



Emissions inventory framework in the CLRTAP

Laurence ROUÏL
Chair of the EMEP Steering Body



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EECCA
COORDINATING GROUP

EXECUTIVE BODY

IMPLEMENTATION
COMMITTEE

WORKING GROUP ON
EFFECTS

EMEP STEERING BODY

WORKING GROUP ON
STRATEGIES AND REVIEW

ICP FORESTS
TASK FORCE

COORDINATING
PROGRAMME
CENTRE

TASK FORCE ON
EMISSION INVENTORIES AND
PROJECTIONS

TASK FORCE ON REACTIVE
NITROGEN

ICP INTEGRATED
MONITORING
TASK FORCE

PROGRAMME
CENTRE

CENTRE ON EMISSION
INVENTORIES AND
PROJECTIONS (CEIP)

TASK FORCE ON TECHNO-
ECONOMIC ISSUES

ICP MODELLING AND
MAPPING
TASK FORCE

COORDINATION
CENTRE FOR
EFFECTS

TASK FORCE ON
MEASUREMENTS AND
MODELLING

ICP MATERIALS
TASK FORCE

MAIN RESEARCH
CENTRE

CHEMICAL COORDINATING
CENTRE (CCC)

ICP VEGETATION
TASK FORCE

PROGRAMME
CENTRE

METEOROLOGICAL
SYNTHESIZING CENTRE-WEST
(MSC-W)

ICP WATERS
TASK FORCE

PROGRAMME
CENTRE

METEOROLOGICAL
SYNTHESIZING
CENTRE-EAST (MSC-E)

TASK FORCE
ON HEALTH

WHO BONN

TASK FORCE ON
INTEGRATED ASSESSMENT
MODELLING

JOINT EXPERT GROUP ON
DYNAMIC MODELLING

CENTRE FOR INTEGRATED
ASSESSMENT MODELLING
(CIAM)

TASK FORCE ON
HEMISPHERIC TRANSPORT OF
AIR POLLUTION

LEGEND:

SUBSIDIARY BODIES

TASK FORCES

PROGRAMME/EMEP
CENTRES

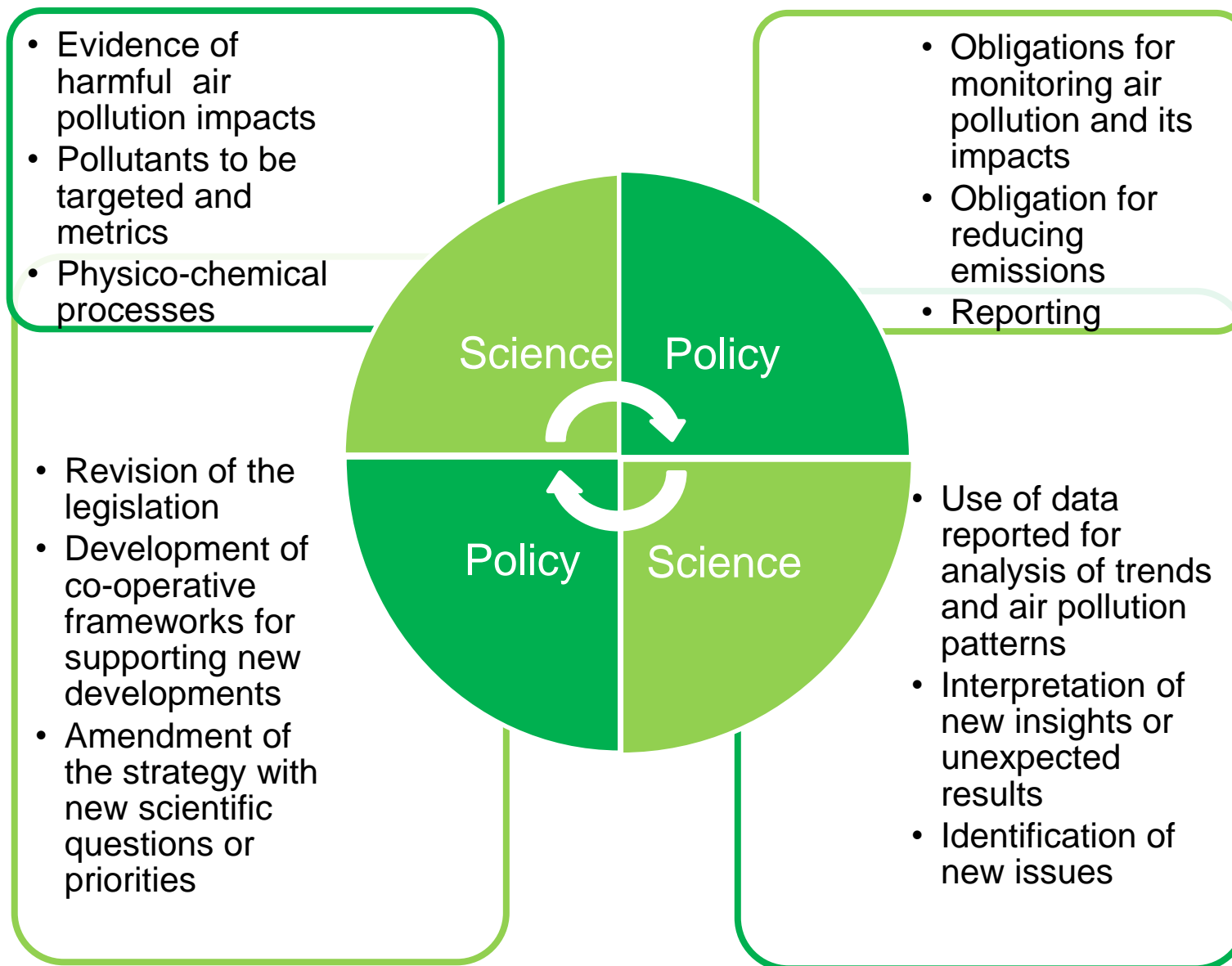
A policy framework driven by an « effect approach »

- Policy decisions set-up upon scientific evidences regarding air pollutant concentration and deposition trends and their effects on human health, vegetation, crops, materials, waters, forests, etc..
- Several tools are developed and maintained by the Convention Centres and national experts to monitor past and future trends and the impact of control strategies :
 - Implementation of a monitoring strategy for airborne concentrations and deposition
 - International Cooperative programmes (ICPs) dedicated to effects monitoring
 - Air pollution chemistry transport and deposition modelling
 - Integrated assessment modelling and cost-benefits analysis
 - Emission inventories
- Science - policy making interactions

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Science-Policy interaction within the CLRTAP



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The starting point : emission inventories

➤ A binding instrument of the Convention and a scientific challenge



National emissions ceilings set in the
Protocoles + implementation of BAT
Compliance checking

Input for modelling : maps ,
forecasts, scenarios analysis,
IAM and cost-benefits analysis

- Parties to the Convention have to report emissions and projections every year.
- Gridded emission reporting mandatory since 2017 (10km*10km grid resolution) : 27 Parties reported in 2019
- Black carbon emissions are reported on a voluntary basis since 2016; 39 Parties reported in 2019

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CEIP : the EMEP Centre on Emission Inventories and projections

Convention on Long-range Transboundary Air Pollution

emep

Co-operative programme for monitoring and evaluation of the long-range transmissions of air pollutants in Europe

CEIP umweltbundesamt^U



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CEIP

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CEIP Reports

UNECE, CLRTAP, EMEP, TFEIP, AC

Countries

Reporting Instructions

Check your inventory (RepDab)

Status of reporting

WebDab (Emission database)

Interactive data viewers

Review of Inventories

Review results

Amended GP

Gothenburg protocol

Adjustments under the Gothenburg protocol (GP)

The new EMEP grid

Centre on Emission Inventories and Projections

CEIP

Learn more

About the Centre on Emission Inventories and Projections



CEIP Reports

Reports of the Centre on Emission Inventories and Projections



Reporting Guidelines

Learn more about what and how to report



How to use RepDab

Check completeness and consistency of your inventory



Submission overview

Check the emission reporting status of Parties to the CLRTAP



EMEP database (WebDab)

Get emission data



Review Process

Learn more about the review process and review results



Gridding

Spatial resolution of reported emissions -> EMEP grid

NEWS

Joint CEIP/MSC-E technical report on emission inventory improvement for **HMs modeling** [PDF, 2.0MB]

Joint CEIP/MSC-E technical report on emission inventory improvement for **POPs modeling** [PDF, 4.3MB]

2014 Revised reporting guidelines

EB 2012 Decisions on Gothenburg Protocol

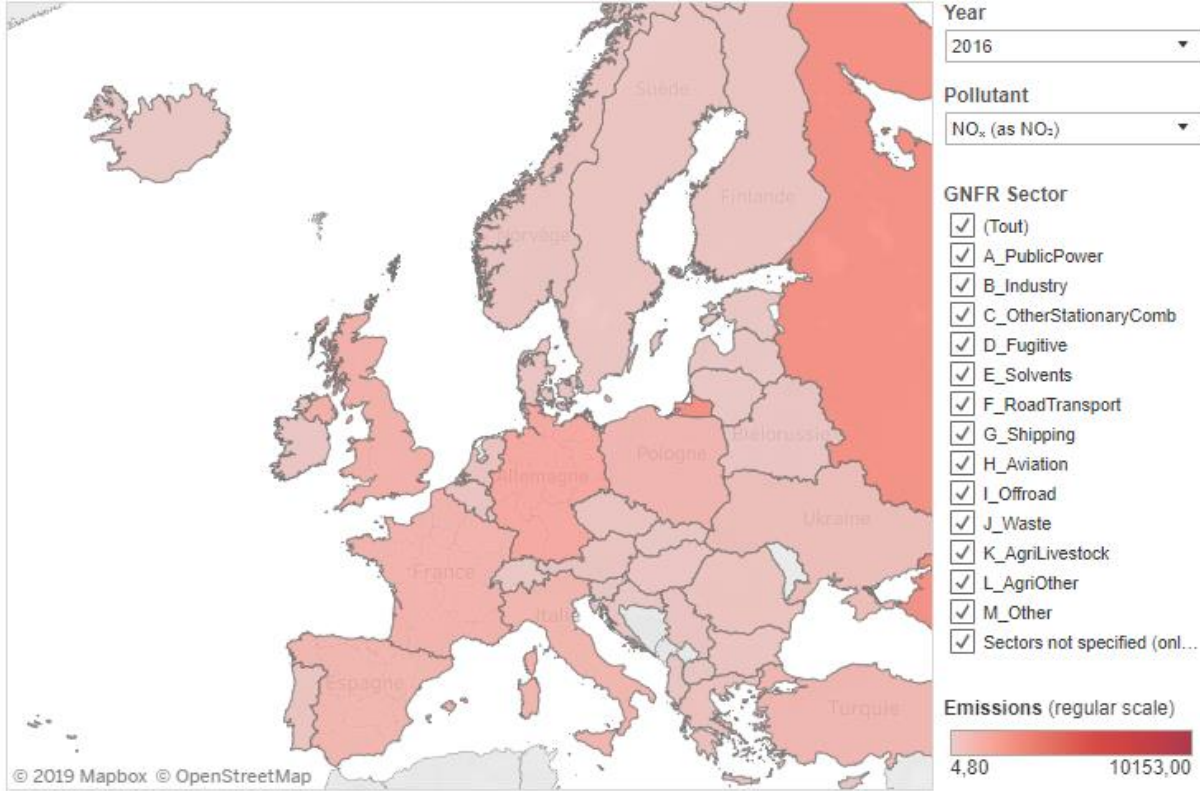
Information about the new EMEP grid

Glossary

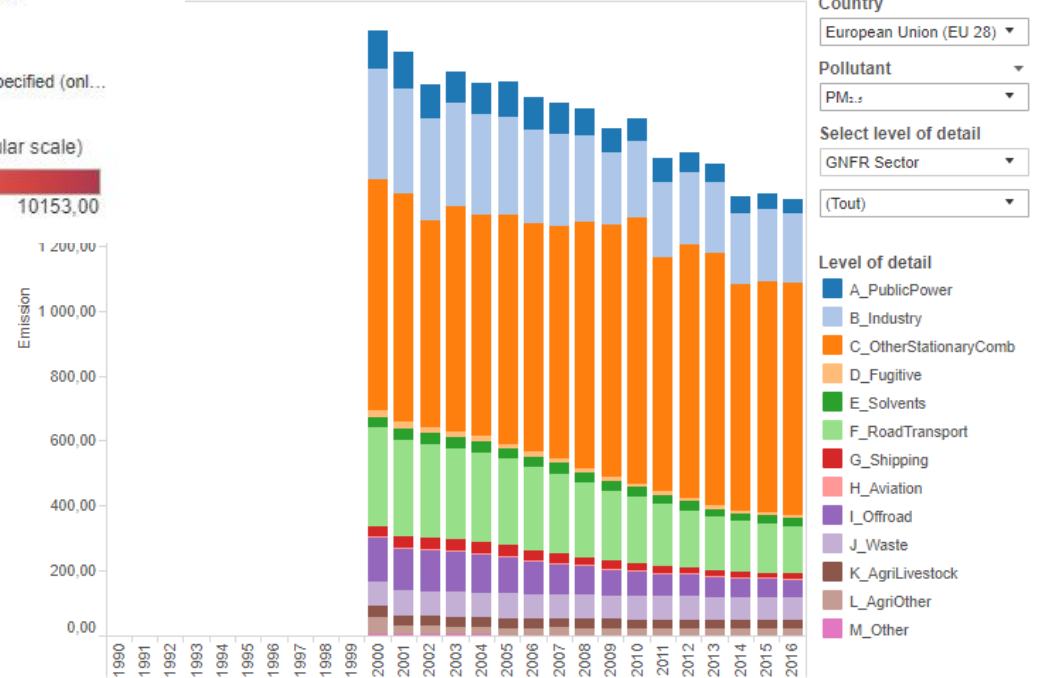
Role of CEIP and of the TFEIP (Task Force on Emission Inventories and projections)

- **CEIP** implements the technical framework for reporting activities, processes datasets (QA/QC, gap filling...), and provides technical assistance to the Parties
- CEIP maintains operational tools and set-up the review processes which involves experts from all the Parties
- Basic requirements that drive the process
 - Comparability : common methodology, emission factors..
 - Transparency: data and assumptions documented, expert reviews
 - Accuracy and Completeness: gaps avoided and best estimates
- **TFEIP** updates methodologies, emissions factors published in the ***EMEP/EEA emission inventory guidebook*** which is the reference document

Emissions of NO_x (as NO₂) (kilotonnes)

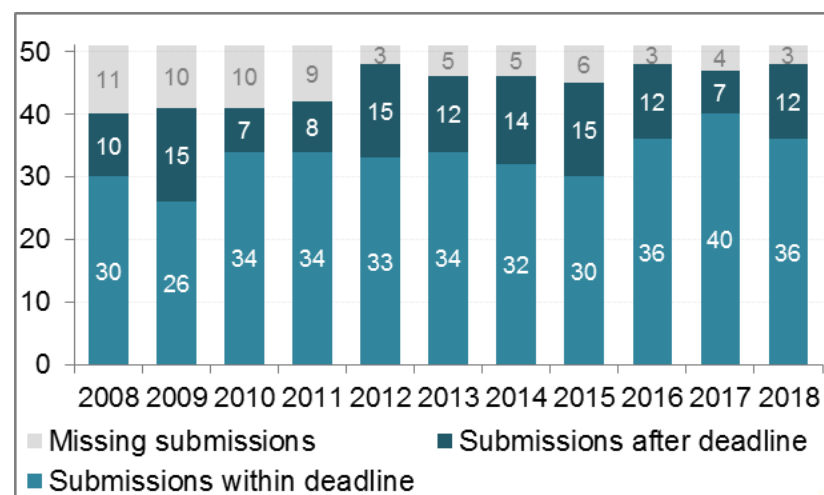
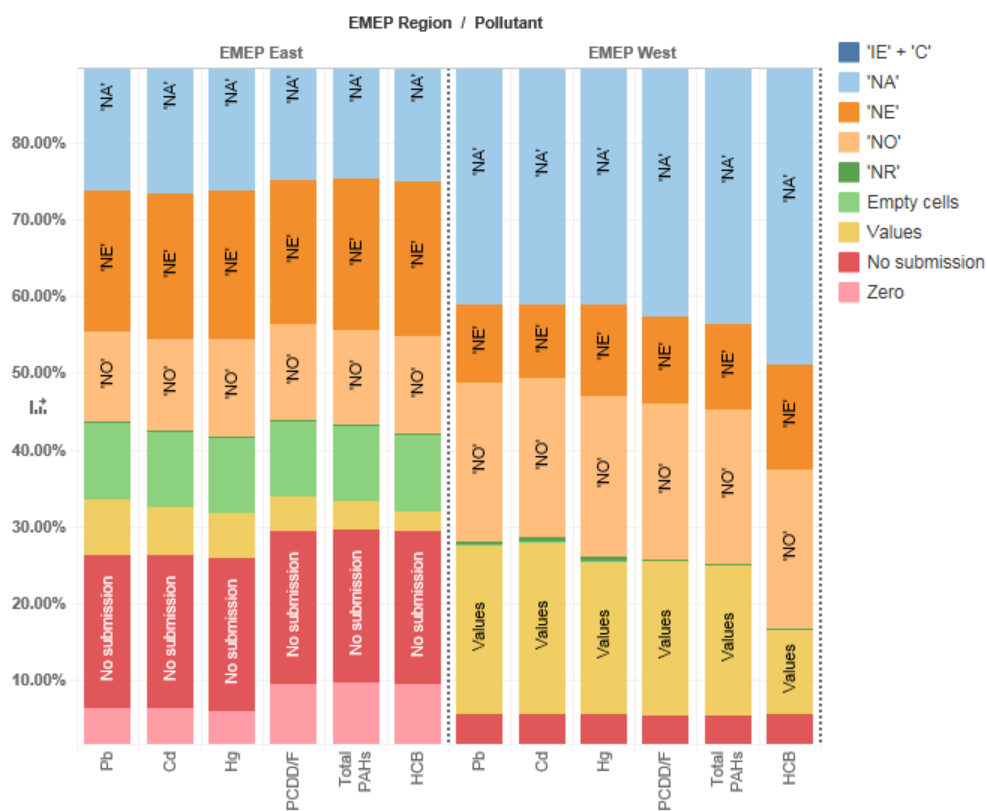
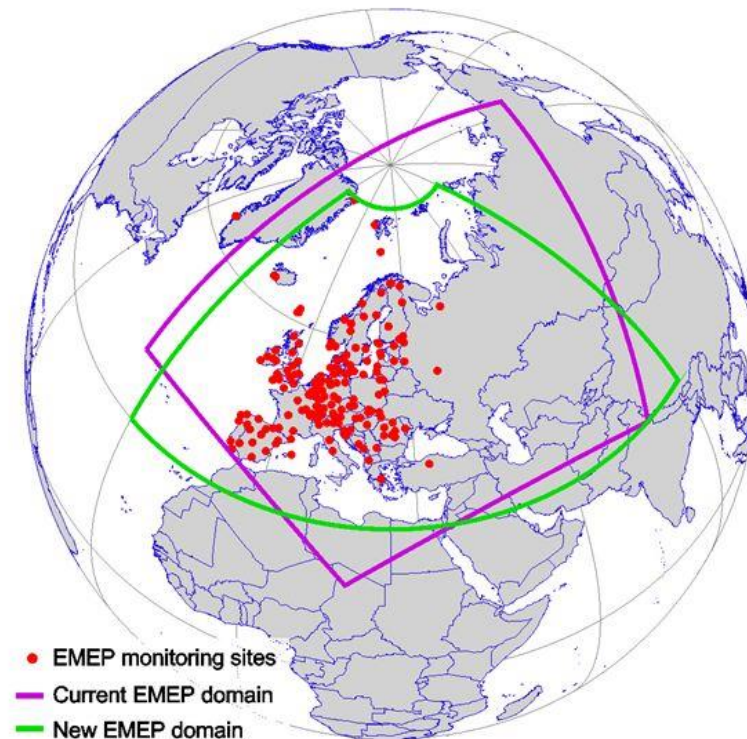


..5 (kilotonnes), European Union (EU 28)



Persisting challenges

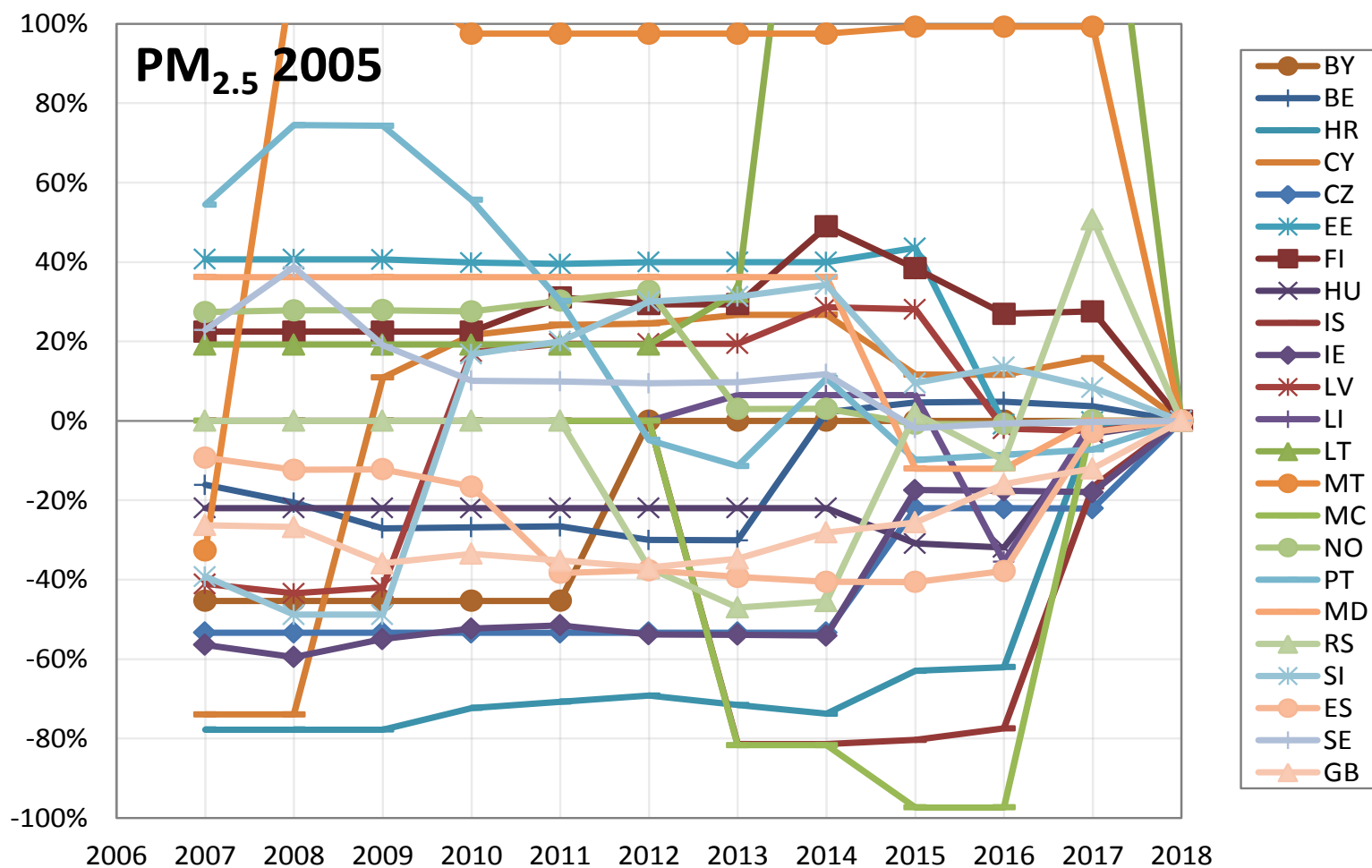
- Gap filling (New EMEP Domain)
- Timeliness
- Format of activity data
- Completeness / **non reporting**
- Consistency across years, countries
- Recalculations
- Transparency (IIRs)



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Need to make the reporting process more stringent

Still too many resubmissions and too high yearly variability



Technical reviews and In-depth reviews

- Technical reviews (stage 1 and 2) are performed by CEIP to check completeness and consistency of the reported emission datasets.
 - Interaction with national experts in the parties
 - Country reports
- In-depth reviews are performed by national experts and help investigating in-details the quality of reported emissions according to the reference document

2018

Moldova
Armenia
Finland
Belarus
Ukraine
Azerbaijan

2019

Turkey
Norway
Georgia
Serbia
Russian Fed
Albania

2020

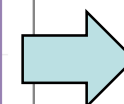
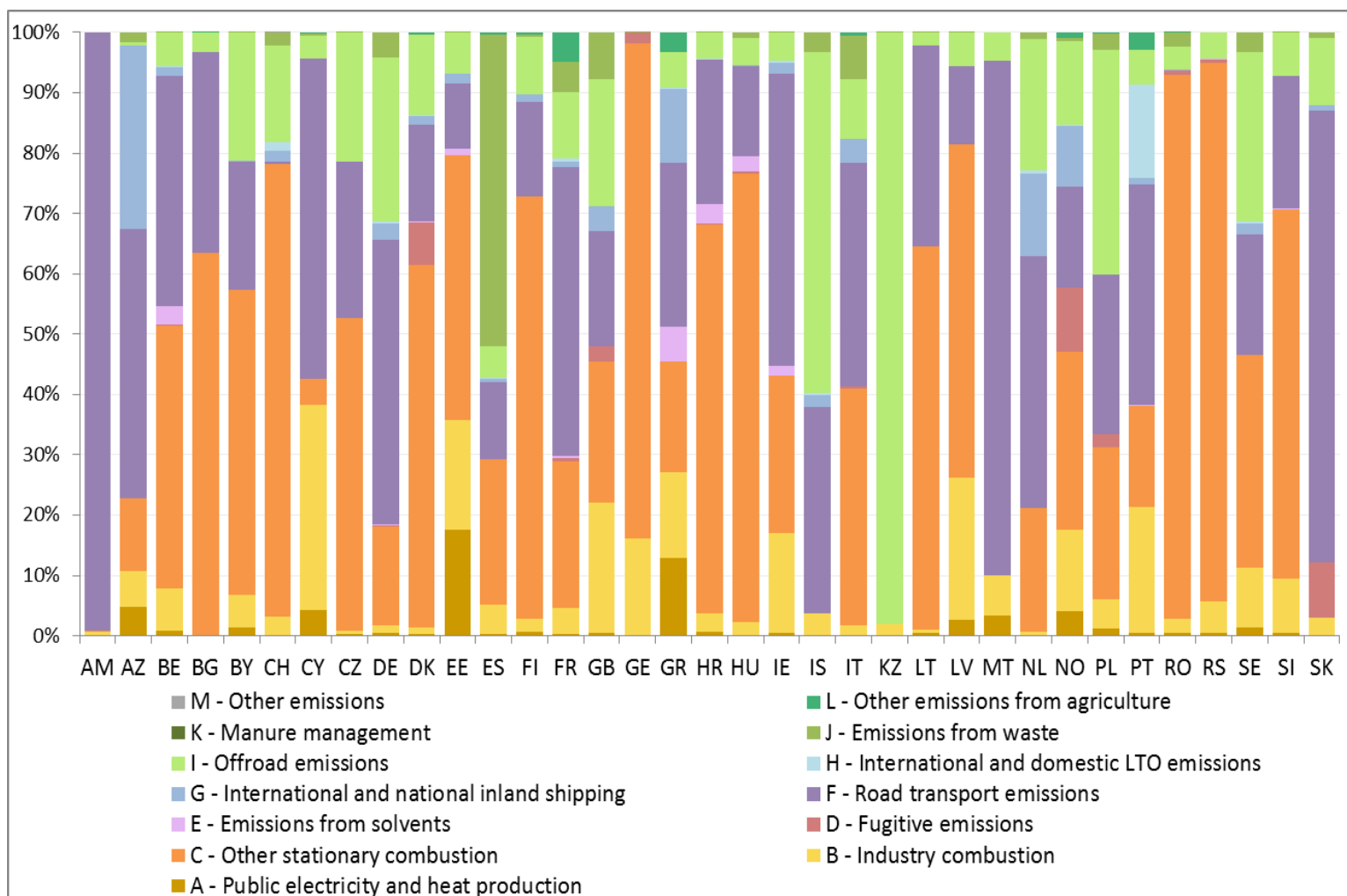
Liechtenstein
Switzerland
Iceland
Kyrgyzstan
Kazakhstan
Monaco
FYR of Macedonia
EU

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Black carbon emissions

About 40 Parties report Black Carbon emissions each year



Urgent need to revise methodologies and emission factors

Collaboration with AMAP (Arctic Council) and the EU

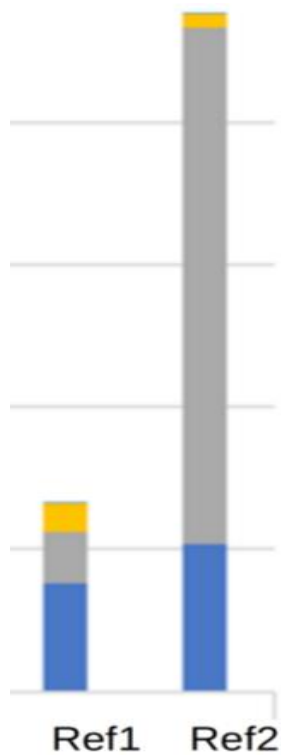
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A new challenge : the condensable part in PM

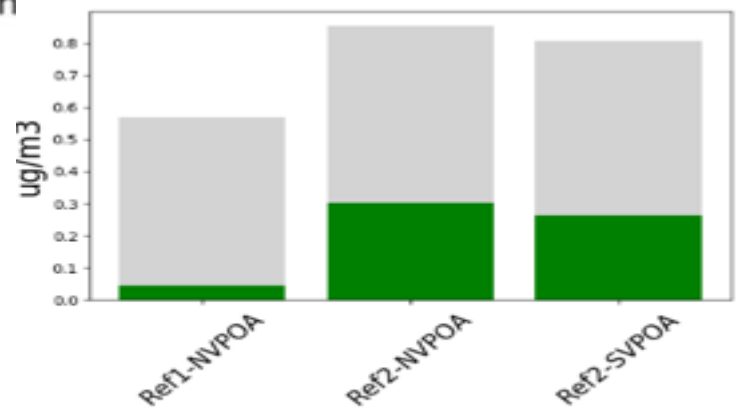
- Condensable = released as a gas but upon dilution and cooling particles formed shortly after the release.
- Emissions not measured by filterable systems in some sectors.. And not reported !
- Particularly sensitive for residential heating
- Can have compliance or non-compliance

PM emissions assessment methodology in residential heating must be now updated and documented to develop a consistent approach

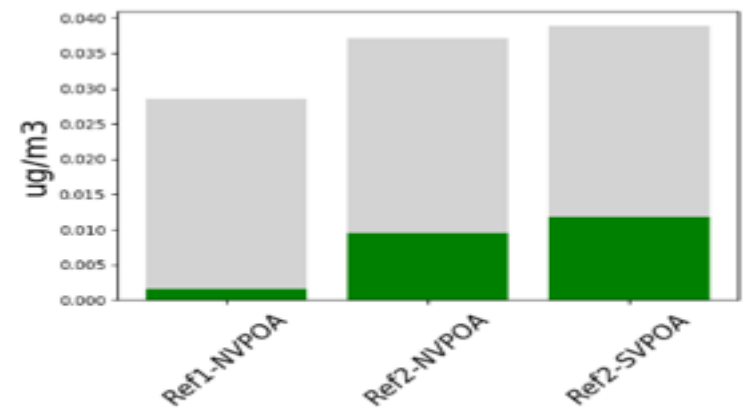


... performed by the MSC-West EMEP centre for Poland

Legend:
 OthMin_fine (yellow)
 OM_fine (grey)
 Na_fine (orange)
 EC_fine (blue)



(b) Own-contributions



(c) Domain-contributions

Emissions : lessons learnt

- A unique reference framework (accurate and reliable) helps in achieving comparability of the data.
 - Essential to sustain the modelling activity (including IAM)
 - Essential for the policy dialogue
- There are still huge uncertainties for some pollutants (HM, POPs, PM2.5) and Parties are encouraged to improve their data and technical support still expected/needed in some countries
- Some remaining scientific issues to make the process more robust and datasets more reliable
 - condensables ,
 - uPOPs,
 - Gridding and gap filling,
 - added-value of inverse modelling
 - Comparison with other emission inventories (developed for scientific purposes)

Many thanks for your attention!

Laurence.rouil@ineris.fr

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