

CO2. I SEE YOU!

Reducing Carbon Dioxide By Producing Carbon Based Resources

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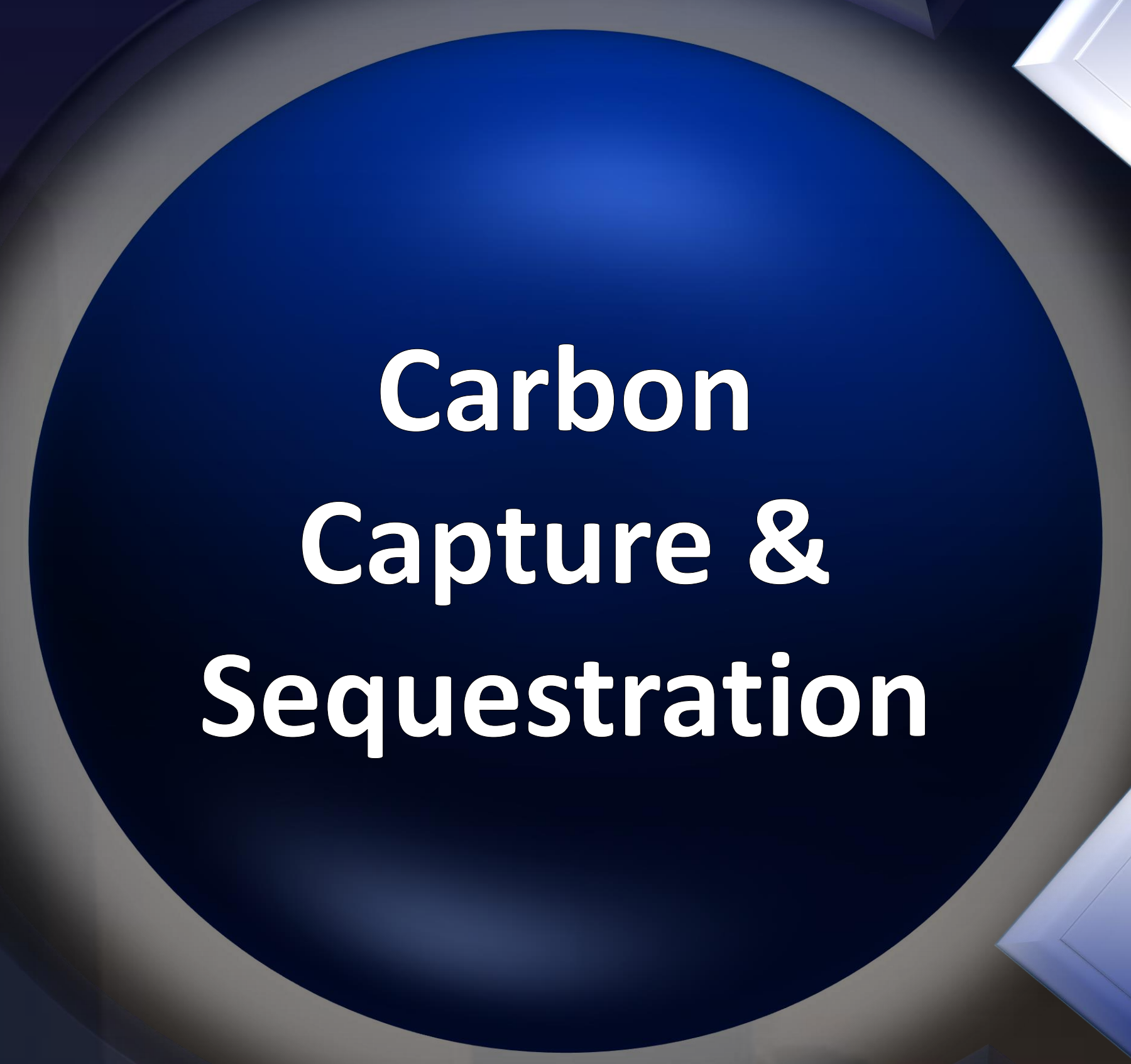
Project Objective

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

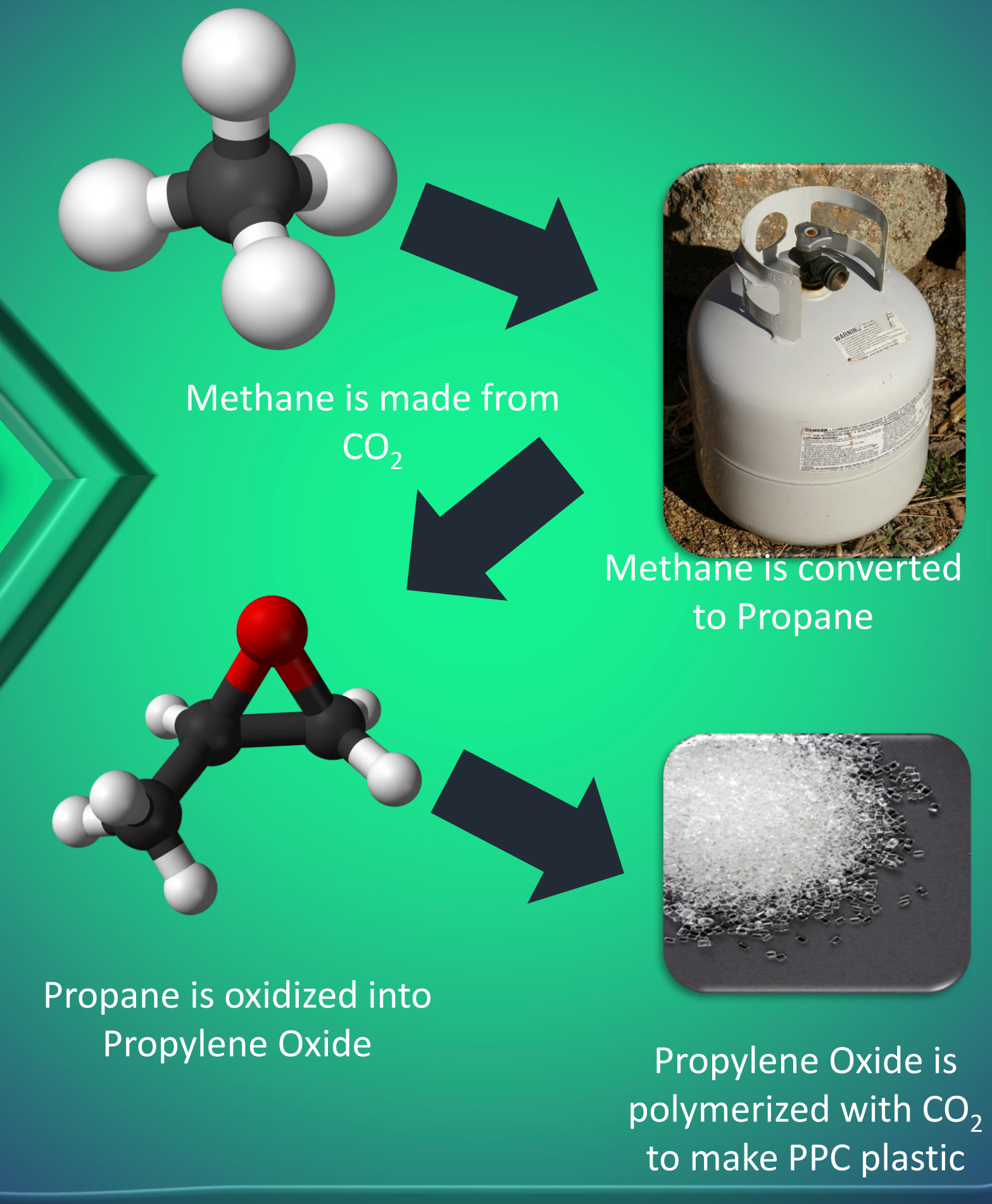


Abstract

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 in 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 humanly produced could return to nature without upsetting its organic balance.



Processes To Make PPC



PPC*

Processes To Make Biofuel

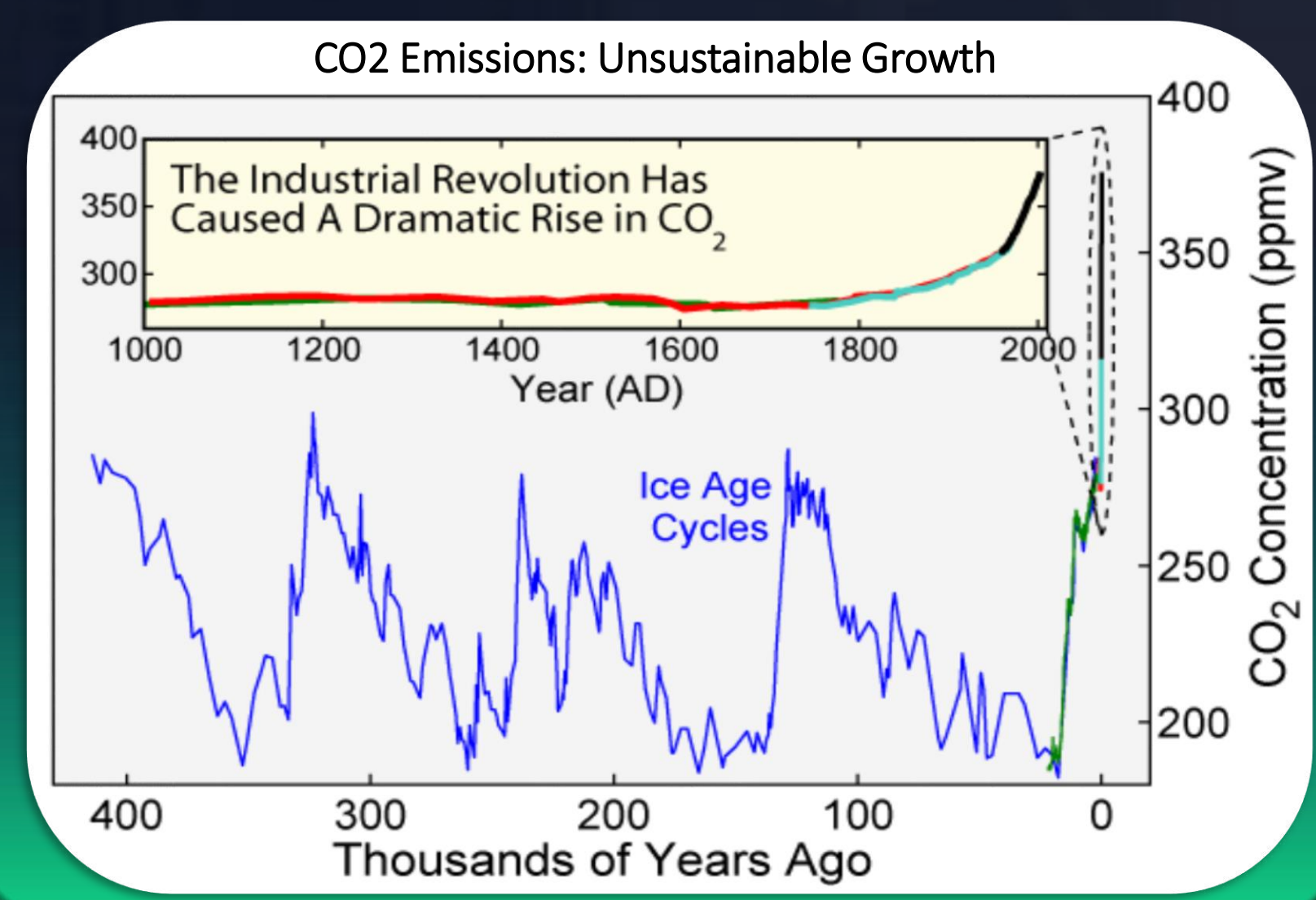


Biofuel

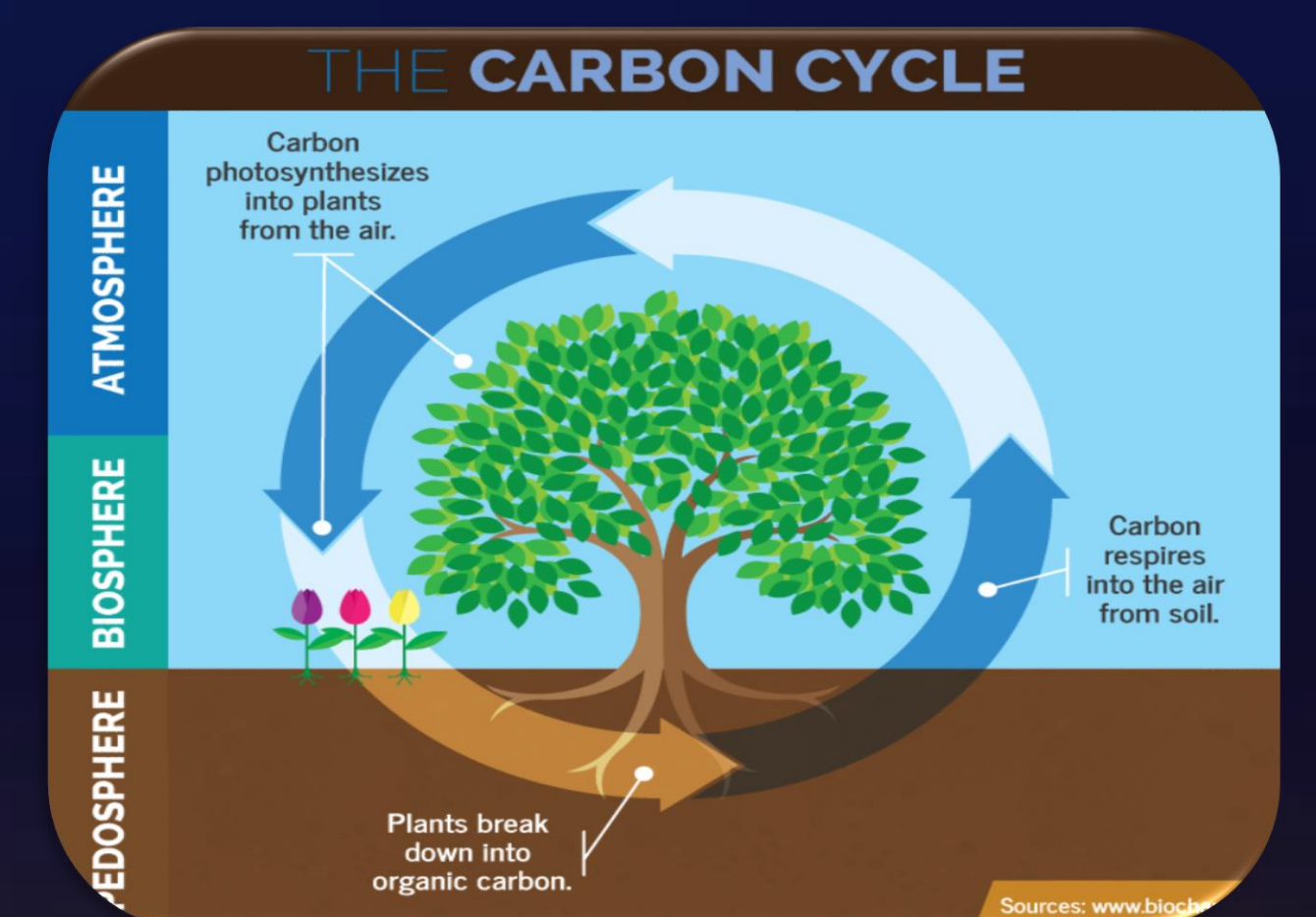
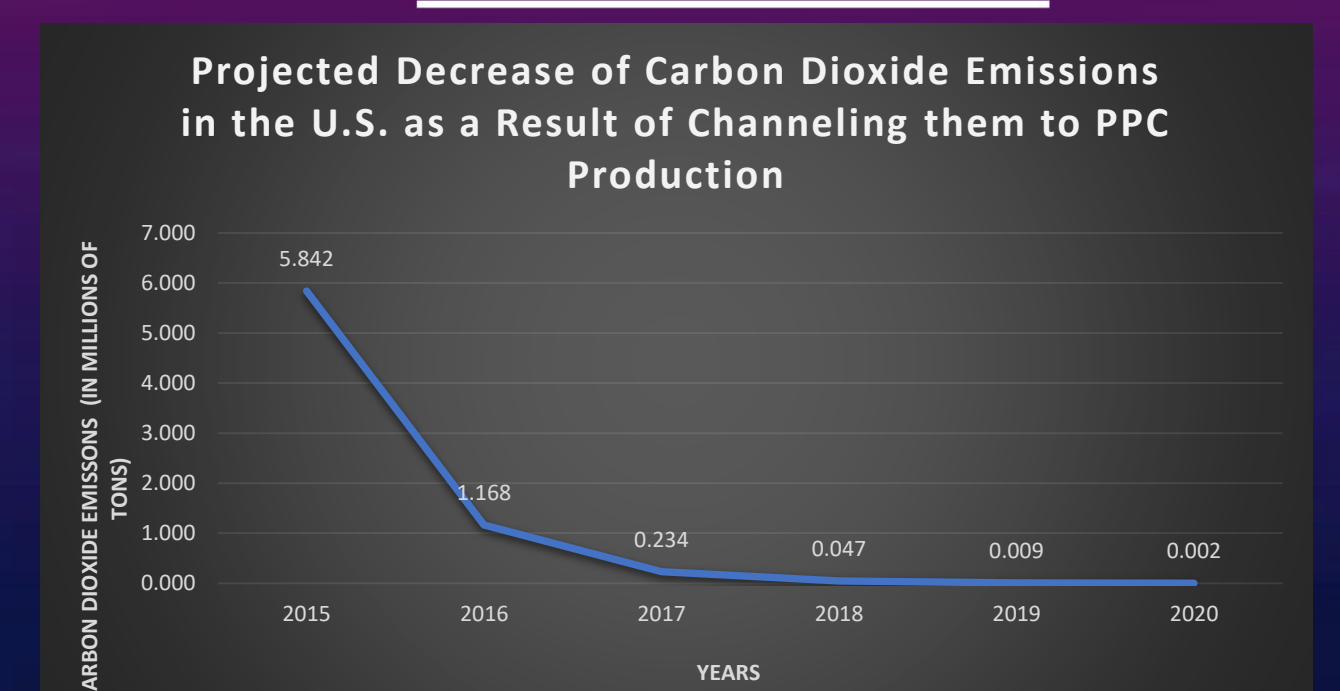
Methodology

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

Problem Statement Graph



Conclusion



Producing biofuels and PPC emulates one type of circular economy found in nature: The Carbon Cycle. It reduces the use of finite resources and reuses CO₂ byproducts from industrial production. It is a significant improvement over the current linear economy of CO₂, which mainly disposes it as waste and exacerbates its harmful effects on the environment.

Acknowledgements

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