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EMN for atmospheric Essential Climate Variables

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Rationale

WMO-GCOS → Essential Climate Variables (ECVs)
Focus on Atmospheric Composition
WMO-GAW → Data Quality Objectives (DQO)



Greenhouse gases
(CO₂, CH₄, CFCs, ...)

Particles
(properties...)

Particles Precursors
(NO₂, VOCs, ...)

Water?!

- DQO → long-term observation with uncertainty → address climate change and air quality trends

Actual state:

- Some DQO not met because of lack of suited Reference Materials !
- Some NMIs have capabilities but one NMI cannot cover all the ECVs and all the NMIs don't have to cover all of them!

→ **Join capabilities, elaborate common strategy, focus efforts, allow sufficient redundancy, better use of resources**

Activities and Actors

NMIs :

LNE, VSL, NPL, VTT, METAS, ...



Stakeholders:

GCOS, GAW, monitoring networks, meteorological stations, instruments manufacturers,...

Background: EMRP/EMPIR projects with successful technical progress, impact and collaboration



Activities :

- References for newly emitted compounds or reactive compounds
- Uncertainty improvement of existing references (to meet DQO)
- Regular exchanges with stakeholders
- Common long-term strategy

Outputs

- Research and development based on existing knowledge
- New infrastructures
- New services and/or Certified Reference Materials
- New CCL or extend capabilities of actual CCL
- Stronger link with stakeholders and between NMIs
- Use of complementary competencies and resources

Impact

Deliver uniform and stable SI-references for high priority ECVs :

→ improve quality of measurement

→ enable data evaluation of climate trends

Common strategy to answer societal and environmental challenges

→ deliver sound data for policy maker



Thank you very much for your attention