

Partner search form

Thematic area: Climate action, resource efficiency and raw materials

Topic:

SC5-4-2015: Improving the air quality and reducing the carbon footprint of European cities ([H2020-SC5-2014-two-stage](#)) – Deadline: 8 April 2014

Contact details

Name: Dr. Rafiq HAMDI & Dr. Andy DELCLOO

Institution: Royal Meteorological Institute

Organisation type: Research institute

Address: Avenue Circulaire 3
1180 Brussels - Belgium

E-mail address: rafiq.hamdi@meteo.be
andy.delcloo@meteo.be

Telephone number: +32 2 373 67 45

Telephone number: +32 2 373 05 93

Contribution to the project

Role in the project (coordinator, work package leader, task leader or participant):

- **Participant or Task leader**

Looking for (existing consortium, partners with specific expertise, etc.):

- **Existing consortium**

Contribution to the project (expertise, human resources, testing, lab facilities, etc):

- **Expertise:** Studying the interaction and feedback between future climate change and the urban environment. A regional climate model is running at the Royal Meteorological Institute (RMI) where a state-of-the art urban parametrization (Town Energy Balance, Masson 2000) scheme is validated for present climate and used for future climate change projection at high resolution (1 km) over Brussels and Paris (Hamdi et al. 2014). The output of this regional climate model is used as input for the Chemical Transport Model (CHIMERE, Delcloo et al., 2014) running also at the RMI in order to study the effect of introducing an urban parametrization for future air quality projection over urban areas.
- **Human resources:** Rafiq HAMDI for running the regional climate model and Andy DELCLOO for running the CHIMERE air quality model using the high-performance computing resources of the RMI.

Previous experience

ACCEPTED acronym for Assessment of Changing Conditions, Environmental Policies, Time-activities, Exposure and Disease. The research project started in December 2012 and is planned to be finished in 2015. ACCEPTED involves 11 different European partners and is funded by the European network [ERA-ENVHEALTH](#).

The main objectives of our tasks is to bridge processes from global to local (i.e. urban) using a suite of state-of-the-art atmospheric model. With applications in several large European cities including Paris and Brussels. We will study the impact of alternative adaptation scenarios on urban air-quality to a mid-century horizon (2030-2060) accounting for the effects of changing urban climate. To account for increased heating over urban areas (heat island effect) and atypical mixing processes induced by the three-dimensional structure of the city and artificial material (e.g. buildings, street canyons, urban vegetation, green roofs etc.) we will run dedicated urban parametrization over the city (Town Energy Balance scheme). State-of-the-art chemistry transport models CHIMERE will be used to assess concentrations at urban scale for present and future conditions.

By means of a chemical transport model (CHIMERE), we are running some climate scenario's for air quality for the current time and the A1B scenario (10 years) for the city of Brussels, in order to verify the effect of climate change on air pollution, taking into account the adapted scenario's within the regional climate model ALARO.