Frames Renewable Energy Solutions

Introduction

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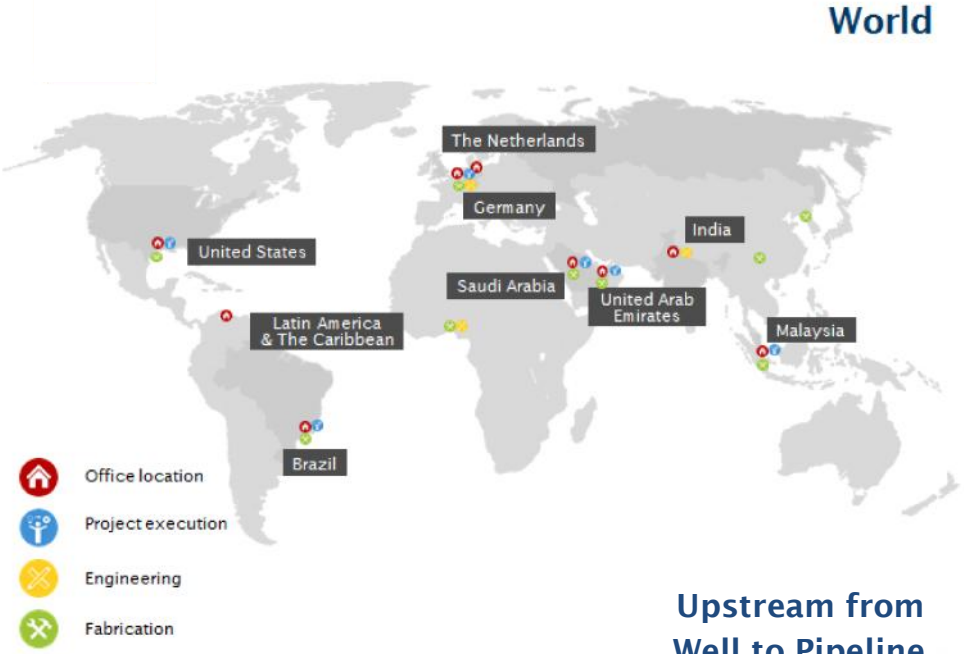
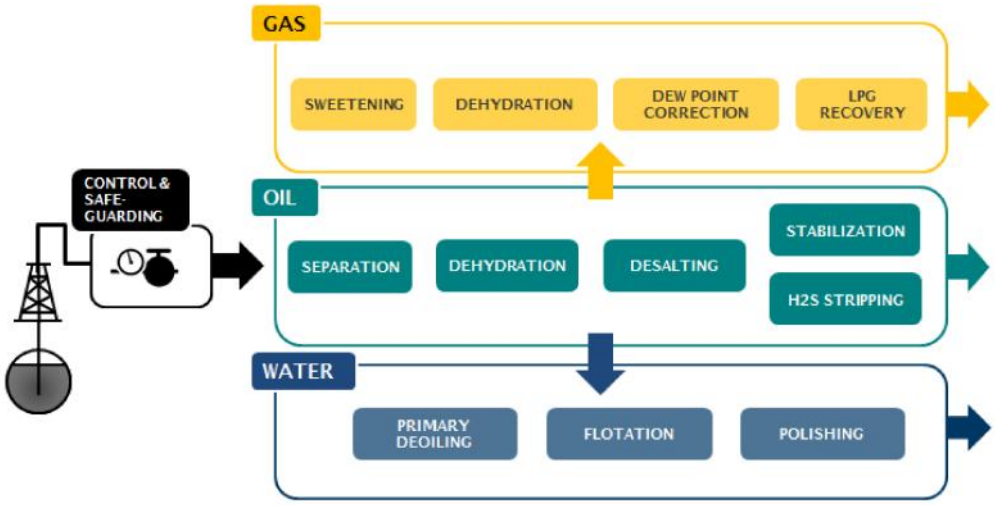
About Frames



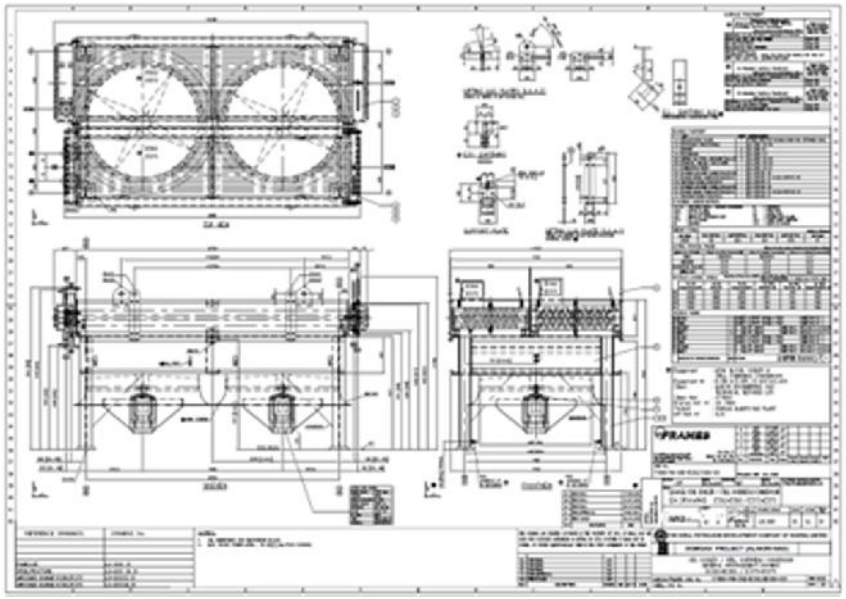
Upstream from Well to Pipeline



Packages with process & Mechanical guarantee

Know-how

- Process know-how all of all oil & gas treatment systems
- Added value in optimization hardware
- All engineering disciplines in house
- Process & mechanical guarantee
- Customer specific equipment
- Worldwide fabrication
- Flexible organization
- Total system responsibility
- Project management
- Document control



Certifications and HSEQ

- Ensuring reliable high quality products and services being provided to contractors and operators
- Stakeholders and the growing industry demand a continuous improvement
- Our aim is to meet standards and exceed the HSEQ expectation levels of clients, personnel and other stakeholders
- Frames is certified to ISO 9001, ISO 18001, ISO 14001 and VCA

Lloyd's Register LRQA

Frames Renewable Energy Solutions

Renewable gas & CCU

The Future is Green

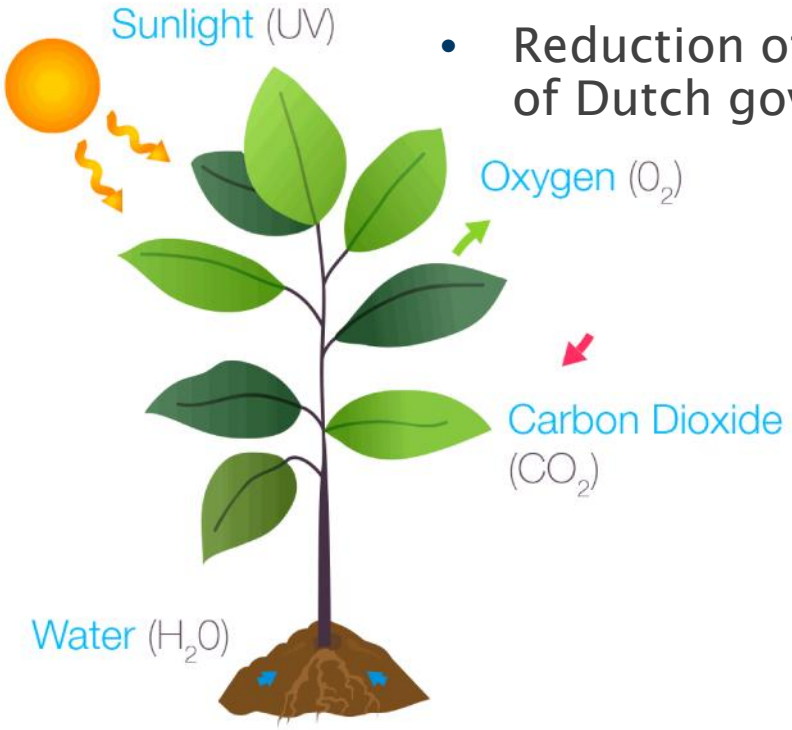
FRAMES
a family of oil & gas solutions

Frames Renewable Energy Solutions

- CO_2 afvang en hergebruik & Duurzaam gas opwaardering

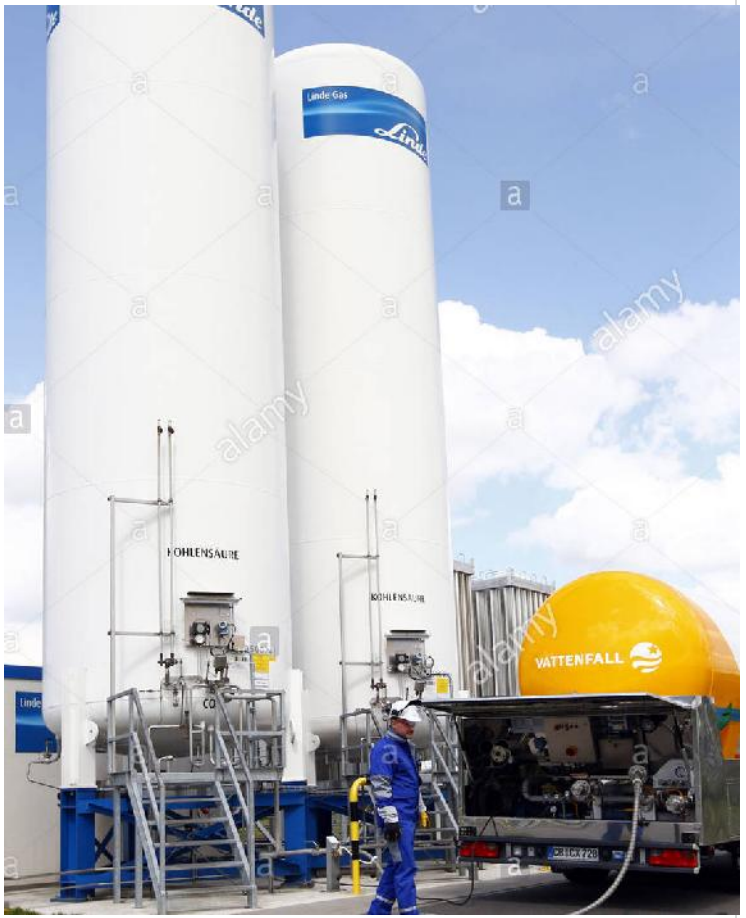
CO_2 for greenhouses from biomass combustion?

- Photosynthesis requires -> CO_2!
- Additional CO_2 required to optimize the growth.
- Heat for warming the greenhouses
- Reduction of natural gas due to restriction of Dutch government



What is the current situation?

- Warmte en CO_2 uit aardgas in voorjaar en najaar.:
  - Gas WKK
  - Gas ketel
- Vloeibare CO_2 aanvulling in de zomer
- Of wanneer aanwezig OCAP CO_2



What is the new situation?

CLEAN ENERGY TECHNOLOGY
VYNCKE

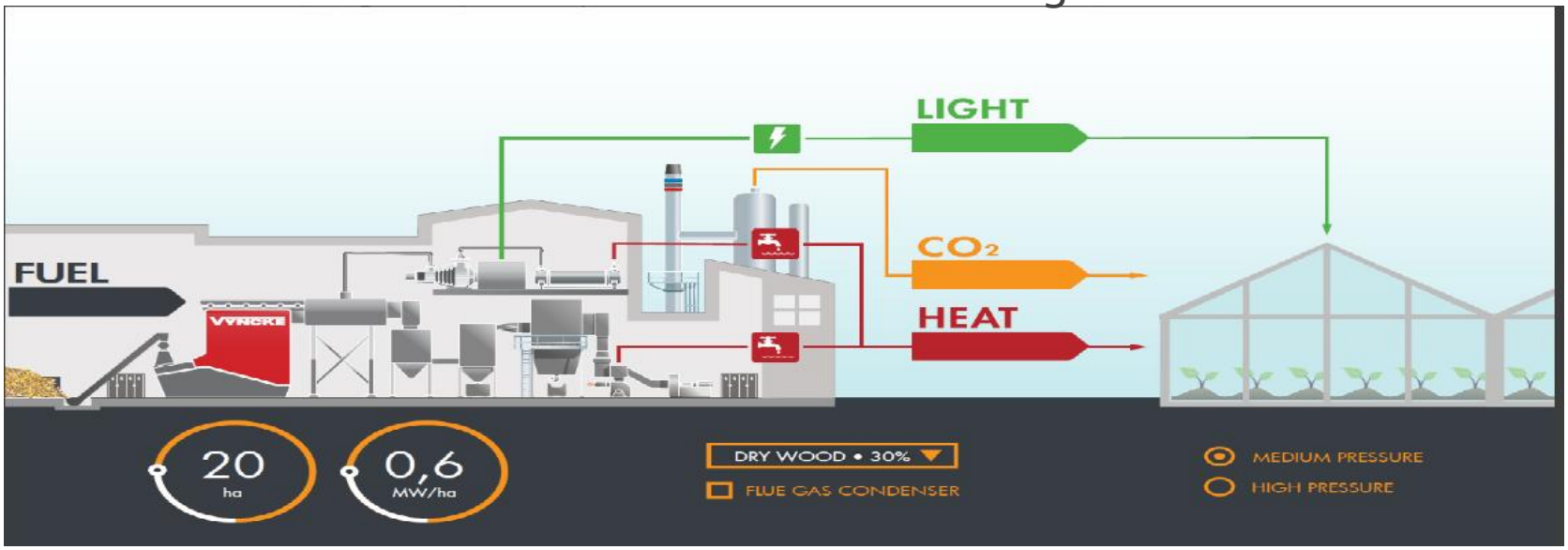
FRAMES

Biomass boiler (7 MW)

- Fed by wood

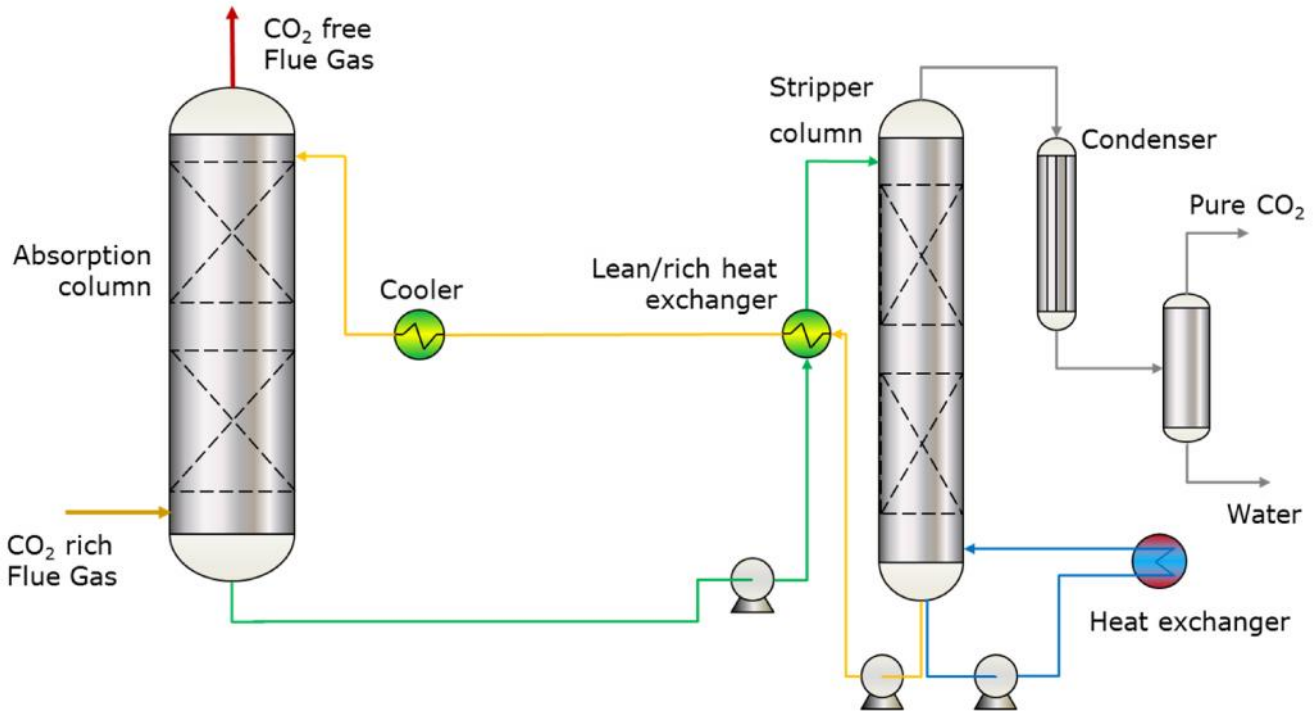
CO_2 capture and storage facility

- Absorption of CO_2 by Galloxol® 2,2t per hour
- Heat integration

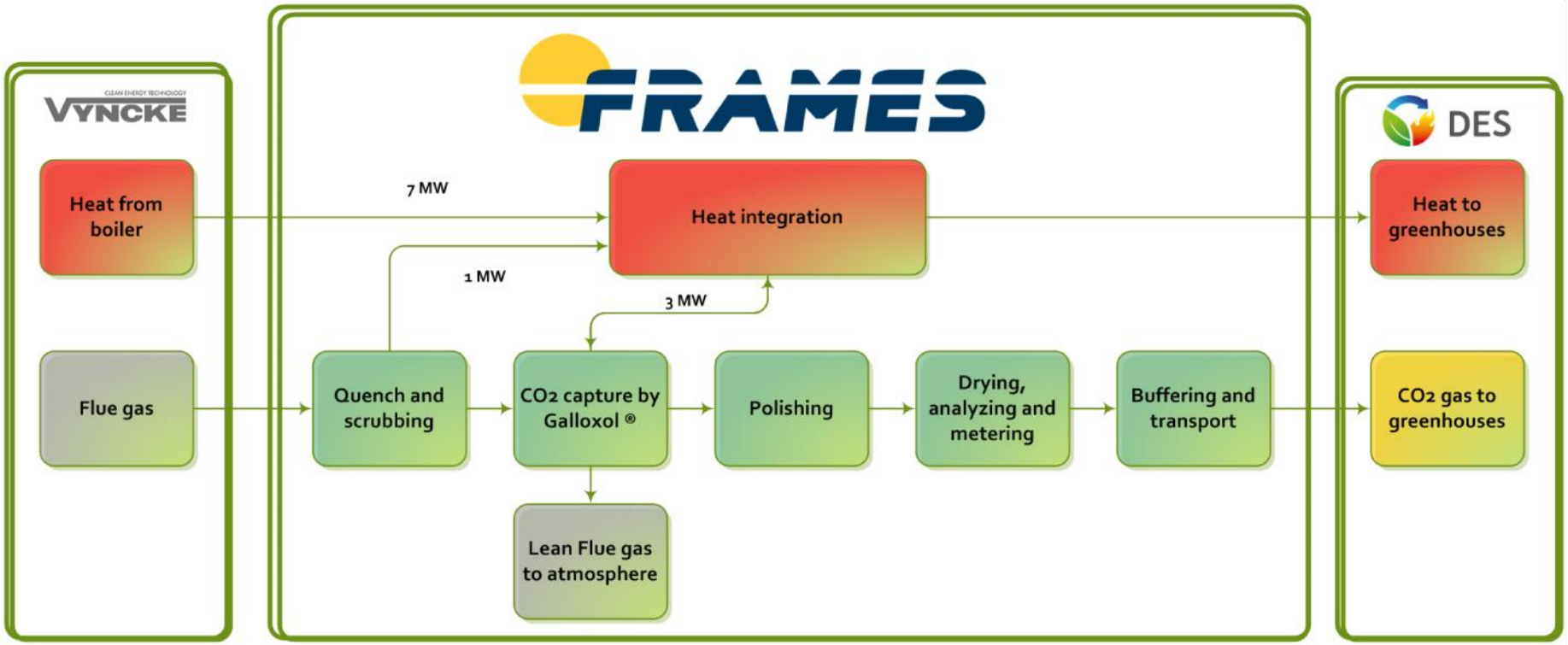


Frames Galloxol® CO_2 capture unit

- Non-volatile solvent CO_2 capture unit
- Deep CO_2 removal at low gas pressure
- Thermal driven process
- Deep integration of CO_2 removal and biomass boiler

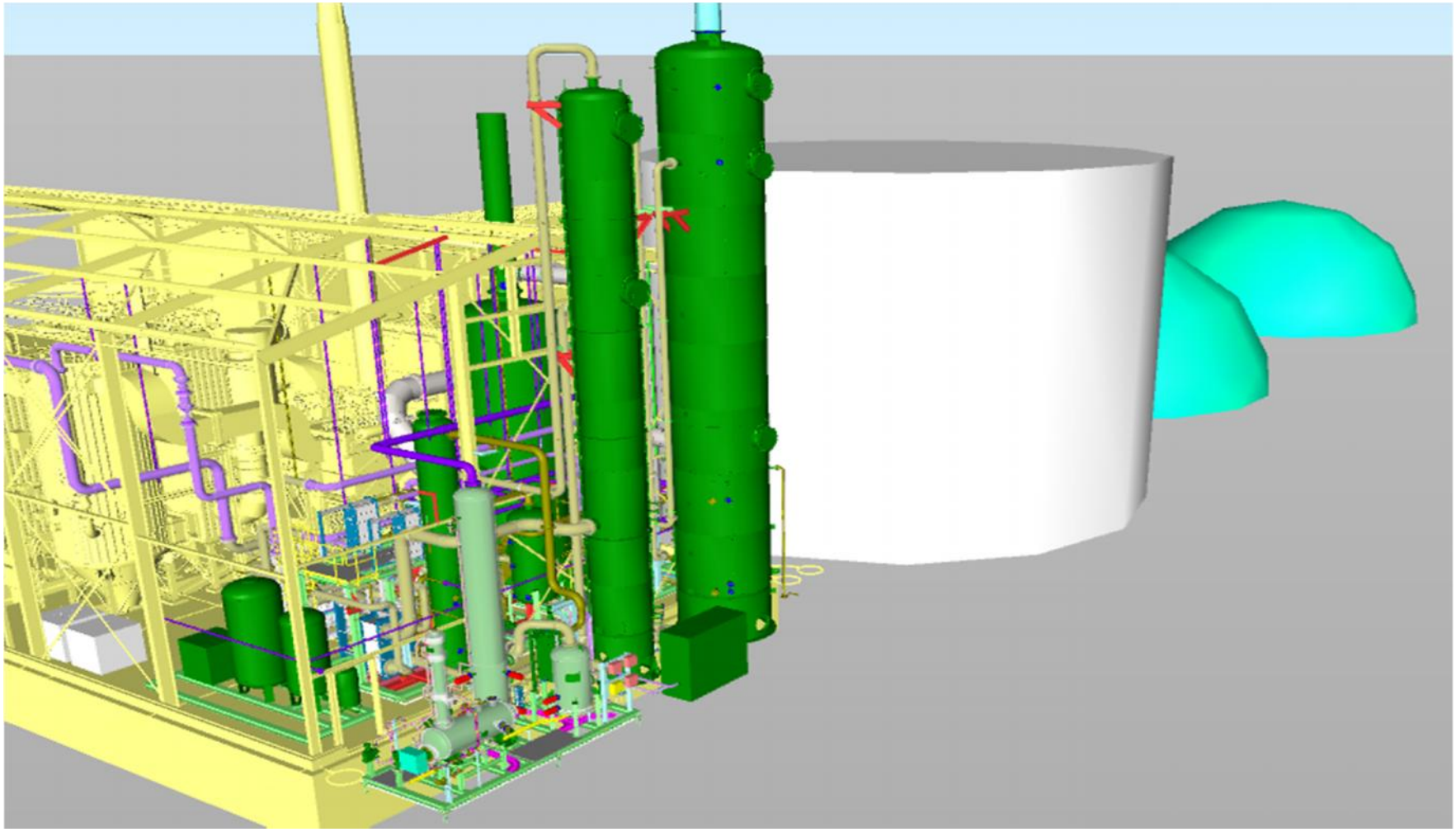


CO_2 capture process and heat integration

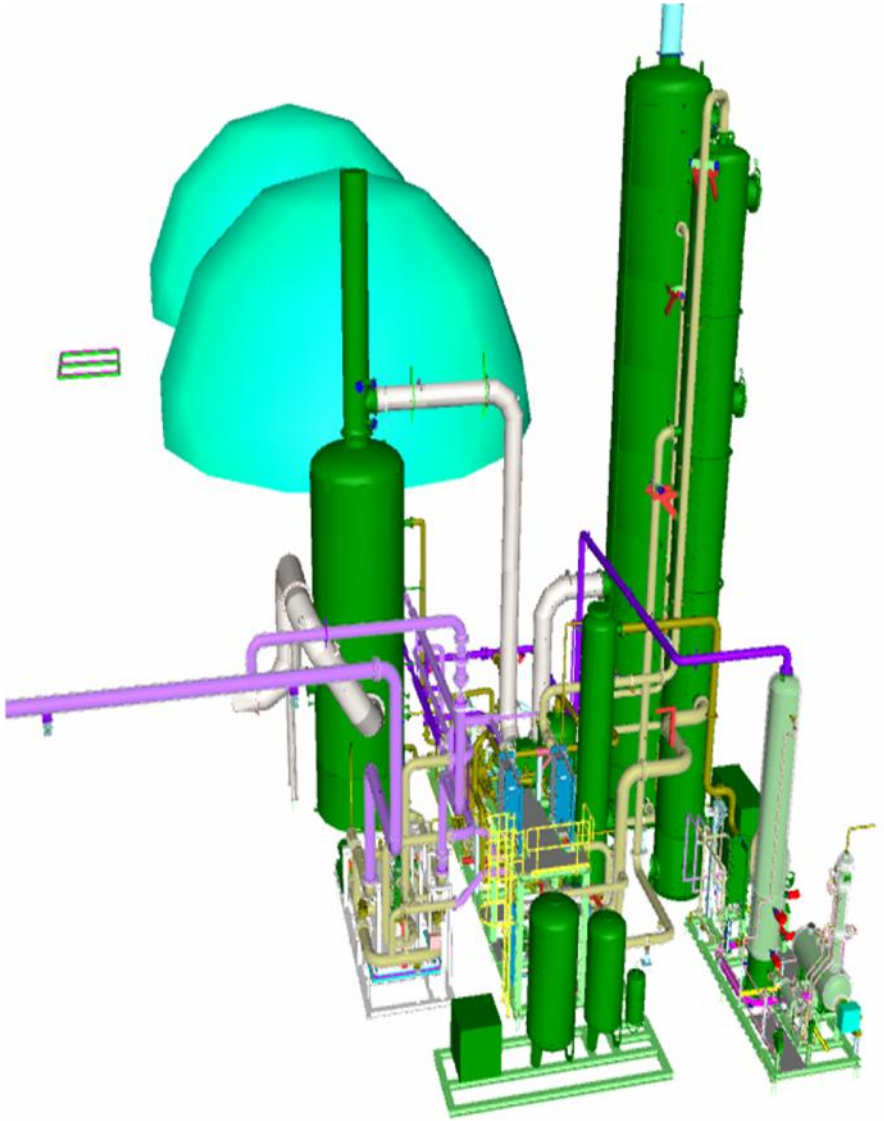


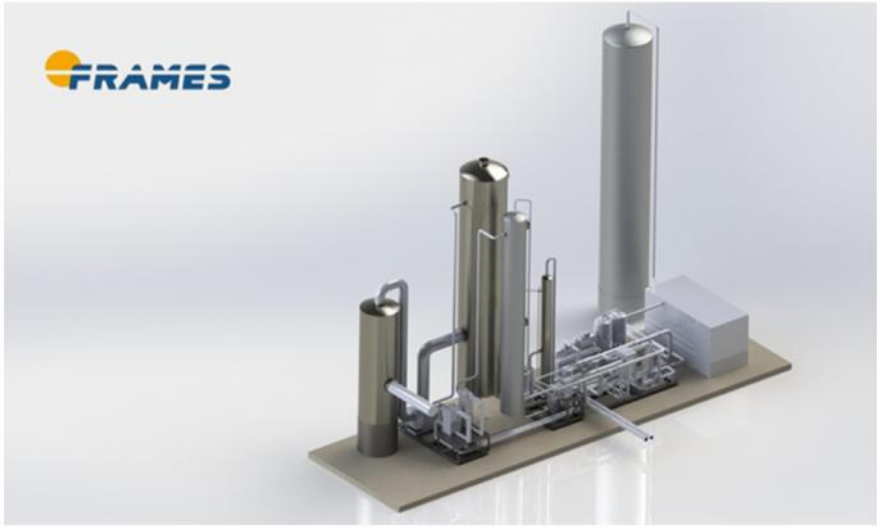
Recent droneview of CO_2 capture project

CO_2 recovery from biomass for Greenhouses

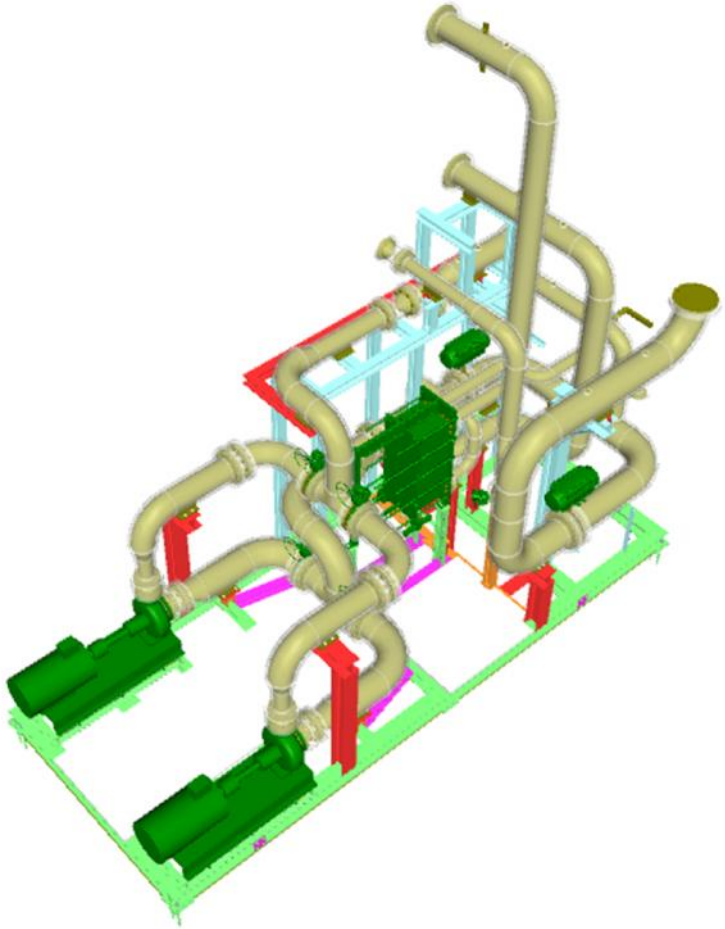


Overview

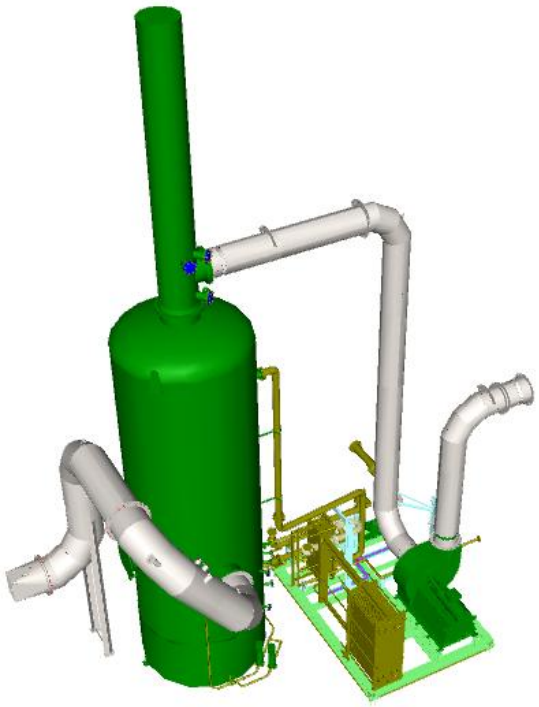




Heat integration

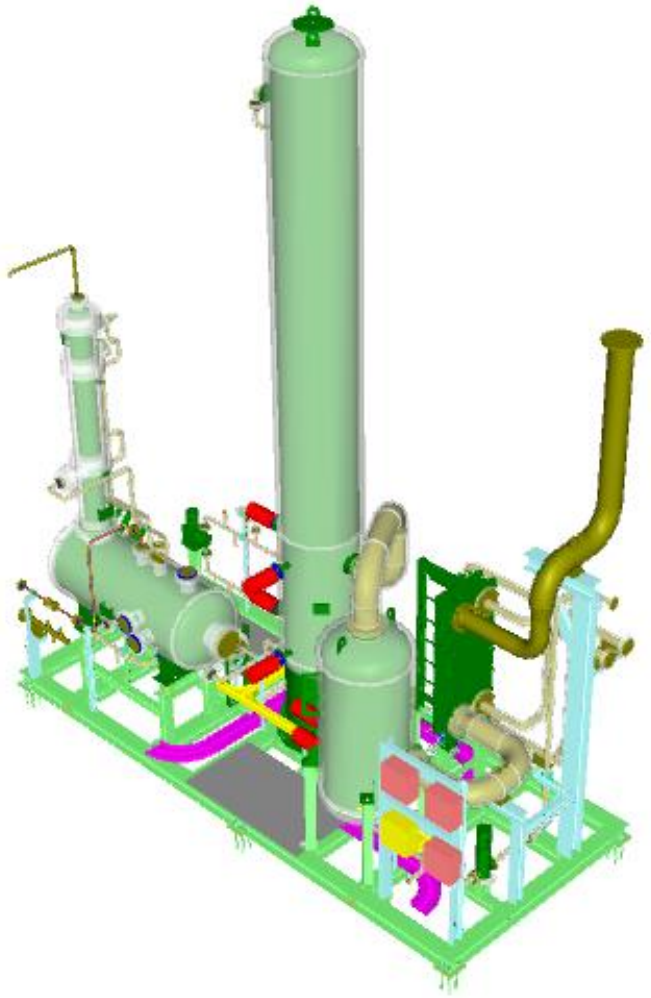


Quench and blower system

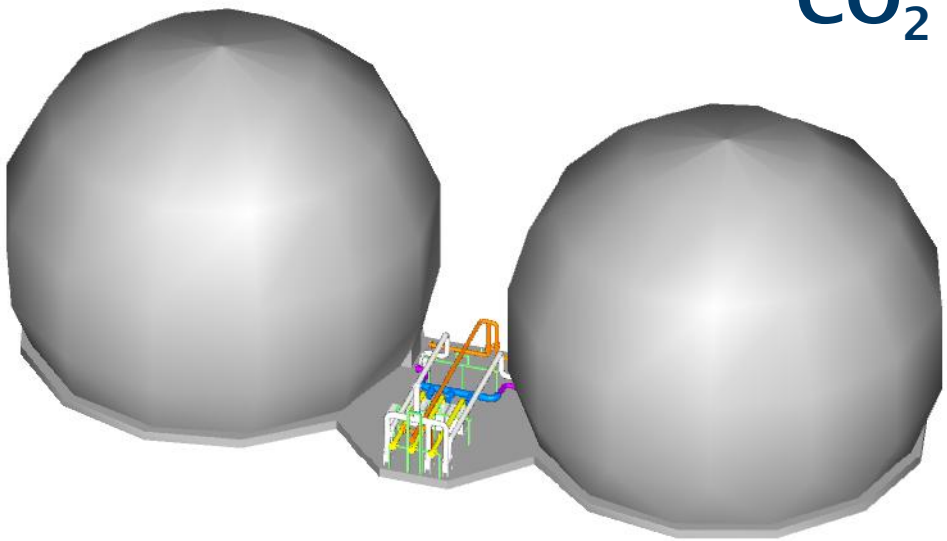


CO_2 capture system

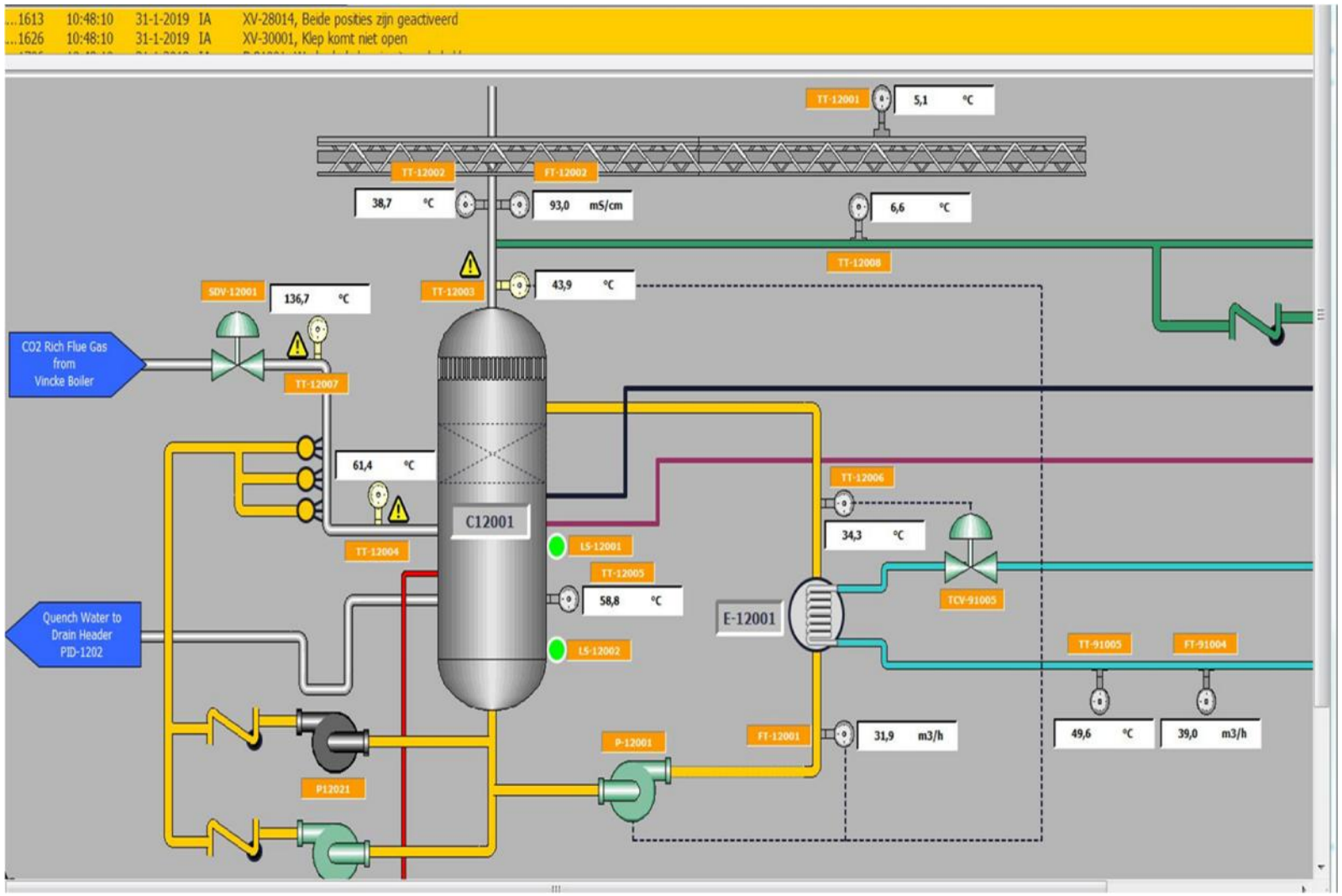
CO_2 drying



CO_2 storage and buffering



Remote monitoring & control



Overview Factory and woodstorage

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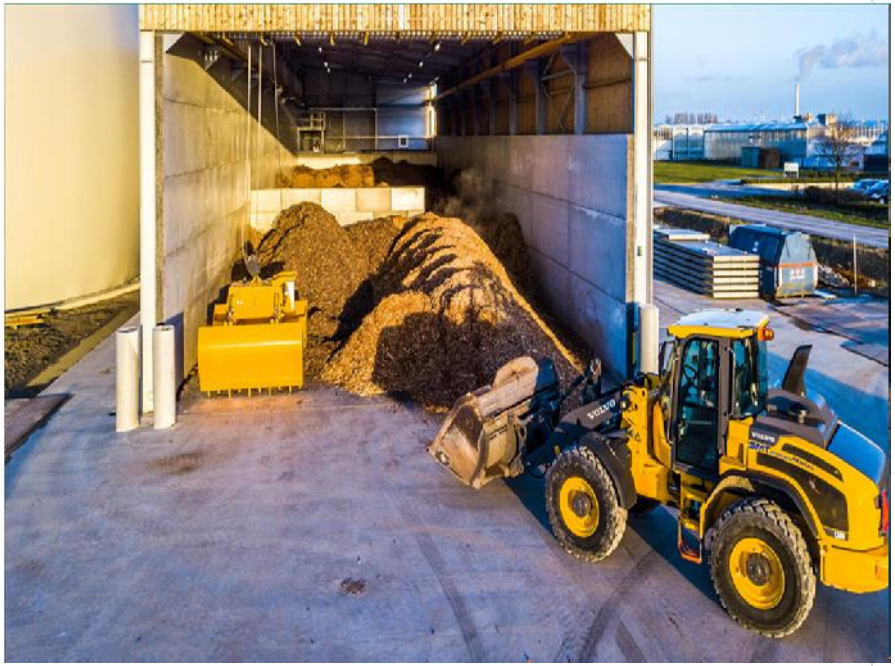

CO_2 recovery from biomass for Greenhouses DES

DES

Gebr. van Duijn
aubergine kwekerij - teler van
Purple Pride

PROMINENT
TOMATOES ON THE VINE SPECIALIST
VOF Prominent
Grevelingen

D.T. van Noord
tomaten


Thank you for
your time!
FRAMES
a family of oil & gas solutions