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# L'apport de la science pour atteindre les objectifs sanitaires concernant la qualité de l'air

*Interventions magistrales*

Intervention de :

**Kimber S. SCAVO**

Agence de Protection de l'Environnement USA (EPA),  
Bureau of Oceans and International Environmental and Scientific  
Affairs (OES), Office of Environmental Quality (ENV), ONU,  
Chair of the Executive body of the air Convention, Foreign Affairs Officer



From scientific findings to regulatory and legislative developments

*Session magistrale*

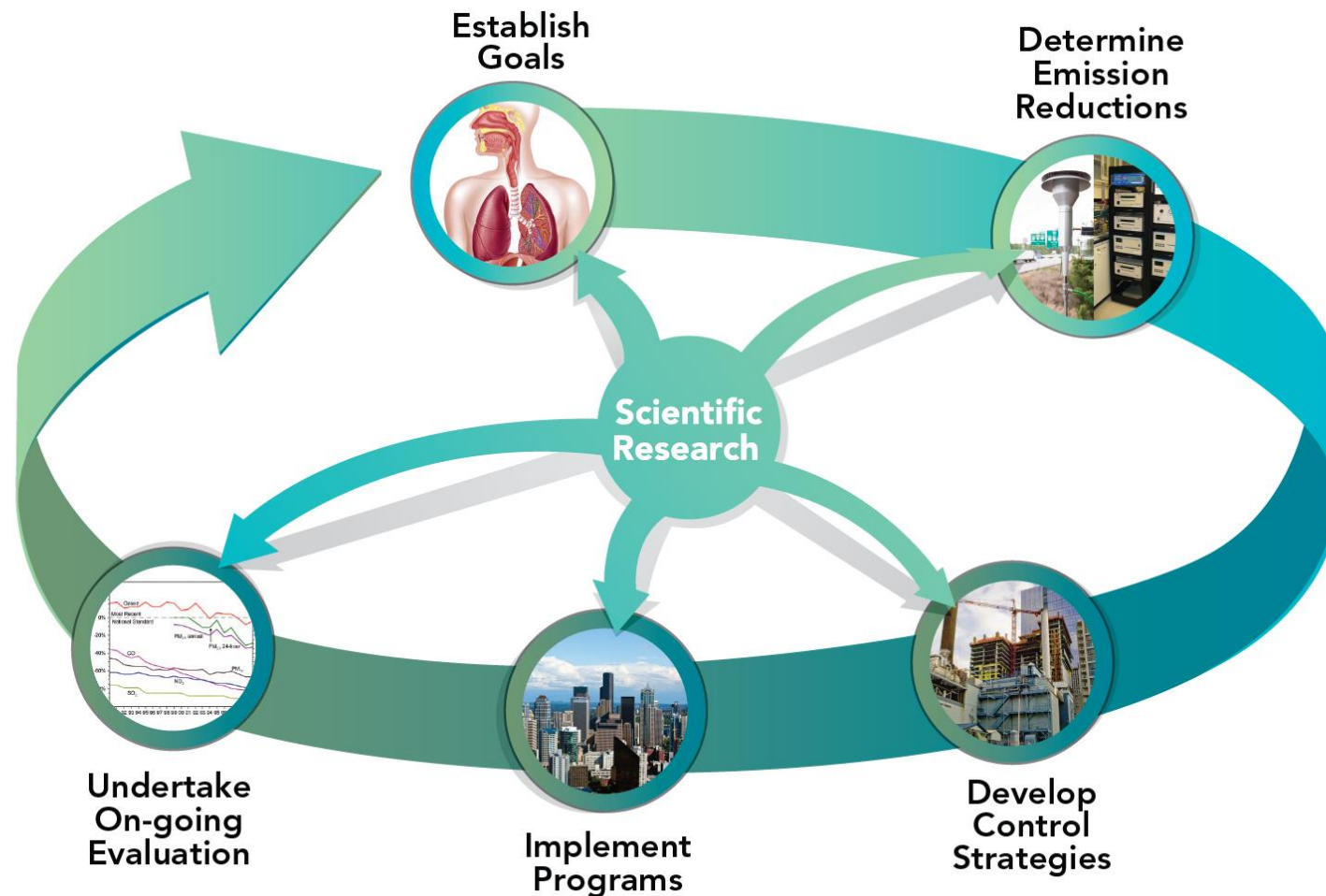
# The contribution of science to achieving health objectives for air quality

## **Kimber S. SCAVO**

Agence de Protection de l'Environnement USA (EPA),  
Bureau of Oceans and International Environmental and Scientific  
Affairs (OES), Office of Environmental Quality (ENV), ONU,  
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- National Ambient Air Quality Standards (NAAQS) in the United States to protect public health and welfare
- Implementation plans and designation of nonattainment areas
- Specific requirements in the Clean Air Act for state, local and tribal areas that do not meet the NAAQS
- Shared responsibility to address air quality management
  - Federal Government
  - State, local and tribal air agencies

# Air Quality Management Cycle



- NAAQS for six common pollutants: particulate matter, ozone, sulfur dioxide, carbon monoxide, lead and nitrogen dioxide
- Standards specify levels intended to protect public health
  - Integrated Science Assessment
  - Risk and Exposure Assessment
  - Policy Assessment
  - Rulemaking
- State Implementation Plans
- New Source Performance Standards and New Source Review

# AQM Responsibilities in the U.S.

## National (US EPA)

- Sets air quality standards
- Designates areas as attainment, nonattainment, or unclassifiable
- Establishes national controls for source categories with nationwide applicability (e.g., mobile sources, power generation)
- Issues regulations to address interstate transport of pollution
- Develops guidance to interpret rules and Clean Air Act requirements
- Approves and enforces SIPs

## Subnational (states and tribes)

- Recommend designation of areas
- Develop emission inventories
- Operate air quality monitoring networks
- Perform air quality modeling and identify emissions control strategies needed to attain standards
- Adopt the necessary measures into their State or Tribal Implementation Plans (SIPs/TIPs)
- Enforce regulations
- Issue pre-construction and operating permits

# Summary: National Ambient Air Quality Standards (NAAQS)

Pollutant		Primary/ Secondary	Average Time	Level	Form
Carbon Monoxide		primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead		primary and secondary	Rolling 3-month average	0.15 µg/m <sup>3</sup>	Not to be exceeded
Nitrogen Dioxide		primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	Annual	53 ppb	Annual Mean
Ozone		primary and secondary	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution	PM <sub>2.5</sub>	primary	Annual	12 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
		secondary	Annual	15 µg/m <sup>3</sup>	Annual mean, averaged over 3 years
		primary and secondary	24-hour	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24-hour	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide		primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

# UNECE Air Convention - Achievements

- **Successful regional cooperation**
  - **Regional framework** for controlling and reducing transboundary air pollution
- **Emission reduction commitments**
  - Notably **ground-level ozone, persistent organic pollutants, heavy metals and particulate matter**
- **Science-policy-interface & common knowledge basis**
  - Access to emission, measurement and modelling **data and information** on the effects of air pollution on ecosystems, health, crops and materials
- **Capacity-building program**
  - Support of the analysis of national legislation, the development of emission inventories, and the participation in the Convention's activities and awareness-raising in the **EECCA and Western Balkan regions**
- **Main achievements**
  - **Reduction of emissions** of certain air pollutants **by 40 to 80 per cent**
  - **Recovery** of forest soils and lakes from **acidification**
  - **Avoidance of 600,000 premature deaths** annually
  - **More than 70 capacity-building events** conducted between 2014 and 2023 and **2 e-learning courses developed**



# UNECE Air Convention - Challenges

- **Achieving further emission reductions**
  - Ozone and its precursors, such as methane
  - Particulate matter and its precursors
  - Nitrogen compounds, such as ammonia
- **Encouraging broader ratification of the more recent protocols to the Air Convention**
  - Flexibilities included in the Gothenburg Protocol as amended have not had the desired effect
- **Transboundary air pollution as a global problem**
  - Transboundary air pollution from outside the ECE region has a growing impact on the air quality in the region
- **Strengthening the Convention's role in the context of climate change and biodiversity loss**
  - Air pollution is a central link in the interaction between ozone, nitrogen, climate change and ecosystems

# UNECE Air Convention - Plans

- **Further emission reductions and ratifications**
  - **Launched negotiation process** as a follow-up to the Review of the Gothenburg Protocol
  - Additional reductions needed to reduce ozone and particulate matter and continue to address acidification and eutrophication
  - Continuing **awareness-raising** and **capacity-building** to increase parties to the **Gothenburg Protocol**
- **Transboundary air pollution as a global problem**
  - **Strengthening cooperation** with actors outside the ECE region, for example, through the Task Force on International Cooperation on Air Pollution
  - **Extending cooperation** with the relevant fora and other UN bodies
  - **Supporting the planned UNEA-6 resolution** on air quality and increasing international and regional cooperation on air pollution

# Achieving Health and Environmental Objectives for Air Quality: UNEA-6

- Re-energize efforts from resolutions 1/7 & 3/8 and raise the profile of air pollution
- Form a global network for regional cooperation to provide information and resources for data sharing across regions with similar air quality issues
- Strengthen regional cooperation to build local capacity for air quality monitoring, emission inventory development, source identification and control strategy development and increase sustained expertise in countries to implement specific air quality management projects
- Expand online platform for air quality and positive health and environmental messaging
- Increase member states working to address transboundary air pollution
- Enhance coordination between Ministries, existing regional bodies, and UN organizations