Project Objective
The objective of this project is to develop viable processes to convert carbon emissions into something useful.

Abstract
Global warming is a problem that is caused by an excess of carbon dioxide. The excess carbon dioxide is a harmful by-product of industrial activity, which is yet to be put to good use. In an effort to find constructive applications for this harmful waste, our team has outlined two cutting-edge methods to reduce and reuse carbon dioxide. The first is designed to generate biofuel by growing algae using carbon dioxide to be ultimately harvested to make biocrude oil. The second is designed to manufacture plastic by chemically turning carbon dioxide into polypropylene carbonate (PPC*), which can become a biodegradable substitute for many harmful plastics in the market today. These CO₂ products are cleaner and safer than their counterparts (petroleum based fuel and slow-to-degrade plastic). As a result of these proposed methods, CO₂ production could be substantially reduced to bring us one step closer to achieving the standards of a circular economy where waste is eliminated and everything humanity produced could return to nature without upsetting its organic balance.

Processes To Make PPC
- Methane is made from CO₂
- Methane is collected to Propane
- Propane is oxidized into Propylene Oxide
- Propylene Oxide is polymerized with CO₂ to make PPC plastic

Processes To Make Biofuel
- Algae is grown and harvested
- Algae is burned to make biocrude
- Biocrude can be used as a substitute for crude oil

Methodology
Research and comparative analysis of various methods of CO₂ reduction and ways to optimize those methods.

Co2 I SEE YOU!
Reducing Carbon Dioxide By Producing Carbon Based Resources
Alicia Hyland
Tsuiyee Ng
Thomas Perry
Brandon Weyant

Selected Bibliography

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