Updates on the Agricultural Emission Estimation (AgrEE) Tool

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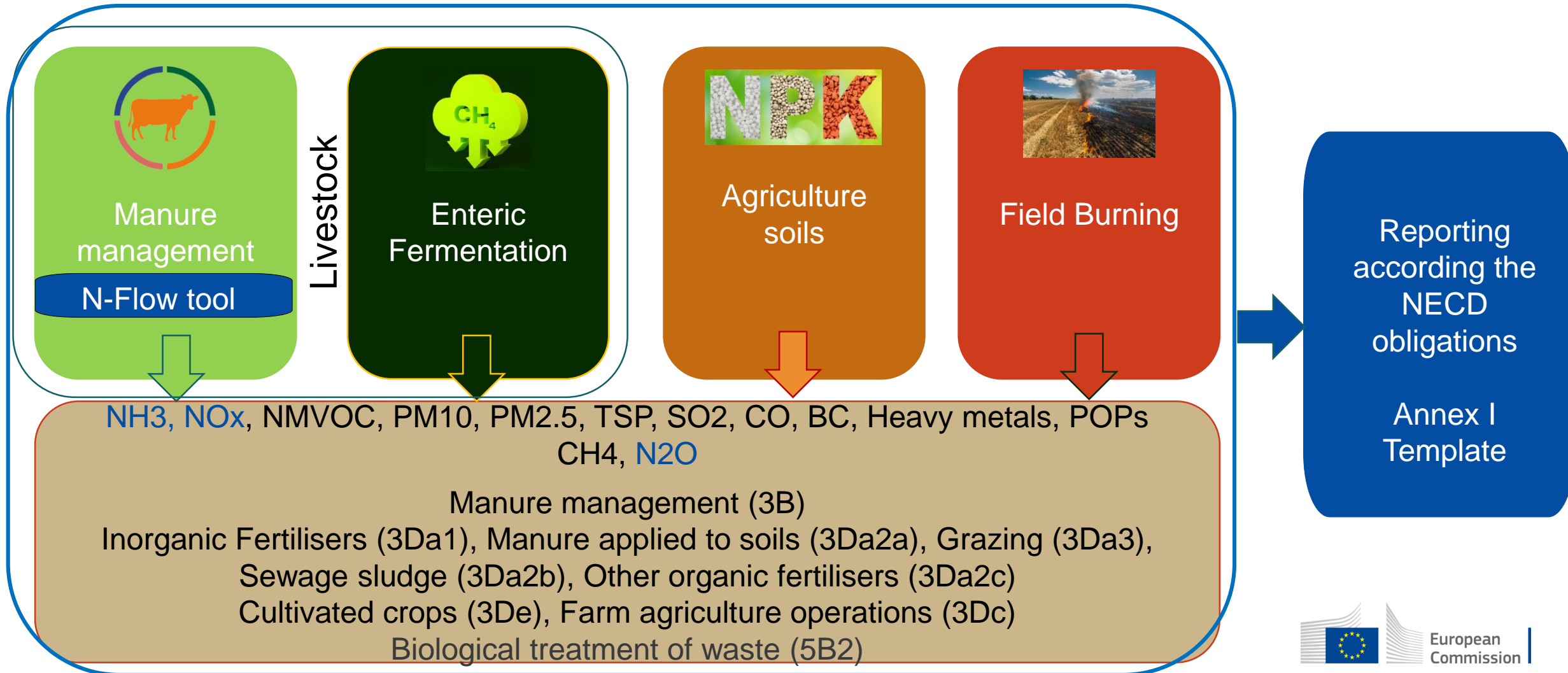European Commission

Outline

- **Short description of AgrEE tool**
  - General info
  - Access, data privacy
  - Data management, User Guide and Contacts
  - Internal controls on data input
- **Latest updates of the AgrEE tool**
  - Methane estimation
  - Abatement measures
  - Partial results
- **Comparison with official reporting and other sources**
- **Possible future developments of the AgrEE tool**

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Agricultural Emission Estimation (AgrEE) Tool

- Support the Commission priorities from the "EU Green Deal" and in line with "EU Methane Strategy" aiming at improving the emission reporting from agricultural sector through better data collection

- User-friendly web tool designed and implemented under direct request of DG ENV to help EU MS with air pollution inventory reporting under NECD

- One stop shop – all air pollutants and agriculture categories in one place expanding further the N-flow excel tool developed by EEA for manure management

- Consistency across Member States and with EMEP/EEA Guidebook 2019

- Data extracted and organized in a report-ready format following the Annex I template

- Applicable for country, region and local scale addressing data gaps for sources that have similar characteristics

- Fed by activity data and emission factors sourced from EDGAR and other sources

- Directly aimed at evaluating the effect of abatement measures

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Agricultural Emission Estimation (AgrEE) Tool (2)

19 inventory compilers from 14 EU MS and 1 non-EU country registered

Livestock

Manure management

N-Flow tool

Enteric Fermentation

Agriculture soils

Field Burning

Reporting according the NECD obligations

Annex I Template

NH3, NOx, NMVOC, PM10, PM2.5, TSP, SO2, CO, BC, Heavy metals, POPs
CH4, N2O

Manure management (3B)
Inorganic Fertilisers (3Da1), Manure applied to soils (3Da2a), Grazing (3Da3),
Sewage sludge (3Da2b), Other organic fertilisers (3Da2c)
Cultivated crops (3De), Farm agriculture operations (3Dc)
Biological treatment of waste (5B2)

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Agree tool - Access and privacy

AgrEE tool does not deal with private data of its users. The access to the tool is done through the "EU login" and the user need to previously register on ECAS (European Commission Authentication Service) which is a **secure "single sign-on" approach**.
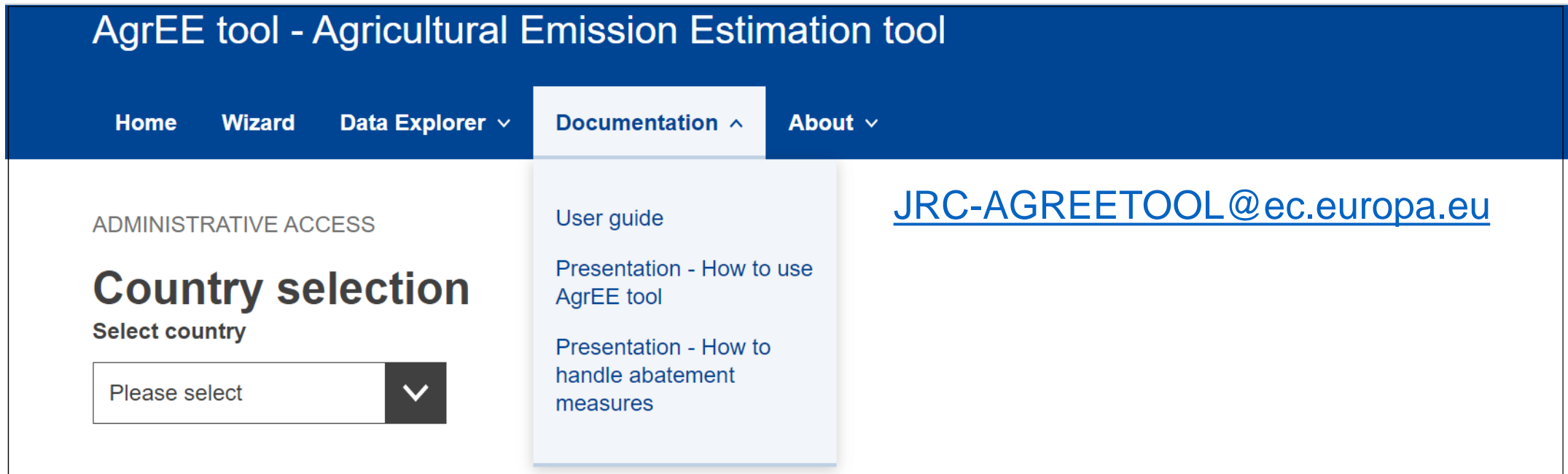
https://webgate.ec.europa.eu/cas/privacyStatement.html

Register to ECAS EU login → Go to the Tool → Unique Identifier Role Target country → Access the tool Associate to target country

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https://edgar.jrc.ec.europa.eu/agree_tool/

Energy, Climate change, Environment

AgrEE tool - Agricultural Emission Estimation tool

Home   Wizard   Data Explorer ∨   About ∨

Welcome to the open, user-friendly Agricultural Emission Estimation (AgrEE) tool designed to support inventory compilers to calculate air pollutant and greenhouse gas emissions from agricultural activities.
The AgrEE tool implies the EMEP/EEA 2019 Guidebook and IPCC 2006 and 2019 Guidelines methodologies to calculate emissions for relevant air pollutants from agriculture with emission reduction commitments established under the NECD (PM2.5, NH3, SO2, NOx, NMVOC), other air pollutants (PM10, TSP, CO, Heavy metals, Dioxins, POPs) and greenhouse gases (CH4, N2O).

Enjoy working with AgrEE Tool.

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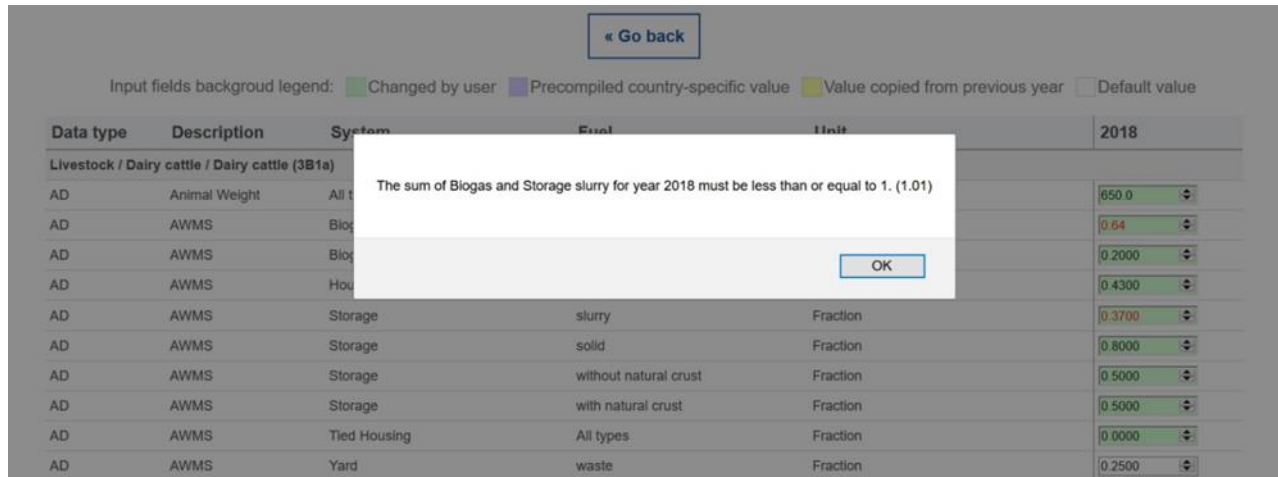# Data management, User Guide and Contacts

- Inventory compiler/ researcher/stackholder - more than one user per country, dedicated area for each user
- User Guide available in the "Documentation" dedicated space in AgrEE tool
- Other documentations on how to use the tool are also available
- Contact information in the "About" section

AgrEE tool - Internal controls on data input

- Internal checks are applied through all the calculations steps and for all categories (partial and whole system)

- The tool calculates the defined sum of Animal Waste Management System (0 -100% in Tier 1 and 0-1 in Tier 2)

- Range from 0 to 1 is applied for fractions
- Range 0 to 365 is applied for house period
- Range of animal weight is applied for each livestock category
- Upper and Lower level of EFs is included (when available)

AgrEE tool – Input template

- The user can **download** the input template and **save** it in Excel.
- One can **work** with the template **filling/changing data** and then **upload** it in the tool.
- The name of the input template is defined by the selections done in the previous steps.

1. Input template
English (XLSX)   [Download]

2. Template upload*
[   ] [Browse...]

3. Upload

Do you want to open or save input_template_AA_NH3_Dairy_cattle_2018.xlsx from siprweb01d-aeet.dev-srv.jrc?   ×

Open   Save ▼   Cancel
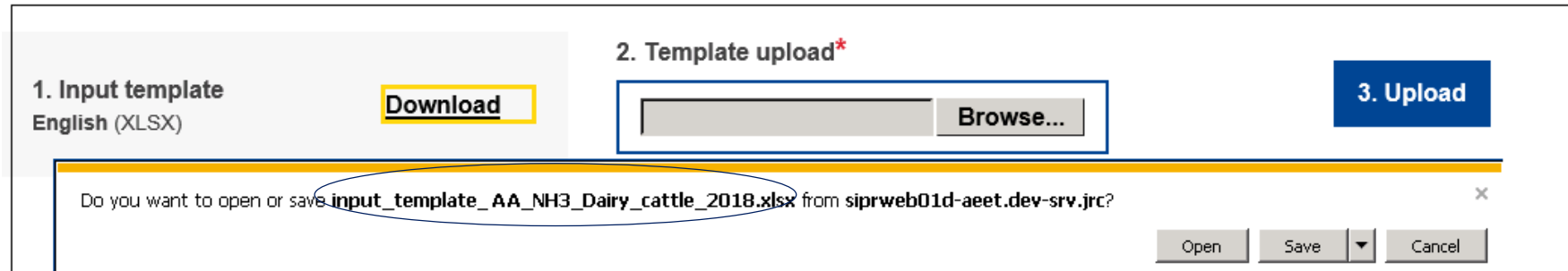
It is important not to change the structure of the input template

Pollutant	Sector	SubSector	Category	SubCategory	NFR	Data type	Description	System	Fuel	Unit

Save data → Perform calculations
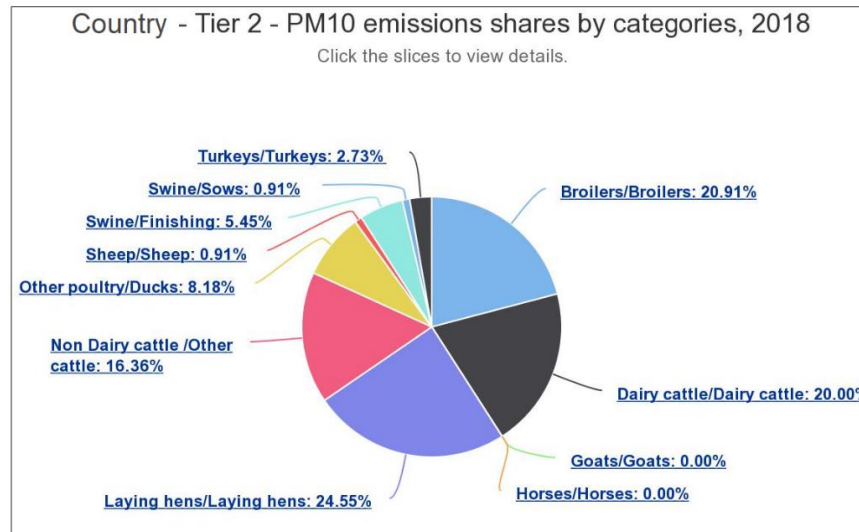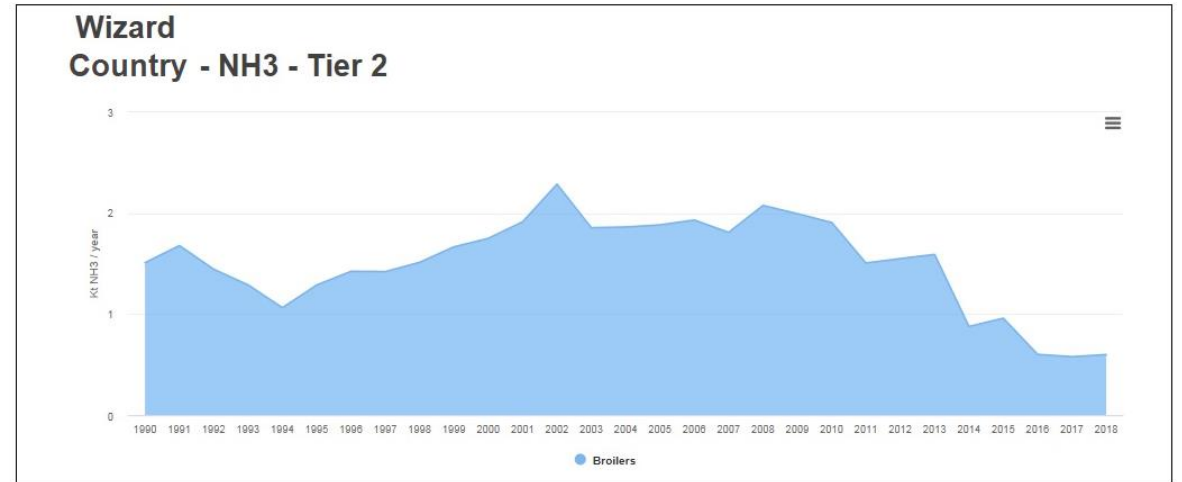
AgrEE tool - Results

- Enable extracting results conform the CLRTAP Annex I template for air pollutants
- Facilitate trend analysis, result comparison, relative contributions (by categories/sectors)

ANNEX 1: National sector emissions: Main pollutants, particulate matter, heavy metals and persistent organic pollutants

NFR 2019-1		
COUNTRY:	ISO2	(as ISO2 code)
DATE:	DD.MM.YYYY	(as DD.MM.YYYY)
YEAR:	YYYY	(as YYYY, year of emissions and activity data)
Version:	v1.0	(as v1.0 for the initial submission)

ISO2: DD.MM.YYYY: YYYY	NFR sectors to be reported	
NFR Aggregation for Gridding and LPS (GNFR)	**NFR Code**	**Long name**
K_AgriLivestock	3B1a	Manure management - Dairy cattle
K_AgriLivestock	3B1b	Manure management - Non-dairy cattle
K_AgriLivestock	3B2	Manure management - Sheep
K_AgriLivestock	3B3	Manure management - Swine
K_AgriLivestock	3B4a	Manure management - Buffalo
K_AgriLivestock	3B4d	Manure management - Goats
K_AgriLivestock	3B4e	Manure management - Horses
K_AgriLivestock	3B4f	Manure management - Mules and asses
K_AgriLivestock	3B4gi	Manure management - Laying hens
K_AgriLivestock	3B4gii	Manure management - Broilers
K_AgriLivestock	3B4giii	Manure management - Turkeys
K_AgriLivestock	3B4giv	Manure management - Other poultry
K_AgriLivestock	3B4h	Manure management - Other animals (please specify in the IIR)
L_AgriOther	3Da1	Inorganic N-fertilizers (includes also urea application)
L_AgriOther	3Da2a	Animal manure applied to soils
L_AgriOther	3Da2b	Sewage sludge applied to soils
L_AgriOther	3Da2c	Other organic fertilisers applied to soils (including compost)
L_AgriOther	3Da3	Urine and dung deposited by grazing animals
L_AgriOther	3Dc	Farm-level agricultural operations including storage, handling and transport of agricultural products
L_AgriOther	3De	Cultivated crops
L_AgriOther	3F	Field burning of agricultural residues
L_AgriOther	3I	Agriculture other (please specify in the IIR)

Wizard
Country - NH3 - Tier 2

Country - Tier 2 - PM10 emissions shares by categories, 2018
Click the slices to view details.

Turkeys/Turkeys: 2.73%
Swine/Sows: 0.91%
Swine/Finishing: 5.45%
Sheep/Sheep: 0.91%
Other poultry/Ducks: 8.18%
Non Dairy cattle /Other cattle: 16.36%
Broilers/Broilers: 20.91%
Dairy cattle/Dairy cattle: 20.00%
Goats/Goats: 0.00%
Horses/Horses: 0.00%
Laying hens/Laying hens: 24.55%

Latest in AgrEE tool – Methane emissions

IPCC 2006

T2 for manure management

T2 & T1 for enteric fermentation

IPCC 2019 Refinement for Goats

in Enteric Fermentation

WIZARD

Country - Tier 2 - CH4
Livestock / Enteric Fermentation

Select categories

Select categories ⌄

Search

☐ Select all

☐ Dairy cattle (3B1a)

☐ Non Dairy cattle (3B1b)

☐ Sheep (3B2)

☐ Buffalo (3B4a)

☐ Goats (3B4d)

Livestock sub-divisions

Country specific sub-divisions

☐ Check to use country specific sub-divisions

« Go back   Proceed »

WIZARD

Country - Tier 2 - CH4
Livestock

Select sub-sector

Select sub-sector ⌄

Select sub-sector
Enteric Fermentation
Manure Management

« Go back   Proceed »

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Latest in AgrEE tool – Abatement measures

Category Selection ← Intermediate Step → Input template

WIZARD

Country - Tier 2 - NH3
Livestock

Select mode for Nex

| Country specific value | ⌄ |

Select abatement measures

| None | ⌄ |

Select mode for Nex

| Country specific calculation | ⌄ |

| Country specific calculation |
| IPCC 2006 Eq. 10.31 |
| IPCC 2006 Eq. 10.30 |

Select abatement measures

| None | ⌄ |

| None |
| Air scrubber |
| Partially slatted floor |

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Latest in AgrEE tool – Partial results

- Partial results for NH3 emissions from Livestock available in the "Results" page
    - To compare results if a different method is applied for the NH3 estimation
    - In other calculations if the user applies a different method of estimation for other pollutants
    - Values of Total TAN can be used in official reporting

Nitrogen excretion mode: IPCC 2006 Eq. 10.30

Sector	Category	Subcategory	System	2018
Livestock	Dairy cattle	Dairy cattle	Nex head (kg N/head/year)	105.945
Livestock	Dairy cattle	Dairy cattle	Total Nex (kg N)	179400087.188
Livestock	Dairy cattle	Dairy cattle	Total TAN (kg N)	179400087.188
Livestock	Dairy cattle	Dairy cattle	Ehouse slurry (kg NH3-N)	13100633.664
Livestock	Dairy cattle	Dairy cattle	Ehouse solid (kg NH3-N)	10251654.507
Livestock	Dairy cattle	Dairy cattle	Estorage slurry NH3 (kg NH3-N)	10522690.015
Livestock	Dairy cattle	Dairy cattle	Estorage solid NH3 (kg NH3-N)	8234333.185
Livestock	Dairy cattle	Dairy cattle	Eapplic slurry (kg NH3-N)	10447409.776
Livestock	Dairy cattle	Dairy cattle	Eapplic solid (kg NH3-N)	3217565.692

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Comparison with official reporting and other sources

- Comparison of results when applying not exactly the EMEP/EEA methodology (differences in certain steps of calculations)

- Comparison with results from countries own methodologies (more advanced)

- Comparison with other sources (e.g models)
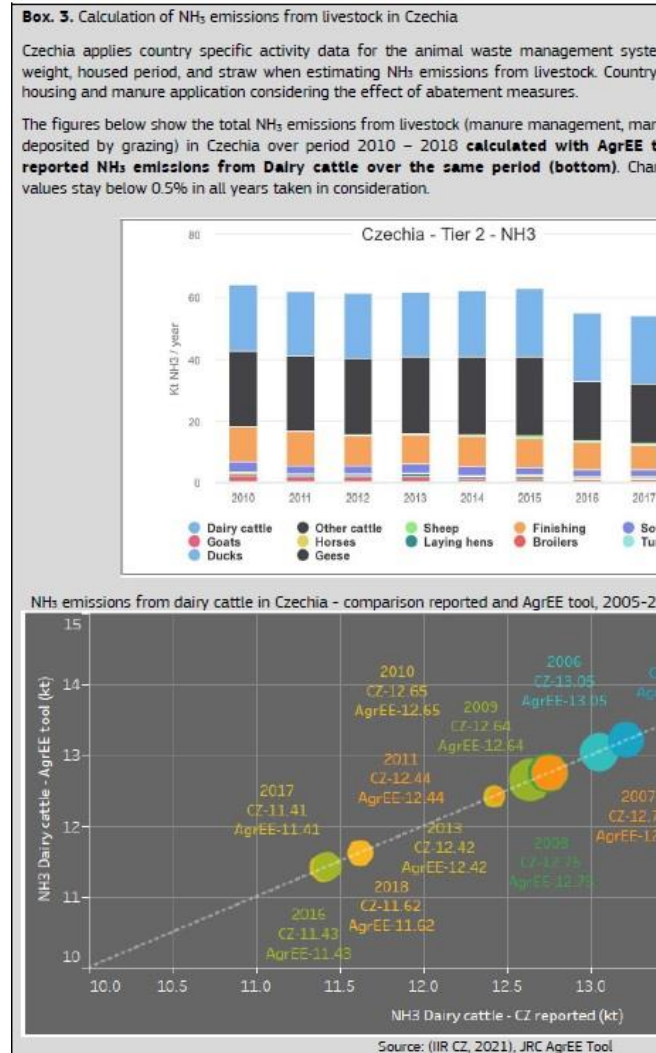
Possible future developments of the AgrEE tool

- **Keeping AgrEE tool updated – following the updates available in the upcoming Guidebook versions**

- Enhancing the quality assurance and transparency of the tool

- Assessing emission uncertainty

- Making the AgrEE tool more flexible – allowing the user the possibility to add categories

- Improvement and further development of the data visualisation and analysis section of the tool

- Introduction of 2019 IPCC Refinement data for methane estimation

- Inclusion of further abatement measures for NH3

- Gridding emissions in AgrEE tool applying EDGAR methodology

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Questions

Contact: JRC-AGREETOOL@ec.europa.eu

Thank you

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