

FUTURECEM™
a sustainable solution
for cement and concrete.



Paris Agreement: reducing emissions
Keep temperature increase below 2°C and pursue effort to limit to 1.5°C

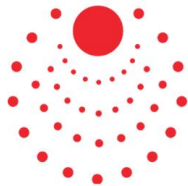
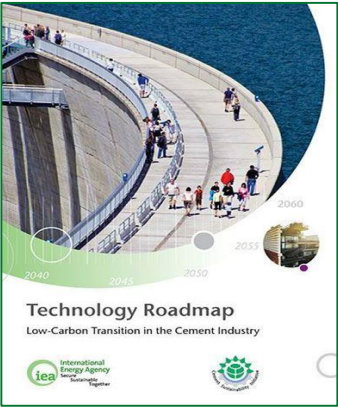


...For UE to lead the world in climate action, it means achieving net-zero greenhouse gas emissions by 2050.....

Mette Quinn - European Commission.
DG CLIMA



to support the sustainable transition of the cement industry.



CLINKER
CEMENT
CONCRETE
CONSTRUCTION
CARBONATION



EU Emissions Trading System (EU ETS)



New measures to reduce the supply of emissions allowances (EUA, or EU allowance) from 2019, combined with plans for a tighter system from 2021.

The EU emissions trading system (EU ETS) is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively. It is the world's first major carbon market and remains the biggest one.

Not only cement sector.....



<https://commons.wikimedia.org/wiki/File:Nordjyllandsv%C3%A6rket.jpg>



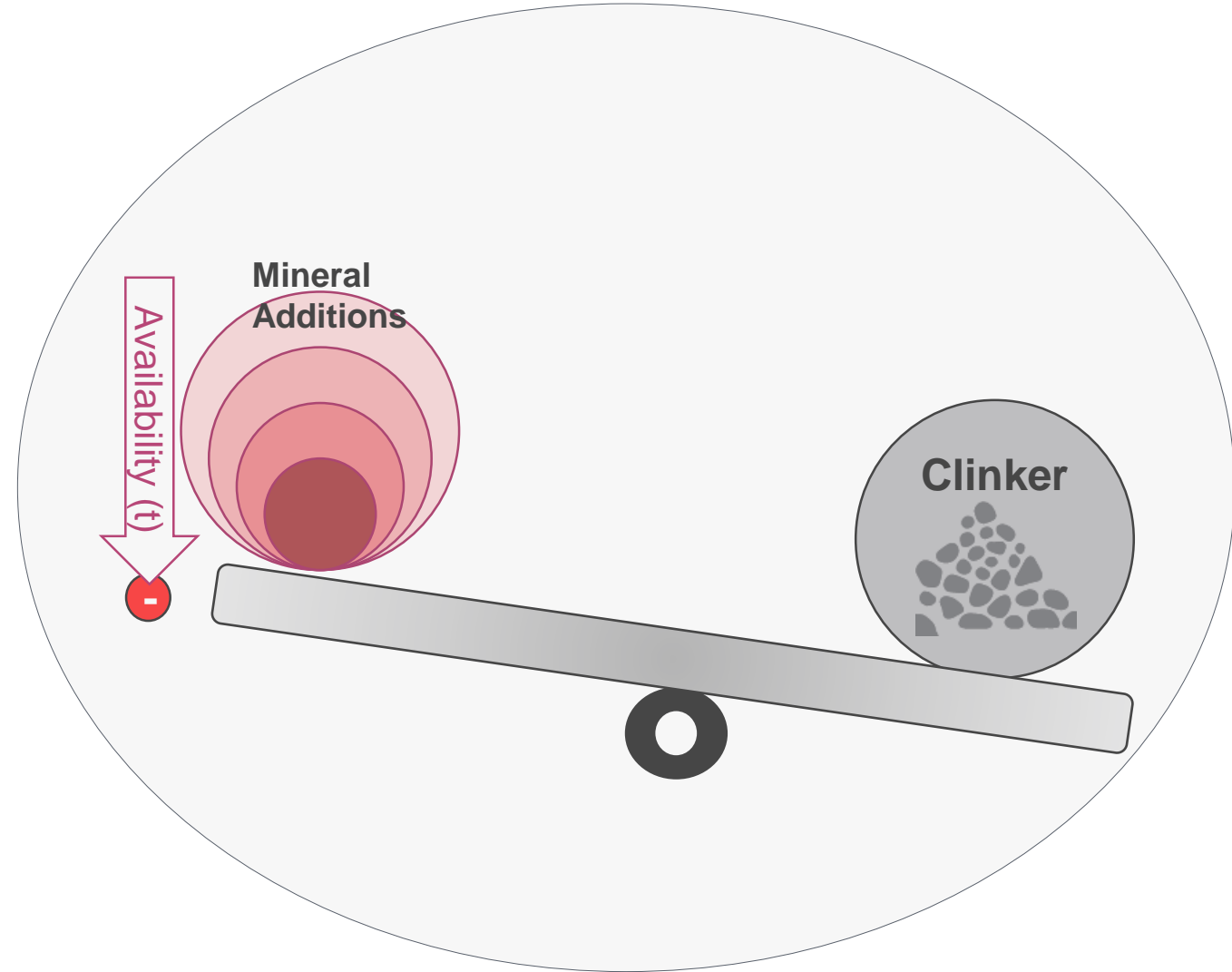
Pursuing clinker substitution as CO₂ emission strategy

Mineral additions are key factor for clinker substitution

The most commonly used mineral additions, *fly ash and slag are becoming in short supply*

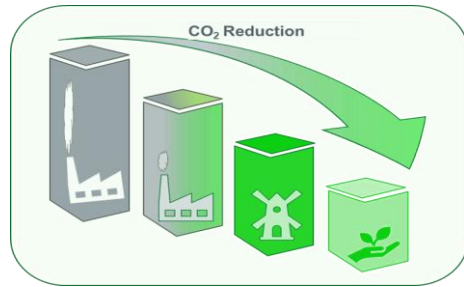
- Coal fired power stations shut down because of green transformation to reduce CO₂
- Steel production in EU is under pressure for CO₂ reduction and new technology reduce production of slag

New solutions to reduce clinker content needed



FUTURECEM™ – The cement/binder of the future

FUTURECEM



Reducing more than - 30% CO₂ emission through clinker replacement.

Green

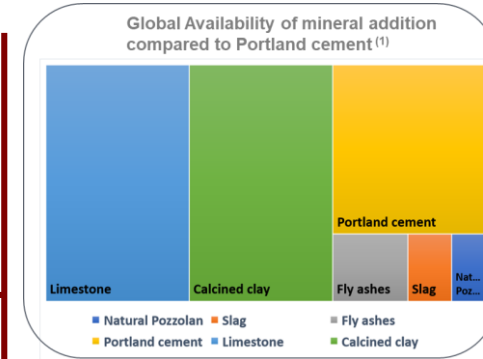
Sustainable

FUTURECEM

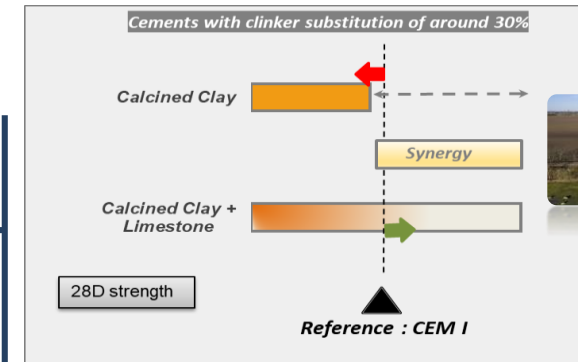
Innovative and validated

FUTURECEM

Developed by



Relying on natural raw materials readily available on the Earth



Synergy between limestone and calcined clay enables clinker replacement.

Full scale trial in Denmark in Green Concrete II Project

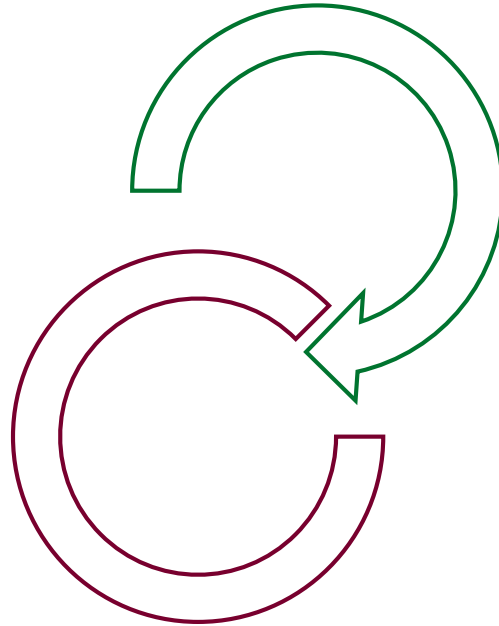
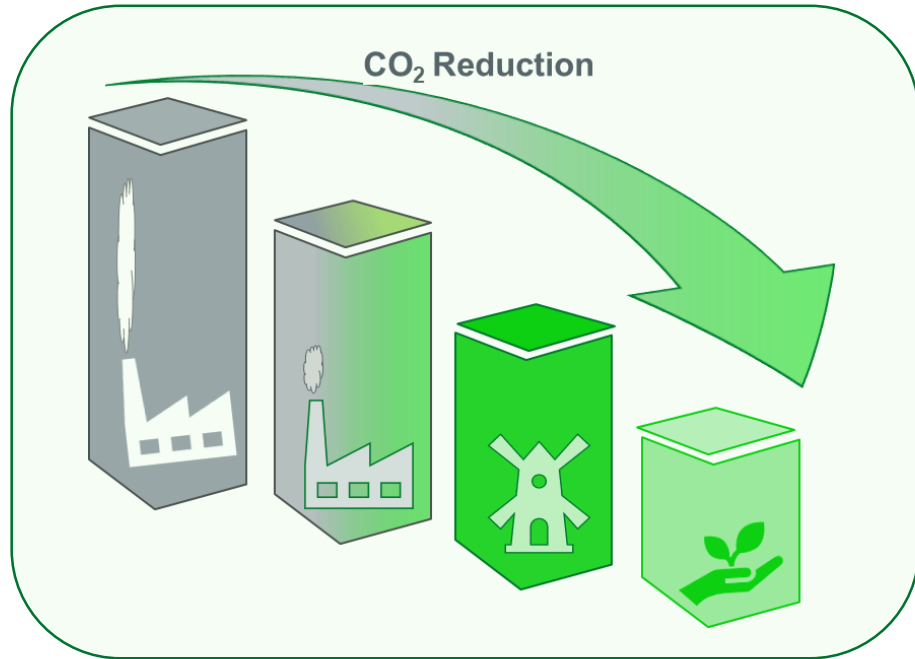


FUTURECEM™: Limestone-calcined clay

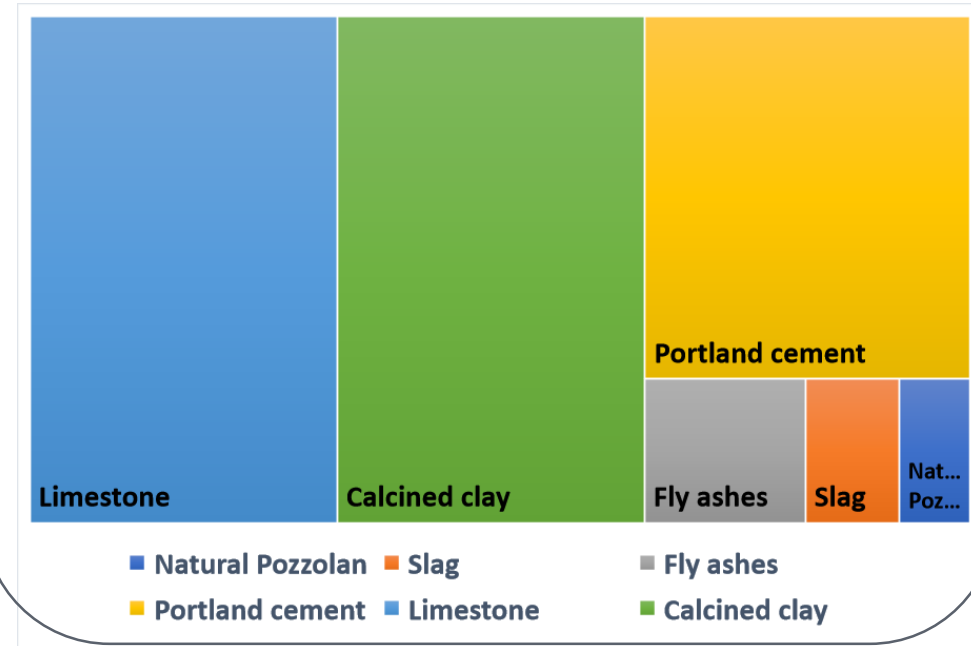
Innovative technology which enables production of durable concrete with reduced clinker content (greener) and exploiting synergies of two largely available materials on earth (sustainable)



FUTURECEM



Global Availability of mineral addition compared to Portland cement ⁽¹⁾



Reducing clinker content so
more greener cement
More than **- 30% CO₂** emission

Sustainability
as main challenge
(largely available materials)

Real Construction in place with FUTURECEM™ – “Green Concrete Project II” in Denmark

FUTURECEM

Two Bridges

Torben Eskerod

Torben Eskerod

Building

Torben Eskerod

FUTURECEM technology is highly resistant to the most aggressive environmental exposure classes.

FUTURECEM technology is suitable for concrete industry, while maintaining conventional production and execution technologies.

FUTURECEM™ is not only for the production of sustainable cement, but also



it powers **Ultra-High Performance Concrete Premix**

AALBORG EXTREME®: for structural applications: structural building elements, balconies, bridges, ...

AALBORG
EXTREME™

AALBORG EXCEL®: for decorative applications: facade cladding, urban furniture

AALBORG
EXCEL™



What is FUTURECEM™?

FUTURECEM™ Technology:

- is the result of Cementir Group's extensive applied research which covers the whole production process, from raw materials assessment to manufacturing and cement application. FUTURECEM™ is a proprietary technology patented in US, Canada, Mexico, Europe, India, China and Australia;
- it relies on the synergy between calcined clay and limestone filler which allows over than 40% clinker replacement in cement, depending on clay type, but keeping the same performance of a pure Portland cement;
- it is a proven innovation, which is being used for building two bridges in Denmark (project "Green Concrete II").

Why is FUTURECEM™ more sustainable than ordinary cement?

FUTURECEM™ is more sustainable because it:

- determines approx. **30% CO₂ emission reduction** in the manufacturing phase;
- enables production of durable concrete with **reduced clinker content** by exploiting synergies of two largely available materials;
- is fully acknowledged as a **solution for clinker ratio reduction** in the roadmap for "Low Carbon transition in the cement industry" by the International Energy Agency – 2018.



for further information visit our website:
<https://www.cementirholding.com/en>