

WAYU, the air filter device that will make sure the people of Delhi get to breathe fresh air

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Delhi is among the most polluted cities in the world, and with 17 million inhabitants, is also the fifth most populated. A [report](#) by the WHO (World Health Organization) stated the air in the capital city has a high presence of PM10 (particulate matter). PM10 in Delhi's air is around 292 micrograms per cubic

While there have been many policies, ranging from banning unauthorised industries releasing harmful chemicals, to bringing electric mobility, only a few have been successful.



Dr Harsh Vardhan inaugurating WAYU in Delhi, source [Twitter](#)

To combat the worsening air quality, National Environmental Engineering Research Institute (NEERI), the Nagpur-based laboratory of the Council of Scientific and Industrial Research (CSIR), has developed the WAYU (Wind Augmentation and Purification Units) device. This device, designed in collaboration with Industrial Design Centre at IIT Bombay, can tackle air pollution at high traffic zones.

In an official statement, Prashant Gargava, member secretary, Central Pollution Control Board [said](#),

WAYU, designed by NEERI and IIT (Bombay), works by converting pollutants such as dangerous PM2.5 and PM10 particles, carbon monoxide and volatile organic compounds into carbon dioxide using a filter. Its creators claim it can reduce pollution at busy traffic junctions by 40-60 percent.

The purification process

The WAYU device works in two stages. The first stage uses a fan to suck in air around the device, which contains all kinds of pollutants like dust and particulate matter. These are separated using three blades of different dimensions.



WAYU Device, source [ESS Enviro](#)

Post this, the air enters into a specially designed chamber where oxidation takes place using activated carbon coated with titanium oxide. The oxidation is supported by two ultraviolet lights. The purified air is then pumped out into the atmosphere.

NEERI Director Rakesh Kumar [said](#),

Filters were made of non-woven fabric and their removal efficiency for particulate matter was 80 to 90 percent and of the poisonous gases 40 to 50 percent. the device is 5.5 feet tall and one foot wide.

Prototypes of the WAYU device have been installed at the ITO Junction in central Delhi, and Mukarba Chowk in north Delhi and were unveiled by Minister for Science and Technology Dr Harsh Vardhan, on Tuesday.

Impact on the environment

The device uses half a unit of electricity for 10 hours of operation, and can provide purified air to an area of 500 square metre.

The device can bring down the PM10 values from 600 micrograms per cubic metre to 100 micrograms per cubic metre. It also brings down PM 2.5 values from 300 micrograms per cubic metre to 60 micrograms per cubic metre.

Work is in progress to make the device compatible to serve an area of 10,000 square metre. Work is also underway to make the device treat other atmospheric pollutants such as nitrous and sulphur [dioxides](#).

The National Institute of Design, Ahmedabad, will work on the aesthetic design for the purifier.