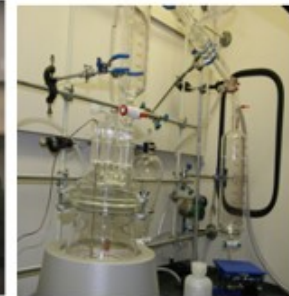


# CO<sub>2</sub> Capture & Repurpose that can profitably heal ocean health

A company that consistently  
**URNS THE PROBLEM INTO A SOLUTION**



**Successful & Profitable formula  
converts environmental  
problems into commercially  
viable solutions**



**Patented technologies,  
Proven methodology:**

- CO<sub>2</sub> to mineral salts
- NO<sub>x</sub> to mineral acids
- Sulfur compounds
- Brine to potable water
- Enhanced concrete



# PROFITABLE ENVIRONMENTAL REMEDiation

- PRDD has a 30+ year history of innovation & commercialization.
- The CO<sub>2</sub> gas treatment process is an example.
  - Uses waste energy from combustion to recycle chemicals used in the process.
  - Sodium chloride salt/saltwater is used as the only chemical consumable for all processes.
  - The PRDD integrated CO<sub>2</sub> gas treatment process can have a zero consumable cost and earn Carbon Credits.
  - Generates bicarbonate and carbonate byproducts that earn Carbon Credits and have commercial value. They can also be used in other PRDD processes, for clean water, to treat ocean acidity and strengthen concrete.
  - The process dynamically adjusts to changes in the treated exhaust gas stream.
  - System is small enough for use on a ship & can be large enough for power plants.



# Global Warming is REAL

Studies by many  
reputable  
agencies agree:

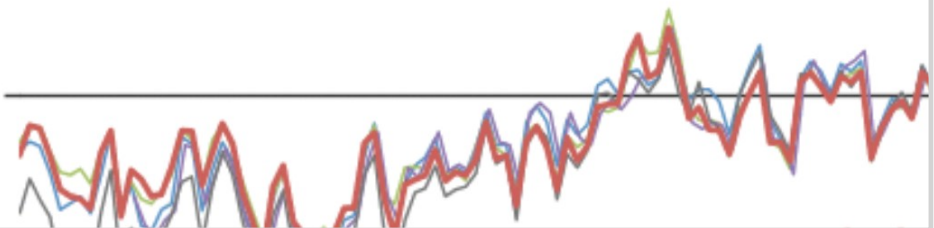
## A World of Agreement: Temperatures are Rising

Global Temperature Anomaly (°C)

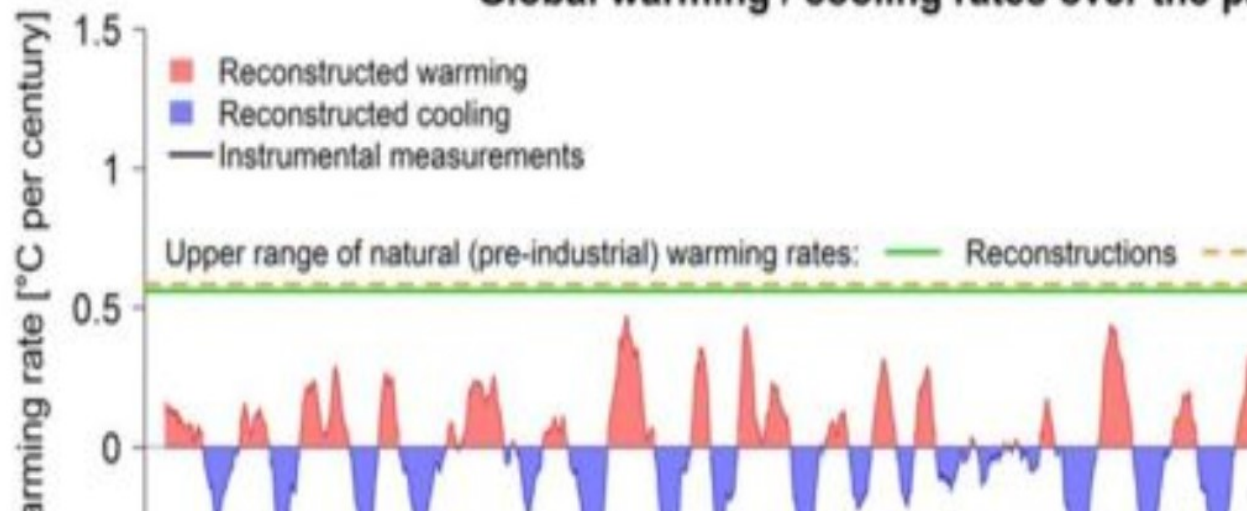
1.0 –

0.5 –

0.0 –

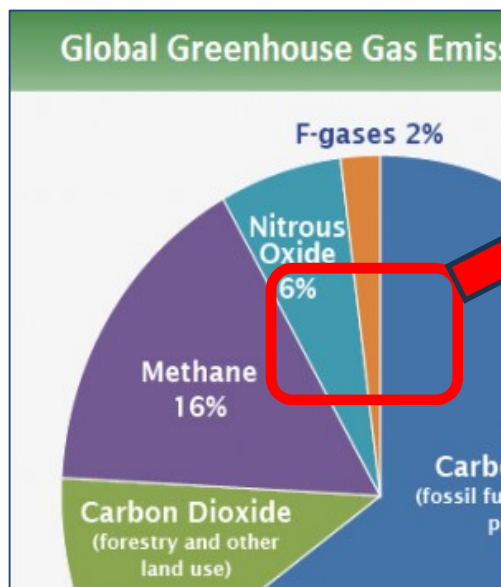


## Global warming / cooling rates over the past century



# PRDD technology converts the CO<sub>2</sub> problem into a commercially viable solution.

Unique – Conventional CO<sub>2</sub> capture technologies are not profitable.



Byproducts of CO<sub>2</sub> capture solve environmental problems.

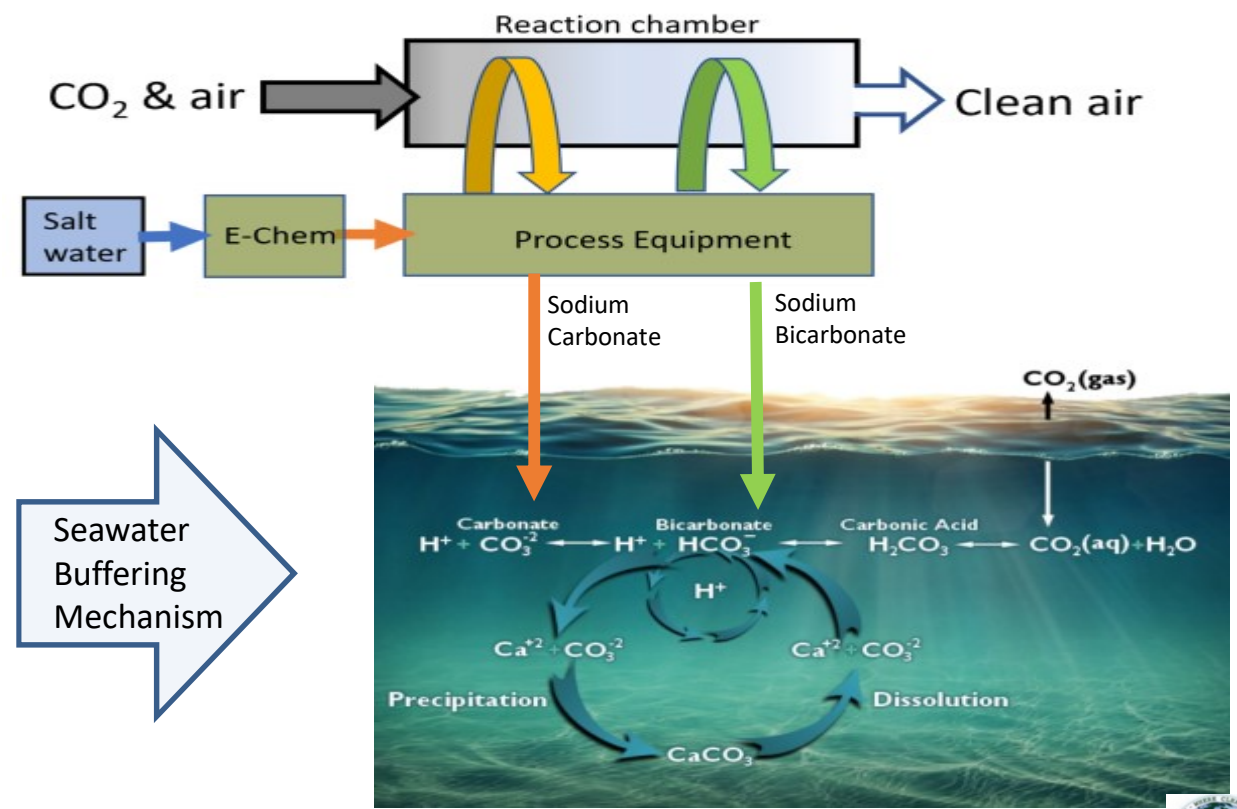
- Treat ocean acidification
- Strengthen concrete & more

## \$3.65 trillion dollar equipment market

# INTRODUCING THE PRDD CO<sub>2</sub> CAPTURE & REPURPOSE PROCESS

## FEATURES:

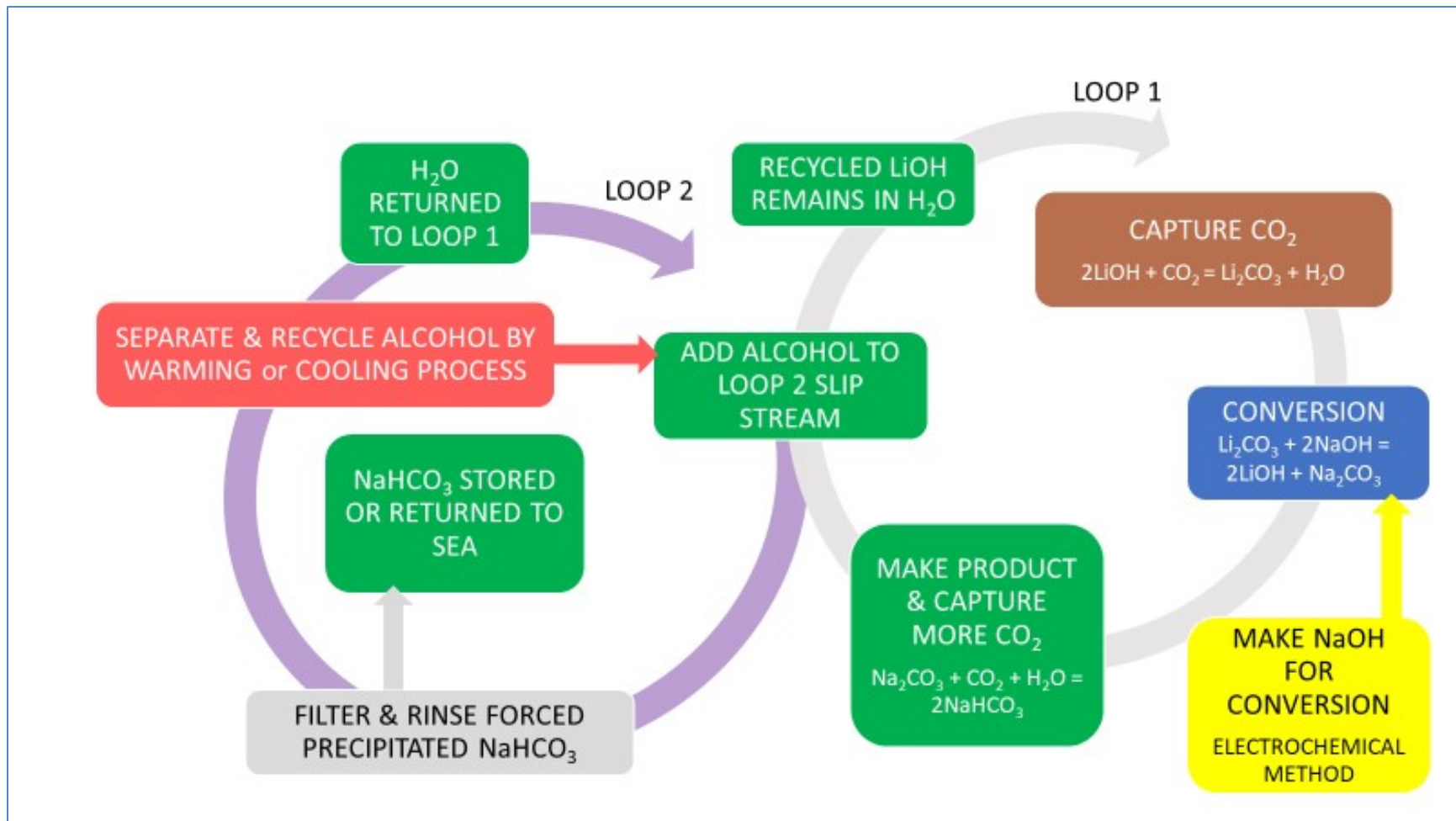
- Process captures & repurposes more CO<sub>2</sub> than it makes.
- 99+% CO<sub>2</sub> capture efficiency.
- Can make use of salt water or brine as source for its only consumable materials.
- Recycles process chemicals with waste heat from combustion.
- Creates carbonates & bicarbonates that are directly used by oceans to neutralize acidity caused by CO<sub>2</sub> adsorption.
- Improve habitat for many calcifying organisms and promote healthy oceans.
- May qualify for Emission Reduction Credits & Tax Credits & Tax Donations.



Seawater Buffering Mechanism

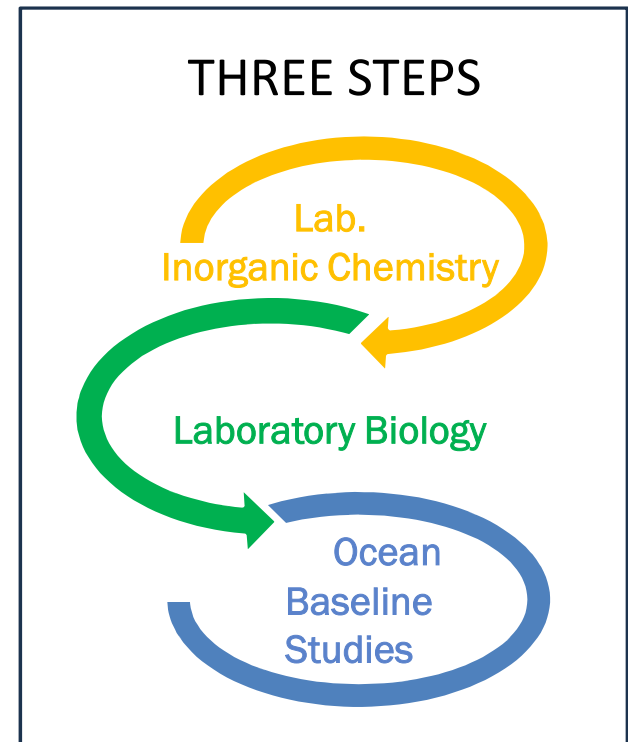
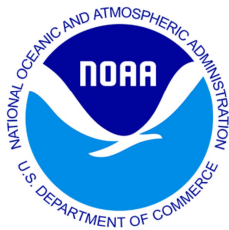
# THE PRDD CO<sub>2</sub> CAPTURE & REPURPOSE PROCESS

- ONLY CONSUMABLES ARE CO<sub>2</sub> & SALT WATER
- RECYCLES ITS SOLVENT
- NO WASTE PRODUCTS



# TREATING OCEAN ACIDIFICATION THROUGH OPTIMIZED DOSING OF CARBONATE & BICARBONATE INTO THE OCEAN

WE ARE REDUCING OCEAN ACIDITY THROUGH COLLABORATION WITH:





THE PRDD CO<sub>2</sub> CAPTURE & REPURPOSE PROCESS  
HAS A NEGATIVE CARBON FOOTPRINT  
(It captures more CO<sub>2</sub> than it makes)

THIS IS IMPORTANT BECAUSE IT GIVES THE  
PRDD CO<sub>2</sub> CAPTURE & REPURPOSE PROCESS  
A POSITIVE CASH FLOW.

(It makes more money than it costs to operate & purchase when  
paired with a cost-effective power generation source.)

TYPICAL CARBON CAPTURE TECHNOLOGIES  
HAVE POSITIVE CARBON FOOTPRINTS  
(They make more CO<sub>2</sub> than they capture)  
SOME CREATE 25X MORE CO<sub>2</sub> THAN THEY CAPTURE



# CLIENT CO<sub>2</sub> CREDIT RESIDUAL INCOME EXAMPLE

Federal Tax and CARB Credit Value for CO<sub>2</sub> from 3 small oilfield steam generators (photo to right) at California facility used for secondary oil recovery.



| Year Count | Year | CO <sub>2</sub> e MT/Year | Fed 45Q Tax Credit \$/MT | Fed 45Q Tax Credit Amount | CARB LCFS CO <sub>2</sub> Credit \$/MT |    |
|------------|------|---------------------------|--------------------------|---------------------------|--|----|
| 1          | 2021 | 60000                     | \$ 34.81                 | \$ 2,088,600.00           | \$195.00                               | \$ |
| 2          | 2022 | 60000                     | \$ 37.85                 | \$ 2,271,000.00           | \$195.00                               | \$ |
| 3          | 2023 | 60000                     | \$ 40.89                 | \$ 2,453,400.00           | \$195.00                               | \$ |
| 4          | 2024 | 60000                     | \$ 43.92                 | \$ 2,635,200.00           | \$195.00                               | \$ |
| 5          | 2025 | 60000                     | \$ 46.96                 | \$ 2,817,600.00           | \$195.00                               | \$ |
| 6          | 2026 | 60000                     | \$ 50.00                 | \$ 3,000,000.00           | \$195.00                               | \$ |
| 7          | 2027 | 60000                     | \$ 50.00                 | \$ 3,000,000.00           | \$195.00                               | \$ |
| 8          | 2028 | 60000                     | \$ 50.00                 | \$ 3,000,000.00           | \$195.00                               | \$ |
| 9          | 2029 | 60000                     | \$ 50.00                 | \$ 3,000,000.00           | \$195.00                               | \$ |
| 10         | 2030 | 60000                     | \$ 50.00                 | \$ 3,000,000.00           | \$195.00                               | \$ |

12 YEAR INCOME



# PRDD CO<sub>2</sub> CAPTURE & REPURPOSE TECHNOLOGY

IS PROFITABLE  
WITH  
HYDROELECTRIC  
POWER

## PROFIT/TON OF CO<sub>2</sub> WITH HYDROELECTRIC POWER

- \$149.84 - when byproduct is sodium carbonate.
- \$202.99 - when byproduct is sodium bicarbonate.

## COST/TON OF CO<sub>2</sub> WITH FOSSIL FUEL POWER

- (\$179.70) - when byproduct is sodium carbonate.
- (\$126.70) - when byproduct is sodium bicarbonate.

**PRDD CO<sub>2</sub> CAPTURE & REPURPOSE CAN USE POWER  
FROM ANY SOURCE & ALWAYS PRODUCES  
COMMERCIALY VIABLE BYPRODUCTS**

(Pricing includes operational and equipment costs, product value & CA carbon credits)



## PRDD CO<sub>2</sub> PROCESS IS VERY SCALABLE.

- Applicable to any size boiler, other combustion exhaust. Also applies to chemical processes.
- PRDD has developed integrated pretreatment for gas streams with NO<sub>x</sub>, SO<sub>x</sub>, VOC, sulfur compounds and more.
- Each process has 100% turndown ratio.
- Reactions occur in ducting that can be oriented in any direction, so equipment has small physical footprint.



## Summary & Conclusion

- PRDD provides the best available CO<sub>2</sub> technology with 99% removal efficiency.
- Processes are **PROFITABLE** in California.
  - Earns immediate carbon/emission credits.
  - Also earns additional donation tax credits.
  - Makes commercially viable products.
- CO<sub>2</sub> process equipment is simple, low maintenance, and small. The reactions occur in ducting so there is no need for large reaction vessels.
- PRDD has developed other processes to meet NO<sub>x</sub>, VOC and other air quality requirements.



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# Thank You

We look forward to sharing more information on the applicability of PRDD processes for your requirements



**PACIFIC RIM**  
DESIGN & DEVELOPMENT INC.  
MISSION: CLEAN AIR

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