

# Thomas Johansson

Head of Process Engineering at Citec Oy Ab  
2020 EFCA FL Competition Winner

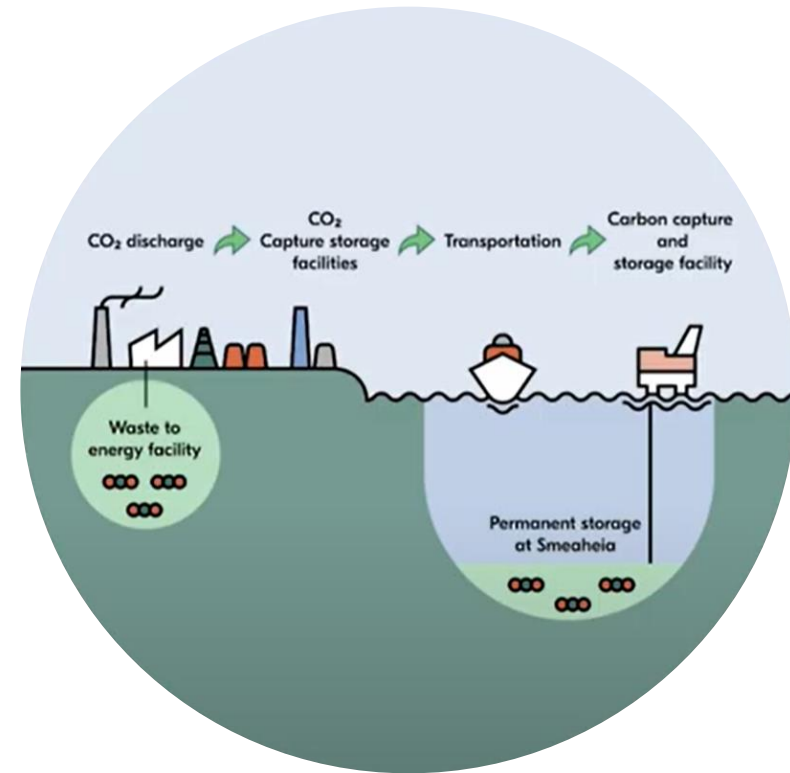


The full-scale Norwegian Carbon capture project

# The full-scale Norwegian Carbon capture project

## Waste to Energy and Carbon capture

- Carbon capture from waste incineration contributes to solving two global problems
- Large point emissions from waste incineration that can easily be captured
- Waste incineration is a growing business with long term prospects, connected to cities' infrastructure and district heating systems
- Great potential for BIO-CCS
- Great potential in the global waste sector and Waste to Energy plants over the world



# The full-scale Norwegian Carbon capture project

Citec's role

## Project:

To find an optimal solution for reducing the CO<sub>2</sub> emissions from the Oslo waste to energy plant. Evaluate and integrate CC-technology suppliers with the existing plant without compromising the district heating supply or otherwise negatively impacting the existing WtE plant.



## Citec's scope:

From feasibility study to Concept to FEED

Evaluations of various technologies

Technology supplier steering

Project management and owner's engineer services

Balance of plant and heat/cooling/utilities integration

Integration and interfaces to existing plant (and upgrades)

# The full-scale Norwegian Carbon capture project

CO<sub>2</sub> capture at Klemetsrud

## Klemetsrud Waste to Energy plant

- 3 separate incineration lines
- 3 separate flue gas channels
- 2 separate steam and condensate cycles
- 2 separate steam turbines
- 2 separate internal district heating networks
- 3 separate external district heating networks





# **Citec and COWI selected as engineering partners for Fortum Oslo Varme's carbon capture project in Oslo, Norway**

26.04.2022 · News

Fortum has sold its 50% ownership in Fortum Oslo Varme AS to a Norwegian investor consortium and as a result the company is now renamed as Hafslund Oslo Celsio AS.