Profitably Upgrading Carbon Dioxide

Use CO$_2$ to Store Energy

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With Thanks and Acknowledgement to the Department of Energy Office of Energy Efficiency and Renewable Energy

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ENERGY EFFICIENCY & RENEWABLE ENERGY
The CO₂ Challenge for Ethanol Refiners

Bioethanol Refineries co-produce large amounts of high-purity CO₂

But CO₂ supply in the U.S. exceeds market demand by 5x

Resulting in a very low market price for CO₂

$0.02/kg of CO₂
Our Solution

Upgrade the value of CO$_2$ by 50 times ($20 \rightarrow $1000/ton) into a zero-carbon chemical and fuel at a 30% lower cost than existing fossil-based synthesis routes.

Feedstocks

- CO$_2$ ($20$/ton)

Product

- CH$_2$O$_2$ (Formic Acid, $1000$/ton)

Markets

- Silage Preservation
- De-Icer
- Drilling Fluid
- Hydrogen Carrier
- Energy Storage
- Clean Power

OCO’s FA process and product qualify for up to $247$/ton CO$_2$ tax credits (e.g. 45Q).
Commercialization Traction
OCO is Planning its Final Commercial Scale-Up Stage Starting in January 2020

Raised Funds
- DOE-EERE Award
- DOE-NETL Award
- Angel Capital
- Founder Capital

Scaling-Up
Phase 1 of 3 New Scaled-Up Pilot Plant Commissioned in Ohio in July

Final Design
Final Full-Size Cell and Balance of Plant Design Development with Eqpt. Manufacturer

First Customer
Deployment of FA-fueled 250 kW Back-up Power Generation Unit for Northwest Utility

First Full Plant
Looking at co-located partner sites to build and operate the world’s only zero-carbon FA full-scale (1 tpd) process demonstration plant

We are Looking for Great Partners Interested in Improving Bio-ethanol Refinery Operating Margins by $0.50/gallon
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Thank You!

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