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SUSTAINABLE SOLUTIONS FOR GLOBAL WARMING: CARBON CAPTURE AND UTILIZATION (CCU)

TRANSFORMING EMISSIONS INTO
SUSTAINABLE MATERIALS

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THE CHALLENGE

- Excessive CO₂ emissions driving global warming.
- Construction industry's dual challenge:
 - Reducing emissions.
 - Maintaining profitability.
- Need for sustainable materials to meet environmental regulations and market demands.
- Urgent demand for innovation in reducing the carbon footprint.
- Rising consumer and government focus on sustainability.
- Construction sector contributes nearly 40% of global CO₂ emissions.
- Existing materials and methods are not sufficient to meet net-zero goals.
- Growing pressure from stakeholders for eco-friendly solutions.

INSPIRATION

Inspired by the global push for net-zero emissions.

Leverages Carbon Capture and Utilization (CCU) to mitigate the environmental impact of construction.

Draws from successful models in renewable energy and sustainable innovation.

Advances in technology make CCU more feasible than ever.

Inspired by global leaders in climate innovation and carbon management.

THE CCU BUSINESS MODEL

1

Capture CO₂:
From industrial
sites or
atmosphere.

2

Transform CO₂:
Into carbon-
negative concrete
and CO₂-based
bioplastics.

3

Market Opportunity:
Sustainable materials
for construction and
eco-friendly plastics.

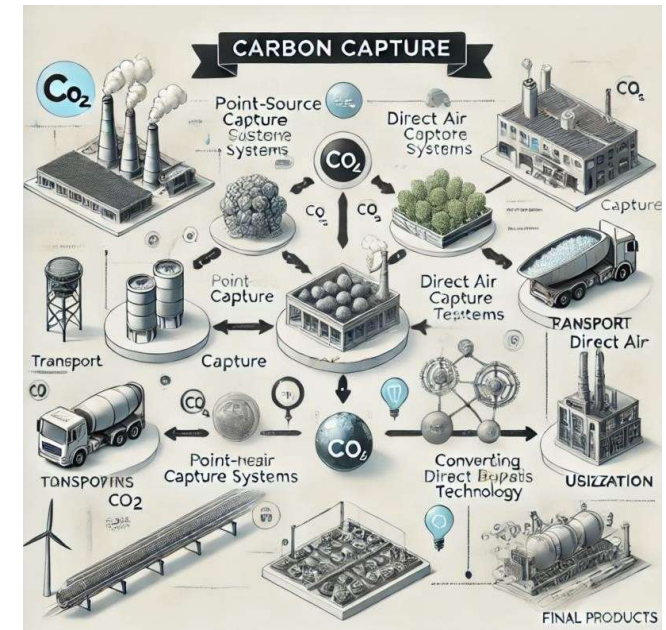
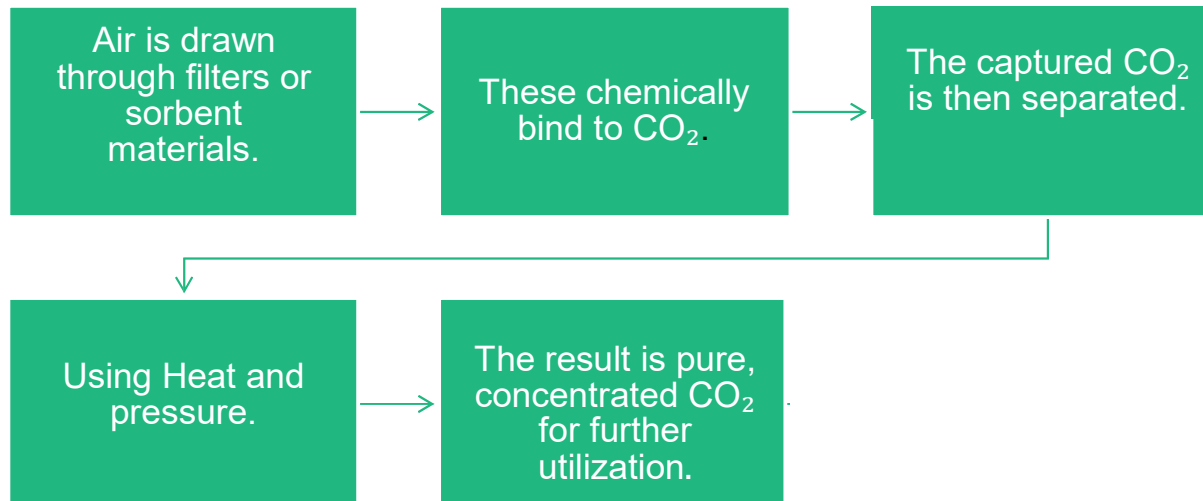
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**Foster
collaboration with
industries to
integrate CCU
solutions.**

1. DIRECT AIR CARBON CAPTURE PROCESS

Process: CO₂ is captured directly at emission sources, such as power plants, steel mills, or cement factories.

Use Case: Ideal for industries with concentrated CO₂ emissions, such as cement production.





2. POINT SOURCE CARBON CAPTURE

Point-Source Capture

- **Process:** CO₂ captured at emission sources (e.g., power plants).

Use Case: Ideal for industries with high emissions (e.g., cement).

•**Mechanism:**

- Exhaust gases are funneled into a scrubber or absorber unit containing chemical solvents (e.g., amines or ammonia solutions).
- These chemicals bind selectively to CO₂, separating it from other gases like nitrogen or oxygen.
- The CO₂-rich solution is then heated to release the captured gas, which can be compressed and stored.



TRANSFORMING CO₂ INTO A PRODUCT

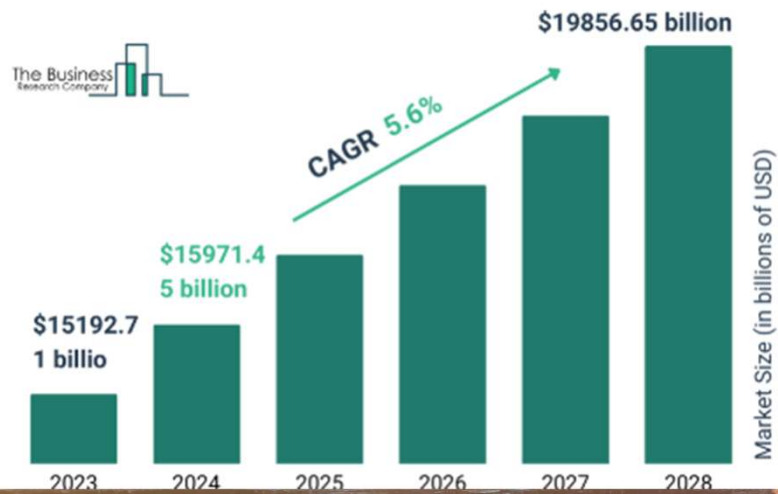
Carbon Negative Concrete

- Chemically binds CO₂ during production.
- Stronger, more durable, and eco-friendly.
- A sustainable alternative with a longer lifespan.

Key Benefits

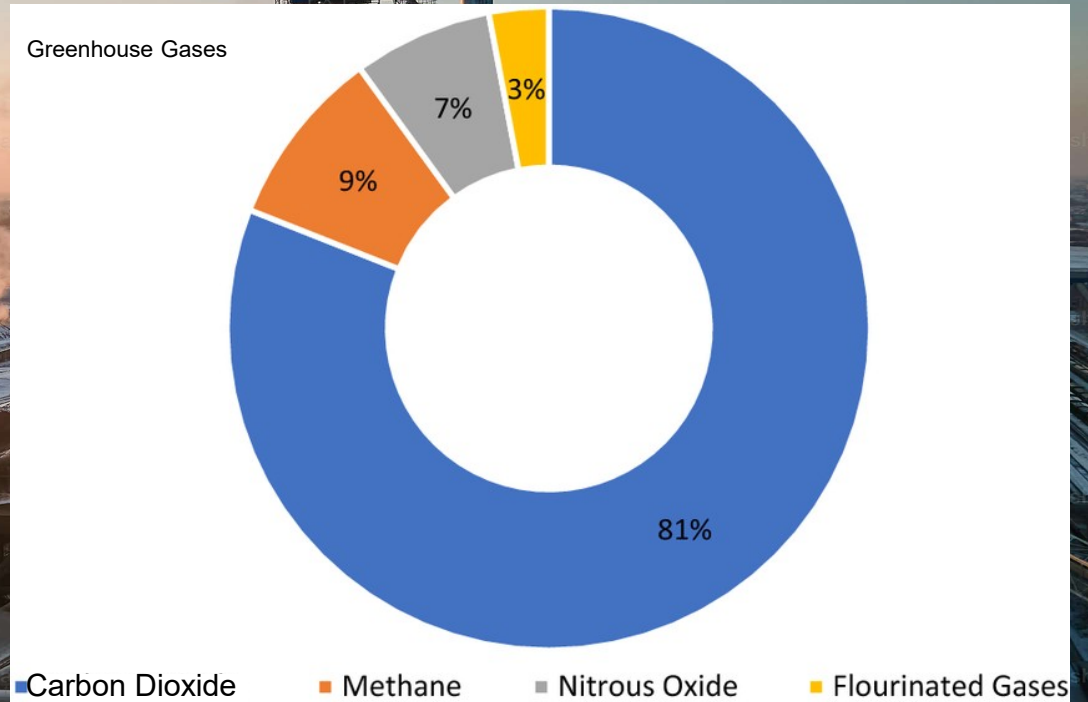
- Meets demand for eco-friendly materials.
- Aligns with global sustainability and ESG goals.
- Long-term cost savings through material durability.
- Promotes circular economy principles.

Construction Global Market Report 2024

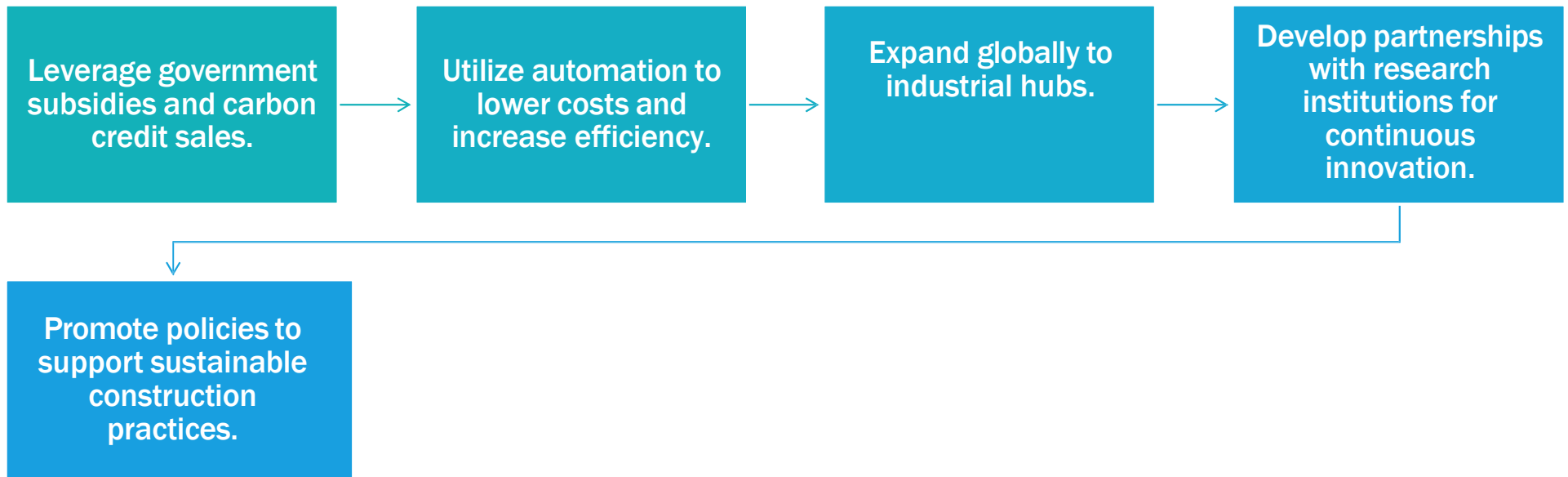


MARKET POTENTIAL

Greenhouse Gases



- SCALING THE SOLUTION



ECONOMIC POTENTIAL

The construction industry contributes to **38%** of global carbon emissions, with concrete production alone accounting for approximately **8%** of global CO₂ emissions.

Market Demand: The global construction industry is valued at over **\$10 trillion USD**.

Cost Savings: Innovations in carbon-negative concrete can reduce emissions by up to **85%** compared to conventional cement.

Regulatory Incentives: With stricter global environmental regulations, companies using carbon-negative concrete may benefit from tax breaks, subsidies, and preferential market access.

Long-Term Durability: Carbon-negative concrete offers enhanced durability, which can reduce maintenance and replacement costs over time.

Growth Forecast: The market for sustainable construction materials is expected to grow at a CAGR of **8.5%** over the next decade.



A background image showing an industrial landscape at sunset. In the foreground, there's a body of water reflecting the lights from the industrial area. In the middle ground, there are several large industrial cranes and structures, likely part of a port or refinery. In the background, there are tall smokestacks emitting thick plumes of dark smoke into the sky. The sky is a mix of orange, yellow, and blue, indicating the time is either sunrise or sunset. The overall scene suggests a transition from traditional industry to sustainable practices.

Why invest in CCU

1. Climate Change Mitigation

- Reduces CO₂ emissions, helping combat global warming and supporting carbon neutrality.

2. Sustainable Innovation

- Drives the development of eco-friendly products like carbon-negative concrete and sustainable fuels.

3. Environmental Responsibility

- Helps industries meet global sustainability goals and reduce their environmental footprint.

4. Advancing Green Technologies

- Supports the growth of scalable, cutting-edge solutions for a cleaner, more sustainable future.

5. Global Impact

- Contributes to global efforts to reduce atmospheric CO₂ and protect the planet for future generations.

Investing in CCU is a powerful step towards a sustainable, carbon-neutral world.

Thank
you