Green Concrete Consortium
- combining technologies to achieve net ZERO -
Mitsubishi Numbers FY20

around **90** Countries

**10** Business Groups

around **1700** Group companies

around **6000** Employees

around **86,000** including consolidated subsidiaries

around **USD5bil** Net Income

**JPY535bil**
CCU activities

• Investment
• Business Development
Japan to reduce greenhouse-gas emissions to net zero by 2050

Suga to make pledge in first general policy speech as industry faces pressure
Japan Carbon Recycle Roadmap

- CCU development support from Government and interest from Public sector
• JP gov. grant for **Para-xylene (PX) production from CO2 R&D**

- MC is the largest global PX trader
- Owns clothing and packaging business
- 49mil t/a demand of PX
- 160 mil t/a potential CO2 reduction + removal
**Green Concrete Consortium** a combination of CCU mineralization projects

1. Cement replacement/CO2 mineralization to concrete
   - CCU Ready Mix
     - Investment
     - Business development
   - CCU Precast
     - Exclusive license
     - New technology development

2. CO2 mineralization to aggregate
   - CCU Aggregate
     - Financial support
     - Business development
   - New technology development
     - Carbon credit development
     - Business development
• **Invested** and discussing **business development** mainly in Asia

• **Both Economic and Climate benefits** for concrete producers
• Commercial ready **Carbon Negative** Concrete

\[ \gamma-2\text{CaO} \cdot \text{SiO}_2 + 2\text{CO}_2 \rightarrow 2\text{CaCO}_3 + \text{SiO}_2 \text{gel like} \]

Photomicrograph of concrete interior

- black: void
- gray: $\gamma$-C$_2$S

\[ \text{Amount of CO}_2 \text{ emission (Kg/m}^3\text{)} \]

- Reduced CO$_2$: 197 Kg/m$^3$
- Captured CO$_2$: 109 Kg/m$^3$

React with CO$_2$

- gray (CaCO$_3$, SiO$_2$ gel like)

Photo: Nozomu Shimao / SS
• JP gov. grant for Carbon Negative Ready mix/Reinforced Concrete R&D

Concrete Product

- Un-Reinforced
  - Road Blocks etc.

- Reinforced
  - Tunnels, Waterways etc.

Cast in Place Concrete

- Dams, River Structures etc.
- Buildings, Pillars etc.
Joint technical and business development agreement to advance a new process for carbonating residual materials, including steel slags.
• Financing to Blue Planet to support a feasibility project on possible applications of its technology in California.

• MC will market Blue Planet’s technology to potential customers as a solution to: the treatment of returned and demolished concrete, the depletion of natural aggregates and the efficient use of CO2.
• Observer of Mark Carney leading Task Force on Scaling Voluntary Carbon Markets

• Developing Carbon Removal Credit Platform together with South Pole
Thank you feel free to contact

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