

Second ECRA/CEMCAP workshop
Düsseldorf Nov 6-7, 2017

Overview of the CEMCAP project

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CEMCAP coordinator



September 2015: first joint CEMCAP-ECRA workshop, with study tour to the HeidelbergCement plant in Lixhe, BE

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Introduction: the CEMCAP objectives

The **primary objective of CEMCAP** is

To prepare the ground for large-scale implementation of CO₂ capture in the European cement industry

To achieve this objective, **CEMCAP will**

Leverage to TRL6 for cement plants three components of the oxyfuel capture technology and three fundamentally different post combustion capture technologies, all of them with a targeted capture rate of 90%.

Identify the CO₂ capture technologies with the greatest potential to be retrofitted to existing cement plants in a cost- and resource-effective manner, maintaining product quality and environmental compatibility.

Formulate a techno-economic decision-basis for CO₂ capture implementation in the cement industry, where the current uncertainty regarding CO₂ capture cost is reduced by at least 50%.



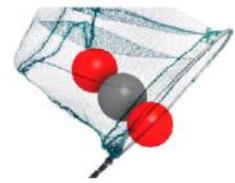
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Project metrics

- Project duration: May 2015-October 2018
- Budget: 10 030 kEUR
- EC contribution: 8 779 kEUR
- Swiss government funding 704 kEUR
- Industrial funding 547 kEUR
- Coordinator: SINTEF Energy Research



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CEMCAP Consortium

Cement Producers

Italcementi, IT

Norcem, NO

HeidelbergCement, DE

Technology Providers

GE Carbon Capture (GE-DE), DE

GE Power Sweden (GE-SE), SE

IKN, DE

ThyssenKrupp Industrial Solutions, DE

Research Partners

SINTEF Energy Research, NO

ECRA (European Cement Research Academy), DE

TNO, NL

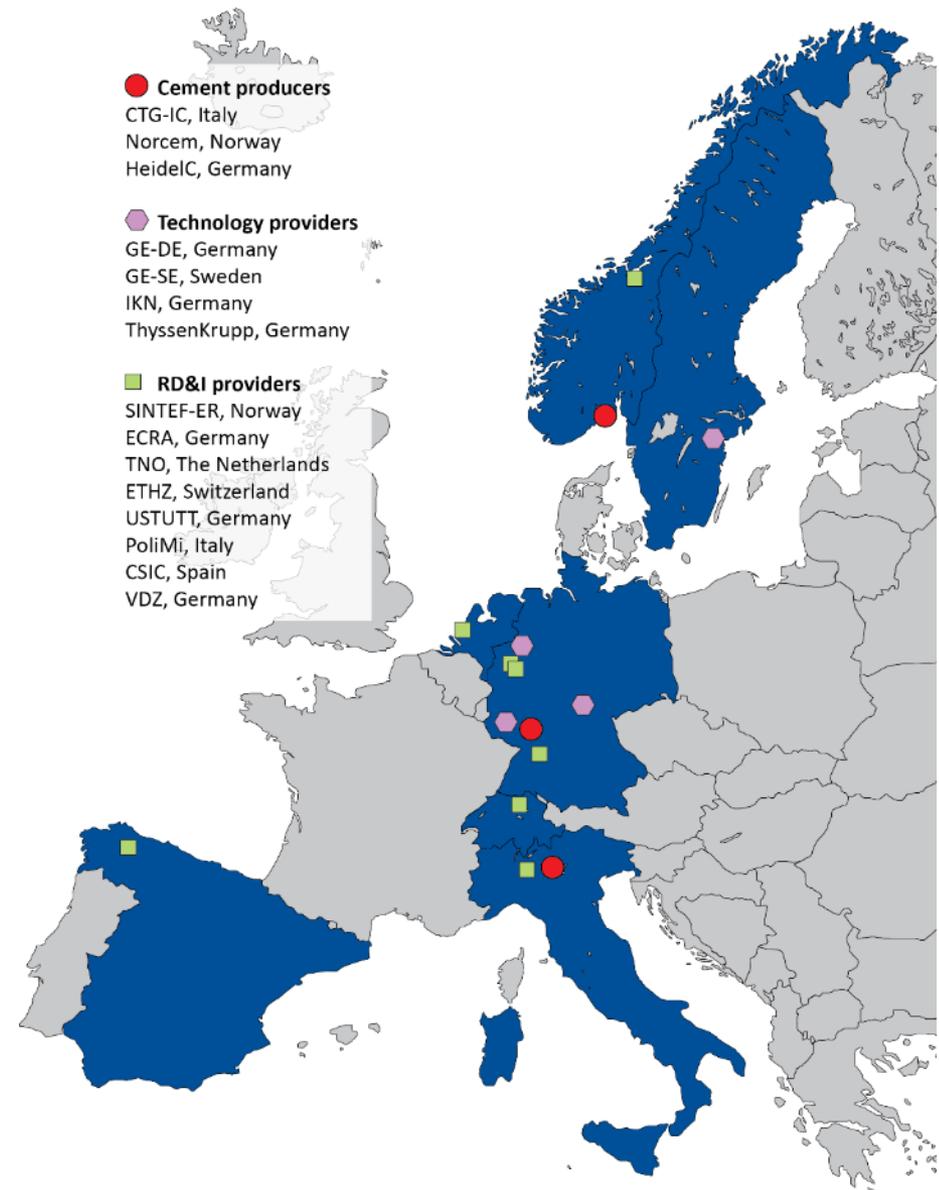
EHTZ, CH

University of Stuttgart, DE

Politecnico di Milano, IT

CSIC, ES

VDZ, DE

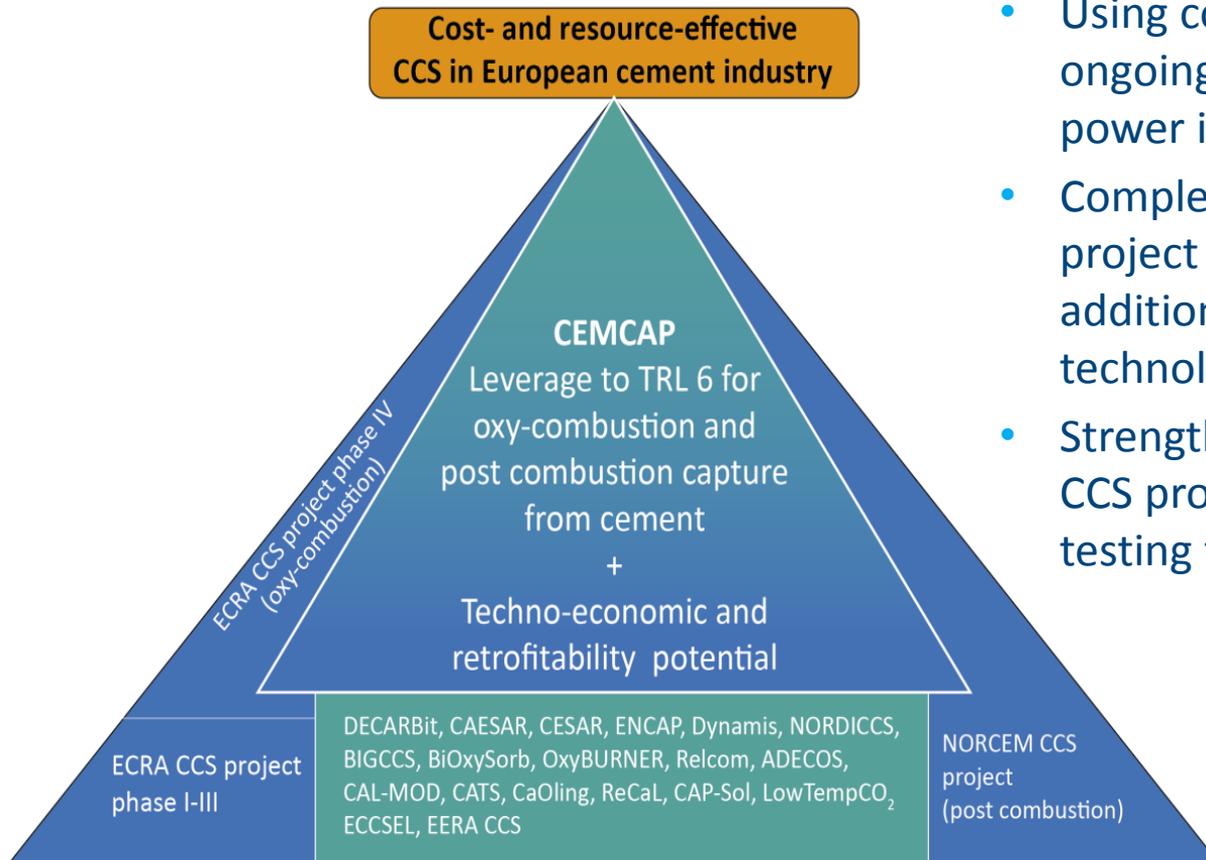


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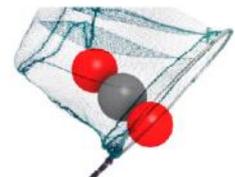
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CEMCAP background and contributions to CO₂ capture for cement



CEMCAP is

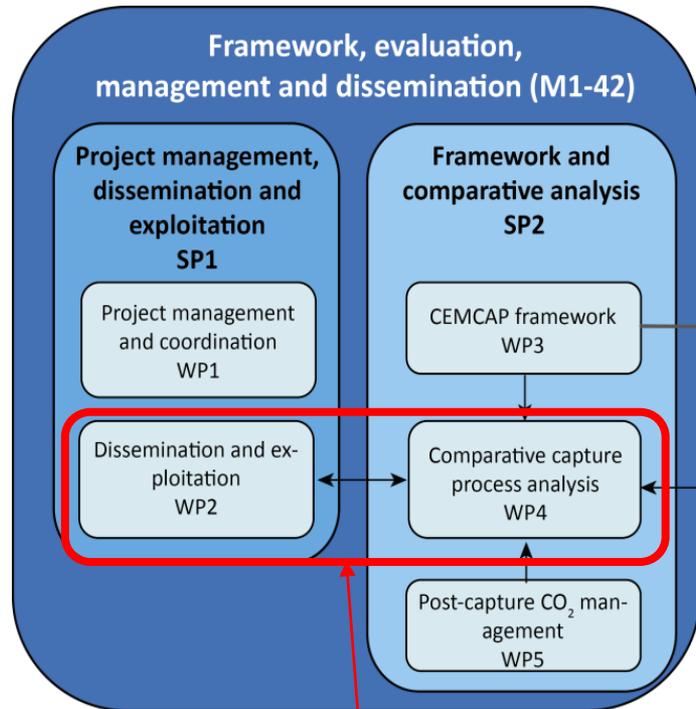
- Using competence and knowledge from ongoing and concluded CCS projects for power industry
- Complementing the Norcem CCS project by testing and evaluating additional post-combustion capture technologies
- Strengthening and advancing the ECRA CCS project for through component testing for oxyfuel CO₂ capture



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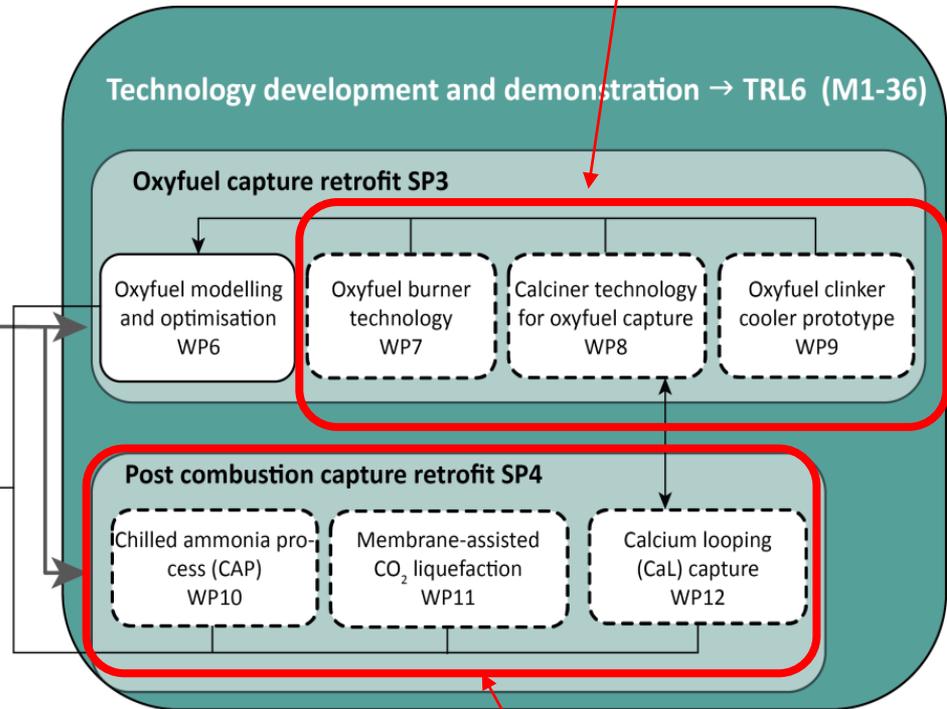


Project structure



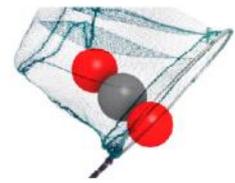
Final analysis and conclusions

Testing of three oxyfuel components



Testing of three fundamentally different post-combustion capture technologies

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CEMCAP framework: ready for use!

- Enabler of consistent comparative assessment of capture technologies
- Provides information relevant for experimental and simulation work
- Defines:
 - A reference cement burning line
 - Specifications for standard process units
 - Utilities description, cost and climate impact
 - Extent of capture and CO₂ specs
 - Economic parameters
 - Key performance parameters




Grant Agreement Number:
641185

Action acronym:
CEMCAP

Action full title:
CO₂ capture from cement production

Type of action:
H2020-LCE-2014-2015/H2020-LCE-2014-1

Starting date of the action: 2015-05-01
Duration: 42 months

D3.2
**CEMCAP framework for comparative techno-economic analysis
of CO₂ capture from cement plants**

Due delivery date: 2017-01-31
Actual delivery date: 2017-05-11

Organisation name of lead participant for this deliverable:
SINTEF-ER

Project co-funded by the European Commission within Horizon2020		
Dissemination Level		
PU	Public	x
CO	Confidential, only for members of the consortium (including the Commission Services)	

Download from
www.sintef.no/cemcap/results

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Looking forward towards October 2018

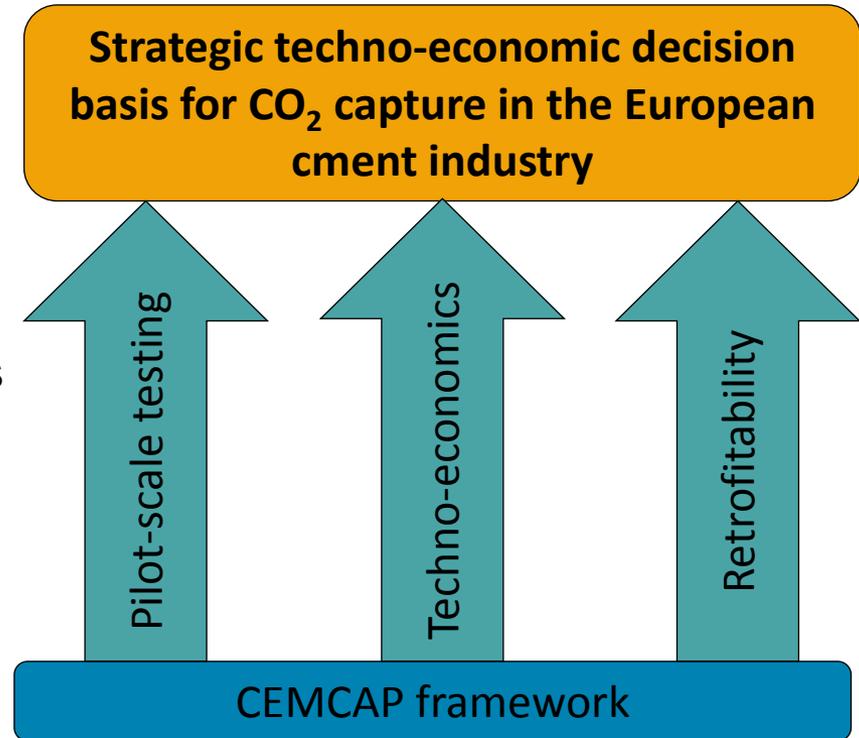
The **final CEMCAP report** will include

*Techno-economic decision base for CO₂ capture retrofit:

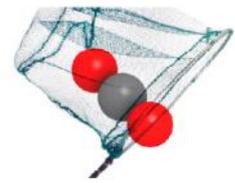
- Summary of pilot-scale testing
- Techno-economic benchmarking results
- Retrofitability analysis

*Innovations and technology gaps

*Pathways for realising future low-emission cement plants



"Save the week": Final CEMCAP/ECRA workshop in Brussels October 2018 (Oct 17 or 18)
Possibly joint event with H2020 projects LEILAC, CLEANKER, CHEERS



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Acknowledgements

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