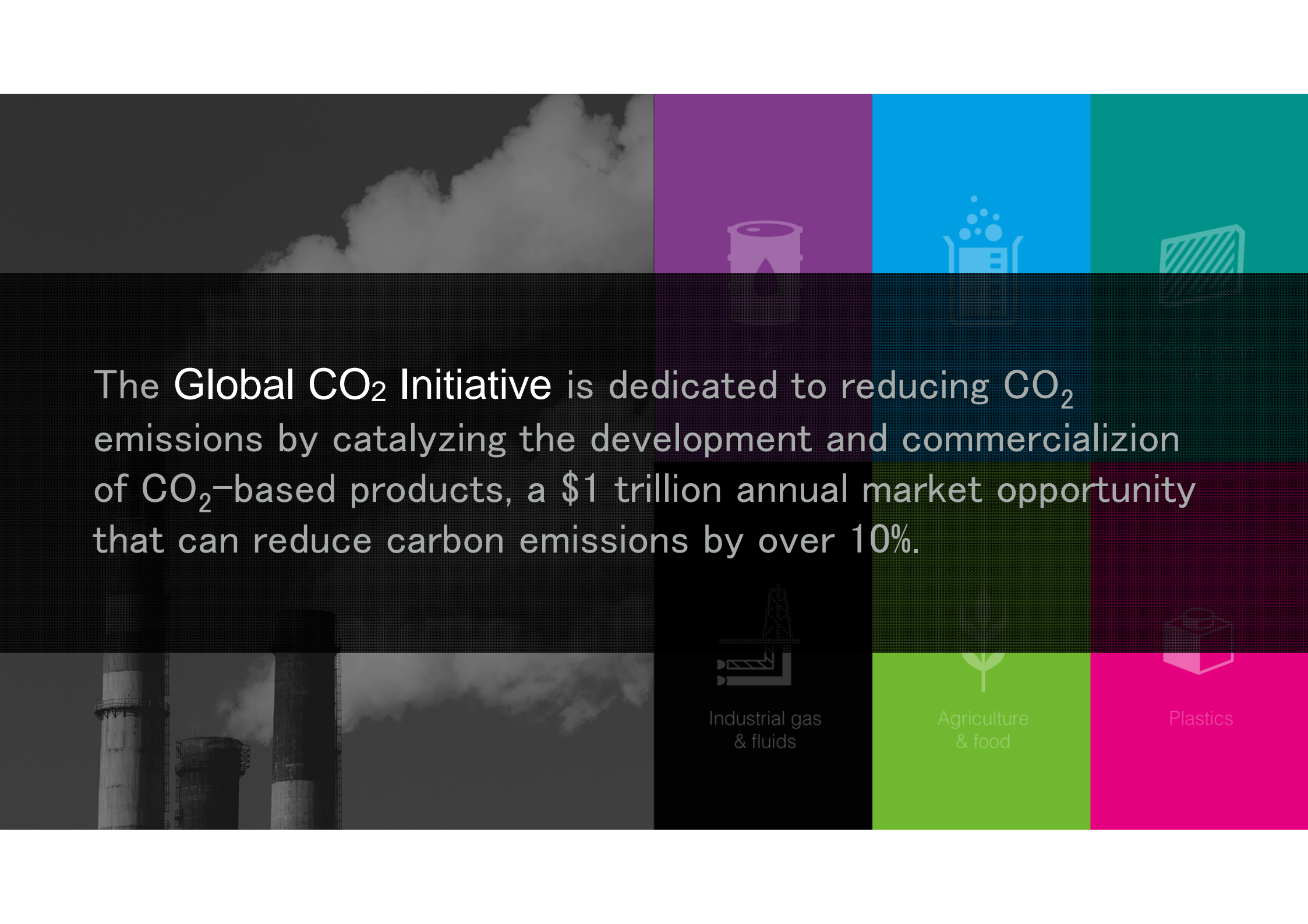


A satellite view of Earth from space, showing the Western Hemisphere. The image is dark blue and black, with the Earth's surface visible in lighter shades of blue and white. The text is overlaid on the image.



# THE GLOBAL CO<sub>2</sub> INITIATIVE

Transforming a liability into an asset

Bernard J. David  
Chairman, CO<sub>2</sub> Sciences, Inc.  
November 2016



The **Global CO<sub>2</sub> Initiative** is dedicated to reducing CO<sub>2</sub> emissions by catalyzing the development and commercialization of CO<sub>2</sub>-based products, a \$1 trillion annual market opportunity that can reduce carbon emissions by over 10%.



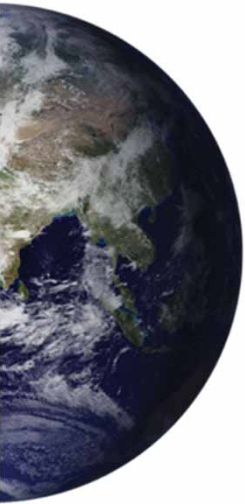
Industrial gas  
& fluids

Agriculture  
& food

Plastics

# The Challenge

Rapidly increasing global CO<sub>2</sub> emissions



Annual CO<sub>2</sub> emissions:

**35.9 gigatons**

Mass equivalent:

**1.1 billion garbage trucks**

Annual Increase:

**1.9%**

**CO<sub>2</sub> stays in the atmosphere for hundreds of years**

**275 PPM**



1700

1800

1900

2000

CO<sub>2</sub> ATMOSPHERIC CONCENTRATION (PPM)

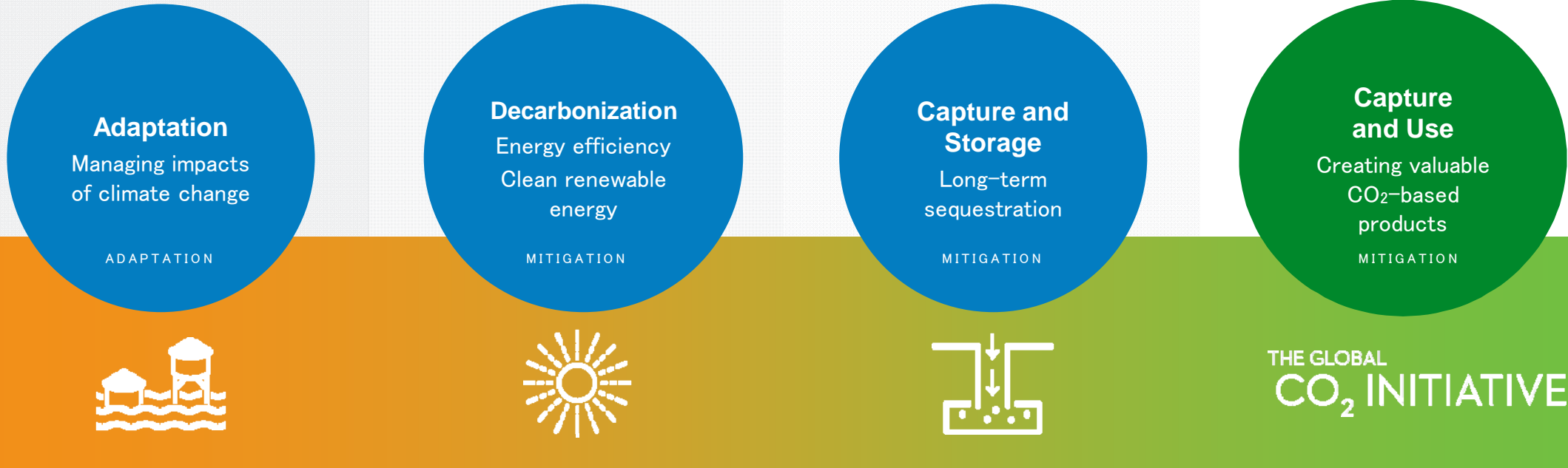
**400 PPM**

Source: Global Carbon Project, 2015 Carbon Budget



# Addressing the challenge creates an opportunity

CO<sub>2</sub>-based products are one part of the climate solution



Increasingly necessary

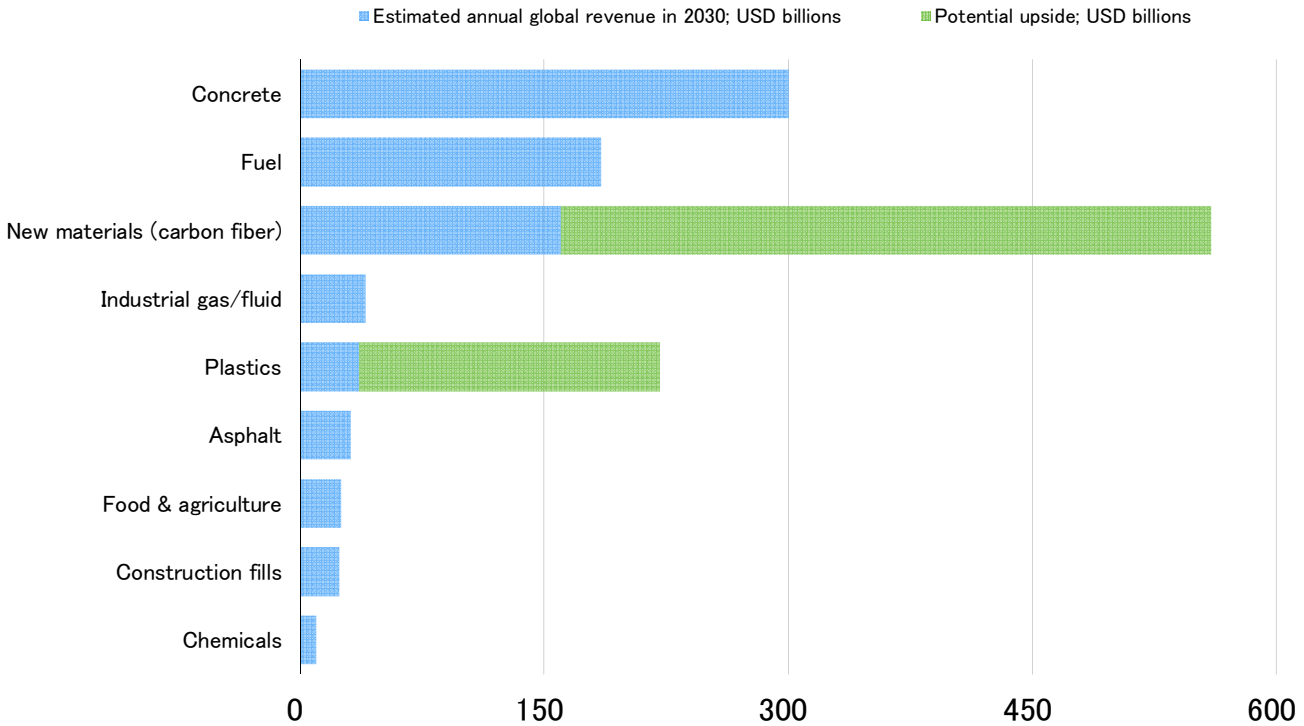
Progress, but not fast enough

Necessary but costly

Market-driven solution

# Significant environmental impact and market opportunity

CO<sub>2</sub>-based products must be a part of our solution to climate change

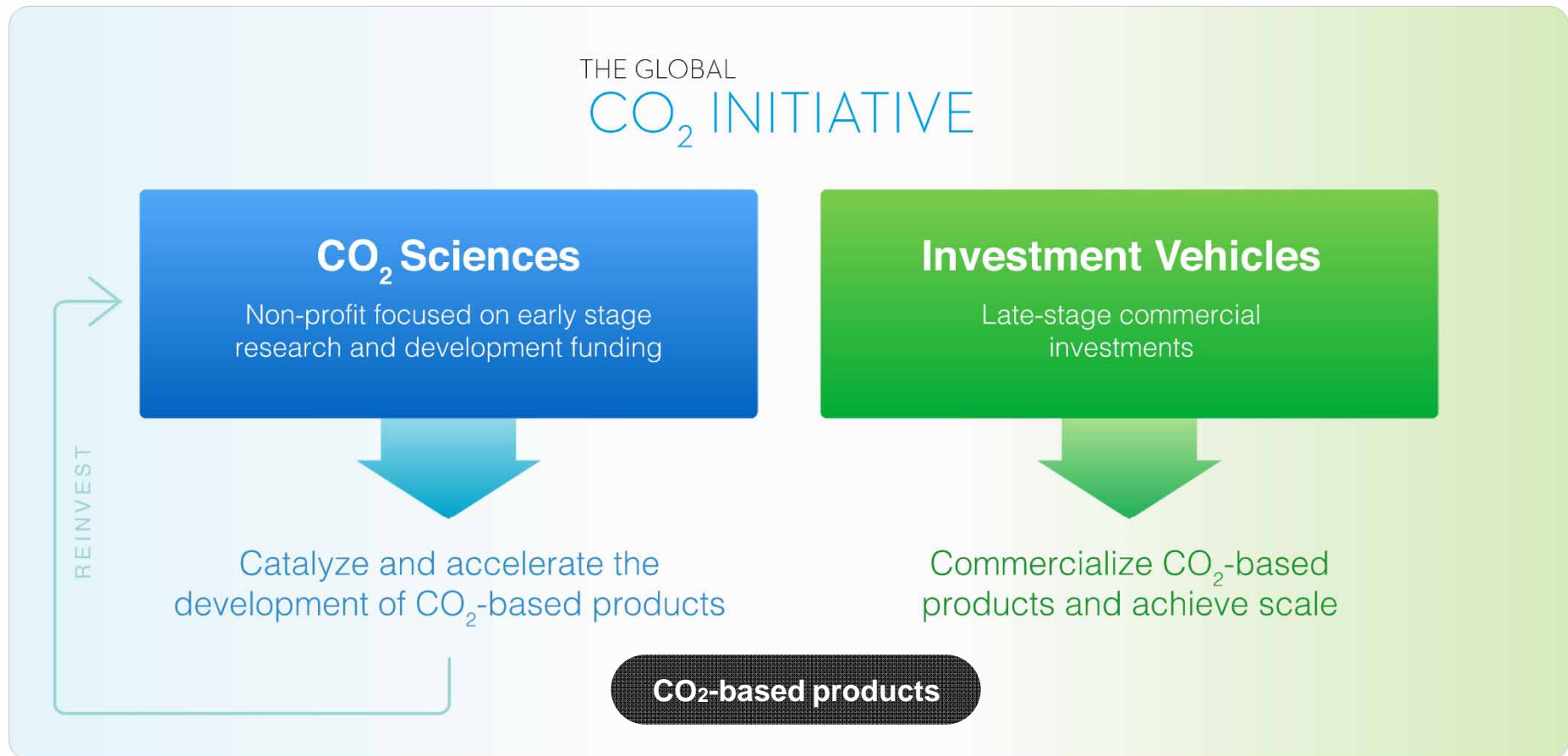


ANNUAL MARKET SIZE:  
**\$800 billion - \$1.1 trillion**

ANNUAL CO<sub>2</sub> CONSUMPTION  
**10% of global emissions**

Source: CO<sub>2</sub>-based products market analysis by McKinsey and Company and CO<sub>2</sub> Sciences, Inc.

# A unique structure and two platform model

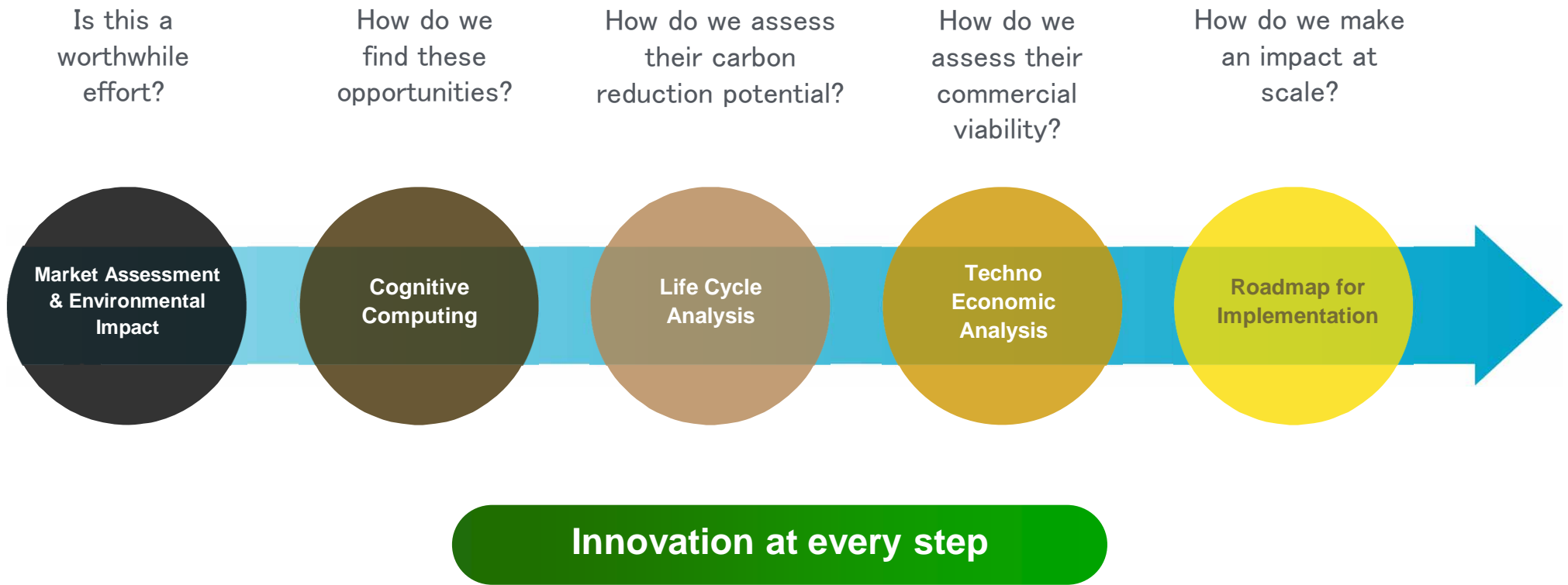


# The approach: building partnerships with key stakeholders



# Our unique toolset

Project funding and investments are driven by in-depth, proprietary knowledge





# An experienced and motivated team

Driven by a team of global scientific, technical, and business leaders



# Working at a global level

The Global CO<sub>2</sub> Initiative is the leader in the development of CO<sub>2</sub>-based products



Officially launched  
Global CO<sub>2</sub> Initiative at the  
World Economic Forum in 2016



Releasing global roadmap for  
implementation of CO<sub>2</sub>-based  
products at COP22

# CO<sub>2</sub> Sciences – Our nonprofit platform

Funding projects to catalyze CO<sub>2</sub>-based product development

## Key Points

- Allocate \$400 million between 2017 and 2027 to fund research and development projects for technology to create CO<sub>2</sub>-based products
- Fund 25 to 30 projects annually at premier academic and research institutions



# Focused technology research and development

Funding pivotal technology development for CO<sub>2</sub>-based products

CO<sub>2</sub> capture and reduction

CO<sub>2</sub> transformation into  
CO<sub>2</sub>-based products

Hydrogen generation

*(Hydrogen is sometimes needed to  
make CO<sub>2</sub>-based products)*

Low-carbon power sources:  
generation and storage

*(Needed to make products)*

# CO<sub>2</sub>-based product technology readiness

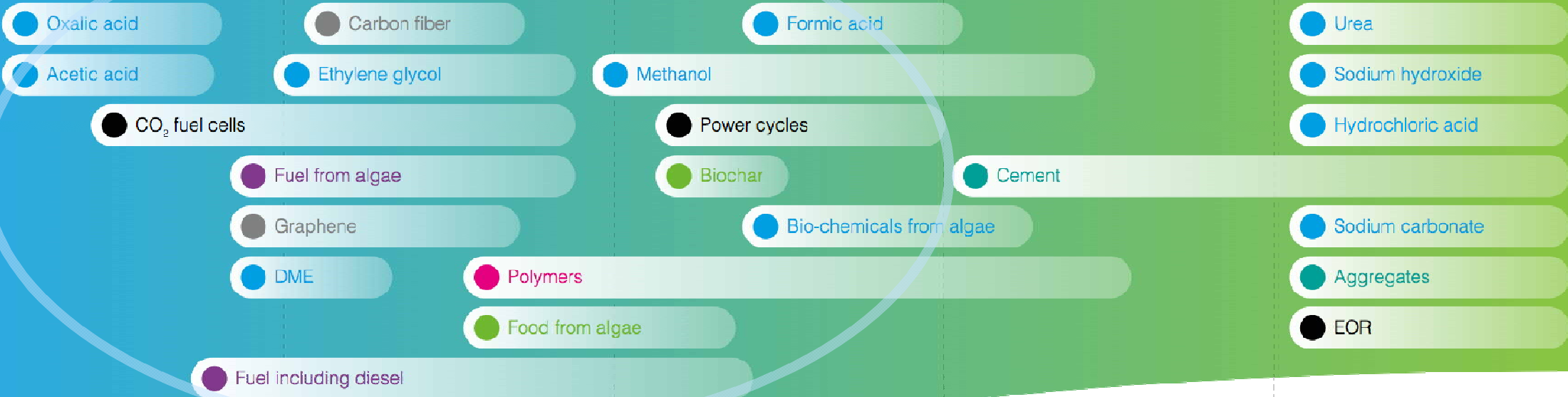
Proof of concept

Lab scale

Pilot

Semi-commercial

Commercial deployment



**Research and development funding focus**

- Fuel
- Construction materials
- New materials
- Chemicals
- Plastics
- Agriculture & food
- Industrial



# Investment Vehicles – Our for-profit platform

Investments to accelerate the adoption of CO<sub>2</sub>-based products

## Key Points

- Utilize Special Purpose Vehicles and other tools to invest in companies that are commercializing CO<sub>2</sub>-based products
- Realize broad climate benefit through widespread production and use of CO<sub>2</sub>-based products



# CO<sub>2</sub>-based product technology readiness

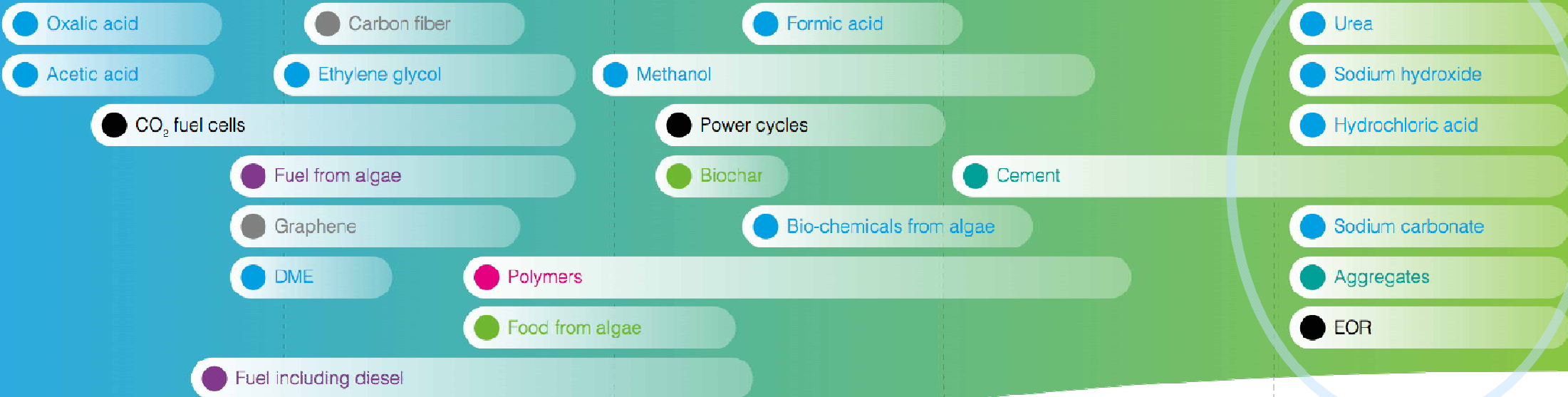
Proof of concept

Lab scale

Pilot

Semi-commercial

Commercial deployment



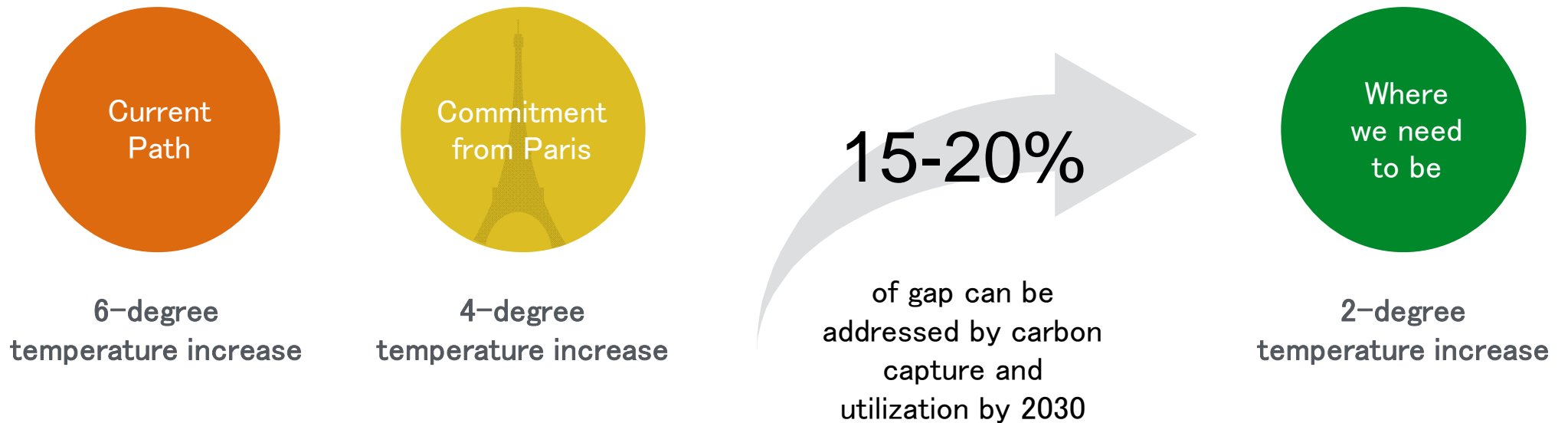
- Fuel
- Construction materials
- New materials
- Chemicals
- Plastics
- Agriculture & food

## Investment focus

- Industrial

CONFIDENTIAL AND PROPRIETARY

# Carbon capture and utilization will help achieve climate goals



# Three steps to implement carbon capture and use

1

## Research and Development

To reduce costs and expand the options for using CO<sub>2</sub>

2

## Commercialization

To scale CO<sub>2</sub>-based products in areas where there is a strong business case

3

## Acknowledgement

To make carbon capture and utilization a part of the mainstream dialogue on how to address climate change



# Financial returns and climate impact

Realizing the power of a market-based solution