

The MACPoll project

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Project coordinator

EMRP

European Metrology Research Programme
► Programme of EURAMET



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MACPoll workshop -BAM, Berlin- 13 February 2014

JRP ENV01 MACPoII

Jun 2011 – Jun 2014

Metrology for Chemical Pollutants in Air

EMRP “Environment call”

Partners



Dutch
Metrology
Institute



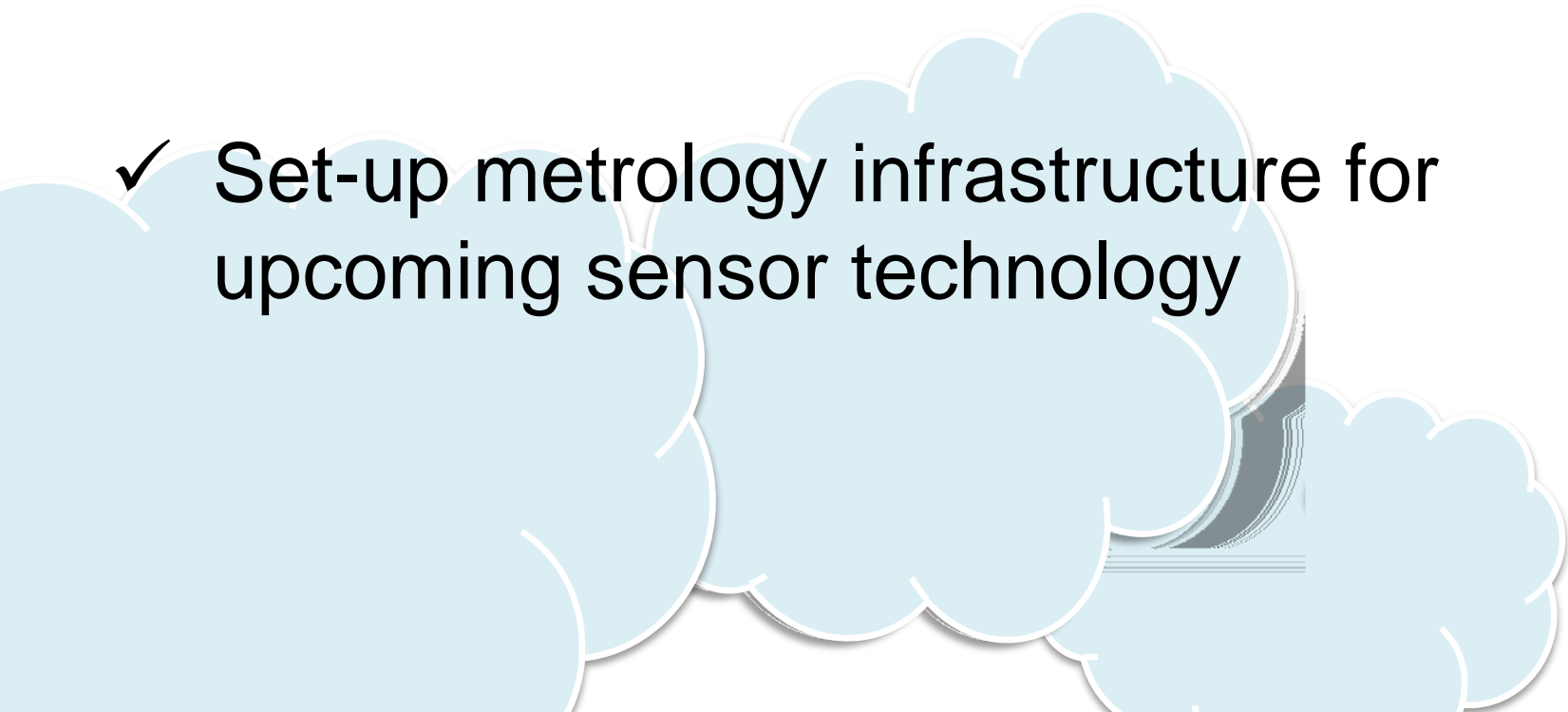
REGs



RMG & ESRMG



MACPoll Goals

- ✓ Improve metrological traceability and comparability of measurement results in current air monitoring techniques
 - ✓ Set-up metrology infrastructure for upcoming sensor technology
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Drivers for research in ambient air

Air pollutant	Stations
SO ₂	2098
NO ₂	3278
NO _x	2431
CO	1314
O ₃	2270
Total reporting	4660

Stations reporting to EEA's public European air quality database system (AirBase) in 2010

Source:

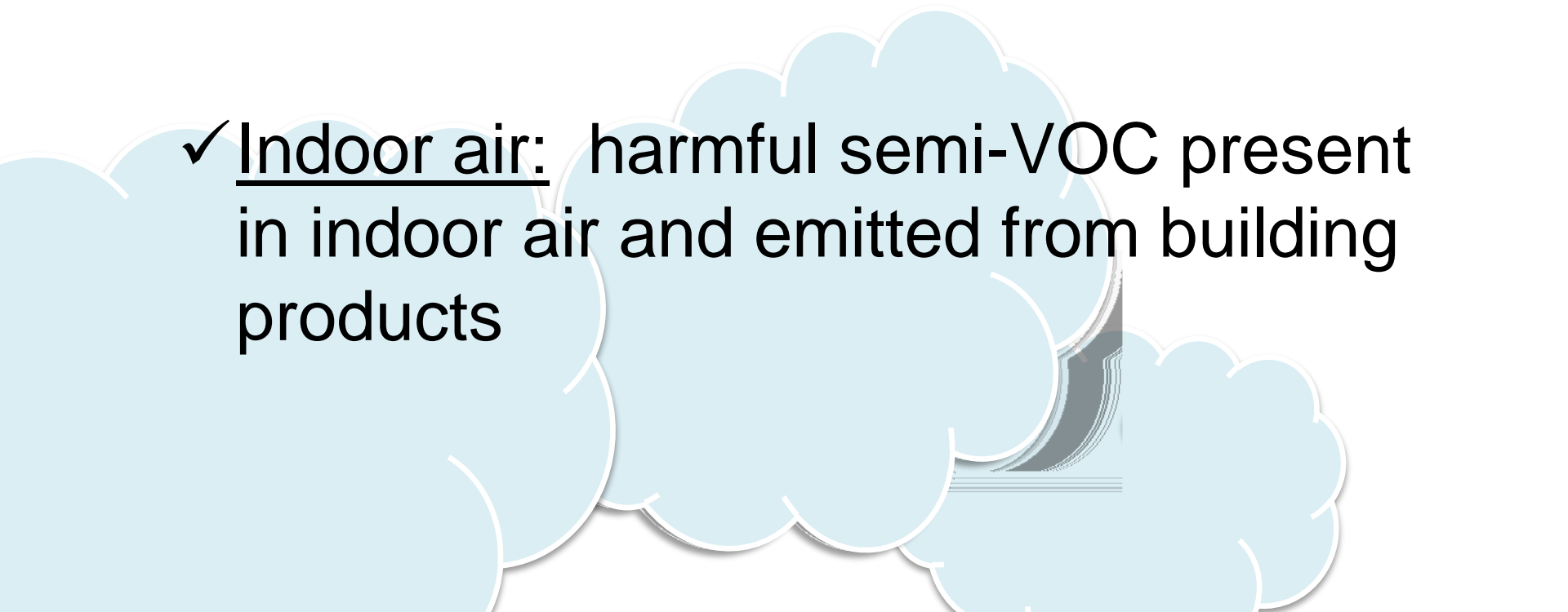
Mol and van Hooydonk, 2012

- ✓ Large amount of data produced by monitoring stations and compliance with DQOs of EU 2008/50/EC directive
- ✓ Significant investments and operational costs

Drivers for research in indoor air

- ✓ Poor regulation for indoor air in Europe and roadmap towards an EU-wide harmonised framework for indoor products labelling schemes (ECA Report n. 27)
- ✓ Lack of reference materials for Quality Control and Quality Assurance

Target air pollutants

- ✓ Ambient air: reactive gases (NO_x , SO_2) included in Air Quality Directive (2008/50/EC)
 - ✓ Indoor air: harmful semi-VOC present in indoor air and emitted from building products
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MACPoll & ambient air

- ✓ Improve preparation and comparability gas standards for NO, NO₂ and SO₂ at Limit Values (EU AQD) using dynamic methods
- ✓ Develop new measurement techniques for the determination of impurities in zero gas relevant for the measurement of reactive pollutants and validate purification systems
- ✓ Develop graphene-based sensors for air monitoring
- ✓ Set-up a validation programme for sensors to demonstrate their suitability in air monitoring

MACPoll & Indoor air

Develop (certified) reference materials for the measurement of (semi) volatile organic (hazardous) compounds – VOC emitted by building products

- ✓ Preparation of transfer standards in sorbent tubes
- ✓ Preparation of “diffusion-controlled” reference materials for the quality control of emission test chambers



Definition of Semivolatile Organic Compounds

From ISO 16000-6:

Organic compound whose boiling point is in the range from (240 °C to 260 °C) to (380 °C to 400 °C).

Conventionally regarded as those eluting after *n*-hexadecane respectively on a non-polar (polydimethylsiloxane) column

MACPoll Final Conference

- ❑ Venue: VSL, Delft, The Netherlands
- ❑ Date: 13-14 May 2014

For more details, check www.macpoll.eu



Announcement KEY-VOCs project

new EMRP project “Metrology for VOC indicators for air pollution and climate change”

Period: Oct 2014- Sep 2017

Objectives of WP3 “gas standards to underpin indoor air measurements”

- ✓ Develop reference gas standards for key-polar and semi-VOCs for indoor air QA/QC activities
- ✓ Develop reproducible emitting polymer materials for the QC of emission testing procedures

Enjoy the workshop !
and follow our progress and results on
www.macpoll.eu

