
Carbonaide
Solving the World's Hardest Problems with CO_2

Concrete learnings from decentralized CCUS in Nordics and Europe

Bio-CO_2 Use and Removal 2025

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8%
Concrete's heavy burden
on global GHG emissions
We wanted to do something
about it at VTT in 2018:
Carbonaide was born.
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Concrete industry is extremely difficult to decarbonize at scale.

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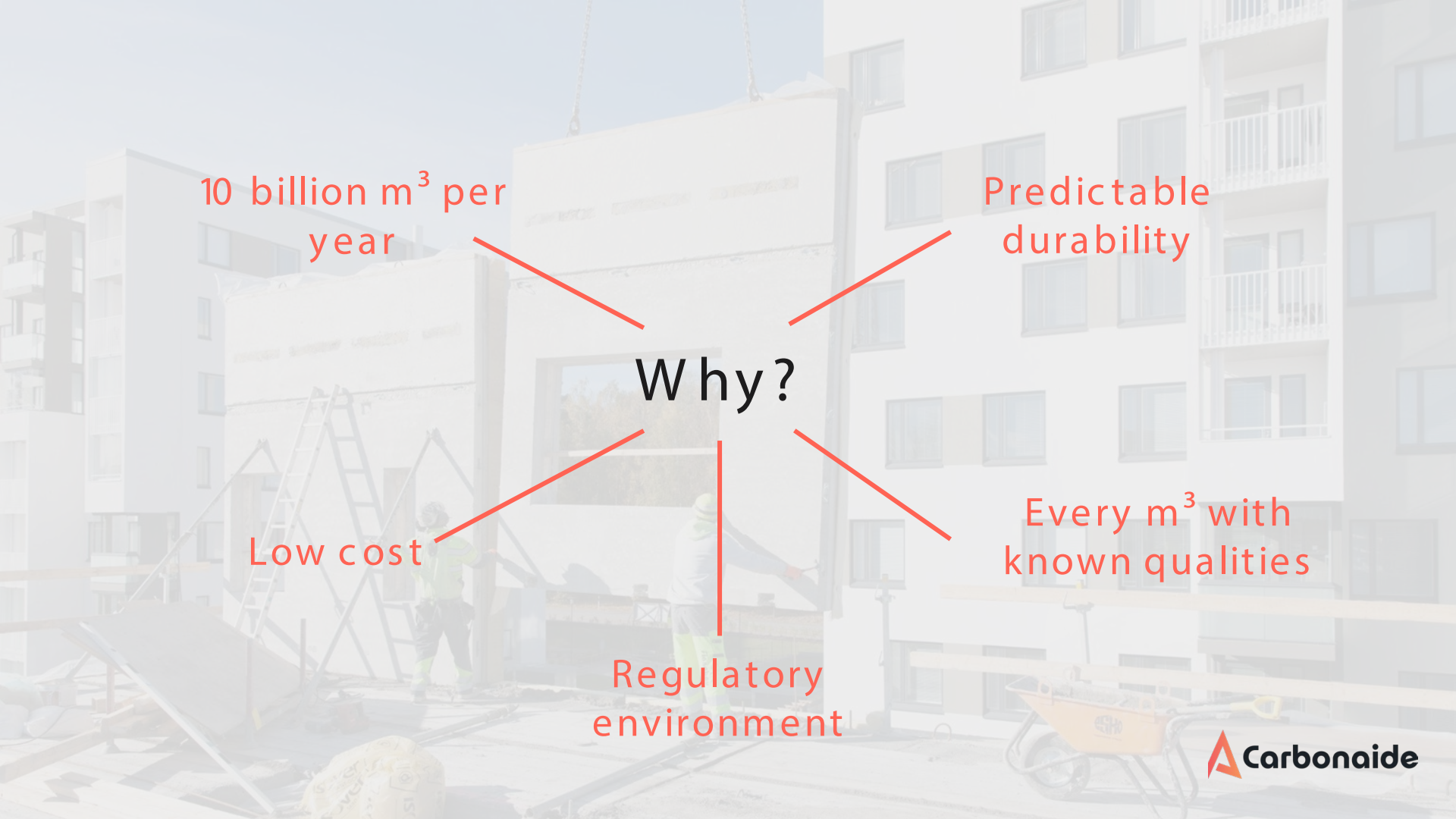
10 billion m³ per year
Predictable durability
Why?
Low cost
Every m³ with known qualities
Regulatory environment
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Yet, increasing cement price is driving the decarbonization of concrete sector.

+100% during past 5 years.

+100% expected due to EU ETS by 2035.

=Hard problems.

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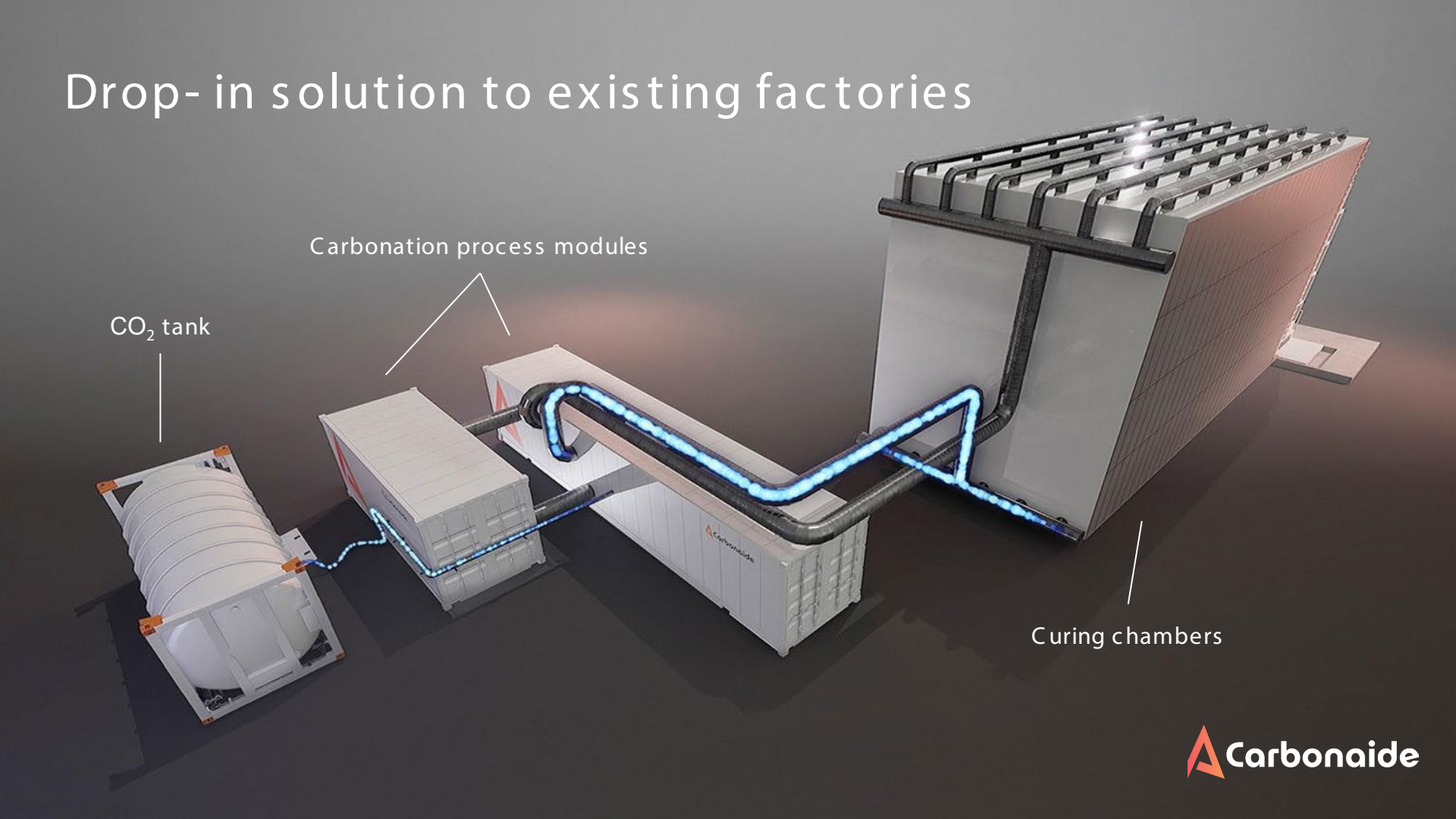
No superman needed - just CO_2

Enabling decarbonisation in 3 ways:

1. Transforming CO_2 into solid minerals, generating negative emissions.
2. Reducing cement dosing by 20-50%.
3. Adapting to a wider portfolio of supplementary cementitious materials.

Making carbon-negative concrete a reality.

Drop- in solution to existing factories



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Concrete actions

- Commercially used since Q2/2024
- 75 tons of CO_2 permanently stored
- New clients confirmed in Finland
- More clients expected in Nordics and DACH during 2025

- Forecast for first 6 clients: 50.000tCO_2 stored by end of 2029

Kivikko, Helsinki: 10 tCO_2 from Amager Bakke (WtE)

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Setting CO_2 value chains

Finland:

- Taking its first steps in bio - CO_2capturing installations
- Sync potential with CCU/CCS projects
- Large bio - CO_2 potential but one of the lasts to capture from biomethane upgrading

Europe:

- Partnership opps for CO_2 in multiple markets
- Potential first EU ETS projects (cement production based CO_2)
- High interest on the storage and removal due to permanency and lean cost structure
- High interest from DAC companies

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Biggest surprises?

1. Slow movement in CO_2 capture in Finland −
2. Interest towards EU ETS emission storing +
3. Willingness to include negative emission in concrete itself +
4. Air-gas companies + −

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Expanding to elemental structures & beyond Europe with Elematic.

The value of faster curing speed and better usability of blended cements reduce dependency on carbon credits.

Number of potential clients multiplied by 2- 3x.

Getting beyond Europe is a call for partners, also in CO_2 sourcing.

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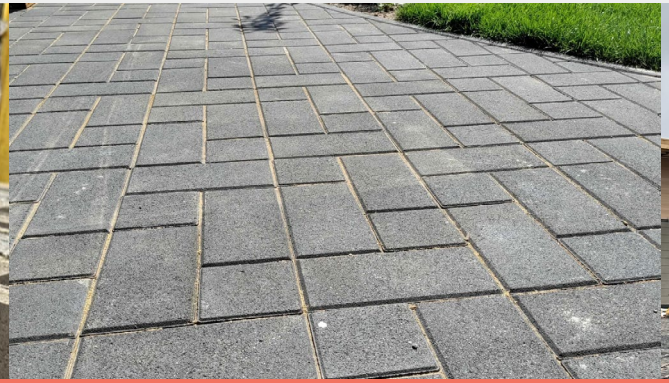


Not just storing CO_2
Solving hard problems with it.


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