GASPING FOR BREATH

The country's air pollution problem is going from bad to worse owing to the high usage of coal for generating power and the rise in the number of vehicles. **By RAMESH CHAKRAPANI**

The recent severe smog problem in New Delhi, caused by crop burning in neighbouring States, has once again put the spotlight on the dangerous levels of air pollution in the city and also turned the nation's focus on the extent of air pollution nationwide.

A report put out by The Lancet, one of the world's most respected general medical journals, stated that outdoor air pollution was responsible for 6 per cent of the "total disease burden in India in 2016".

According to Swaniti, a non-profit initiative, as of January 2015, coal-powered thermal power plants accounted for nearly 61 per cent of India's total power generation, while private and commercial vehicles accounted for more than 66 per cent of the total consumption of diesel.

Also, as per Census 2011, 87 per cent of rural households and 26 per cent of urban households depend on biomass for cooking. These are the three main causes of air pollution in the country.

The WHO estimates that over four million people die prematurely worldwide from illness attributable to household air pollution from cooking with solid fuels.

Household air pollution and health

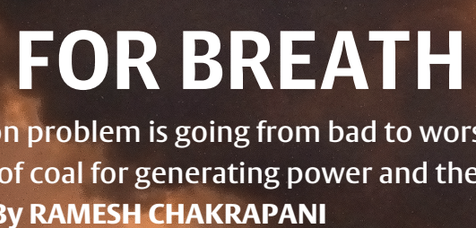
Around 3 billion people cook and heat their homes using open fires and simple stoves burning biomass (wood, animal dung and crop waste) and coal.

Over 4 million people die prematurely from illness attributable to the household air pollution from cooking with solid fuels.

More than 50% of premature deaths due to pneumonia among children under 5 are caused by the particulate matter (soot) inhaled from household air pollution.

3.8 million premature deaths annually from noncommunicable diseases including stroke and lung cancer are attributed to exposure to household air pollution.

Fossil fuel consumption in India



SOURCE: GREENPEACE

SOURCE: HTTP://AQICN.ORG

Most polluted spots in India

Anand Vihar, Delhi	408
DTU, Delhi	401
ITO, Delhi	304
Siri Fort, Delhi	297
R.K. Puram, Delhi	284
IGSC Planetarium Complex, Patna	308
Sector16A, Faridabad	300
Sanjay Palace, Agra	299
Nehru Nagar, Kanpur	280
Maninagar, Ahmedabad	285

Air quality index scale as defined by the US-EPA 2016 standard: 0-50 Good 51-100 Moderate 101-150 Unhealthy for sensitive groups 151-200 Unhealthy 201-300 Very Unhealthy 300+ Hazardous

Major causes of air pollution in India

As of January 2015 coal-powered thermal power plants accounted for nearly **61%** of India's power generation, according to data available from Central Electricity Authority (CEA). Coal plants are a leading source of SO_2 and NO_2.

Growing number of cars in Indian cities--private and commercial vehicles--account for **66.28%** of the total consumption of diesel. Low standards for vehicle emissions and fuel have resulted in increased levels of oxides of nitrogen and sulphur.

As per Census 2011, **87%** of rural households and 26% of urban households depend on biomass for cooking. Burning of biomass is a leading cause of indoor air pollution and is responsible for respiratory and pulmonary health issues in approximately 400 million Indians.

The proportion of rural households using kerosene as a primary source of energy for lighting is almost **30%**. Kerosene lanterns used in rural areas are a primary source of emission of black carbon soot and cause significant health problems.

SOURCE: SWANITI

SOURCE: GREENPEACE

Most polluted spots excluding India

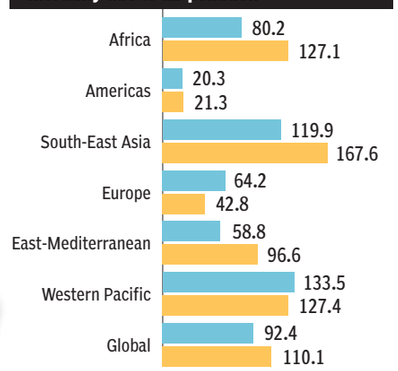
China Hanting Dt, Weifang, Shandong	890
China Tangsha	368
China Xingtai	374
China Tangshan	368
China CongTai Park, Handan	352
Ulaanbaatar Bayankhoshuu	418
Mexico Finanzas, Saltillo, Coahuila	869
Mexico Piedras Negras, Coahuila	814

SOURCE: HTTP://AQICN.ORG

Ambient air pollution worst performers PM2.5 concentration

Asia	Urban	Total
Saudi Arabia	127.1	107.7
Qatar	104.64	103.4
Bangladesh	88.8	83.5
Kuwait	78.4	74.5
Nepal	74.3	64.0
Pakistan	67.7	59.8
India	65.7	62.4
U.A.E.	64.4	63.6
Afghanistan	63.4	46.0
Bahrain	60.1	60.0
Africa		
Egypt	100.6	92.8
Mauritania	86.2	64.8
Uganda	79.6	57.2
Cameroon	63.6	65.2
Chad	61.3	39.5
Congo	60.7	37.5

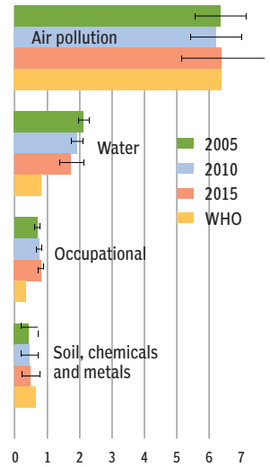
Mortality due to air pollution



Mortality rate attributed to household and ambient air pollution (per 100,000) 2012 · Age-standardised mortality rate attributed to household and ambient air pollution (per 100,000 population) 2012

SOURCE: LANCET

Global estimated deaths millions

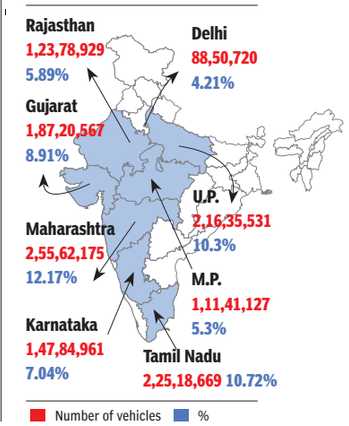


SOURCE: WWW.DATA.GOV.IN

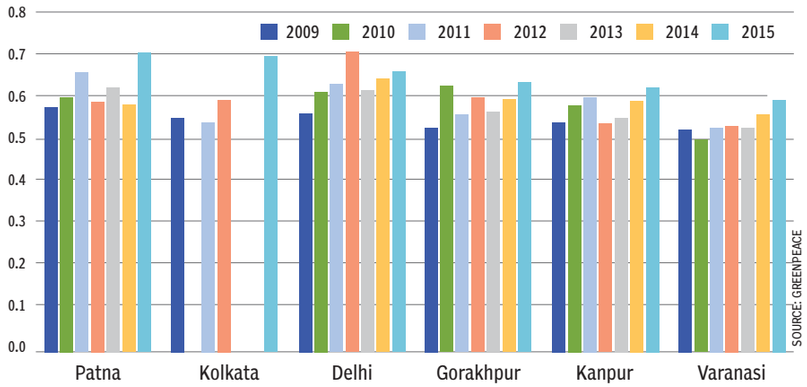
Vehicular population in India

(as on March 31, 2015)

All India 21,00,23,289 100%



Satellite-based pollution levels in most polluted Indian cities



SOURCE: GREENPEACE