

# Air pollution at the FIFA Under-17 World Cup

- Air pollution in six Indian cities that will host the FIFA Under-17 World Cup exceeds international safe levels, posing serious health risks to spectators and young athletes.
- Out of the six Indian cities hosting the World Cup, Goa, Guwahati and Kochi<sup>1</sup> have 'Zero' real-time monitoring stations and as a result there are no health advisories being issued on bad air quality days.
- China got international attention for poor air quality during 2008 Olympics, forcing authorities to take action. Air quality in China has been changing since then. Air pollution levels during the Indian tournament could be significantly worse than during the 2008 Beijing Olympics.
- The FIFA Under-17 World Cup takes place in India from 6-28 October 2017. Smoky winters are just around the corner and weather conditions coupled with harvest and festive season, along with high pollution emission load will make air quality worse.

## FIFA U-17 cities have high air pollution

The six cities hosting the tournament - New Delhi, Navi Mumbai, Goa, Kochi, Guwahati and Kolkata - share dangerous levels of air pollution that threaten the health of spectators and athletes.

Concentrations of coarse particulate matter (PM<sub>10</sub>) in these cities regularly break international standards. Even the least polluted of these cities breach World Health Organization [recommendations](#) that PM<sub>10</sub> should not exceed 50µg/m<sup>3</sup> over a 24-hour period. PM<sub>10</sub> concentrations in New Delhi were more than six times the recommended WHO limit at the same time last year.

PM<sub>10</sub> pollution is [caused by](#) coal power stations, heavy industry, motor vehicles, diesel generators, and burning biomass and waste. It can damage the lungs and hearts of those affected. Numerous scientific studies [link](#) PM<sub>10</sub> pollution to premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. Young people are particularly vulnerable.

Average concentrations of PM<sub>10</sub> in the host cities during October of 2016 are shown in the following table. Although air pollution levels vary slightly from year to year, the Indian government has not been very successful in tackling the problem till now. The actions taken were in isolation from each other as well as were not comprehensive enough to cover big sources of pollution in a systematic manner. As a result the air quality levels even now<sup>2</sup> are hazardous and have not come down to breathable levels which implies that levels during the FIFA U-17 World Cup are likely to be similar.

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<sup>1</sup> Real time monitoring will be conducted at stadium in Kochi during the matches,

<https://timesofindia.indiatimes.com/city/kochi/ensure-adequate-air-quality-fifa-to-pcb/articleshow/60815282.cms>

<sup>2</sup> <http://cpcb.nic.in/aqiv.php>

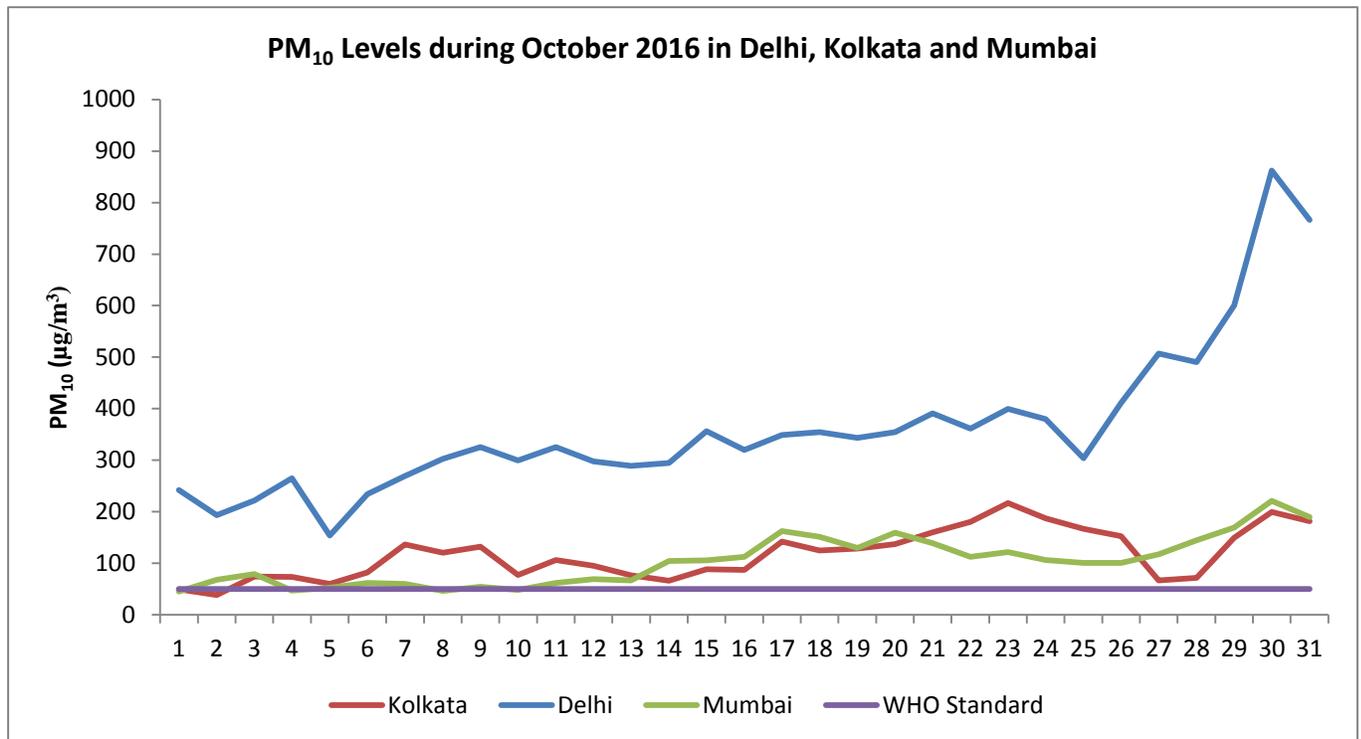
<b>Location</b> (monitoring station names in brackets)	<b>PM<sub>10</sub> concentrations</b> ( $\mu\text{g}/\text{m}^3$ ), October 2016 ( <a href="#">data from CPCB</a> )	<b>Countries / matches affected</b> ( <a href="#">tournament schedule</a> )
New Delhi (R K Puram; Mandir Marg; Punjabi Bagh; Anand Vihar)	304	Group matches: Colombia, Ghana, India, Mali, New Zealand, USA Round of 16
Navi Mumbai (MPCB Bandra; NMMC Airoli)	100	Group matches: Colombia, Mali, New Zealand, Paraguay, Turkey, USA Round of 16
Goa (Margoa Station)	68	Group matches: Brazil, Costa Rica, Germany, Guinea, Iran, Niger Round of 16 Quarter Finals
Kochi (MG Road, South Overbridge, Vyttila)	65	Group matches: Brazil, Germany, Guinea, Niger, North Korea, Spain Round of 16 Quarter Finals
Guwahati (average of 6 stations, <a href="#">data from Government of Assam</a> )	73	Group matches: Chile, France, Honduras, Japan, Mexico, New Caledonia Round of 16 Quarter Finals Semi Finals
Kolkata (Victoria)	75	Group matches: Chile, England, Iraq, Japan, Mexico, New Caledonia Round of 16 Quarter Finals 3rd-place Play-off Final

Pollution levels are already very high (due to existing pollution load and meteorological conditions) and up-coming winters with crop harvest (Agricultural biomass burning) and festival season means air pollution will be even worse i.e., last year the average PM<sub>10</sub> levels reached 865  $\mu\text{g}/\text{m}^3$  in Delhi and around 200  $\mu\text{g}/\text{m}^3$  in Mumbai and Kolkata during October as depicted in the graph below.

The dates of the festive season differ from year to year based on the lunisolar calendar followed across the country. The festive days this year are scheduled about 10 days before the same time last year, therefore the spike in pollution may happen about a week earlier compared to last year.

A combination of pollution sources including thermal power plants, transport, industry, construction, household and municipal biomass/waste burning coupled with increasing share from agricultural biomass burning and festival season results in National Health Emergency.

The last match in New Delhi will be held on the 16<sup>th</sup> of October when all of these multiple factor combined together will deteriorate the air quality to hazardous levels, PM<sub>10</sub> concentrations on the equivalent day in 2016 were 320µg/m<sup>3</sup> which was more than 6 times the recommended WHO maximum.



## FIFA U-17 air pollution will be worse than other international events

Concentrations of particulate matter will be higher during the FIFA U-17 World Cup than they were during other international tournaments and periods of severe air pollution. For example:

- Average PM<sub>10</sub> concentrations during the **Beijing Olympics** in 2008 were [82µg/m3](#). There were widespread [concerns](#) about the effect pollution would have on the Games.
- Chile declared an air pollution [emergency](#) while it hosted the 2015 **Copa America**, South America's main football tournament. The highest daily PM<sub>10</sub> recorded during the period at any station in Santiago, which hosted several games including the final, was 286µg/m<sup>3</sup>.<sup>3</sup>
- **Paris** took emergency measures, including restricting traffic, in December 2016 when it experienced its most severe pollution for 10 years. The highest daily PM<sub>10</sub> concentration recorded during the period was [146µg/m3](#).
- The Mayor of **London** [warned](#) of "very high" pollution and "toxic" air in January 2017, advising residents to protect themselves. PM<sub>10</sub> concentrations at the time were 101µg/m<sup>3</sup>.

<sup>3</sup> Estación Quilicura I, data from [SINCA](#)

## Air pollution threatens the health of athletes and spectators

Such high levels of PM<sub>10</sub> risk the health of spectators and players and could reduce athletic performance.

Exposure to particulate matter causes [health problems](#), particularly to respiratory and cardiovascular systems. Even short-term exposure to high levels of particulate matter leads to more hospital admissions and deaths. Death rates increase with higher concentrations of PM<sub>10</sub> - a concentration of 150µg/m<sup>3</sup> leads to [5% more deaths](#) than days with less pollution.

The risks are greatest for older people, children and those with lung or cardiovascular conditions. Young athletes undergoing extreme physical exertion are at risk. Everyone, including healthy adults, should reduce outdoor physical exertion when PM<sub>10</sub> concentrations are above 100µg/m<sup>3</sup>, according to [advice](#) from the UK Met Office.

Ahead of the Beijing Olympics, Dr Michal Krzyzanowski, a WHO pollution expert, [warned](#) about the risks to spectators from air pollution: "There is a risk people with not perfect health may take trips to the Olympics. For them, exposure to high pollution levels may be a trigger to serious problems if they already have, for instance, cardiovascular disease. Those who come with asthma may suffer attacks."

Air pollution could also reduce the quality of the football at the tournament. Football matches that take place during periods of worse air pollution are played more slowly, according to a [study](#) of the German league. The study found the strongest effect when PM<sub>10</sub> concentrations are above 50µg/m<sup>3</sup> and when players have fewer than five rest days between matches. The FIFA U-17 tournament will meet both of these criteria.

Central pollution control board in India have released directions<sup>4</sup> calling for actions to be taken in view of the rising air pollution levels and FIFA World cup matches being played in Delhi, This is a step towards firstly in acknowledging and then tackling the issue. However, for the pollution levels of Delhi and other cities to fall within breathable limits, the efforts need to be much greater/ stringent and spread across larger geographies. India's actions to reduce pollution levels during this international event and winters to come will show our commitment towards public health. Time to debate on the pollution levels has passed long back and it's time act now because every polluted day is taking a toll on public health across the country.

India needs Action Plan at different geographical and time scales, i.e., city/regional/national clean air action plan with actions to be taken across sectors in time bound manner in short-term, mid-term and long-term. Such action plans also needs to have public participation as well as responsible authorities to act within stipulated time frames to achieve breathable air quality across the country.

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<sup>4</sup> [http://cpcb.nic.in/DPCC\\_19.09.2017.pdf](http://cpcb.nic.in/DPCC_19.09.2017.pdf)