



New EC 7FP Project MEGAPOLI: ‘Megacities: Emissions, urban, regional and Global Atmospheric POLLution and climate effects, and Integrated tools for assessment and mitigation’

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The MEGAPOLI project brings together leading European research groups from 11 countries, state-of-the-art scientific tools and key players from countries outside Europe to investigate the interactions among megacities, air quality and climate. MEGAPOLI will bridge the spatial and temporal scales that connect local emissions, air quality and weather with global atmospheric chemistry and climate.

The main MEGAPOLI objectives are

1. to assess impacts of megacities and large air-pollution hot-spots on local, regional and global air quality
2. to quantify feedbacks among megacity air quality, local and regional climate, and global climate change

3. to develop improved integrated tools for prediction of air pollution in megacities.

In order to achieve these objectives we will:

- Develop and evaluate integrated methods to improve megacity emission data,
- Investigate physical and chemical processes starting from the megacity street level, continuing to the city, regional and global scales,
- Assess regional and global air quality impacts of megacity plumes,
- Determine the main mechanisms of regional meteorology/climate forcing due to megacity plumes,
- Assess global megacity pollutant forcing on climate,
- Examine feedback mechanisms including effects of climate change on megacity air quality,
- Develop integrated tools for prediction of megacity air quality,
- Evaluate these integrated tools and use them in case studies,
- Develop a methodology to estimate the impacts of different scenarios of megacity development on human health and climate change,
- Propose and assess mitigation options to reduce the impacts of megacity emissions.

We will follow a pyramid strategy of undertaking detailed measurements in one European major city, Paris, performing detailed analysis for 12 megacities with existing air quality datasets and investigate the effects of all megacities on climate and global atmospheric chemistry. The results will be disseminated to authorities, policy community, researchers and the other stakeholders in the corresponding megacities.