



# Pranavayu

Executive Summary prepared for the Biomimicry Institute, 11/01/2020

Pranavayu tackles hazardous pollutants from the air in Delhi. We are working with Utrecht University's established engineering department with help from TU delft's Biotechnology engineers.

## PROBLEM & OPPORTUNITY

India's 1.5 million rickshaw drivers are exposed to unhealthy pollutants during the summer season. Closing themselves off from the environment would prevent air flow causing them to overheat. Illness prevents primary breadwinners providing for their family and incurring a cost to the state for hospital bills whilst reducing mass transport availability.

## SOLUTION

Pranavayu is keeping users healthy with our biomimetic filter. An electrostatic field causes charged pollutants to be drawn from the air to our filter. We can protect our users whilst allowing air to flow freely across them. Users retrofit their rickshaw with our filter, which sits in the door arch.

## BIOMIMICRY IN PRACTICE

Bees moving through the air gather electrostatic charge on their pointed hairs. Pollen can be positively charged and so jumps onto the bee, preventing the need for physical contact. We are mimicking the structure of bee hairs to allow for the function of electrostatic attraction of charged particles. This will reduce the need to throw away ineffective PPE and reuse pollutants for ink, offsetting carbon.

## REVENUE MODEL

Pranavayu will rent our air filters out to users or user unions, providing them with technical repairs and extracting pollutants at regular intervals. This will keep cost low to user, extend the longevity of our product and allow us to valorise waste.

## TRACTION

Through our Bio Inspired Network at Utrecht University, our teams connected with various players in the field of circularity and sustainability. A few of these include members of Climate-KIC, COBIOM, and the sustainable startup incubator, Utrecht Inc. We also received encouragement from AirInk, a potential partner in this circular innovation.

## TEAM

As budding bio-inspired innovators we are committed to the planet and people. Diverse in expertise, geography, race, and language we aim to take our message across the world.

## NEXT STEPS

Develop our prototype to test further parameters. Increase awareness of our idea in relevant markets.

## UN SDGs

Goal 3: Good health in well-being

Goal 8: Decent work and economic growth

Goal 10: Reduced inequalities

Goal 11: Sustainable cities and communities

Goal 17: Partnerships for goals

## NATURE INSPIRATION

Attraction of pollen onto flowers and bees.

## NEEDS

An opportunity for in situ prototype testing.

Opportunities to connect and sell directly to rickshaw drivers and rickshaw unions to enable the testing.

## FOUNDING TEAM

- Hida Parsay (Organizer)
- Ashutosh Sinha (Networking)
- Nina Vodnjov (Developer)
- Edward Paddon (R&D)

## CONTACT INFO

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