

PROJECT B.E. (BREATHE EASY)

PROJECT BY:

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Diploma in Clean Energy | Year 3

PROJECT OBJECTIVE

This project aims to create an innovative and sustainable zero-waste carbon capture device to reduce carbon emissions. This device can be placed at locations with high levels of CO₂ such as road dividers, highways, and rooftops.

PROJECT SUMMARY

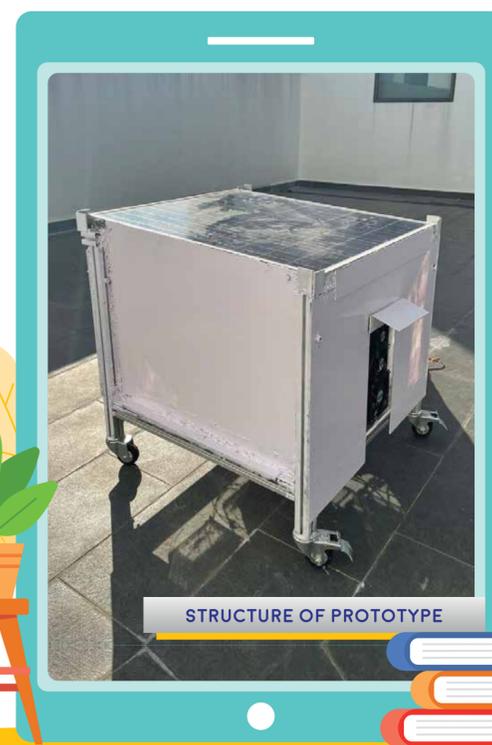
The device is currently solar-powered and can run for nine uninterrupted hours.

For CO₂ reduction, we used 3 levels of filtration:

- Stage 1 uses calcium bicarbonate, which is a mixture of calcium carbonate and water to remove carbon dioxide.
- Stage 2 uses algae to further remove CO₂ from stage 1.
- Stage 3 uses activated carbon to remove dust particles.

Through experimentation, we observed that the CO₂ levels decreased by 26.2%, from an average of 450ppm before filtration to 332ppm after filtration.

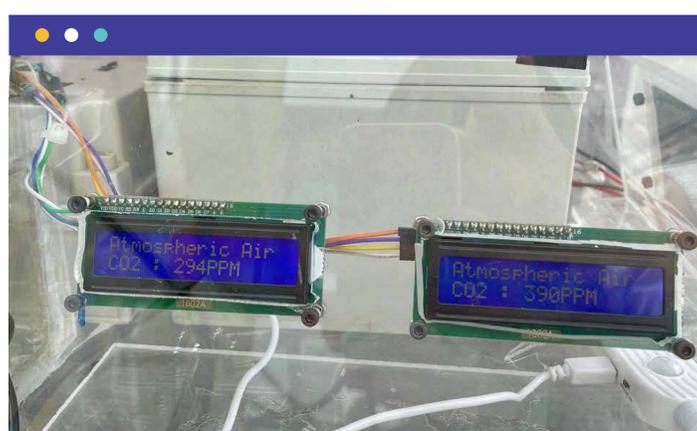
A very important feature of the project is that it produces almost zero waste. The used/dead algae may be used for biofilm, while the calcium carbonate precipitate may be used for paint production.



PROJECT OUTCOMES

- Successfully reduced CO₂ levels using two stages of filtration: algae and calcium carbonate.
- Purely solar powered making the project sustainable.
- Any by-product from our device can be repurposed to reduce waste.

CO₂ READINGS AFTER FILTRATION FROM
CALCIUM CARBONATE AND ALGAE



ALGAE TUBES (GREEN LIQUID) &
CALCIUM CARBONATE (WHITE LIQUID)



PART OF



ORGANISED BY

