

MEGACITIES PARTNERSHIP

Air Quality and Emissions Data Request

March 2023

Objectives of Data Request:

* Request and collect all available data potentially relevant to air quality and emissions, including but not limited to energy and fuel use, air quality monitoring, and air quality modeling
* Collect emissions inventory data, if available
* Catalog available data related to air quality monitoring, measurement, and sources
  + Needs Assessment will provide insight on possible analyses, based on data availability, and major gaps

Relevant Agencies to Contact:

* Ministry of Environment
* Meteorological agencies
* Ministry of Transport
* Local universities and research institutions conducting air quality research

Example Data Catalog:

The table below provides an example data catalog. The format includes 4 columns: data source, data category, type of data, and data details. The data source column is divided into 2 rows: ambient air monitor data and emissions inventory data. These larger rows are further sub-divided under each of the other three columns. It is expected that the compliment of ambient and emissions data available to each Megacity Partnership will vary.

**Table 1. Example Data Catalog**

| Data Source | Data Category | Type of Data | Details |
| --- | --- | --- | --- |
| Air Quality Monitor Data | Ambient PM10 Data | Digitized concentrations of PM10 for all years and monitoring stations available. | Data should be at the finest temporal resolution available |
| Monitor locations | Coordinates (in degrees, minutes, and seconds) and altitudes (in meters) of air quality monitoring stations |
| Ambient PM2.5 Data | Digitized concentrations of PM2.5 for all years and monitoring stations available. | Data should be at the finest temporal resolution available |
| Monitor locations | Coordinates (in degrees, minutes, and seconds) and altitudes (in meters) of air quality monitoring stations |
| Ambient ozone and other ambient gaseous phase data (e.g., sulfur oxides and nitrous oxides) | Digitized concentrations of pollutants for all years and monitoring stations available. | Data should be at the finest temporal resolution available |
| Monitor locations | Coordinates (in degrees, minutes, and seconds) and altitudes (in meters) of air quality monitoring stations |
| Modelled PM10, PM2.5, ozone and other ambient gaseous phase data | Air quality concentrations for modelled air quality scenarios | Model outputs of air quality scenarios, if available |
| Emissions Inventory Data | Mobile sources | Emissions results from vehicle testing | Any available results from emission tests (by class or vehicle make/model, and vehicle vintage/year built) |
| Vehicle registration data by class for the previous 5 years | Most recent years of vehicle registration data for the city region |
| Available emissions results from modeling, from any platform (e.g., COPERT, MOVES) | Most recent model results from mobile source emissions model by class and vintage – emissions in terms of gm/km and/or total annual emissions. Sharing of the model itself and input data is preferable |
| Point sources | Emissions estimation data from pre-construction applications, for all regulated pollutants, as available | For each available point source, emissions estimates for all stacks (sources with greater than 100 tons/yr emissions), as compiled from pre-construction applications. Estimates should be labeled as estimated emissions/unit time period (daily, weekly, etc), or as potential-to-emit estimates |
| Emissions monitoring stack data (if/where available), for all regulated pollutants | For each available point source, hourly, daily, or weekly emissions of all pollutants measured, along with location (lat/long) of stack |
| Area Sources | Emissions estimation data from any source (e.g., landfill, home heating, cookstoves, waste burning) for all regulated pollutants, as available | For each available area source, emissions estimates for all relevant locations, as compiled from studies or emissions permit applications. Estimates should be labeled as estimated emissions/unit time period (daily, weekly, etc), or as potential-to-emit estimates |