

## **EIG's views on the implementation of the MPGs for the transparency framework under the Paris Agreement (SBSTA 51)**

18 November 2019

In response to the call for submissions contained in the conclusions of SBSTA 50 on Methodological issues under the Paris Agreement, the Environmental Integrity Group (EIG) is pleased to submit additional views<sup>1</sup> on

- (1) Experience with using the Intergovernmental Panel on Climate Change 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 IPCC Guidelines), the common reporting format, the transition to the 2006 IPCC Guidelines and countries' experience with that transition;
- (2) Common tabular format tables for tracking progress in implementing and achieving nationally determined contributions;
- (3) Tables for reporting on support needed and received, and support mobilized;
- (4) Approaches to operationalizing the flexibility for those developing country Parties that need it in the light of their capacities, as defined in Dec. 18/CMA.1.

The EIG welcomes the opportunity to share experiences with existing reporting formats. With a view to the successful implementation of the enhanced transparency framework established under the Paris Agreement, the group considers it essential to build on experience gained so far and to take such experience into account when specifying the implementation of the framework. The members of the EIG are diverse with respect to the reporting approaches (use of reporting guidance and templates) as well as the national circumstances influencing the implementation of reporting tasks. Thus, the group believes that sharing its experiences could benefit the ongoing efforts to implement the MPGs adopted at COP24.

### **(1.a) Experience with using the 2006 IPCC Guidelines, the transition to these guidelines, and experience with that transition**

The EIG is pleased to present case studies for Mexico, Monaco, the Republic of Korea and Switzerland.

#### **Case study 1: Mexico**

- Mexico has submitted six National Communications and two BURs to the UNFCCC. The most recent, submitted in 2018, contains a national GHG emissions inventory, baseline year 2015, and tables that account for the most important mitigation actions that were suitable for quantification.
- Pursuant to Mexico's General Law on Climate Change (LGCC), the National Institute of Ecology and Climate Change (INECC) is in charge of the GHG emissions inventory and of the National Communications to the UNFCCC. INECC has also integrated the BURs and serves as technical focal point for the ICA process and FSV session.
- The LGCC establishes the periodic update of the inventory as follows: a) annually for emissions from fossil fuels use; b) biannually for other emissions different from fossil fuels and land use and land use change and forestry; and c) every four years for LULUCF. This means that the inventory is fully updated every 4 years.
- During the last inventory update for the Sixth National Communication, and with the view of supporting the ETF of the Paris Agreement, Mexico decided to report all categories with IPCC 2006 methodologies moving from the 1996 IPCC methodologies that were mandatory for non-Annex I countries. In the 5th National Communication, some improvements were already presented, using

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<sup>1</sup> The present submission complements the views expressed by the EIG in its submission of 15 June 2019.

IPCC Good Practice Guidance, and thus the migration to 2006 IPCC methodologies was a gradual process. Also, Mexico presented the time series 1990-2015 with a consistent methodological approach. It is foreseen that a tracking system for mitigation actions will be developed based on 2006 IPCC methodologies as well.

- The process to fully move from IPCC 1996 to IPCC 2006 methodologies took approximately 3 years; the process was supported partially through the GEF resources allocated to Mexico for the Sixth National Communication. Mexico also had to allocate INECC's personnel and resources to be able to create necessary expertise in the country.
- In the Sixth National Communication, for the first time, Mexico estimated the uncertainties of the inventory using a Tier 1 approach. The exercise was rather complicated, primarily because a great number of the activity data collected for the inventory doesn't include the necessary information to estimate uncertainty ranges. It was necessary, in many cases, to use the default data proposed by the IPCC, acknowledging that this data most certainly does not reflect national circumstances. Mexico would like to underscore that this issue does not seem to have an easy solution, since it would be rather expensive to collect data in many sectors that would be robust enough for proper uncertainty analysis.
- The technical team of INECC was trained by the GHG Management Institute, based in Canada, in the following courses: 501 IPCC: Introduction to Cross-Cutting Issues (15 persons); 511 IPCC: Energy (3 persons); 521 IPCC: Industrial Processes and Other Product Use (4 persons); 531 IPCC: Agriculture (4 persons); 541 IPCC: Forestry and Other Land Uses (2 persons); 551 IPCC: Waste (5 persons).
- In addition, consultants were hired for data collection from agriculture, livestock, industrial processes, oil and gas, and for the uncertainty analysis.
- In order to engage stakeholders in the inventory assessment, 5 workshops were conducted at the beginning of the inventory update to gather data and advice from experts, and at the end to present results. Special working groups were established with the National Commission for Forests and with PEMEX (the national oil company). Meetings were held with industrial chambers, such as Iron and Steel, Cement, Paper, and Chemical Industry.
- Regarding QA/QC, Mexico developed a Quality Control System for the inventory. This system includes an internal QC process, mainly consisting of documentation procedures and a peer review process. The QA was done with experts from the UN roster that were hired through the Sixth National Communication project.
- Regarding IPCC 2006 methodologies, new gases need to be reported (fluorinated gases). Mexico was able to report them due to a project conducted by UNIDO in Mexico for the Montreal protocol work. It is foreseen that additional support will be needed for ensuing reporting periods. Other efforts to implement IPCC 2006 include the reporting of N<sub>2</sub>O from new sources (caprolactam, glyoxylic acid) and CO<sub>2</sub> (titanium dioxide); activity data for these categories were only available through industry interactions through an industry study (but a formal process is not yet established).
- Main challenges that still remain by category:
  - Land: activity data comes from maps of land use cover developed by the National Institute for Statistics; however, further work is required to better inform emissions trends throughout the time series. INECC is exploring the use of other methodologies that could rely on better resolution satellite data. Regarding emission factors, better algorithms are needed to cover different vegetation in Mexico. The country is still working on the representation of wetlands, particularly to assess coastal vegetation appropriately.

- Livestock emissions (enteric fermentation) resulted as a key category that is estimated with Tier 1 method, and thus the TTE recommended to estimate national emission factors; however, it has not been possible to conduct such a study due to diversity of climate and animal populations in the country, resulting in high costs. Also, since there are no mitigation options for enteric fermentation (Mexico has explored some, but these still seem unsatisfactory for the country), national experts don't believe that allocating resources for this would be cost-effective for mitigation policy.
- IPCC 2006 methodologies require the reporting of emissions coming from the electronic industry; however, INECC was not able to obtain activity data (i.e. production of electronic screens at individual production plants). Some flexibility should be considered for reporting new categories, particularly when there are no default options in the IPCC guidelines.

### **Case study 2: Monaco**

- Monaco is pleased to present information on the implementation of the 2006 IPCC Guidelines by the second smallest country in the world and consequently in a context of a small inventory team.
- The main difficulties to implement the 2006 IPCC Guidelines was to collect data for the new sectors which was not available in the national statistics, and to adapt some methodologies to national circumstances.
- However, this work was undertaken as part of the regular inventory improvement program and it did not present any significant difficulties.
- The changes that have occurred in the national system in Monaco are not due to the improvement of methodologies, but to reinforce the quality of the data and reports, and to improve the procedures and the calculation tools.
- Therefore, when human resources are limited, the switch to the new guidelines has to be planned well to take into account the differences and to get a grasp of how the new tools work.

### **Case study 3: Republic of Korea**

- In order to monitor and track progress made in implementing and achieving national greenhouse gas (GHG) reduction targets, it is required and considered essential to compile the GHG inventory on a regular basis based on a national GHG Measurement/Reporting/Verification (MRV) system with associated competent institutions.
- In the case of the Republic of Korea, pursuant to the 「Framework Act on Low Carbon, Green Growth (April 2010)」, the Greenhouse Gas Inventory and Research Centre (GIR) is in overall charge of tasks related to the national GHG inventory. GIR, on an annual basis, compiles and reviews the sectoral inventory data, as estimated by the responsible ministries in accordance with the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, and finalizes the data following the deliberations of the National GHG Inventory Management Committee<sup>2</sup>. Afterwards, GIR publishes the approved national GHG inventory and regularly submits the pertinent information through its national communication and biennial update report.
- The Republic of Korea is currently in the gradual transition of applying the 2006 IPCC Guidelines into its national GHG MRV system as outlined below:

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<sup>2</sup> The Management Committee is the decision-making body that approves the final draft of the national GHG inventory, country-specific emission/removal factors, etc. submitted subsequent to the consultation of the Working Group. The Management Committee, chaired by the Vice Minister of Environment, is an association of no more than 15 commissioners comprising director general-level officials from the sectoral responsible ministries and Statistics Korea (KOSTAT), as well as experts from academia and the public sector that have been recommended by the responsible ministries.

- Legal and institutional arrangements have been established, e.g. 「Basic Plan for the adoption of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories for the National GHG Inventory (August 2014)」 , 「Master Management Plan for the National GHG Inventory (2015~2019) (June 2015)」 ;
- A roadmap for the adoption of the 2006 IPCC Guidelines has been prepared and estimation trials are underway;
- The IT system for data management is being developed; and
- Relevant activity data as well as country-specific emission factors are being examined in accordance with the five-year mid-term Implementation Plan aimed at quality improvement.
- It is noted that the classifications not only of the national GHG inventory based on the 2006 IPCC Guidelines but also of the national statistics used for activity data such as the energy balance need to be further disaggregated and/or re-categorized according to the classification of the mitigation policies and measures (e.g. ETS and non-ETS) for domestic use. This allows the national GHG inventory to be utilized efficiently to monitor the effects of the mitigation policies and measures (e.g. the Korean Emissions Trading System) in achieving the Party's nationally determined contribution (NDC).
- The Republic of Korea's national GHG inventory system, backed up by its legal and institutional framework, has helped make continuous quality improvements to the inventory as well as respond to various external changes including methodologies. Based on this experience, GIR, in collaboration with the UNFCCC Secretariat, has been operating the international GHG inventory training program for capacity building in developing countries, the 'UNFCCC-GIR-CASTT Programme on Greenhouse Gases.'

#### **Case study 4: Switzerland**

- Switzerland started implementing the 2006 IPCC Guidelines in the run-up to its 2013 inventory submission. The main challenge perceived was the allocation of data according to the new category structure which involved a substantive investment in time. This mainly concerned the LULUCF sector and IPPU, where additional categories called for a different disaggregation of data or an allocation to a new category (e.g. non-energy use of fuels).
- No changes to institutional arrangements or human resources were necessary; however, all data providers had to actively familiarize themselves with the new guidelines in advance.
- Benefits from the switch to the 2006 IPCC Guidelines arose where the quality of emission estimates improved due to better methodologies, updated default emission factors in the tier 1 approach or more detailed explanations in the guidelines with regard to good practice. In addition, in several instances (e.g., non-energy use of fuels, solid waste disposal sites, various categories in IPPU) the new methodologies contained in the 2006 IPCC Guidelines facilitated estimation of sources or sinks.
- During the implementation of the transition, very helpful guidance was provided by the IPCC Primer document (IPCC 2008: 2006 IPCC Guidelines for National Greenhouse Gas Inventories – A primer. Prepared by the National Greenhouse Gas Inventories Programme. Publisher: IGES, Japan). In this document, all important changes between 1996 and 2006 guidelines are documented and detailed information related to differences in categorisation can be found. After the initial transition to the new guidelines, further improvements were implemented following the annual review cycles.

**(1.b) Experience with the common reporting format (CRF) for GHG inventories, including experience-based remarks relating to the implementation of the ETF and the promotion of enhanced reporting by Parties**

The EIG is of the view that one single set of tables, applicable to all Parties, should be developed in order to facilitate improved reporting and transparency over time. For several reasons, and as already indicated in its previous submission, the EIG considers the common reporting format (CRF) tables<sup>3</sup>, as presently used by developed country Parties for GHG inventory reporting, the most appropriate basis on which to build.

The CRF tables follow the same sectoral structure as is defined in the MPGs (see the Annex to Dec.18/CMA.1, paragraph 50: "Each Party shall report the following sectors: energy, industrial processes and product use, agriculture, LULUCF and waste"). For reporting according to the MPGs, LULUCF data are needed separately from agriculture data to apply the key category and the insignificance thresholds (paragraphs 25 and 32 of the MPGs, respectively). Furthermore, several paragraphs of the MPGs refer to the LULUCF sector and/or related data (see paragraphs 47, 77, 81, 82 and 100), which recommends the use of tables in line with the structure already contained in the CRF.

Independently of their suitability and their proven usability, some amendments to the existing CRF tables are necessary. To fully conform with the Annex to Dec. 18/CMA.1, the common tables under the Paris Agreement should reflect the provisions related to the use of flexibility (see section (4) on 'Approaches to operationalizing flexibility...' below and the specific proposals contained in the tables presented in Annex I to this submission) while taking into account experiences gained in reporting up to date. At the same time, it would be beneficial to better align the categories in the existing CRF tables with the 2006 IPCC Guidelines to facilitate improved reporting as well as avoid confusion in estimating the inventory.

The EIG acknowledges that, up to now, some Parties have reported based on the IPCC inventory software and thus are not familiar with the CRF tables. As a matter of fact, Mexico has not used the CRF for the inventory. Instead, as the inventory progressed, Mexico has developed its own reporting tables to be able to include more information in the national communications than what is strictly required from developing countries. Experience with these tables could be useful for some other developing countries. The tables used by Mexico can be consulted in its Sixth National Communication.

Such experiences need to be borne in mind when implementing the MPGs. The EIG considers it important that the transfer of data from IPCC to CRF table formats is facilitated, e.g. through supporting material (such as the IPCC Primer document<sup>4</sup>) or focused assistance provided by the UNFCCC Secretariat.

Experience from reporting indicates that targeted capacity building on the use of the CRF Reporter Tool may be a useful way to assist Parties in the handling and submission of data. As many Parties may start using the software for the first time, establishing a helpdesk or an online forum for inventory compilers (moderated, e.g. by the UNFCCC Secretariat) could be another means to help practitioners in familiarizing themselves with the tool. User friendly electronic reporting formats, ideally with functionalities for automated data import/transfer, would further facilitate reporting by Parties.

The CRF Reporter Tool itself has now been in use for several years and various improvements have been implemented, making it a valuable instrument for producing high quality inventories. Further improvements may be envisaged as more Parties are using the tool:

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<sup>3</sup> contained in Annex II to Dec. 24/CP.19

<sup>4</sup> IPCC 2008, 2006 IPCC Guidelines for National Greenhouse Gas Inventories – A primer. Prepared by the National Greenhouse Gas Inventories Programme. Publisher: IGES, Japan

- In the short term, it is of particular importance to bring the performance of the software in line with an increasing number of Parties. Past experience has shown that there are bottlenecks that urgently need to be overcome.
- In the medium term, software improvements should be envisaged to further enhance the usability of the tool. Practitioners' experiences indicate that adding basic feedback functionalities (e.g. plausibility checks) could help inventory compilers to identify "simple" mistakes. Simplifying the use of units (e.g. by eliminating, to the extent possible, different units of weight such as t, kt or Gg) would be another option to reduce the risk of input errors. Table cells filled in beforehand with pertinent default information may be another approach worth considering to facilitate reporting by Parties. A survey amongst experienced practitioners could unearth additional ideas to improve the usefulness of the software while reducing the burden on Parties.

In the past, Parties to the Kyoto Protocol have routinely provided additional information that is not part of the CRF but is based on IPCC Good Practice Guidance for the LULUCF sector. As this information would serve reporting in line with the guiding principles of the Paris Agreement, Parties may consider integrating additional tables (e.g. on areas subject to natural disturbances, on forest management reference levels, or on changes in carbon pools).

Valuable input on potential ways to assist Parties in reporting can also be derived from the experience of national experts participating in the review process under the UNFCCC. While the main purpose of reviews lies in the assessment of the implementation of Party commitments, reviews also provide an important opportunity for capacity building and information sharing. Feedback from individual reviews, e.g. via the lead reviewer meetings, could be used more systematically to identify ways to facilitate the reporting process, in particular with regard to the preparation of GHG inventories.

Finally, efforts should be made to harmonize reporting under the UNFCCC with other global statistics (e.g. IEA – energy, FAO – agriculture, OECD – GHG emissions, etc.) to reduce reporting burden on Parties and make better use of synergy potentials.

## **(2) Common tabular format tables for tracking progress in implementing and achieving nationally determined contributions**

The development of CTFs is about deciding on the structure and the reporting format of the information that was agreed as part of the MPGs. The MPGs are clear as to what information Parties need to report and the level of discretion Parties have in the process of reporting. The questions of what to report and to what extent a given piece of information is to be reported were settled in the MPGs. Common tabular formats (CTFs) are not about those settled questions. CTFs should be consistent with the MPGs and neither create new, nor alter existing obligations within the MPGs. The task ahead is solely a matter of design and shall result in maximum presentational ease and clarity of the information agreed as part of the MPGs. In order to achieve this, two design principles will be crucial: no duplication and commonality.

Firstly, duplicative and unnecessary reporting should be avoided. There are overlaps in terms of requested information both within the MPGs and between the MPGs and the NDC accounting guidance. Mechanical translation of those redundancies into tabular formats would lead to duplicative reporting. Even within the NDC accounting guidance, a careful distinction should be made between guidance on accounting to be followed and guidance on the information to be reported. Guidance on accounting is guidance to be followed in Parties' accounting practices, and thus it is to be embedded and reflected in the actual accounting information. Such guidance in itself need not lead to a reporting obligation (see Tables 3(a) and 3(b) of Annex II of this submission). The final CTFs should ensure that all necessary information is reported in the place most relevant.

Secondly, tabular formats for tracking progress should be common. The mandate unequivocally requests SBSTA to develop common tabular formats. The MPGs, in accordance with which the CTFs should be

developed, are common. Furthermore, this implies that CTFs will have to be designed to accommodate all NDC types in one format.

In the view of the EIG, when implementing the mandate given to SBSTA, there are two important considerations to be taken into account.

(1) The current tabular formats under the Convention should serve as the basic reference for the development of a new set of CTFs, building on past experience as presented by the case studies above. However, given the different arrangements under the enhanced transparency framework, some amendments to the current tables are inevitable. For example, unlike the existing CTFs, which were designed to be used for the 2020 targets, CTFs for the biennial transparency reports should be designed for perennial use. Hence, things that will become inapplicable with the lapse of time (e.g., specific reporting years) should be expressed in a durable fashion, as exemplified by Tables 4, 7 and 8 of Annex II of this submission.

(2) Tabular formats have inherent structural advantages that, if utilized properly, can enable efficient reporting. For example, a tabular format with a multi-cellular structure can be designed to directly allow for comparisons and assessment in relation to the implementation and achievement of NDCs over time. As exemplified by the proposed tabular format (Table 4), the information referred to in paragraphs 69 and 70 of the MPGs is by and large provided by the structural design of the exemplar tabular format.

### **(3) Tables for reporting on support needed and received, and support mobilized**

Overall, the EIG sees progress on the tables for reporting on support. The information contained therein is becoming more dependable and more relevant. There are, however, areas for simplifying the system without sacrificing the quality of information provided. Requirements regarding reporting formats and underlying definitions and methodologies need to be better aligned between National Reports and Biennial Reports. In this regard, the work at SBSTA 50 has been a good start on which Parties can build.

### **(4) Approaches to operationalizing flexibility for those developing country Parties that need it in the light of their capacities, as defined in Dec. 18/CMA.1**

In accordance with Article 13, paragraph 2, of the Paris Agreement, the enhanced transparency framework shall provide flexibility in the implementation of the provisions of Article 13 to those developing country Parties that need it in the light of their capacities. Hence, the MPGs reflect such flexibility. There are six flexibility provisions<sup>5</sup> in regard to the national inventory report. The EIG suggests that four flexibility provisions can be applied by using notation keys and footnotes in the existing tables while the remaining two provisions can be addressed separately in the national inventory document (NID), as outlined in the table below (see next page).

Annex I to this submission gives illustrative examples for the operationalization of flexibility in the current CRF tables 7 (Summary Overview for Key Categories), 9 (Completeness – Information on Notation Keys), Summary 2 (Summary Report for CO<sub>2</sub> Equivalent Emissions) and 10 (Emission Trends), respectively. In these sample tables, the proposed use of footnote marks, notation keys and other elements to reference flexibility is highlighted in yellow.

It is important to note that those developing country Parties that apply the flexibility provisions need to endeavour to improve their reporting and provide self-determined estimated time frames for such improvements (paragraph 6 of the MPGs).

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<sup>5</sup> Key category analysis (para. 25), uncertainty assessment (para. 29), assessment of completeness (para. 32), quality assurance/quality control (para. 34-35), covered gases (para. 48), time series (para. 57-58)

<b>Provision</b>	<b>Scope</b>	<b>Approach</b>
<b>Key category analysis</b> (para. 25)	threshold no lower than 85% instead of 95%	<b>footnote</b> to the name of the table; <b>additional cell</b> for the threshold applied
<b>Uncertainty assessment</b> (para. 29)	at a minimum, a qualitative discussion of uncertainty for key categories, instead of a quantitative estimation and a qualitative discussion	addressed separately in the NID (e.g. narrative, etc.)
<b>Assessment of completeness</b> (para. 32)	use “NE” when the level of emissions is below 0.1% of the national total GHG emissions (excl. LULUCF) or 1,000 kt CO <sub>2</sub> eq, whichever is lower, instead of 0.05% or 500 kt CO <sub>2</sub> eq	<b>footnote</b> to the name of the table; <b>notation key</b> in the explanation cell
<b>Quality assurance/ quality control</b> (para. 34-35)	- “encouraged to elaborate an inventory QA/QC plan” instead of “shall” - “encouraged to implement and provide information on QC procedures” instead of “shall”	addressed separately in the NID (e.g. narrative, etc.)
<b>Covered gases</b> (para. 48)	at least 3 gases (CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O) and any of the additional 4 gases (+ HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub> ) that are included in the Party’s NDC under Article 4 of the Paris Agreement, are covered by an activity under Article 6, or have been previously reported vs. 7 gases	<b>footnote</b> to the name of the table; <b>notation key</b> to the relevant cells
<b>Time series</b> (para. 57-58)	- (time series information) a consistent annual time series from at least 2020 onwards plus the NDC reference year/period data instead of data from 1990 onwards - (the latest reporting year) no more than 3 years prior to the submission of the NIR instead of 2 years	<b>footnote</b> to the name of the table

# Annex I – Proposals for the Implementation of Flexibility Provisions in the Common Reporting Formats for GHG Inventory Tables

## 1) Key category analysis (MPGs, para. 25)

TABLE 7 SUMMARY OVERVIEW FOR KEY CATEGORIES <sup>(1)(2)</sup>					Year
(Sheet 1 of 1)					Submission
Key category identification threshold applied:					Country
					85 per cent
KEY CATEGORIES OF EMISSIONS AND REMOVALS	Gas	Criteria used for key source identification		Key category excluding LULUCF	Key category including LULUCF
		L	T		
<i>For example: 3.B Manure management</i>	CH <sub>4</sub>	X		X	

Note: L = Level assessment; T = Trend assessment.

<sup>(1)</sup> This table is filled automatically based on the IPCC Tier 1 methodology.

<sup>(2)</sup> Table content subject to the flexibility provision pursuant to paragraph 25 of the MPGs: « Each Party shall identify key categories for the starting year and the latest reporting year referred to in chapter II.E.3, including and excluding land use, land-use change and forestry (LULUCF) categories, using approach 1, for both level and trend assessment, by implementing a key category analysis consistent with the IPCC guidelines referred to in paragraph 20; those developing country Parties that need flexibility in the light of their capacities with respect to this provision have the flexibility to instead identify key categories using a threshold no lower than 85 per cent in place of the 95 per cent threshold defined in the IPCC guidelines referred to in paragraph 20, allowing a focus on improving fewer categories and prioritizing resources.»

## 2) Assessment of completeness (MPGs, para. 32)

TABLE 9 COMPLETENESS - INFORMATION ON NOTATION KEYS <sup>(1)</sup>					Year
(Sheet 1 of 1)					Submission
					Country
Sources and sinks not estimated ("NE") <sup>(2)</sup>					
GHG	Sector <sup>(3)</sup>	Source/sink category <sup>(3)</sup>	Explanation		
CO <sub>2</sub>	<i>For example (developing country Parties): Industrial Processes and Product Use</i>	<i>2.A Mineral Industry/2.A.4 Other Process Uses of Carbonates/2.A.4.c Non-metallurgical Magnesium Production</i>	<i>Insignificant (FLEX): detailed explanation for not reporting these sources and sinks, or reference to section/chapter in NID, where further explanation can be found</i>		
CH <sub>4</sub>					
N <sub>2</sub> O					
HFCs					
PFCs					
SF <sub>6</sub>					
Unspecified mix of HFCs and					
NF <sub>3</sub>					
Sources and sinks reported elsewhere ("IE") <sup>(4)</sup>					
GHG	Source/sink category	Allocation as per IPCC Guidelines	Allocation used by the Party	Explanation	
CO <sub>2</sub>					
CH <sub>4</sub>					
N <sub>2</sub> O					
HFCs					
PFCs					
SF <sub>6</sub>					
Unspecified mix of HFCs and					
NF <sub>3</sub>					

<sup>(1)</sup> Table content subject to the flexibility provision pursuant to paragraph 32 of the MPGs: «Each Party may use the notation key "NE" (not estimated) when the estimates would be insignificant in terms of level according to the following considerations: emissions from a category should only be considered insignificant if the likely level of emissions is below 0.05 per cent of the national total GHG emissions, excluding LULUCF, or 500 kilotonnes of carbon dioxide equivalent (kt CO<sub>2</sub> eq), whichever is lower. The total national aggregate of estimated emissions for all gases from categories considered insignificant shall remain below 0.1 per cent of the national total GHG emissions, excluding LULUCF. Parties should use approximated activity data and default IPCC emission factors to derive a likely level of emissions for the respective category. Those developing country Parties that need flexibility in the light of their capacities with respect to this provision have the flexibility to instead consider emissions insignificant if the likely level of emissions is below 0.1 per cent of the national total GHG emissions, excluding LULUCF, or 1,000 kt CO<sub>2</sub> eq, whichever is lower. The total national aggregate of estimated emissions for all gases from categories considered insignificant, in this case, shall remain below 0.2 per cent of the national total GHG emissions, excluding LULUCF.»  
In line with paragraph 6 of the MPGs, developing country Parties shall clearly indicate the table cells to which this kind of flexibility is applied by use of the notation key "FLEX".

<sup>(2)</sup> Clearly indicate sources and sinks which are considered in the 2006 IPCC Guidelines but are not considered in the submitted inventory. Explain the reason for not reporting these sources and sinks, in order to avoid arbitrary interpretations. An entry should be made for each source/sink category for which the notation key "NE" (not estimated) is entered in the sectoral tables.

<sup>(3)</sup> Indicate omitted source/sink category.

<sup>(4)</sup> Clearly indicate sources and sinks in the submitted inventory that are allocated to a sector other than that indicated by the 2006 IPCC Guidelines. Show the sector indicated in the 2006 IPCC Guidelines and the sector to which the source or sink is allocated in the submitted inventory. Explain the reason for reporting these sources and sinks in a different sector/category. An entry should be made for each source/sink for which the notation key "IE" (included elsewhere) is used in the sectoral tables.

### 3) Covered gases (MPGs, para. 48)

SUMMARY 2 SUMMARY REPORT FOR CO <sub>2</sub> EQUIVALENT EMISSIONS <sup>(1)</sup>									
(Sheet 1 of 1)									Year Submission Country
GREENHOUSE GAS SOURCE AND SINK CATEGORIES	CO <sub>2</sub> <sup>(2)</sup>	CH <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	Unspecified mix of HFCs and PFCs	NF <sub>3</sub>	Total
CO <sub>2</sub> equivalent (kt)									
<b>Total (net emissions)<sup>(2)</sup></b>									
<b>1. Energy</b>									
A. Fuel combustion (sectoral approach)									
1. Energy industries									
2. Manufacturing industries and construction									
3. Transport									
4. Other sectors									
5. Other									
B. Fugitive emissions from fuels									
1. Solid fuels									
2. Oil and natural gas and other emissions from energy production									
C. CO <sub>2</sub> transport and storage									
<b>2. Industrial processes and product use</b>				FLEX	FLEX	FLEX	FLEX	FLEX	
A. Mineral industry									
B. Chemical industry				FLEX	FLEX	FLEX	FLEX	FLEX	
C. Metal industry				FLEX	FLEX	FLEX	FLEX	FLEX	
D. Non-energy products from fuels and solvent use									
E. Electronic industry				FLEX	FLEX	FLEX	FLEX	FLEX	
F. Product uses as ODS substitutes				FLEX	FLEX	FLEX	FLEX	FLEX	
G. Other product manufacture and use				FLEX	FLEX	FLEX	FLEX	FLEX	
H. Other				FLEX	FLEX	FLEX	FLEX	FLEX	
<b>3. Agriculture</b>									
A. Enteric fermentation									
B. Manure management									
C. Rice cultivation									
D. Agricultural soils									
E. Prescribed burning of savannahs									
F. Field burning of agricultural residues									
G. Liming									
H. Urea application									
I. Other carbon-containing fertilizers									
J. Other									
<b>4. Land use, land-use change and forestry<sup>(2)</sup></b>									
A. Forest land									
B. Cropland									
C. Grassland									
D. Wetlands									
E. Settlements									
F. Other land									
G. Harvested wood products									
H. Other									
<b>5. Waste</b>									
A. Solid waste disposal									
B. Biological treatment of solid waste									
C. Incineration and open burning of waste									
D. Waste water treatment and discharge									
E. Other									
<b>6. Other (as specified in summary 1.A)</b>				FLEX	FLEX	FLEX	FLEX	FLEX	
				FLEX	FLEX	FLEX	FLEX	FLEX	
<b>Memo items:<sup>(3)</sup></b>									
<b>International bunkers</b>									
Aviation									
Navigation									
<b>Multilateral operations</b>									
<b>CO<sub>2</sub> emissions from biomass</b>									
<b>CO<sub>2</sub> captured</b>									
<b>Long-term storage of C in waste disposal sites</b>									
<b>Indirect N<sub>2</sub>O</b>									
<b>Indirect CO<sub>2</sub><sup>(4)</sup></b>									
<b>Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry</b>									
<b>Total CO<sub>2</sub> equivalent emissions with land use, land-use change and forestry</b>									
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, without land use, land-use change and forestry</b>									
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, with land use, land-use change and forestry</b>									

<sup>(1)</sup> Table content subject to the flexibility provision pursuant to paragraph 48 of the MPGs: «Each Party shall report seven gases (CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>)); those developing country Parties that need flexibility in the light of their capacities with respect to this provision have the flexibility to instead report at least three gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) as well as any of the additional four gases (HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>) that are included in the Party's NDC under Article 4 of the Paris Agreement, are covered by an activity under Article 6 of the Paris Agreement, or have been previously reported.»  
In line with paragraph 6 of the MPGs, developing country Parties shall clearly indicate the table cells to which this kind of flexibility is applied by use of the notation key "FLEX".

<sup>(2)</sup> For carbon dioxide (CO<sub>2</sub>) from land use, land-use change and forestry the net emissions/removals are to be reported. For the purposes of reporting, the signs for removals are always negative (-) and for emissions positive (+).

<sup>(3)</sup> See footnote 7 to table Summary 1.A.

<sup>(4)</sup> In accordance with the UNFCCC Annex I inventory reporting guidelines, for Parties that decide to report indirect CO<sub>2</sub>, the national totals shall be provided with and without indirect CO<sub>2</sub>.

#### 4) Time series (MPGs, para. 57-58)

TABLE 10 EMISSION TRENDS <sup>(1)</sup>								Year
GHG CO <sub>2</sub> eq emissions								Submission
(Sheet 1 of 6)								Country
GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Base year <sup>(2)</sup> / NDC reference year/period	Starting year (X)	X+1	X+2	...	Latest reporting year	Change from base to latest reported year	
	(kt CO <sub>2</sub> eq)							%
<b>Total (net emissions)<sup>(3)</sup></b>								
<b>1. Energy</b>								
A. Fuel combustion (sectoral approach)								
1. Energy industries								
2. Manufacturing industries and construction								
3. Transport								
4. Other sectors								
5. Other								
B. Fugitive emissions from fuels								
1. Solid fuels								
2. Oil and natural gas and their emissions from energy production								
C. CO <sub>2</sub> transport and storage								
<b>2. Industrial Processes</b>								
A. Mineral industry								
B. Chemical industry								
C. Metal industry								
D. Non-energy products from fuels and solvent use								
E. Electronic industry								
F. Product uses as ODS substitutes								
G. Other product manufacture and use								
H. Other								
<b>3. Agriculture</b>								
A. Enteric fermentation								
B. Manure management								
C. Rice cultivation								
D. Agricultural soils								
E. Prescribed burning of savannahs								
F. Field burning of agricultural residues								
G. Liming								
H. Urea application								
I. Other carbon-containing fertilizers								
J. Other								
<b>4. Land use, land-use change and forestry<sup>(3)</sup></b>								
A. Forest land								
B. Cropland								
C. Grassland								
D. Wetlands								
E. Settlements								
F. Other land								
G. Harvested wood products								
H. Other								
<b>5. Waste</b>								
A. Solid waste disposal								
B. Biological treatment of solid waste								
C. Incineration and open burning of waste								
D. Waste water treatment and discharge								
E. Other								
<b>6. Other (as specified in summary 1A)</b>								
<b>Memo items:</b>								
<b>International bunkers</b>								
Aviation								
Navigation								
<b>Multilateral operations</b>								
CO <sub>2</sub> emissions from biomass								
CO <sub>2</sub> captured								
Long-term storage of C in waste disposal sites								
Indirect N <sub>2</sub> O								
<b>Indirect CO<sub>2</sub><sup>(4)</sup></b>								
<b>Total CO<sub>2</sub> equivalent emissions without land use, land-use change and forestry</b>								
<b>Total CO<sub>2</sub> equivalent emissions with land use, land-use change and forestry</b>								
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, without land use, land-use change and forestry</b>								
<b>Total CO<sub>2</sub> equivalent emissions, including indirect CO<sub>2</sub>, with land use, land-use change and forestry</b>								

<sup>(1)</sup> Table content subject to the flexibility provision pursuant to paragraphs 57 and 58 of the MPGs: «Each Party shall report a consistent annual time series starting from 1990; those developing country Parties that need flexibility in the light of their capacities with respect to this provision have the flexibility to instead report data covering, at a minimum, the reference year/period for its NDC under Article 4 of the Paris Agreement and, in addition, a consistent annual time series from at least 2020 onwards.» «For each Party, the latest reporting year shall be no more than two years prior to the submission of its national inventory report; those developing country Parties that need flexibility in the light of their capacities with respect to this provision have the flexibility to instead have their latest reporting year as three years prior to the submission of their national inventory report.»

Note: All the other footnotes for this table are given at the end of the table on sheet 6.

## **Annex II – Proposals for the Implementation of Common Tabular Formats for Tracking Progress**

(see separate Excel document 'EIG 2019-11-18 - Annex II Tracking progress tables')