

Roadside air quality worse in first half

South China Morning Post

2010-7-5

Roadside air quality worse in first six months

Readings 20pc higher than in 2009

Health-threatening roadside air pollution continued to get worse in the first half this year. The latest air-quality monitoring data shows the number of hours at street level with a very high level on the air pollution index (API) rose by a fifth from 2009.

While the six-month air quality data was skewed a little by a sandstorm from March 21 to 23, a closer look at the figures excluding readings taken during the three days still indicated that air pollution at street level was rising.

Readings at nine out of 14 stations in the quality monitoring network surged to 500 - the maximum level under the API system - for 106 hours over the three days when the city was affected by the sandstorm from northern China.

The Environmental Protection Department countered by saying that, excluding readings during the sandstorm, those in the first half were comparable to those for 2009.

The EPD also reported that readings of most air pollutant concentrations - which it said are more scientific and widely used - actually fell during the first half of the year.

At the three roadside air quality monitoring stations, however, a total of 1,277 hours of API over 100 were recorded in the first six months.

That includes the 108 hours of unprecedented severe readings taken during the sandstorm, to show a 20 per cent increase over 2009 - and an eightfold rise from 2005.

The increase was roughly the same minus the sandstorm readings.

Excluding all API readings between March 21 and 23, the hours of API over 100 in Causeway Bay and Central were still 60 and 19 per cent more than in 2009. Mong Kok, however, saw a decrease of 24 per cent.

And as roadside readings rose, those reflecting regional pollution have actually improved - despite a record 295 hours of severe API (readings over 200) being taken in the period.

The number of hours with pollution readings at or above a high level (API over 50) at all 11 monitoring stations fell by 17 per cent. Excluding the three-day sandstorm readings, that would widen to a 20 per cent improvement.

Hours with API over 50 fell by 222 in Central and Western District, from 1,418 in 2009 to 1,196 this year, excluding the March 21 to 23 data for both years. Before adjustment, however, the hours dropped by 184.

In response to queries about air quality, an EPD spokeswoman said comparing air quality changes over a short period of time might not be representative because of possible shifts in weather and emission patterns.

She also said the API readings were not the most scientific and reliable indicators to assess air-quality changes, compared to monitoring the concentration levels of various pollutants. "A more scientific and commonly adopted way to assess whether air quality is improving or deteriorating is to look at the changes in average pollutant concentrations on an annual basis," she said.

Even including the impact of the sandstorm, the half-yearly readings of the average pollutant concentrations in the first six months - except nitrogen dioxides and nitrogen oxides - have dropped from 1.5 to up to 33 per cent compared with the same period in 2009.

Roadside nitrogen dioxide concentration went up by 4.5 per cent from 109 to 114 micrograms per cubic metre of air - which still exceeds the 80-microgram annual concentration limit. At ambient level, nitrogen oxides and nitrogen dioxides rose by 6.6 and 2 per cent, respectively.

Roadside sulphur dioxide concentration saw the biggest fall, down from 15 to 10 micrograms and well within the limit of 80 micrograms.

Professor Wang Tao, an air pollution scientist at Polytechnic University, said there was an urgent need to find out why roadside pollution was continuing to deteriorate.

"This is an interesting phenomenon. Before 2005, the ambient-level pollution seemed to be getting increasingly worse each year. Now, the trend has reversed and more scientific research has to be done to find out why," he said.

Wang believed three factors could explain why roadside pollution had worsened.

One possibility is increasing vehicle emissions in the city. While the number of cars on the roads might not have increased much, Wang suggested higher mileage could be generating more emissions.

A second possible cause is the interaction between ambient ozone pollution and nitrogen oxide emissions from vehicles. The reaction of the two gases can lead to a surge in nitrogen dioxide pollution by the roadside - which has been seen increasingly in recent years.

Wang said a third possibility was air-flow changes in the city, which could have reduced the dispersion of pollution. "Whether increasing high-rise developments block the wind and air flow and how this will affect the dispersion of pollutants requires further in-depth studies," he said.

Professor Chan Chak-keung, director of the Institute for the Environment at the University of Science and Technology, said that while more information was needed to determine the actual impact of the sandstorm on air quality in the first half, he believed that poor roadside air quality was a city-wide problem, not just a localised phenomenon.

He said switching to cleaner vehicles might help ease pollution by the roadside. Chan also suggested low-emission zones be set up in districts beyond Central, Causeway Bay and Mong Kok, where roadside air quality data is routinely monitored.