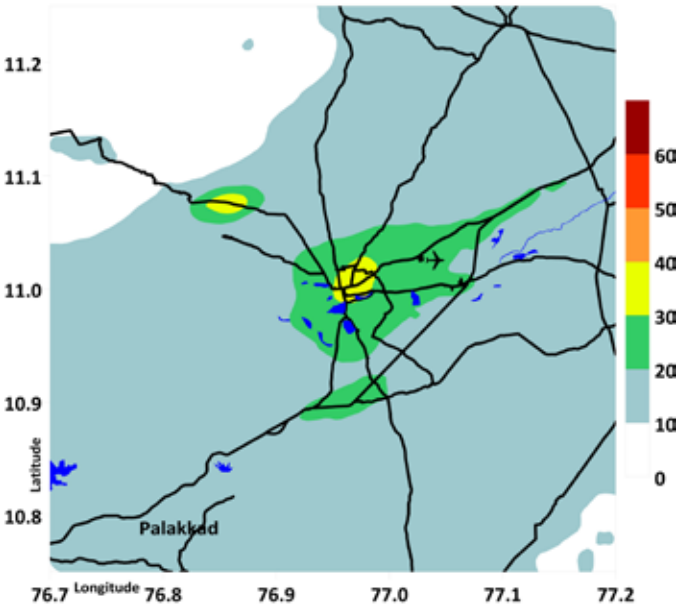
Modeled annual average $PM_{2.5}$ concentration (2015) µg/m³



For urban Coimbatore, average $PM_{2.5}$ concentration was 19.4 ± 4 µg/m³. This is within the national standard (40) but more than three times the WHO guideline (10).

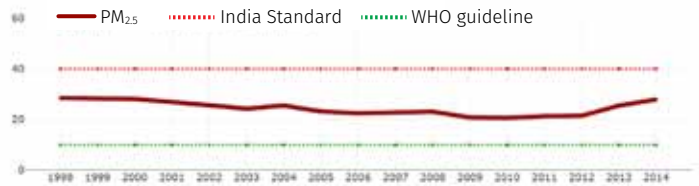
Air monitoring infrastructure

Coimbatore has 0 Continuous Air Monitoring Station (CAMS) reporting data for all the criteria pollutants and 3 manual stations reporting data on PM_{10}, SO_2, and NO_2. There should be at least 19 CAMS in the city for efficient reporting.

Annual averages from the national ambient monitoring program (2011-2015) µg/m³

PM_{10}	NO_2	SO_2
62.5 ± 39.7	26.9 ± 15.3	4.0 ± 1.7

Trend in $PM_{2.5}$ concentrations, based on satellite observations and global model simulations (1998-2014) µg/m³



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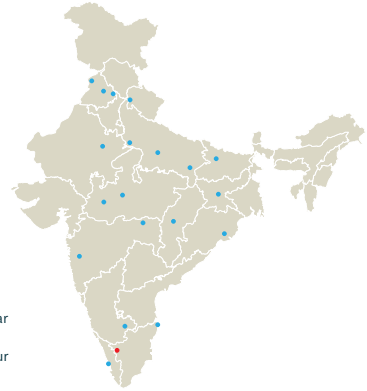
SHAKTI SUSTAINABLE ENERGY FOUNDATION

APnA CITY PROGRAM

Clearing the air with data

The Air Pollution Knowledge Assessment (APnA) City Program

Clearing the air with data



• Agra • Amritsar • Bengaluru • Bhopal • Bhubaneswar
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• Indore • Jaipur • Kanpur • Kochi • Ludhiana • Nagpur
• Patna • Pune • Raipur • Ranchi • Varanasi

Designing an effective Air Quality Management (AQM) plan for a city requires robust data on levels of pollution, affected areas, source contributors, peaking trends and possible control mechanisms.

The Air Pollution Knowledge Assessment (APnA) City Program seeks to make this database available and also serve as a starting point for understanding air pollution.

The program, implemented by Urban Emissions and facilitated by Shakti Sustainable Energy Foundation, seeks to create a comprehensive, city-specific information pool by pulling together data from disparate sources, surveys, mapping and atmospheric modeling.

Policy options based on this information, and their implementation, would be the effective next steps in improving the air quality of our cities.

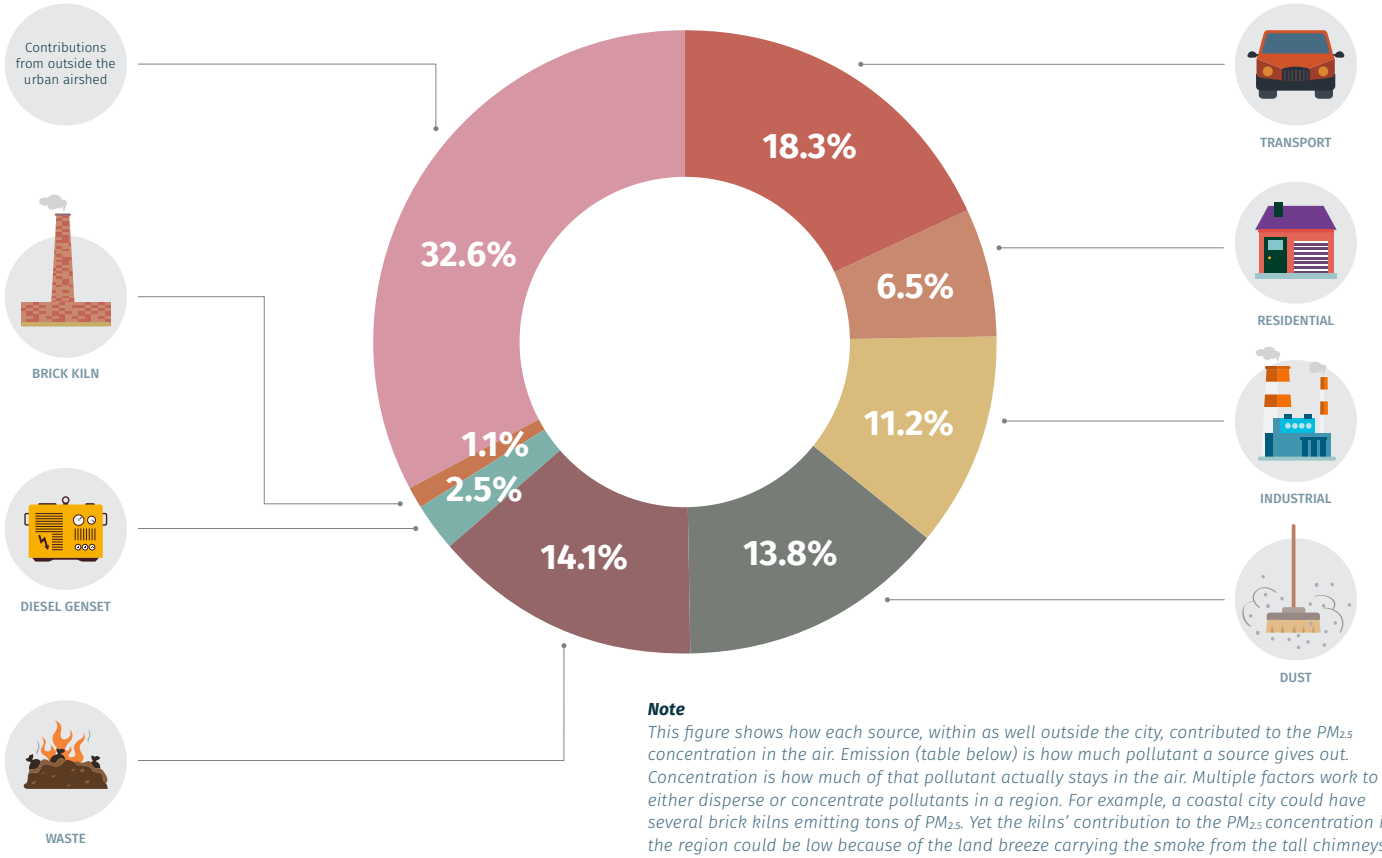
www.urbanemissions.info

Coimbatore

One of the fastest growing cities in India, Coimbatore air quality degradation has been thankfully slow. But that could change.

For detailed information on Coimbatore Air Quality, visit **www.urbanemissions.info/india-apna**

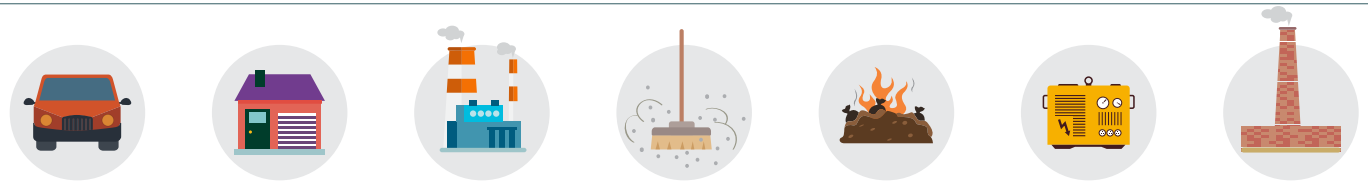
$PM_{2.5}$ concentration : source–wise percentage share in 2015



Note

This figure shows how each source, within as well outside the city, contributed to the $PM_{2.5}$ concentration in the air. Emission (table below) is how much pollutant a source gives out. Concentration is how much of that pollutant actually stays in the air. Multiple factors work to either disperse or concentrate pollutants in a region. For example, a coastal city could have several brick kilns emitting tons of $PM_{2.5}$. Yet the kilns' contribution to the $PM_{2.5}$ concentration in the region could be low because of the land breeze carrying the smoke from the tall chimneys to the sea. To know how source concentration is calculated please visit the APnA city website.

$PM_{2.5}$ emissions : source–wise share in tons in 2015 and 2030 (projected)



3,000	700	6,050	1,600	1,400	350	1,000
4,800	800	8,100	2,800	2,050	400	1,300

Total emissions in 2015 = 14,100 tons | Total emissions in 2030 = 20,250 tons

Findings & Recommendations

- The modeled source contributions highlight transport (including on-road dust), industries (large cement plants), and open waste burning as the key air pollution sources in the urban areas.
- The contribution of sources outside the urban airshed was an estimated 33% of the ambient annual $PM_{2.5}$ pollution (in 2015), stemming mostly from large industries, brick kilns, and agricultural activities. In absolute terms, this is a equivalent to background concentrations.
- Inside the city, there is a growing need to aggressively promote public and non-motorized transport as part of the city's urban development plan, along with the improvement of the road infrastructure to reduce on-road dust re-suspension.
- By 2030, the vehicle exhaust emissions are expected to remain constant, if and only if, Bharat 6 fuel standards are introduced nationally in 2020, as recommended by the Auto Fuel Policy.
- By 2030, the share of emissions from residential cooking and lighting is expected to decrease with a greater share of LPG, residential electrification, and increasing urbanization.
- The 120 brick kilns in the urban airshed are fueled mostly by coal, agri-waste, and other biomass. These kilns can benefit from a technology upgrade from the current fixed-chimney and clamp-style baking to (for example) zig-zag, in order to improve their overall energy efficiency.
- The cement manufacturing plants need to practice and enforce stricter environmental standards for all the criteria pollutants to reduce their share of influence on urban air quality.
- Open waste burning is dispersed across the city and requires stricter regulations for addressing the issue.