WASTE EXPERT PANEL
MAY 2022

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AGENDA

➤ A new Expert Panel is just born

➤ Which contribution of the Waste sector in the national (pollutants) emissions inventories ?

➤ Updates to the 2019 EMEP/EEA GB

➤ IPCC methodology on Short Life Climate Forcers (Richard Claxton, UK)

➤ Domestic green waste burning in France (Vincent Mazin, FR)

➤ Small scale agricultural burning in Italy (Eleonora Di Cristofaro, IT)

➤ Interactive session

➤ AOB & close

A NEW EP IS JUST BORN

Expected output 1 :

➢ Living list of waste experts wanting to **get informed** about the TFEIP waste EP and working groups / **provide data** / **provide expertise**

  ✓ Roster of the CLRTAP inventory reviews (nominated by parties)

  ✓ **You want to be in the list?**

  ✓ **You want a special role in the EP (Co-chairing, following cross-cutting aspects of waste in the various EPs, ?**

  ⇒ **Send me your contact information**

      celine.gueguen2@gmail.com

A NEW EP IS JUST BORN

Expected output 2:

➢ Living list of issues/areas of improvements identified in the EMEP/EEA GB,

    ✓ Mistakes (unit, reference, values...)?

    ✓ Missing sources?

    ✓ Outdated EFs?

    ✓ Lack of transparency in the methodological description?

    ✓ Allocation issues?...

    ⇒ **Send the description of the issue / areas of improvement identified as we go along**

A NEW EP IS JUST BORN

Expected output 3:

➤ Set priorities among identified improvements

Expected output 4:

➤ Identification of waste experts which are going to contribute to the EMEP/EEA Guidebook updates

✓ Willingness

✓ Availability

A NEW EP IS JUST BORN

A sharepoint to work on :

- ✓ List of waste experts and the lList of proposed improvements
- ✓ Backgraound documents, papers
- ✓ Calculation files

Which organisation want to host the waste EP Sharepoint ?

- ➢ Is it the TFEIP one ?
- ➢ **Is it yours ?**

  ⇒**Send me your contact information**

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WHICH CONTRIBUTION OF THE WASTE SECTOR ?

Waste emissions sources documented in the EMEP/EEA GB 2019

➤ 5.A Solid waste disposal on land

✓ NMVOC (T1), TSP (T1;T3), PM10 (T1;T3), PM2.5 (T1;T3)

✓ Waste degradation (NMVOC), Waste handling (PM)

➤ 5.B.1 Composting

✓ NH3 (T2), CO (T2)

✓ Compost production, Windrow composting of garden & Parks waste

➤ 5.B.2 Anaerobic Digestion Biogas

✓ NH3-N (T1; T2)

✓ Biogas production (T1), pre-storage (T2), Storage of non-separated digestate (T2)

WHICH CONTRIBUTION OF THE WASTE SECTOR IN NT?
Waste emissions sources documented in the EMEP/EEA GB 2019

- ✓ Main pollutants, Heavy metals, POPs

- ✓ Applicable to incineration with and without energy recovery

➢ **5.C.1.a Municipal waste incineration**

- ✓ Municipal waste incineration (T1; T2)

➢ **5.C.1.b Industrial waste incineration**

- ✓ IW incineration incl. HW and sludge (T1), Sludge incineration (T2), HW (*incomplete T2*)

➢ **5.C.1.b.iii Clinical waste incineration**

- ✓ Clinical waste incineration (T1; T2)

➢ **5.C.1.b.v Cremation**

- ✓ Human bodies cremation (T1), sheep and cows carcasses (T2 for PM)

WHICH CONTRIBUTION OF THE WASTE SECTOR IN NT?

Waste emissions sources documented in the EMEP/EEA GB 2019

➢ 5.C.1.b.v Cremation

- ✓ Human bodies cremation (T1), sheep and cows carcasses (T2 for PM)

➢ 5.C.2 Open burning of waste

- ✓ Main pollutants, Heavy metals, POPs (list depending on the Tier level)

- ✓ Small scale agricultural burning (T1), open burning of forest residue (T2), orchard crops (T2)

WHICH CONTRIBUTION OF THE WASTE SECTOR IN NT?

Waste emissions sources documented in the EMEP/EEA GB 2019

➢ 5.D Wastewater handling

- ✓ NMVOC (T1 for domestic WW; T2 for industrial WW), NH3 (T2)

- ✓ Wastewater handling in WWTP (NMVOC), Latrines (NH3), Industrial wastewater handling (NMVOC)

➢ 5.E Other waste

- ✓ NH3 (T2), PM –TSP, PM10, PM2,5 (T2 for car fires and for building /house fires), PCDD-F (T2 for car fires and for building /house fires), HM – Pb, Hg, As, Cr, Cu (T2 for building/house fires)

- ✓ Sludge spreading (NH3), car fires (PM), detached, undetached houses, apartment building, industrial building fires (PM, HM, PCDD-F)

WHICH CONTRIBUTION OF THE WASTE SECTOR IN NT?

It depends !

➢ …it depends on the **pollutants** !

➢ …it depends on **country's national circumstances** !

➢ … it depends on the **inventory year** !

➢ … it depends on the **Tier method** applied to estimate emissions !

➢ …it depend on the **completeness** of the inventory !

➢ …it depends if you **include incineration with energy recovery** !

=> Example : EU27+UK, waste sub-categories contribution more than 2% to national emissions (inventories submitted in April 2021)

WASTE SUB-SECTORS > 5% OF NATIONAL EMISSIONS ?

EU27+UK	2005	2019
5A	NMVOC (LT, MT) ;	NMVOC (CY, MT)
5B1	-	-
5B2	-	-
5C1a	-	-
5C1bi	-	-
5C1bii	-	-
5C1biii	-	-
5C1biv	-	-
5C1bv	-	-
5C2	NMVOC (ES) ; PM2,5 (DE, ES, GR,HU); BC (ES, GR, HU); CO (ES, GR); PM10 (ES, GR, HU)	NMVOC (ES) ; PM2,5 (DE, ES, FR,GR, LU); BC (ES, GR, HU, IT, PL); CO (ES, GR); PM10 (DE, ES, GR)
5D1	-	-
5D2	NH3 (HU, RO);	
5E	PM10 (BE, FR, SE)	PM10 (BE, DE, FR, LU, NL)

EU27+UK	2005	2019
5A	Hg (IE)	-
5B1	-	-
5B2	-	-
5C1a	-	-
5C1bi	DIOX (PT, RO, BG); HCB (PL, BG)	DIOX (EE,PT); PCB (PT)
5C1bii	PCB (FR); Hg (FR)	HCB (SE)
5C1biii	DIOX (EE, HR, LT, LV, RO, SK,BG); HCB (HU, RO); Hg (HU, LT, LV,SK); Cd (HU), Pb (HU)	DIOX (RO); HCB (GR, LT, PT, RO)
5C1biv	DIOX (ES); HCB (FR, IT)	DIOX (ES); Cd (FR); Hg (FR); Pb (FR)
5C1bv	Hg (CZ, DK, NL, SE, SL)	Hg (CZ, ES, HU, LV, PL, SE, SL, SK); DIOX (MT); HCB (MT); PCB (DK, LT, MT)
5C2	DIOX (BE, FR, HU); Cd (ES, IT); BaP (NL); PAH (NL)	DIOX (FR); PCB (IE); Cd (ES, IT); Pb (GR)
5D1	-	-
5D2	-	-
5E	DIOX (AT, BE, CY, CZ, DE, DK, EE, ES, FI, HU, IE, LU, MT, NL, PT, SE, SL) Pb (DK); BaP (NL); PAH (NL)	DIOX (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, HU, IE, LT, LU, LV, NL, PL, PT, SE, SL) ; Pb (DK); BaP (NL); PAH (NL); PAH (DK, NL);

If you were asked to give one category/issue where the Guidebook would need improvement, what would that be?

PRELIMINARY IMPROVEMENTS IDENTIFIED

ID	Short description of the proposed improvement	Impact *	Ressources needed
5A-1	**NMVOC (Accuracy)** Update the default Tier 1 with the methodology recommended during ESD Reviews _Rational:_ the current EF proposed in the 2019 EMEP/EEA is based on UK data which appears as less accurate for other MS. Using the current Tier 1 result often in a KC which is unlikely.	Medium	**GB update** : ½ men day **Verification** : ¼ men day
5A-2	**TSP (Transparency / Accuracy)** Define more clearly associated AD	Low	**GB update** : 2 men day (including checking the original EPA document and looking for updated EF) **Verification** : ¼ men day

* Expected impact on the national inventories

PRELIMINARY IMPROVEMENTS IDENTIFIED

ID	Short description of the proposed improvement	Impact*	Ressources needed
5C1-1	**5C1bi - All pollutants (Completeness / Accuracy)** Identify EF for uncontrolled incinerators of hazardous waste (tier 2) *Rational: uncontrolled EF are documented only for sewage sludge incinerators*	Medium	**GB update** : 2 men day (including looking for the original EPA document and looking for updated EF) **Verification :** ¼ men day
5C1-2	**5C1biii - All pollutants (Completeness / Accuracy)** Update the tier 1 for clinical waste incineration *Rational: the tier 1 EF corresponds to "uncontrolled" rotary kiln in the 2019 version of the GB based on US-EPA (1993); tier 1 and tier 2 EFs are not consistent*	Medium	**GB update** : 2 men day (including looking for the original EPA document and looking for updated EF) **Verification :** ¼ men day

PRELIMINARY IMPROVEMENTS IDENTIFIED

ID	Short description of the proposed improvement	Impact*	Ressources needed
5C1-3	**All sub-sectors - All pollutants (Completeness / Accuracy)** Add a warning that when using concentration measurements to derive the mean annual EFs the confidence interval must not be subtracted *Rational:* some MS may apply underestimated EF based on data reported by operators (automatically reduced by the IC95 in their continuous Emissions Monitoring system)	Medium	**GB update + verification** : ¼ men day *No ressources needed*
5C1-4	**5C1bv - PM** Refine the PM EFs (PM2,5 vs PM10) *Rational:* PM2,5 and PM10 are identical in the 2019 GB	Low	**GB update:** 1 men day (looking for measurement campaigns) **Verification:** ¼ men day

* Expected impact on the national inventories

ID	Short description of the proposed improvement	Impact*	Ressources needed
5C2-1	All pollutants (completeness / Accuracy) Define of a more complete/relevant methodology related to open burning of waste (all types of waste, including mixed MSW waste) – landfill fires, domestic backyard burning (green and/or mixed waste), accidental tires fires, C&D waste burning, agriculture / orchard / forestry burning (existing in the 2019 EMEP/EEA GB) - AD - EFs - Allocation rules *Rational: improving the completeness is necessary because the source may be important in some countries*	High	**GB update** : 15 men day (including : preparing complete list of potential sources – including illicit and accidenal, collecting /looking for existing methodologies and FE and checking if adapted/valid ; defining missing methodologies for each type of identified waste burning : AD (including for illicit activities) and EF) **Verification** : 2 men day

| ID	Short description of the proposed improvement	Impact *	Ressources needed
5D-1	NMVOC (Accuracy) Confirm/update the EFs from wastewater treatment plants *Rational:* *the current value is from a measurement campaign done many years ago in a Turkish WWTP*	Low	**GB update:** 5 men day (looking for additional EF to increase the geographic coverage and the representativeness of the EFs) **Verification:** 1 men day

PRELIMINARY IMPROVEMENTS IDENTIFIED

ID	Short description of the proposed improvement	Impact*	Ressources needed
5E-1	All pollutants (Accuracy) Check/ update the methodology proposed for building fires (often KC for PCCDF when applying the tier 1 methodology) _Rational:_ _more and more MSs are "adapting" the default methodologies and it is getting difficult for reviewers to make a decision._	High	**GB update** : 5 men day (including : deep understanding of the original methodology (contacting the authors), identification of existing adaptation of the original methodologies and checking if adapted/valid ; definition of a "fire" (benchmark among national statistics; proposing – if necessary – an updated methodology) ; **Verification** : I men day

* Expected impact on the national inventories

5A-1 Update the T1 for NMVOC from landfilling

5A-2 Define more clearly AD for TSP from landfilling

5C1-1 Propose EF for uncontrolled incineration of HW

5C1-2 Update the T1 for clinical waste incineration

5C1-3 Add a warning on CI95

5C1-4 Refine the PM EFs for cremation

5C2-1 Complete the GB on Open burning

5D1- 1 Update the NMVOC EF from WWTP

5E-1 Check/ update the building/house fires methodology
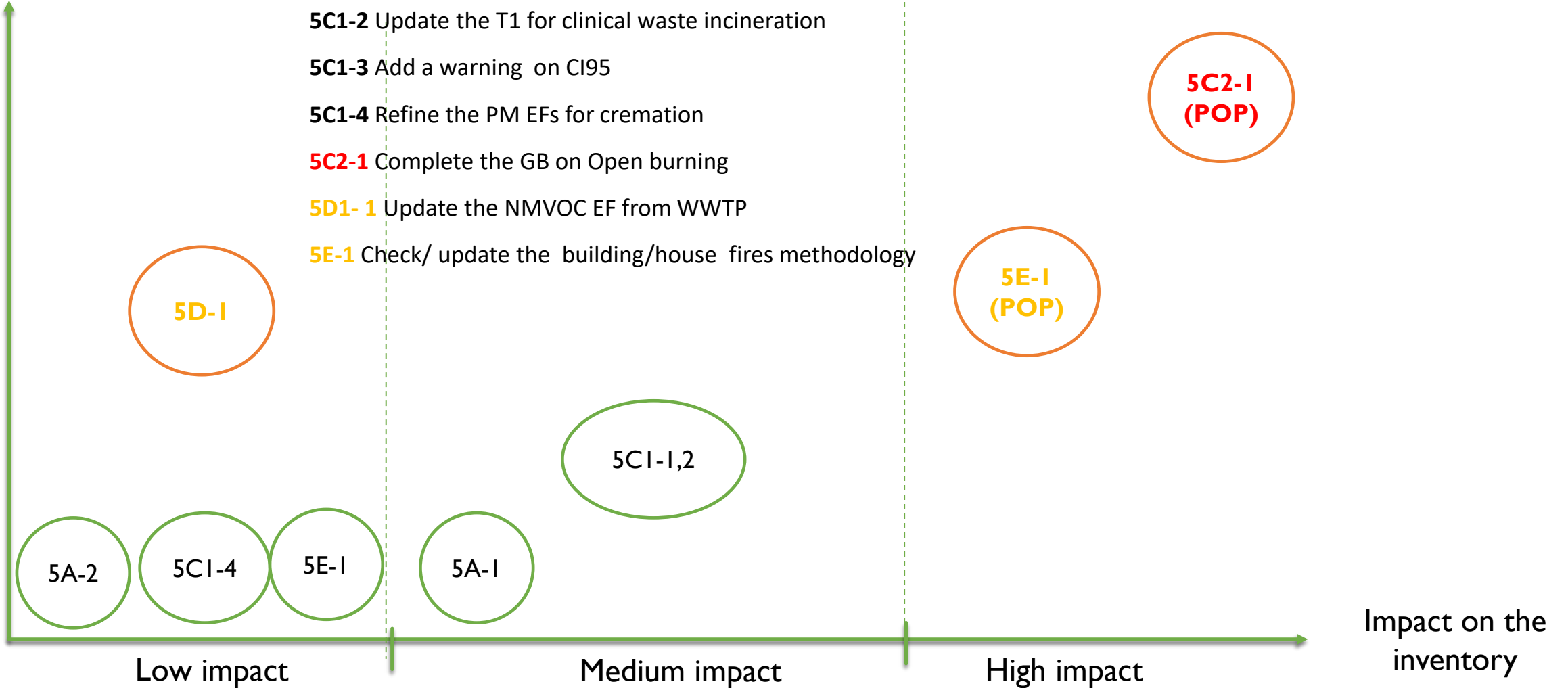
IPCC METHODOLOGY ON SLCF

Richard, the floor is yours !

SPECIAL FOCUS ON OPEN BURNING

5C2 is a real bag of tricks for inventory compilers and for reviewers !

- ✓ Small scale agricultural burning (sometimes...)

- ✓ Domestic green waste burning

- ✓ Fireworks

- ✓ Agricultural plastic burning

- ✓ Cable burning

- ✓ MSW burning

- ✓ ...or even nothing ("prohibited by law") considering no illicit activities or local and/or small scale derogations.

Vincent, the floor is yours !

Eleonora, the floor is yours !

INTERACTIVE SESSION

4 questions using Mantimeter :

➤ Missing sources

➤ Needed improvements / corrections

➤ Priorities

➤ Your coming participation

Justine, the Manti's Master !

AOB AND CLOSING

What is next step ?

➤ Wanting to **get informed** about the TFEIP waste EP and working groups / **provide data** / **provide expertise ?**

➤ Wanting to **propose any additional improvements / corrections** to the 2019 EMEP/EEA GB ?

➤ Wanting to **participate in the update** of the 2019 EMEP/EEA Guidebook ?

➤ Wanting to **have a special role** in the expert panel ?

AOB AND CLOSING

Send me an email (celine.gueguen2@gmail.com) by the end of May:

✓ Name, email address, organisation, country

✓ Any gap/improvement/mistake you have identified in the 2019 EMEP/EEA GB

✓ Any special role in the Waste EP (Co-chair, cross-cutting aspects, sharepoint...)

And if interested to be involved in the GB update in the 2nd half of 2022 :

✓ Which topic you are interested in

✓ Number of days you would be able to dedicate to the update

I'll try to constitute WG on the basis of the resources we will have, the topics of interest and the priorities !

THANK YOU