Resolving Pollution through Technology and Innovation

India has put forth unprecedented achievements in the last few years, where India has not just started moving forward, but leaping forward. The country's Ease of Doing Business ranking has jumped from 142 in 2015 to 77 in 2018; it has also developed the world's largest solar power plant and is the home of the largest R&D operations outside of the home country for some of the biggest technology companies globally. It is now time for India, to take the lead in another parameter – **our environment**.

Over the past few years, the level of pollution in Delhi in the winter months has hit hazardous levels because of the high presence of fine particulate matter in the air. This pollution has resulted in nearly 15,000 people dying prematurely in 2016 alone in the city and has reduced the average life expectancy of the residents by over 6 years.

Tackling this problem cannot be achieved by trying to resolve a single source of pollution but through a strategic and consistent effort across all the sources.

CAUSES OF POLLUTION:

The causes of pollution in India are many, from vehicles and industrial emissions to the burning of crops and fireworks during the festival of the Diwali. In summer, because of the heat, pollutants usually stay 5 to 6 kilometers above the ground, however, in winter, this range comes down to as low as 1 kilometer. This year, the situation seems to be even worse, in June, there was already more toxic smog than it could be measured in Delhi and reports from NASA say the situation is only worsening.

Pollution affects everyone – rich or poor, old or young, man or woman, urban or rural. It's a problem that cannot be dealt with in isolation; just like the causes of pollution are many and varied, the solutions need to be too. We need out-of-the-box ideas to tackle pollution. India is a petri dish of innovation, and here are startups and innovation to beat pollution:

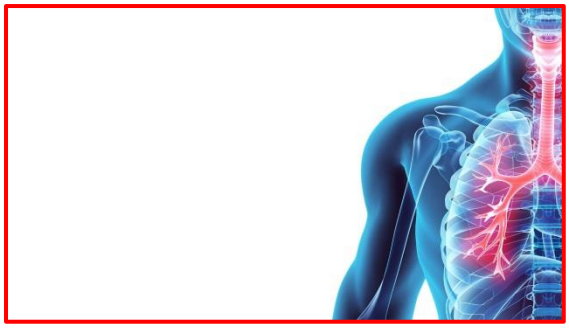
1. Blue Planet:

Blue Planet solves the carbon capture problem by converting CO2 into high-value building materials. What differentiates Blue Planet from other carbon capture methods is that the captured CO2 does not require a purification step, which is an energy and capital intensive process. As a result Blue Planet's capture method is more efficient, and results in a lower cost than traditional methods of CO2 capture.

Using this method, they produce lightweight coarse and fine aggregate, available for residential and commercial construction, sack concrete, roofing granules, high solar-reflective cool pigments, titanium oxide and many others.

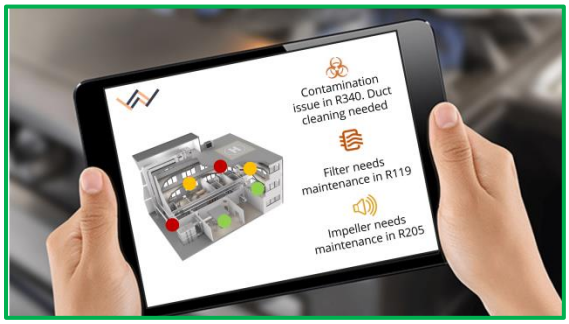
2. Static Air:

Fine dust can have a negative influence on the quality of life and life expectancy, the particles can penetrate into the lungs and be absorbed into the bloodstream, reducing lung and vascular functions, aggravating asthma and increasing blood pressure. StaticAir has developed an innovative technique to reduce particulate matter, that is effective in outside and inside environments.



3. WeavAir:

WeavAir offers advanced sensors & predictive analytics solution to save energy and reduce costs of high-value air distribution systems while improving air quality. Their algorithm detects, diagnoses and predicts issues before they become serious. The sensor modules make use of advanced sensor array technology to measure metrics and the devices are powered in part by renewable energy sources.



4. Graviky Labs:

Graviky Labs were at the launch of Clean Air India in Delhi as supporters of the initiative. They produce Air Ink, the first ever ink to be made entirely out of pollution. They capture air pollution with Kaalink, their patent pending retrofit technology, that can be designed to fit diesel generators and other fossil fuel chimney stacks. It can also capture pollution from the ambient air and can be customized for all sizes and use-cases for outdoor pollution capture. That means that very soon we can be writing with ink made out of pollution!

5. Project Exhale:

Indoor air pollution accounted for 4.3 million deaths in 2012 and has been linked to a wide range of diseases in adults and children such as acute pneumonia, chronic obstructive pulmonary disease, lung cancer, cardiovascular diseases and others. The main source of this type of pollution is smoke released from cooking on open fires and traditional stoves that use coal, wood and biomass fuels. In India alone, these practices are employed by approximately 700-800 million people.

Project Exhale is working alongside people living in slums to develop and provide access to improved cook stoves. They employ a participatory, context-oriented approach grounded in the realities of these urban, marginalized communities, in order to address the issues from the perspective of user needs, acceptability and sustainability of the project.

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