Air Pollution in India: Huge Impacts on Health, Renewable Energy, and Cultural Heritage

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Air Pollution Dominates Deaths Due to Pollution

Figure 4: Global estimated deaths (millions) by pollution risk factor, 2005–15
Using data from the GBD study and WHO. IHME=Institute for Health Metrics and Evaluation.

The Lancet, 2017
Sampling Roadside Burning

Samples collected ~0.5 m from source
First toxicity measurements of roadside garbage fires in India highlight the unhealthy nature of a common practice

By Ken Kingery

Ever wondered about the contribution of waste burning to ambient PM in India https://t.co/QAMm200Ppy @cwiedinm @Parth_ltsme @ajynagpure

24 Sep 2016
DUST AND ATMOSPHERIC POLLUTION DECREASE SOLAR ENERGY PRODUCTION
Current Loss of Solar Production

• China ≅ 11GW ≅ 10 billion US $ per year

• India ≅ 1 GW ≅ 1 billion US $ per year
Results - Modeled color

Color from dust (59%)
AOD=0.22

Color from BrC (38%)
AOD=0.14

Color from BC (3%)
AOD=0.016

Color from dust, BrC, BC (100%)
AOD=0.37
Rescuing an Icon

Once a shining vision in white, the world-famous Taj Mahal has lost some luster over the past few decades. As the population of the surrounding city of Agra, India, swelled and air pollution worsened, the marble of the 17th-century monumental tomb began to turn brownish-yellow.

No one knew the exact cause of the discoloration, though. Was it manufacturing? Transportation? Construction? Or some other activity in the burgeoning industrial hub?

Now a study carried out by scientists from the United States and India has identified the culprit: dust, likely blown up by the traffic on unpaved roads and sent produced by burning trash, agricultural refuse, fossil fuels, and the dung and wood that locals use in fires for cooking and warmth.

The official response was swift. "Our paper came out, and within two weeks it was being discussed in the Indian Parliament," says environmental engineer Mike Bierin. Authorities in Agra then adopted plans to improve air quality, which include giving people propane to cook with and switching several thousand trucks from diesel to natural gas. — A. R. Williams
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Low cost sensor network deployed in India: Streaming real time data

http://atmos.urbansciences.in/dashboard/