

# Updates on Agricultural Emission Estimation (AgrEE) tool

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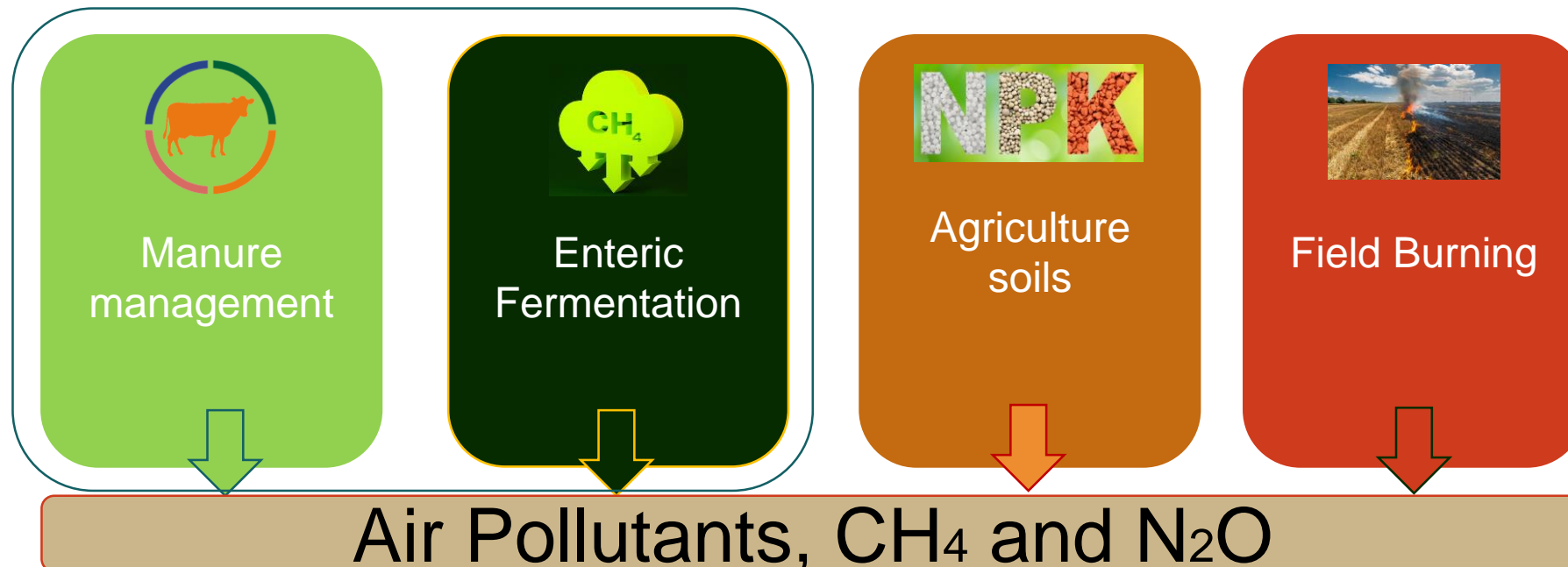
UNECE Task Force on Emission Inventories and Projections (TFEIP)  
Agriculture Expert Panel, 18 April 2023

# Outline

- AgrEE tool – short overview
- AgrEE tool – registered users
- AgrEE tool - abatement measures for ammonia
- AgrEE tool – planned work

# AgrEE tool – short overview

- A user-friendly web tool, part of the EU methodological support to MS to improve reporting of air pollutant and GHG emissions from agricultural sector
- Ensuring policy coherence
- Based on EMEP/EEA Guidebook 2019, IPCC Guideline 2006 and 2019 Refinement with Tier 2 as the main method
- AgrEE tool testing phase was performed in June 2021 – MS feedback received
- Final version of AgrEE tool was launched by the end of February 2022



# AgrEE tool – short overview (2)

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

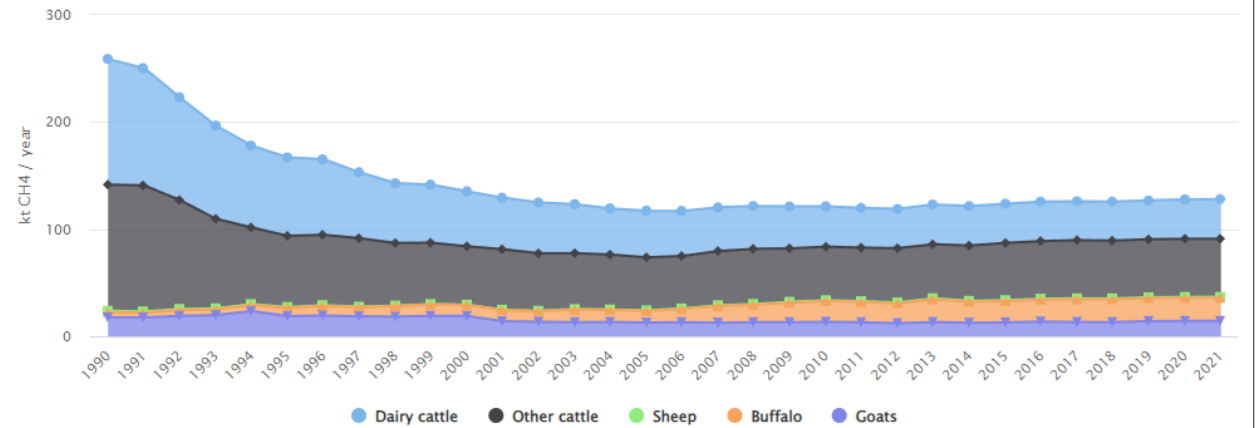
## ANNEX 1: National sector emissions: Main pollutants, particulate matter, heavy metals and persistent organic pollutants

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

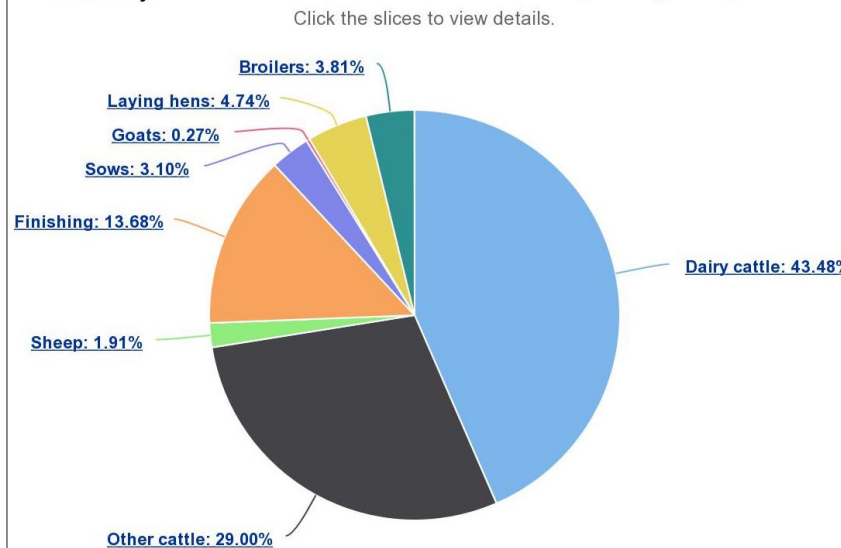
XX: DD.MM.YYYY: XXXX	NFR sectors to be reported
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NFR Aggregation for Gridding and LPS (GNFR)	NFR Code	Long name
K AgriLivestock	3B1a	Manure management - Dairy cattle
K AgriLivestock	3B1b	Manure management - Non-dairy cattle
K AgriLivestock	3B2	Manure 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
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

## Country - Tier 2 - CH4 Livestock / Enteric Fermentation



## Country - Tier 2 - NH3 emissions shares by categories, 2021



# AgrEE tool – registered users

## EU Member States

Belgium (3)  
Austria (1)  
Czechia (1)  
Cyprus (1)  
Denmark (2)  
Finland (1)  
France (1)  
Croatia (1)  
Italy (1)  
Lithuania (1)  
Malta (1)  
Poland (1)  
Portugal (2)  
Romania (4)  
Slovenia (1)

## Non-EU

Norway (1)  
Iceland (1)

Feedback  
on the use  
or needs are  
welcomed

- 24 inventory compiler/responsible representing 15 EU MS and 2 non-EU countries
- Researchers
- DG Environment
- DG Agriculture and Rural Development
- DG for Climate Action
- European Environment Agency
- Received requests from outside Europe

Mentioned in 2022 and 2023 IIRs under NECD reporting e.g Romania, Italy, Czechia

# AgrEE tool - abatement measures for ammonia



## Select abatement measures for NH3


None 

- None
- Air scrubber
- Partially slatted floor

Reduction efficiency, Fraction of livestock and Fraction of slatted floor  
NH3 emission factor with abatement is calculated

Nitrogen excreted calculated with IPCC 2006 method  
Affected by crude protein levels

## Select mode for Nitrogen excretion

IPCC 2006 Eq. 10.30 

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

# AgrEE tool – planned work

Project “**Support to the implementation of clean air legislation in Europe**”  
with DG Environment over period 2023-2025

- Regular maintenance and updates following EMEP/EEA Guidebook updates
  - NH<sub>3</sub> emissions from crop residues Tier 1 and Tier 2 methodology and from fertilisers Tier 1 (based on drafts provided by TFEIP – under discussions)

The JRC Emission Database for Global Atmospheric Research (EDGAR) experience of applying the IPCC methodology to estimate emissions from crop residues will be used
- Introduction of 2019 Refinement IPCC guidelines new Eq.10.31(A), 10.32(A) and 10.33 (A, B, C, D, E) for nitrogen excretion rate
- Improvement and further development of the data visualisation and analysis section of the tool- e.g comparing and quantifying the effect of different feeding situations

# AgrEE tool - planned work (2)

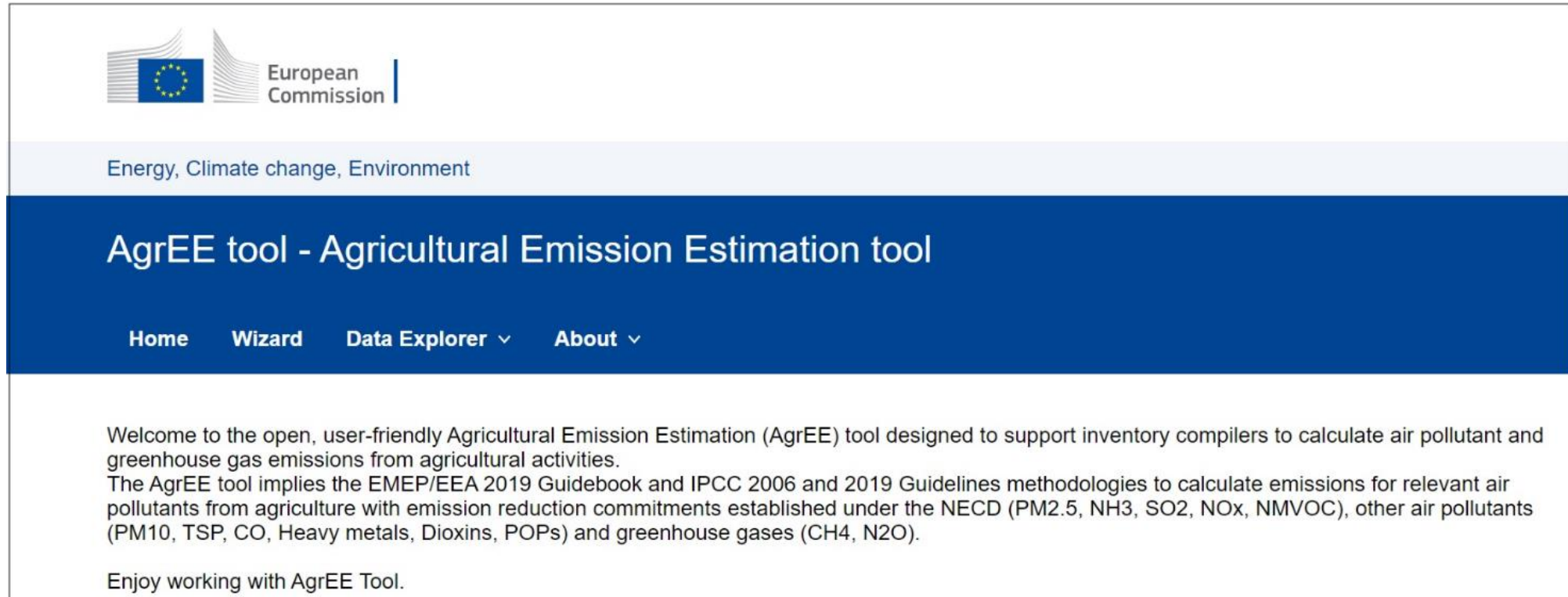
- Implementation of advanced approach for NH<sub>3</sub> emissions with abatement measures
  - Activity data (abatement and reduction factor) can be inserted by the user in the tool
  - Calculation of abated ammonia emission factors (simple and combined) will be incorporated in the tool
  - Calculated average emission factors can be inserted in the tool
- Selection of measures will be based on IPCC guidelines, EMEP/EEA Guidebook, Informative Inventory Reports and available literature on ammonia emissions mitigation

[ECE EB.AIR/149 -Guidance document on integrated sustainable nitrogen management](#)

Slurry Injection (70-90% reduction)  
Band spreading & trailing (30 -35% reduction)  
Rapid incorporation (up to 90% reduction)  
Slurry dilution (~30% reduction for ratio 1:1)



# Questions?



The screenshot shows the top part of the AgrEE tool website. At the top left is the European Commission logo, which includes the European Union flag and the text 'European Commission'. Below this is a light blue bar with the text 'Energy, Climate change, Environment'. A dark blue navigation bar contains the title 'AgrEE tool - Agricultural Emission Estimation tool' and four menu items: 'Home', 'Wizard', 'Data Explorer' (with a dropdown arrow), and 'About' (with a dropdown arrow). Below the navigation bar is a white section with introductory text: '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.'

[https://edgar.jrc.ec.europa.eu/agree\\_tool/](https://edgar.jrc.ec.europa.eu/agree_tool/)

Contact: [JRC-AGREETOOL@ec.europa.eu](mailto:JRC-AGREETOOL@ec.europa.eu)

# Keep in touch

## EU Science Hub

[joint-research-centre.ec.europa.eu](https://joint-research-centre.ec.europa.eu)



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# Thank you



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