



Guidance on work in Break-out Groups (BOGs) Energy, IPPU, AFOLU and Waste

Joint 1st and 2nd IPCC Expert Meeting
on Short-Lived Climate Forcers (SLCFs)

Virtual (online) meeting, 11-22 October 2021

Pavel Shermanau

IPCC TFI TSU

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INTERGOVERNMENTAL PANEL ON climate change



Introduction

IPCC TFI TSU has prepared the following documents for the meeting for each BOG (Energy, IPPU, AFOLU and Waste):

- Table 1 Summary Information
- Table 2 List of Categories
- Issue paper
- Compilation Table (synthesis of information collected by TSU and all feedbacks from participants) in MS Excel
- Guidance to experts

Table 1 (Summary Information) contains category list and SLCF species with pre-filled information on methodological issues and comments, and empty cells on global applicability and gaps *(to be filled in by experts)*

Table 2 (Category List) is based on Table 1 and excerpts only the category list with SLCF species and comments

✓ *These Tables are intended to be used as an input to the Scoping Meeting for a new Methodology Report on SLCFs to produce its draft outline*

Table 1 Summary Information

IPCC code	Category	SLCF	IPCC Method	Alternative methodology	Available EFs/ Parameters	Globally applicable?	Gaps (if any)	Comments
A	B	C	D	E	F	G	H	I
2B Chemical Industry								
2B1	Ammonia production	NOx, NH3, CO, NMVOC, SOx	Yes, with modification, the method is slightly different: fuel and carbon content (IPCC-CO2) per output of ammonia vs. EF of SLCF per output of ammonia		EMEP/EEA, UNEP, US AP-42, REAS, MEP China	Yes		D: In the 2006 IPCC Guidelines, in the case of ammonia production no distinction is made between fuel and feedstock emissions with all emissions accounted for in the IPPU Sector. The method for CO2 and SLCFs is slightly different: input of fuel and its carbon content (IPCC-CO2) by output of ammonia vs. EF of SLCF by output of ammonia (SLCF). F: EMEP/EEA – NOx, CO, NH3. NMVOC - Tier2, Tier 2 - technology specific UNEP – NOx, CO, NH3, SOx, NMVOC US AP-42 – NH3, SO2, CO, NMVOC REAS – NH3 MEP China – NMVOC
2B2	Nitric Acid production	NOx, NH3	Yes		EMEP/EEA, UNEP, US AP-42	Yes		F: EMEP/EEA – NOx. UNEP – NOx and NH3 US AP-42 – NOx
2B3	Adipic Acid production	NOx, CO, NMVOC	Yes		EMEP/EEA, UNEP, US AP-42	Yes		F: EMEP/EEA – NOx, CO UNEP and US AP-42 – NOx, CO, NMVOC

Table 2 Category List

IPCC code	Category	SLCF	Comments
A	B	C	I
2B Chemical Industry			
2B1	Ammonia production	NOx, NH3, CO, NMVOC, SOx	In the 2006 IPCC Guidelines, in the case of ammonia production no distinction is made between fuel and feedstock emissions with all emissions accounted for in the IPPU Sector. The method for CO2 and SLCFs is slightly different: input of fuel and its carbon content (IPCC-CO2) by output of ammonia vs. EF of SLCF by output of ammonia (SLCF). EMEP/EEA – NOx, CO, NH3. NMVOC - Tier2, Tier 2 - technology specific UNEP – NOx, CO, NH3, SOx, NMVOC US AP-42 – NH3, SO2, CO, NMVOC REAS – NH3 MEP China – NMVOC
2B2	Nitric Acid production	NOx, NH3	EMEP/EEA – NOx. UNEP – NOx and NH3 US AP-42 – NOx
2B3	Adipic Acid production	NOx, CO, NMVOC	EMEP/EEA – NOx, CO UNEP and US AP-42 – NOx, CO, NMVOC

Compilation

Table 1 (Summary Information) is based on information compiled from:

- Three methodological frameworks
 - EMEP/EEA. Air Pollutant Emission Inventory Guidebook 2019
<https://www.eea.europa.eu/publications/emep-eea-guidebook-2019>
 - UNEP. Atmospheric Brown Clouds: Emission Inventory Manual
<https://www.unep.org/resources/report/atmospheric-brown-clouds-emission-inventory-manual>
 - US EPA. AP-42: Compilation of Air Emissions Factors
<https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors>
- Experts' feedbacks received after the kick-off meeting

	Energy	IPPU	AFOLU	Waste
Experts' feedbacks	17	12	13	11

Tables

The idea of the tables is to facilitate discussion and to achieve the following goals of the meeting:

- to compile a complete list of SLCF source categories and associated SLCF species (the main goal)
- to compile a list of knowledge gaps (methods, activity data, emission factors and parameters, etc.) (the secondary goal)

BOGs work – Table 1 and Issue paper

Participants in each BOG are requested to consider Table 1 (Summary Information) together with the sectoral Issue Paper, and to go through the sectoral category list with intention to identify the following:

- Completeness

(participants are welcomed to add or to delete any source category and/or SLCF species)

- Global applicability of methods provided for the SLCF source categories
- Significance of source categories, where no methods are available *(as per expert judgment)*
- Any knowledge gaps

BOGs work – Table 1 and Issue Paper

- Global applicability

Is the method applicable to every country in the world so far as can be judged?

The answer should be based on the availability of activity data as national/regional/global datasets

- Gaps

Any gaps in methods, activity data, emission factors, etc.

IPCC code	Category	SLCF	IPCC Method	Alternative methodology	Available EFs/ Parameters	Globally applicable?	Gaps (if any)	Comments
A	B	C	D	E	F	G	H	I
2B Chemical Industry								
2B1	Ammonia production	NOx, NH3, CO, NMVOC, SOx	Yes, with modification, the method is slightly different: fuel and carbon content (IPCC-CO2) per output of ammonia vs. EF of SLCF per output of ammonia		EMEP/EEA, UNEP, US AP-42, REAS, MEP China	Yes		D. In the 2006 IPCC Guidelines, in the case of ammonia production no distinction is made between fuel and feedstock emissions with all emissions accounted for in the IPPU Sector. The method for CO2 and SLCFs is slightly different: input of fuel and its carbon content (IPCC-CO2) by output of ammonia vs. EF of SLCF by output of ammonia (SLCF). F. EMEP/EEA – NOx, CO, NH3, NMVOC - Tier2, Tier2-technology specific UNEP – NOx, CO, NH3, SOx, NMVOC US AP-42 – NH3, SO2, CO, NMVOC REAS – NH3 MEP China – NMVOC
2B2	Nitric Acid production	NOx, NH3	Yes		EMEP/EEA, UNEP, US AP-42	Yes		F. EMEP/EEA – NOx UNEP – NOx and NH3 US AP-42 – NOx
2B3	Adipic Acid production	NOx, CO, NMVOC	Yes		EMEP/EEA, UNEP, US AP-42	Yes		F. EMEP/EEA – NOx, CO UNEP and US AP-42 – NOx, CO, NMVOC

Column G (for non-IPCC methods) and Column H have not been pre-compiled by TSU

BOGs work – Table 2 and Report

- Based on Table 1 and Issue paper, the Table 2 (Category List) should be produced

IPCC code	Category	SLCF	Comments
A	B	C	I
2B Chemical Industry			
2B1	Ammonia production	NO _x , NH ₃ , CO, NMVOC, SO _x	In the 2006 IPCC Guidelines, in the case of ammonia production no distinction is made between fuel and feedstock emissions with all emissions accounted for in the IPPU Sector. The method for CO ₂ and SLCFs is slightly different: input of fuel and its carbon content (IPCC-CO ₂) by output of ammonia vs. EF of SLCF by output of ammonia (SLCF). EMEP/EEA – NO _x , CO, NH ₃ , NMVOC - Tier2, Tier 2 - technology specific UNEP – NO _x , CO, NH ₃ , SO _x , NMVOC US AP-42 – NH ₃ , SO ₂ , CO, NMVOC REAS – NH ₃ MEP China – NMVOC
2B2	Nitric Acid production	NO _x , NH ₃	EMEP/EEA – NO _x . UNEP – NO _x and NH ₃ US AP-42 – NO _x
2B3	Adipic Acid production	NO _x , CO, NMVOC	EMEP/EEA – NO _x , CO UNEP and US AP-42 – NO _x , CO, NMVOC

- Also, each BOG should produce a report, which describes the most important sectoral issues, including issues with different views, possible cross-sectoral issues and a list of knowledge gaps
- All sectoral issues will be useful as input for the third expert meeting and the Scoping meeting. Based on BOGs' reports, the Meeting report will be produced

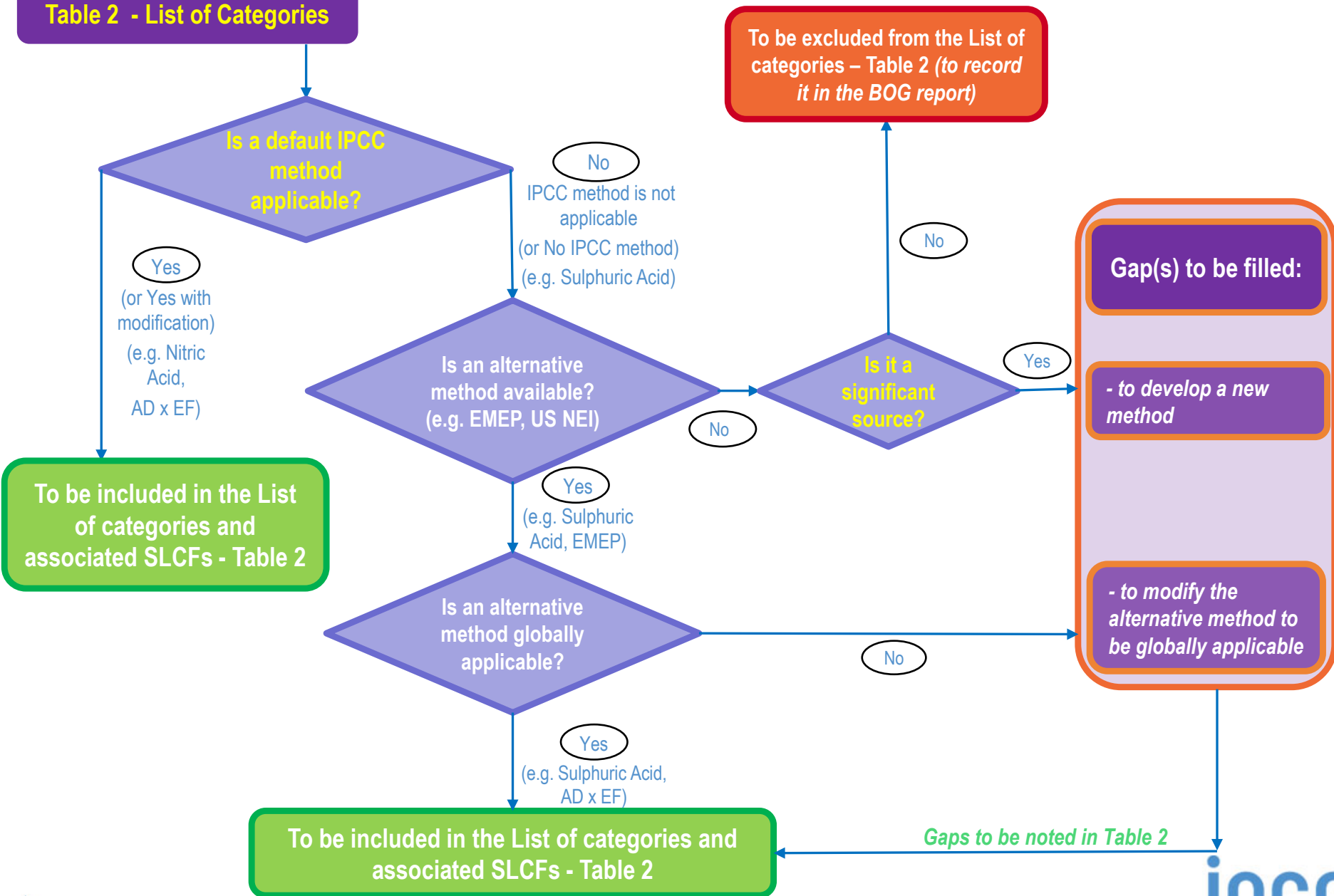
BOGs work - Table 2

IPCC Guidelines provide methods that can be applied under any national circumstances.

Accordingly, categories and associated SLCF species to focus on are the following:

- **SLCF categories that can be estimated by applying a default IPCC method (Tier 1)**
 - *Since IPCC methods are designed to be used world-wide, all source categories, for which SLCF emissions can be estimated by applying an IPCC method (or a modified IPCC method), have been included in the list of source categories – Table 2*
- **SLCF categories that cannot be estimated by applying a default IPCC method. However, alternative methodological sources (e.g., EMEP/EEA) provide a method**
 - *These sources are included in Table 2 by providing comments (Column I) either to confirm the global applicability or to clarify gaps (data/information) that prevent its global application*
- **Other significant SLCF sources for which methods are not currently available**
 - *These sources are expected to be included in Table 2, only if judged to be significant. A note on data/information gaps that prevent to establish a methodology should be provided*

Table 2 - List of Categories



Logistics

- 4 sessions for each BOG with different timing
 - see Agenda
- Final Closing Plenary
 - each BOG will have 30 min for the BOG Report
- All documents are on Electronic Discussion Group (EDG)
<https://www.ipcc-nggip.iges.or.jp/forumtree/login/>
 - username: SLCF_IPCC
 - password: slcf_meetings
- For sharing or uploading materials, please send it to IPCC TFI TSU
 - email: nggip-meetings@iges.or.jp
- Zoom links for the BOGs sessions and Plenaries
 - see Invitation letter
- Zoom sessions including chats are recorded and stored in the EDG

MS Teams for Work and Communication

IPCC SLCF Team was created

Posts for Communication

General

Welcome to the team!

Here are some things to get going...

Create more channels

Open the FAQ

TM Toru Matsumoto 17/03 10:59
Welcome to the SLCF team! This is "General" channel. For identifying clearly, it is recommended to create a channel for your group, and post messages and upload files on it.

The sectoral docs are posted in Files

AFOLU

Name	Modified	Modified By
01_SLCF_AFOLU_Table 1.docx	Monday at 19:03	Sandro Federici
02_SLCF_AFOLU_Table 2.docx	September 30	Sandro Federici
03_SLCF_AFOLU_Issue Paper.docx	Monday at 19:12	Sandro Federici
04_SLCF_AFOLU_Compilation Table.xlsx	September 30	Eduard Karapogho...
AFOLU BOG report.docx	September 30	Eduard Karapogho...

MS Teams (<https://teams.microsoft.com/>)

MS Word file can be edited online

Please, use a track-change mode

02_SLCF_IPPU_Table 2.docx

File Home Insert Layout References Reviewing View Help Table Open in Desktop App Tell me what you want to do Reviewing Copy Link

Editor Word Count Check Access Mark All as Read Translate New Comment Delete Show Comments Track Changes

Table 2 Category list (IPPU)

A	B	C	I
IPC Code	Category	SLCF	Comments
2A Mineral Industry			
2A1	Cement production	BC [OC, SO2]	<p>According to the 2006 IPCC Guidelines combustion emissions should be estimated in Energy sector. EMEP/EEA presents only BC (PM) in IPPU and estimates other gases (NOx, CO, NMVOC, SO2) in Energy, although sulphur is contained in fuels and raw materials. It is assumed that these SLCF emissions to be mainly due to the combustion of the solid and waste fuels and to be included in category 1.A.2.f Manufacturing industries—Non Metallic Minerals (Energy Sector), also double-counting should be avoided.</p> <p>OC emission factor is presented in the US SPECIATE, UNEP, REAS, EMEP/EEA – BC (incl. combustion emissions) US SPECIATE – BC, OC, PM2.5, SO4, NO3, remaining PM species UNEP – SOx, BC, OC, PM2.5, PM10 (incl. combustion emissions) US AP-42 – NOx, NMVOC, SOx, CO (incl. combustion emissions) REAS – BC, OC, PM2.5, PM10 (incl. combustion emissions) MEP China – NMVOC, PM2.5, PM10 (incl. combustion emissions)</p> <p>EME/EEA presents only BC (PM) in IPPU and estimates other gases (NOx, CO, NMVOC, SO2) in Energy, although sulphur is contained in fuels and raw materials. It is assumed that these SLCFs emissions to be...</p>
2A2	Lime production	BC [OC, SO2]	<p>According to the 2006 IPCC Guidelines combustion emissions should be estimated in Energy sector. EMEP/EEA presents only BC (PM) in IPPU and estimates other gases (NOx, CO, NMVOC, SO2) in Energy, although sulphur is contained in fuels and raw materials. It is assumed that these SLCFs emissions to be...</p> <p>OC emission factor is presented in the US SPECIATE, UNEP, REAS.</p>



Any Questions?

<https://www.ipcc-nggip.iges.or.jp/index.html>

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WMO



UNEP