", which can include spreadsheets or databases used to compile inventory data, should enable estimates of emissions and removals to be traced back to the original disaggregated emission factors and activity data. Also, relevant supporting documentation related to QA/QC implementation, uncertainty evaluation, or key category analyses should be kept on file. This information should also facilitate the process of clarifying inventory data in a timely manner when the secretariat prepares annual compilations of inventories or assesses methodological issues. ~~**Annex I Parties are encouraged to collect and gather the information in a single national inventory facility or, at least, to keep the number of facilities to a minimum.**~~

H. Systematic updating of the guidelines

52. These UNFCCC reporting guidelines on annual inventories shall be reviewed and revised, as appropriate, in accordance with decisions of the COP on this matter.

I. Language

53. The national inventory report shall be submitted in one of the official languages of the United Nations. Annex I Parties **should** ~~**also encouraged to**~~ submit, where relevant, a translation of the national inventory report into English.

Table 1. 2007 ~~1995~~ IPCC global warming potential (GWP) values based on the effects of greenhouse gases over a 100-year time horizon

Replace current table 1 with the following table 1:

Greenhouse gas	Chemical formula	2007 IPCC GWP[10]
Carbon dioxide	CO_2	1
Methane	CH_4	**25**
Nitrous oxide	N_2O	**298**

[10] **GWPs as listed in the Errata to Table 2.14 from 31 July 2008 to the IPCC Report "Climate Change 2007 – The Physical Science Basis. The Working Group I contribution to the IPCC Fourth Assessment Report.**

Hydrofluorocarbons (HFCs)		
HFC-23	CHF_3	**14,800**
HFC-32	CH_2F_2	**675**
HFC-41	CH_3F	**92**
HFC-43-10mee	$C_5H_2F_{10}$	**1,640**
HFC-125	C_2HF_5	**3,500**
HFC-134	$C_2H_2F_4$ (CHF_2CHF_2)	**1,100**
HFC-134a	$C_2H_2F_4$ (CH_2FCF_3)	**1,430**
HFC-143	$C_2H_3F_3$ (CHF_2CH_2F)	**353**
HFC-143a	$C_2H_3F_3$ (CF_3CH_3)	**4,470**
HFC-152[11]	**CH_2FCH_2F**	**53**
HFC-152a	C_2H4F_2 (CH_3CHF_2)	**124**
HFC-161	**CH_3CH_2F**	**12**
HFC-227ea	C_3HF_7	**3,220**
HFC-236cb	$CH_2FCF_2CF_3$	**1,340**
Greenhouse gas	**Chemical formula**	**2007 IPCC GWP**[12]
HFC-236ea	CHF_2CHFCF_3	**1,370**
HFC-236fa	$C_3H_2F_6$	**9,810**
HFC-245ca	$C_3H_3F_5$	**693**
HFC-245fa	**$CHF_2CH_2CF_3$**	**1,030**
HFC-365mfc	**$CH_3CF_2CH_2CF_3$**	**794**
Perfluorocarbons (PFCs)		
Perfluoromethane, PFC-14	CF_4	**7,390**

[11] **HFC-152, HFC-161 for the time being are not produced at significant levels**

[12] **GWPs as listed in the Errata to Table 2.14 from 31 July 2008 to the IPCC Report "Climate Change 2007 – The Physical Science Basis. The Working Group I contribution to the IPCC Fourth Assessment Report.**

Perfluoroethane, PFC-116	C_2F_6	**12,200**
Perfluoropropane, PFC-218	C_3F_8	**8,830**
Perfluorobutane, PFC-3-3-10	C_4F_{10}	**8,860**
Perfluorocyclobutane, PFC-318	c-C_4F_8	**10,300**
Perfluourpentane, PFC-4-1-12	C_5F_{12}	**9,160**
Perfluorohexane,PFC-5-1-14	C_6F_{14}	**9,300**
Perfluorinated compounds		
Sulphur hexafluoride	SF_6	**22,800**
Nitrogen trifluoride	**NF_3**	**17,200**
Fluorinated ethers		
HFE-125	**CHF2OCF3**	**14,900**
HFE-134	**CHF2OCHF2**	**6,320**
HFE-143a	**CH3OCF3**	**756**
Greenhouse gas	**Chemical formula**	**2007 IPCC GWP[13]**
HCFE-235da2	**CHF2OCHCICF3**	**350**
HFE-245cb2	**CH3OCF2CHF2**	**708**
HFE-245fa2	**CHF2OCH2CF3**	**659**
HFE-254cb2	**CH3OCF2CHF2**	**359**
HFE-347mcc3	**CH3OCF2CF2CF3d**	**575**
HFE-347pcf2	**CHF2CF2OCH2CF3**	**580**
HFE-356pcc3	**CH3OCF2CF2CHF2**	**110**
HFE-449sl (HFE-7100)	**C4F9OCH3**	**297**

[13] **GWPs as listed in the Errata to Table 2.14 from 31 July 2008 to the IPCC Report "Climate Change 2007 – The Physical Science Basis. The Working Group I contribution to the IPCC Fourth Assessment Report.**

HFE-569sf2 (HFE-7200)	C4F9OC2H5	59
HFE-43-10pccc124 (H-Galden 1040x)	CHF2OCF2OC2F4OCHF2	1,870
HFE-236ca12 (HG-10)	CHF2OCF2OCHF2	2,800
HFE-338pcc13 (HG-01)	CHF2OCF2CF2OCHF2	1,500
	(CF3)2CFOCH3	343
	CF3CF2CH2OH	42
	(CF3)2CHOH	195
HFE-227ea	CF3CHFOCF3	1,540
HFE-236ea2	CHF2OCHFCF3	989
HFE-236fa	CF3CH2OCF3	487
HFE-245fa1	CHF2CH2OCF3	286
HFE 263fb2	CF3CH2OCH3	11
Greenhouse gas	**Chemical formula**	**2007 IPCC GWP[14]**
HFE-329mcc2	CHF2CF2OCF2CF3	919
HFE-338mcf2	CF3CH2OCF2CF3	552
HFE-347mcf2	CHF2CH2OCF2CF3	374
HFE-356mec3	CH3OCF2CHFCF3	101
HFE-356pcf2	CHF2CH2OCF2CHF2	265
HFE-356pcf3	CHF2OCH2CF2CHF2	502
HFE 365mcf3	CF3CF2CH2OCH3	11
PerfluoropolyethersFluorinated ethers		
PFPMIE	$CF_3OCF(CF_3)CF_2OCF_2OCF_3$	10,300

[14] GWPs as listed in the Errata to Table 2.14 from 31 July 2008 to the IPCC Report "Climate Change 2007 – The Physical Science Basis. The Working Group I contribution to the IPCC Fourth Assessment Report.

Annex I : Structure of the national inventory report

***Proposal*: replace "Structure of the national inventory report" with the annotated outline**

~~**EXECUTIVE SUMMARY**~~

~~**ES.1. Background information on greenhouse gas inventories and climate change (e.g., as it pertains to the national context, to provide information to the general public)**~~

~~**ES.2. Summary of national emission and removal related trends**~~

~~**ES.3. Overview of source and sink category emission estimates and trends**~~

~~**ES.4. Other information (e.g., indirect greenhouse gases)**~~

~~**Chapter 1: INTRODUCTION**~~

~~**1.1. Background information on greenhouse gas inventories and climate change (e.g., as it pertains to the national context, to provide information to the general public)**~~

~~**1.2. A description of the institutional arrangement for inventory preparation**~~

~~**1.3. Brief description of the process of inventory preparation (e.g., data collection, data processing, data storage)**~~

~~**1.4. Brief general description of methodologies and data sources used**~~

~~**1.5. Brief description of key categories**~~

~~**1.6. Information on the QA/QC plan including verification and treatment of confidentiality issues where relevant**~~

~~**1.7. General uncertainty evaluation, including data on the overall uncertainty for the inventory totals**~~

~~**1.8. General assessment of the completeness (with reference to annex 5 of the structure of the national inventory report (NIR))**~~

~~**Chapter 2: TRENDS IN GREENHOUSE GAS EMISSIONS**~~

~~***Information should be provided in this chapter that provides an overview of emission trends, but it is not necessary to repeat information that is provided in the sector chapters and in the common reporting format (CRF) trend tables.***~~

~~**2.1. Description and interpretation of emission trends for aggregated greenhouse gas emissions**~~

~~**2.2. Description and interpretation of emission trends by gas**~~

~~**2.3. Description and interpretation of emission trends by category**~~

~~**2.4. Description and interpretation of emission trends for indirect greenhouse gases and SO_2**~~

~~**Chapters 3–9: *(e.g. SECTOR NAME (CRF sector number))***~~

~~***The structure outlined below should be followed in each of the following sectoral chapters. The information should be reported following the IPCC sectors.***~~

~~**3.1. Overview of sector (e.g., quantitative overview and description)**~~

~~3.2. *Source category* (CRF source category number)~~

~~*For each IPCC source category (i.e., at the level of the table Summary 1.A of the CRF, or the level at which IPCC methods are described, or at the level that the Annex I Party estimates its greenhouse gas emissions) the following information should be provided:*~~

~~3.2.1. Source category description (e.g., characteristics of sources)~~

~~3.2.2. Methodological issues (e.g., choice of methods/activity data/emission factors, assumptions, parameters and conventions underlying the emission and removal estimates – the rationale for their selection, any specific methodological issues (e.g. description of national methods))~~

~~3.2.3. Uncertainties and time-series consistency~~

~~3.2.4. Source-specific QA/QC and verification, if applicable~~

~~3.2.5. Source-specific recalculations, if applicable, including changes made in response to the review process~~

~~3.2.6. Source-specific planned improvements, if applicable (e.g., methodologies, activity data, emission factors, etc.), including those in response to the review process~~

~~*Annex I Parties may report some of the information requested above in an aggregate form for some/several source categories if the same methodology, activity data and/or emission factors are used, in order to avoid repetition of information. For key categories, the information should be detailed in order to enable a thorough review of the inventory.*~~

~~Chapter 3: ENERGY (CRF sector 1)~~

~~*In addition, the energy information should include the following:*~~

~~Fuel combustion (CRF 1.A), including detailed information on:~~

- ~~Comparison of the sectoral approach with the reference approach~~
- ~~International bunker fuels~~
- ~~Feedstocks and non-energy use of fuels~~
- ~~CO_2 capture from flue gases and subsequent CO_2 storage~~
- ~~Country-specific issues~~

~~Fugitive emissions from solid fuels and oil and natural gas (CRF 1.B) Chapter 4: INDUSTRIAL PROCESSES (CRF sector 2) Chapter 5: SOLVENT AND OTHER PRODUCT USE (CRF sector 3) Chapter 6: AGRICULTURE (CRF sector 4) Chapter 7: LULUCF (CRF sector 5)~~

~~*In addition, the LULUCF information should include the following:*~~

- ~~*Information on approaches used for representing land areas and on land-use databases used for the inventory preparation;*~~
- ~~*Land-use definitions and the classification systems used and their correspondence to the LULUCF categories.*~~

~~Chapter 8: WASTE (CRF sector 6)~~

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~~Chapter 9: OTHER (CRF sector 7) (if applicable)~~

~~*In addition, information previously included in the additional information and the documentation boxes of the CRF version for the trial period (FCCC/CP/1999/7) should be included and expanded in the NIR, where relevant, as specified in the appendix to this proposed structure.*~~

~~Chapter 10: RECALCULATIONS AND IMPROVEMENTS~~

~~*Information should be provided in this chapter that provides an overview of recalculations and improvements made to the inventory, but it is not necessary to repeat information that is provided in the sector chapters, specifically the category-specific information to be provided, and in particular, Annex I Parties should cross-reference information provided in the sector chapters.*~~

~~10.1. Explanations and justifications for recalculations~~

~~10.2. Implications for emission levels~~

~~10.3. Implications for emission trends, including time series consistency 10.4 Recalculations, including in response to the review process, and planned improvements to the inventory (e.g., institutional arrangements, inventory preparation)~~

~~REFERENCES~~

~~ANNEXES TO THE NATIONAL INVENTORY REPORT~~

~~Annex 1: Key categories~~

- ~~Description of methodology used for identifying key categories~~
- ~~Reference to the key category tables in the CRF~~
- ~~Information on the level of disaggregation~~
- ~~Tables 7.A1 - 7.A3 of the IPCC good practice guidance[1]~~

~~Annex 2: Detailed discussion of methodology and data for estimating CO_2 emissions from fossil fuel combustion~~

~~Annex 3: Other detailed methodological descriptions for individual source or sink categories (where relevant)~~

~~Annex 4: CO_2 reference approach and comparison with sectoral approach, and relevant information on the national energy balance~~

~~Annex 5: Assessment of completeness and (potential) sources and sinks of greenhouse gas emissions and removals excluded~~

~~Annex 6: Additional information to be considered as part of the NIR submission (where relevant) or other useful reference information~~

~~Annex 7: Tables 6.1 and 6.2 of the IPCC good practice guidance[2]~~

~~Annex 8: Other annexes - (Any other relevant information – optional).~~

~~This item has been added for consistency with the provisions in paragraph 30 of these guidelines.~~

~~This item has been added for consistency with the provisions in paragraphs 32 and 41 (f) of these guidelines.~~

~~Energy~~

~~Fuel combustion~~

~~More specific information than that required in CRF table 1.A(a) could be provided, e.g.,~~

- ~~Autoproduction of electricity~~
- ~~Urban heating (in manufacturing industries, commercial and residential sectors).~~

~~Fugitive fuel emissions~~

~~Coal mining:~~

~~More specific information than that required in CRF table 1.B.1 could be provided, e.g.~~

- ~~Number of active underground mines~~
- ~~Number of mines with drainage (recovery) systems.~~

~~Oil and natural gas~~

~~More specific information than that required in CRF table 1.B.2 could be provided, e.g.~~

- ~~Pipeline length~~
- ~~Number of oil wells~~
- ~~Number of gas wells~~
- ~~Gas throughput[1]~~
- ~~Oil throughput[1]~~

~~Industrial processes~~

~~Metal production~~

~~More specific information than is required in CRF table 2(I).A-G could be provided, e.g., data on virgin~~

~~and recycled steel production.~~

~~Potential emissions of halocarbons and SF_6~~

~~In CRF table 2(II)s2, reporting of "production" refers to production of new chemicals. Recycled substances could be included in that table, but it should be ensured that double counting of emissions is avoided. Relevant explanations should be provided in the NIR.~~

~~In the context of gas and oil production, throughput is a measure of the total production, such as barrels per day of oil, or cubic metres of gas per year. Specify the units of the reported~~

~~values. Take into account that these values should be consistent with the activity data reported under production in table 1.B.2 of the CRF.~~

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~~PFCs and SF_6 from metal production / Production of halocarbons and SF_6~~

~~The type of activity data used is to be specified in CRF tables 2(II).C–E (under column "description"). Where applying tier 1b (for 2.C Metal production), tier 2 (for 2.E Production of halocarbons and SF_6) and country-specific methods, any other relevant activity data used should be specified.~~

~~Consumption of HFCs, PFCs and SF_6~~

~~With regard to activity data reported in CRF table 2(II).F ("Amount of fluid remaining in products at decommissioning"), Annex I Parties should provide in the NIR information on the amount of the chemical recovered (recovery efficiency) and other relevant information used in the emission estimation.~~

~~CRF table 2(II).F provides for reporting of the activity data and emission factors used to calculate actual emissions from consumption of halocarbons and SF_6 using the "bottom-up approach" (based on the total stock of equipment and estimated emission rates from this equipment). Some Annex I Parties may prefer to estimate their actual emissions following the alternative "top-down approach" (based on annual sales of equipment and/or gas). Those Annex I Parties should provide the activity data used in that CRF table and provide any other relevant information in the NIR. Data these Annex I Parties should provide include:~~

- ~~The amount of fluid used to fill new products~~
- ~~The amount of fluid used to service existing products~~
- ~~The amount of fluid originally used to fill retiring products (the total nameplate capacity of retiring products)~~
- ~~The product lifetime~~
- ~~The growth rate of product sales, if this has been used to calculate the amount of fluid originally used to fill retiring products.~~

~~Alternatively, Annex I Parties may provide alternative formats with equivalent information.~~

~~Solvents and other product use~~

~~The IPCC Guidelines do not provide methodologies for the calculation of emissions of N_2O from solvent and other product use. If reporting such data in the CRF, Annex I Parties should provide additional information (activity data and emission factors) used to make these estimates in the NIR.~~

~~**Agriculture**~~

~~**Cross-cutting**~~

~~**Annex I Parties should provide livestock population data in CRF table 4.A. Any further disaggregation of these data, e.g. for regions, for type (according to the classification recommended in the IPCC good practice guidance), could be provided in the NIR, where relevant. Consistent livestock population data should be used in the relevant CRF tables to estimate CH_4 emissions from enteric fermentation, CH_4 and N_2O emissions from manure management, N_2O emissions from soils, and N_2O emissions associated with manure production and use, as well as emissions from the use of manure as fuel and sewage-related emissions reported in the waste sector.**~~

~~**Enteric fermentation**~~

~~**More specific information than is required in CRF table 4.A could be provided, e.g., parameters relevant**~~

~~**to the application of good practice guidance.**~~

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~~**Manure management**~~

~~**More specific information than is required in CRF tables 4.B(a) and 4.B(b) could be provided, e.g., parameters relevant to the application of the IPCC good practice guidance. Information required in the additional information table may not be directly applicable to country-specific methods developed for methane conversion factor (MCF) calculations. If relevant data cannot be provided in the additional information box, information on how the MCF is derived should be described in the NIR.**~~

~~**Rice cultivation**~~

~~**More specific information than is required in CRF table 4.C could be provided. For example, when disaggregating by more than one region within a country and/or by growing season, provide additional information on disaggregation and related data in the NIR. Where available, provide activity data and scaling factors by soil type and rice cultivar in the NIR.**~~

~~**Agricultural soils**~~

~~**More specific information than is required in CRF table 4.D could be provided. For example,**~~

~~**• The IPCC Guidelines do not provide methodologies for the calculation of CH_4 emissions or removals by agricultural soils. If reporting such data, Annex I Parties should provide in the NIR additional information (activity data and emission factors) used to make these estimates;**~~

~~**• In addition to the data required in the additional information box of table 4.D, disaggregated values for $Frac_{GRAZ}$ according to animal type, and for $Frac_{BURN}$ according to crop types, should be provided in the NIR.**~~

~~**Prescribed burning of savannas and field burning of agricultural residues**~~

~~**More specific information than is required in CRF tables 4.E and 4.F could be provided. For example, the IPCC Guidelines do not provide methodologies for the calculation of CO_2 emissions from savanna burning or agricultural residues burning. If reporting such data,**~~

~~Annex I Parties should provide in the NIR additional information (activity data and emission factors) used to make these estimates.~~

~~Land-use, land-use change and forestry~~

~~More specific information than is required in the CRF for each land-use category and for subcategories could be provided, for example:~~

~~• When providing estimates by subdivisions, additional information on disaggregation and related data in the NIR~~

~~• Separate reporting of CO_2 emissions from biomass burning, including wildfires and controlled burning~~

~~• For those Parties choosing to report harvested wood products, detailed information on CO_2 emissions and removals from harvested wood products, including information by product type and disposal~~

~~• Information on how double counting and omissions between the agriculture and LULUCF sectors have been avoided.~~

~~Waste~~

~~Solid waste disposal and waste incineration~~

~~More specific information than is required in CRF tables 6.A and 6.C could be provided, e.g.,~~

~~• All relevant information used in the calculation should be provided in the NIR, if it is not already included in the additional information box of the CRF~~

~~• Composition of landfilled waste (%), according to paper and paperboard, food and garden waste, plastics, glass, textiles, other (specify according to inert or organic waste, respectively)~~

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~~• Fraction of wastes recycled~~

~~• Fraction of wastes incinerated~~

~~• Number of solid waste disposal sites recovering CH_4.~~

~~Waste-water handling~~

~~More specific information than is required in CRF table 6.B could be provided. For example, with regard to data on N_2O from waste-water handling to be reported in CRF table 6.B, Annex I Parties using other methods for estimation of N_2O emissions from human sewage or waste-water treatment should provide in the NIR corresponding information on methods, activity data and emission factors used.~~

III. Specific proposals for the revision of Common reporting Format tables

III.1 General issues

The EU would like to highlight the following more general issues related to the common reporting format:

- The CRF should keep the LULUCF and agriculture sector separate in CRF summary tables, trend tables, sectoral and background tables. Further considerations among Parties are necessary how to allocate some of the revised source categories from the AFOLU chapter to the LULUCF and agriculture sector to achieve an allocation which should be close to the existing allocation of source categories under LULUCF and AFOLU.
- The reporting of CO_2 transport and storage as proposed in the energy sectoral table of Annex 8A.2 of the 2006 IPCC Guidelines should be included in the CRF in Table 1 Sectoral report for energy. A new background table needs to be developed for this purpose. The EU considers Table 1.4b Energy Background Table CO_2 Transport, Injection and Storage – Overview in Annex 8A.2 of the 2006 IPCC Guidelines as a good basis that could be implemented in the CRF.
- A separate table for indirect CO_2 and N_2O emissions should be included (see previous comments in section I)
- Delete key category table from CRF. This is currently reported in both the NIR and the CRF and the EU would like to avoid double reporting and prefers the reporting in the NIR.
- The usefulness and necessity of the additional information boxes in the CRF should be reassessed and potentially streamlined and clearer linked to the respective tier for which the information is valid.
- The CRF should keep information about uncertainties of reported estimates. At this moment Parties have to estimate uncertainties in separate environment and report in suggested layout. This makes uncertainty analysis complicated due to use of at least three files (one file with CRF data, second one with detailed estimates, third one for reporting)
- Due to the outstanding work related to methodological issues in the LULUCF and agriculture sector, the EU needs further time to consider the related implications on the CRF and does not yet provide specific views on these tables in this submission. Changes in these areas should not yet be implemented by the UNFCCC secretariat.
- The EU needs further consideration of the implications of the re-allocation of the non-energy use of fuels under the IPPU sector, e.g. in relation to the reference approach and the current checks or related to the additional fuel types proposed for waste fuels in the energy sector of the 2006 IPCC Guidelines. Changes in these areas should not yet be implemented by the UNFCCC secretariat.

While considering possible changes to the CRF tables, EU considered some possible changes or improvements related to the CRF software as well. The EU would like to highlight these in this submission, as they could be also part of the work to be possibly initiated by the secretariat.

- In general a more modular system of the CRF reporter software allowing different organizations to take responsibility for completing the different sectoral components of the CRF tool and allowing them to be integrated with a management overview of completeness and progress would be very helpful.
- A web based interface would allow the system to collect data directly into a centralized database and minimize problems with installing the CRF onto organizations computers.
- The inclusion of specific QA/QC processes in the CRF software could help to improve the quality and the transparency of the inventory reports. These checks could derive from the UNFCCC Article 8 review S&A part 2 and include f.e. visual and computational time series checks, Implied Emission Factor and Double counting checks for activities that overlap sectors.
- Testing and proper development of the software with users in mind is essential for the software to be an improvement. EU experts will be pleased to contribute to the CRF development, and/or to be consulted if that is practicable
- The CRF submission should include an open format XML file (which should be produced as an output of the CRF Reporter Software, but not necessarily using this software)
- The CRF should export tables without password protection. At this moment password protection is applied to each cell of CRF Excel tables. This makes uncertainty and key sources analysis complicated. Exported CRF tables cannot be used for internal purposes. The only way to extract data from CRF is linking spreadsheets.

III.2 Changes to specific common reporting formet tables

Energy - combustion

- Additional disaggregation of 1A1a Electricity and Heat Production to 1A1ai Electricity Generation, 1A1aii Combined Heat and power Generation and 1A1aiii Heat Plants: OK to be implemented in Table 1 sectoral report for energy and Table 1.A(a) Sectoral background data for energy
- Additional disaggregation of 1A1c Manufacture of Solid Fuels and Other Energy Industries: EU needs to further consider this.
- Additional disaggregation of 1A2f to m: OK to be implemented in Table 1 sectoral report for energy and Table 1.A(a) Sectoral background data for energy.
- Further disaggregation of 1A3a Civil aviation into international and domestic aviation in 2006 IPCC Guidelines. This split is not in line with the reporting of international emissions from aviation as memo items in the CRF and should therefore not be implemented. It maybe logic to rename civil aviation into domestic aviation in the CRF, but the EU suggests no further disaggregation.
- Further disaggregation of 1A3b Road Transportation into many subcategories proposed in 2006 IPCC Guidelines. The subcategories used for the estimation of transport emissions depend on country-specific methodologies and aggregations. Therefore the suggested split may not be appropriate for all Parties. This level of detail should be provided in the NIR, but not in the CRF as it is anyway not comparable across countries. The EU therefore suggests not implementing this additional disaggregation for 1A3b suggested in 2006 IPCC Guidelines.

- Further disaggregation of 1A3d (water-borne) Navigation into international and domestic in 2006 IPCC Guidelines. This split is not in line with the reporting of international emissions from aviation as memo items in the CRF and should therefore not be implemented.
- Further disaggregation of 1A3e Other Transportation into pipelines transport and off-road transport in 2006 IPCC Guidelines. The EU suggests to implement a disaggregation into 1A3ei Pipeline Transport and 1A3eii Other (please specify) in the CRF Table 1.A(a) Sectoral report for energy.
- In all subcategories of the transport sector the fuel category "biomass" should be included as separate fuel in order to facilitate the transparent reporting of biofuels.
- Further disaggregation of 1A4c Agriculture/ Forestry/ Fishing/ Fish Farms into Stationary, off-road vehicles and fishing. The suggested split to subcategories is ok and should be implemented in the CRF.
- Further disaggregation of 1A5b Other/mobile into aviation, water-borne and other. The EU suggests not implementing this additional split in the CRF.
- 2006 IPCC Guidelines propose six fuel groups liquid, solid, gas, other fossil fuels, peat and biomass instead of former five fuel groups (liquid, solid, gaseous, biomass and other). The former fuel types "municipal solid waste" and "industrial waste" are split into Municipal Waste (non-biomass fraction), Industrial waste, Waste oils and Municipal Waste (biomass fraction). The EU supports the implementation of the six fuel groups in the sectoral background tables for energy, but need further considerations related to the waste fuel types.
- 2006 IPCC Guidelines propose to report CO_2 capture in a separate column in the energy background tables. The EU supports this way of implementation of reporting on CO_2 capture.

Energy – fugitive emissions

- Further disaggregation of 1B1ai Underground Mines to abandoned underground mines. The EU supports this new subcategory but the new category 1B1ai4 Flaring of drained Methane or Conversion of Methane to CO_2 should not be implemented because there would be a high risk of double counting with other categories and because source categories should not be designed for conversion of CH_4 to CO_2. This can be implemented in Table 1.B.1 and Table 1.
- New category 1B1b uncontrolled combustion and burning of coal dumps: does not seem extremely relevant for the EU but ok to be implemented in the CRF background and sectoral tables.
- New disaggregation of 1B2 Oil and natural gas: The EU supports the rearrangement of subcategories. This can be implemented in Table 1.B.2 and Table 1

CO_2 transport and storage: see comments in general section

Industrial processes and product use

- 2006 IPCC guidelines suggest new source categories 2A3 Glass Production and 2A4 Other Process Uses of Carbonates and further disaggregates 2A4 into 3 subcategories The EU suggests to implement 2A3 and 2A4 in to CRF, but potentially not the further disaggregation of 2A4.

- 2006 IPCC guidelines suggest new source categories 2B4 Caprolactam etc., 2B6 Titanium Dioxide Production, 2B7 Soda Ash Production, 2B8 Petrochemical and Carbon Black Production and subdivides 2B8 into a to f. The EU supports these changes and they could be implemented in the CRF.
- 2006 IPCC guidelines suggest a separate category for 2B9 Fluorochemical Production with two subcategories. The EU supports these changes and they could be implemented in the CRF.
- 2006 IPCC guidelines suggest new categories 2C5 Lead Production and 2C6 Zinc Production: The EU needs further consideration of these changes and would not like to implement them at this point in time in the CRF.
- The EU needs further time to consider split of non-energy products between energy and IPPU sector, this includes the reporting in the new category 2D Non-energy products from fuels and solvent use.
- 2006 IPCC guidelines suggest new source category 2E Electronic industry with 5 subcategories. The EU supports these changes and they could be implemented in the CRF.
- 2006 IPCC guidelines suggest renamed source category 2G Other Product Manufacture and Use with 4 subcategories. The EU supports these changes and the 4 subcategories and they could be implemented in the CRF. However, the categories 2G1 and 2G2 and 2G3 should not be further subdivided in the CRF.
- The EU also needs further consideration of the allocation of CO_2 removal from the atmosphere during urea manufacturing in the industrial processes sector and the new reporting of the related emissions in category 3C3 Urea fertilization in the agriculture sector. At present these emissions seem to be part of the industrial processes sector and are not treated as carbon stored in products.

Waste

2006 IPCC guidelines suggest a new category biological treatment of solid waste and rename the existing categories. The EU supports both changes and the subcategories and the changes could be implemented in the CRF. In CRF Table 6.A the additional information box should be deleted as this information is not related to the estimation methods for this category.

Paper no. 3: Japan

Submission with respect to the revision of the UNFCCC Annex I reporting guidelines (September 2010)

This submission was prepared following the request of SBSTA at its 32nd session to submit additional views on the revision of the UNFCCC Annex I reporting guidelines, including the CRF tables, and areas in which the secretariat can initiate work on these tables.
Japan welcomes the opportunity to submit the following comments on these issues. Please also refer to Japan's submission on the UNFCCC Annex I reporting guidelines submitted February 2009[1] and February 2010[2].

1. The UNFCCC Annex I Reporting Guidelines

- To facilitate smooth compilation of GHG inventories and users' understanding of the inventories, the guidelines should improve the clarity of definitions of all notation keys and include examples. Also, it may be, for example, necessary to examine the criteria for "emissions that need not be included in the inventory (i.e. not a problem even if emissions reported as "NE"=Not Estimated)." Relating to this, it is necessary to consider the possibility of adding a new notation key such as "CI (=considered insignificant)."
- The text regarding potential F-gas emissions in paragraph 21 can be deleted as this is not considered Tier 1 methodology in the 2006 IPCC Guidelines.

2. CRF Table Structure

2.1 General

- Reporting tables that follow the categories of the Revised 1996 IPCC Guidelines and the Good Practice Guidance (2000) should be deleted.
- Set up and order of the categories in the CRF tables should match those of the 2006 IPCC Guidelines to the extent possible.
- The number of parameters for reporting in the additional information section should be minimized as much as possible, and the necessary information should be reported in NIR.
- It is easier to understand if the explanation of "IE" and "NE" is shown in the Background Data Tables where "IE" and "NE" is actually used, instead of showing in a summary of Table 9(a) or in a cell comment.
- It is also easier to understand if the tiers used for the emission estimation are shown in the Background Data Tables instead of the Summary 3 table.
- The treatment of "With LULUCF and Without LULUCF" cells should be considered, taking into account future SBSTA discussions on this issue.
- Categories of emissions and removals that have no explanation on the methodologies such as estimation method of emissions or default emission factors in the 2006 IPCC Guidelines should be shaded to differentiate from categories with explanation.

[1] http://unfccc.int/resource/docs/2009/sbsta/eng/misc03.pdf
[2] http://unfccc.int/resource/docs/2010/sbsta/eng/misc01.pdf

2.2 Energy Sector

- In the submission of February 2010, Japan presented the comment “With respect to whether the emissions from waste associated with energy use and recovery should be counted in the energy sector or in the waste sector, it may be necessary to continue to make further consideration carefully at IPCC and COP.” If greenhouse gas emissions from waste that are used as energy and waste combustion associated with energy recovery is allocated in the energy sector as in the past, a new column should be created so that these emissions can be reported as a reference in both the energy sector and the waste sector.

2.3 IPPU Sector

- In the current CRF, SF_6 emissions are reported as Gg SF_6 units but HFCs and PFCs are reported as Gg-CO_2 eq. The new CRF should use the same units here to avoid confusion.

2.4 AFOLU Sector

- The format of the background table and sectoral table should be such that reporting data on the current agriculture sector and LULUCF sector can be reported separately. In doing so, the separation of emissions from biomass burning into agriculture sector and LULUCF sector should also be considered, since emissions from biomass burning in each sector are reported separately in the current CRF whereas they are integrated in the 2006 IPCC Guidelines. The separation of direct N_2O emissions from managed soils should be considered as well.
- In the present CRF Reporter, the cattle population for enteric fermentation of livestock is reported just as the cattle population for manure management. These should be entered separately as these could be different.
- Regarding the livestock manure management, categories for reporting N_2O emissions from manure management in the current CRF are different from categories of manure management in the Revised 1996 IPCC Guidelines or those in the Good Practice Guidance (2000), and there are fewer categories of manure management in CRF. The categories of manure management in the new CRF should match to those in the 2006 IPCC Guidelines. Also, CH_4 emissions are reported by livestock species; however, they should be able to be reported by category of manure management as well as N_2O emissions.
- Regarding livestock manure management, CH_4 emission factor is shown by temperature range in the 2006 IPCC Guideline. It is favorable that additional information for CRF is entered by climate regions as the present manner due to the difficulty of obtaining information by temperatures.
- The way of reporting HWP needs to be considered: whether it should be reported in G. OTHER of SECTORAL REPORTING TABLE as the present manner, or it should be reported as the 6th carbon pool in BACKGROUND sheet of each land-use.
- Countries which use the stock-change method should be able to enter a numerical value directly into the cell “Net Change” of carbon stock change in living biomass in SECTORAL BACKGROUND sheets.
- For converted land in Land (LULUCF), "Gains" in living biomass corresponds to biomass growth for 20 years, which is a default time span, after the conversion, and "Net carbon stock change" in DOM and soils corresponds to removals/emissions for 20 years after the conversion, whereas "Losses" in living biomass basically corresponds to emissions only in the year of the conversion. Since "Activity Data (Area)" is cumulative area of converted land for past 20 years, the numerical values shown in IEF for "Losses" in living biomass to be meaningless in many cases, and deletion of IEF in LAND sector on CRF should be considered so as to avoid confusions.
- In the new CRF corresponding to the 2006 IPCC Guidelines, it may be unnecessary to set “Controlled Burning” and “Wildfires” into subcategories in LULUCF sector as defaults.

2.5 Waste Sector

- Though the current CRF is quite influenced by default estimation methods, unused data in the estimation is requested to be entered in many cases for countries uses higher tier or country-specific methods. As we mentioned in General above, the additional information reported in the CRF should be organized and simple as possible. For example, only the information relevant to actual activity data and emissions are reported in CRF, and concomitant relative parameter and additional information are reported in NIR.

Paper no. 4: Norway

Norwegian submission on the revision of the UNFCCC Annex I reporting guidelines

At its thirty-second session in June 2010, the Subsidiary Body for Scientific and Technological Advice (SBSTA) invited Parties to submit additional views on the revision of the UNFCCC Annex I reporting guidelines, including the CRF tables, and areas in which the secretariat can initiate work on these tables.
Norway welcomes the opportunity to submit our views in response to this invitation.

General issues
The revision of the UNFCCC Annex I reporting guidelines should, to ensure consistency and to minimize work load, as far as possible take into account the reporting requirements related to the Kyoto protocol and subsequent reporting requirements. The reporting guidelines should also as far as possible be in accordance with the UNECE reporting requirements, to facilitate comparison across gases and to achieve synergy effects in the data compilation.

Recalculations and time-series consistency
Comprehensive alterations in the reporting requirements and the CRF tables will lead to an extensive need for recalculations, and data sources may not be available for new categories. Norway thus suggests that the changes are kept to a minimum. Chapter 5 “Time series consistency” in the 2006 Guidelines could be expanded to include suggestions on methodologies for ensuring time series consistency in the cases where the 2006 Guidelines, and appurtenant CRF tables, differ from the previous versions of the Guidelines and CRF tables.

Scope of gases
Norway believes that the scope of greenhouse gases (GHG) reported in national GHG inventories should be extended. Norway is in favour of including all gases where IPCC through its 2006 Guidelines and 4th Assessment Report (AR4) gives a methodology and provides updated global warming potentials (GWP).

Global warming potentials (GWP)
To calculate the CO_2-equivalent of emissions and removals, the GWPs from the IPCC’s second assessment report should be replaced by the updated and extended table of GWPs from the AR4, using a 100-year time horizon.

Indirect CO_2 emissions
The 2006 IPCC Guidelines includes guidance on calculating the indirect emissions from CO_2. Norway believes that reporting of greenhouse gases should be as comprehensive as possible. By having the option of not reporting indirect emission, we are concerned that countries could underestimate their emissions.

Norway has chosen to report on indirect CO_2 emissions in its GHG inventory. One example is from loading, unloading and storage of crude oil on the oil fields offshore and at oil terminals on shore. This causes direct emissions of CH_4 and NMVOC and indirect emissions of CO_2 from oxidized NMVOC and CH_4.

Hence, Norway believes that the revised reporting guidelines should require a mandatory reporting of indirect CO_2 emissions. However, until the accounting rules are clear, the reporting guidelines should require separate reporting table for indirect emissions.

Potential F-gas emissions

The 2006 IPCC Guidelines has replaced the estimation of potential F-gas emissions by new Tier 1 approaches resulting in actual emissions. There should therefore no longer be a requirement to report potential F-gas emissions.

Merging of "agriculture" and "land use, land use change and forestry"

The 2006 IPCC Guidelines has merged the sectors "agriculture" and "land use, land use change and forestry (LULUCF)" into one sector "AFOLU". In principle, Norway believes that the reporting should follow the AFOLU delineation. However, accounting rules for land-use, land-use change and forestry are presently not clarified.

Until the accounting rules are clear, Norway believes that the agriculture and LULUCF sectors should be kept separate when it comes to reporting.

The common reporting format (CRF)

General

Recalculations to ensure time series consistency is a resource demanding exercise, and comprehensive changes in the reporting requirements for many source categories will place disproportionately large burdens on the reporting parties. Norway thus believes that changes in the CRF only should be made when necessary due to the inclusion of new sources or obvious shortcomings in the current CRF.

It would be very useful if the guidelines could clarify the definitions of the notation keys and include examples.

Energy

- The reporting of CO_2 transport and storage should be included in the CRF tables. For transparency, it should be easy to identify CO_2 transport and storage. This could be a separate row in the fugitive emissions or in a separate background table.
- The CRF tables do not include any specified placement for combustion emissions related to oil and gas extraction. Norway suggests that 1 A 1 c ii is disaggregated to include one or two separate categories, equivalent to 1 B 2 a and b for fugitive emissions in order to pinpoint emissions from these sources.
- In the 2006 IPCC Guidelines, fugitive emissions from venting and flaring are separate subcategories under the oil and natural gas subcategories. Norway wishes to continue to have the option of reporting combined flaring from oil and gas. There are fields that produce both oil and gas and it will be impossible to identify the fugitive emissions from venting and flaring into the separate subcategories under the oil and natural gas.
- The energy balance and reference approach shows the consumption of the andoes and anodes paste in the country in which the anodes and anode paste are produced, while the sectoral approach shows emissions in the country in which the anodes are used for metal production.

This does not have any effect on calculated emissions, but influences the consistency and verification towards other data sources. Norway suggests that the reference and sectoral approach are coordinated in a way that facilitates consistency and verification.

- Norway does not believe that the emissions from combustion of feedstock fuel use should be reported under industrial processes and product use instead of under the energy sector.
- The level of disaggregation of emissions from Manufacturing industries and construction proposed in the 2006 IPCC Guidelines is too detailed.
- Norway prefers the current way of separate reporting of emissions from domestic and international aviation.

Industrial processes

- Norway believes that the merging of the sectors “industrial processes” and “solvents and other product use” to the sector “Industrial processes and Product use” should be reflected in the CRF tables.
- Time series consistency must be considered when disaggregated source categories are included in the reporting requirements.
- The introduction of a separate source category for glass production in the CRF tables will be welcomed by Norway.
- Norway would welcome a separate source category for anode production.
- Norway believes that the CO_2 emissions from limestone and dolomite consumption in ferroalloy production should be reported under the category ferroalloys production (2C2), and not under the category 2A3. This allocation of emissions is the one set out in the 2006 IPCC Guidelines, which encourage all emissions from carbonate consumption to be reported under the category in which they are consumed. Reporting these emissions under 2A3 will make the reporting more complicated without improving the accuracy of the inventory.

AFOLU/LULUCF- Agriculture

- The CRF structure should keep the background tables and the sectoral tables for agriculture and LULUCF separate.
- New source categories for agriculture and for land based emissions and removals (e.g. CO_2 emissions from urea fertilization or CO_2 emissions from peatlands) should be considered and addressed.
- Additional tables may be needed to deal with the reporting on harvested wood products.