

Ispira, European Joint Research Center, 12 febbraio 2014  
Scientific Workshop

**Title:** Determinants of cities' GHG emissions

**Abstract:**

The responsibility of cities to global GHG emissions has rapidly grown in recent years and so their role in climate change mitigation policies. Emissions per capita differ considerably among cities. This difference depends on specific local features: climate, urban form, demographic features, economic activities in place, technology, mobility and housing infrastructures and prices, income and lifestyles of city residents and users.

The seminar will present results from 2 papers on this topic:

- the first one regards seven global cities - Bangkok, Chicago, London, Madrid, Mexico City, Milan and New York City - and aims at analysing the determinants of emissions related to energy used in buildings and energy used for urban transport through a qualitative approach;
- the second one focuses on the mobility sector and regards a wider sample of cities from Europe. The analysis applies a linear regression to explore the relevance of a set of variables in causing emissions.

Among the results of the first paper, beside a significant role of climate conditions, urban density appears as the main determinant in shaping residential emissions from direct fuel consumption, whereas, for electricity, consumption patterns and technological features of power generation play a major role. For ground transport, urban form affecting mobility patterns and technological features of the vehicle stock stand out as the most significant determinants.

The second paper shows that population density has a significant negative correlation with emissions, confirming previous literature. Relative prices of transport modes also appear to be among the most relevant determinants of emissions from mobility.

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