

ORGANIZA

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# Biomethane and CO2 recovery from biogas – Today's and tomorrow's utilization

Thomas Dreisbach

CSO

agriKomp GmbH



**Biometano y otros gases renovables:  
El camino hacia una economía sostenible y competitiva.**

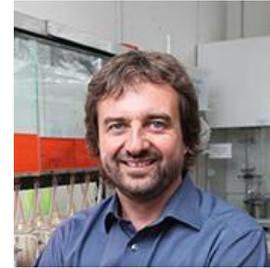
## agriKomp – who we are

### Our goal:

We want to make it possible for agricultural businesses to enter the energy market, quickly and with minimum outlay.

### We stand for in-depth competence

- Biogas technology since 2000
- Own product development
- Components Made by agriKomp
- Implemented > 1.000 biogas plants
- Approx. 700 employees in the agriKomp network



Robert Bugar,  
Founder and Managing  
Director

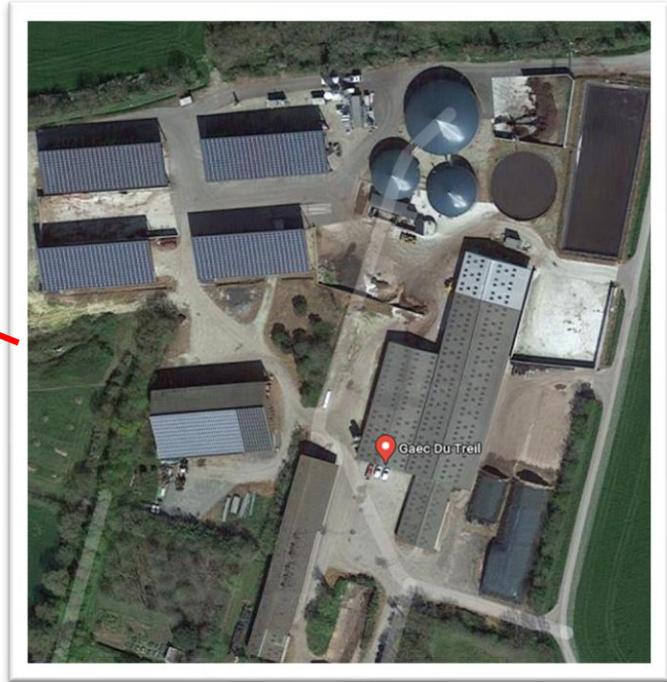
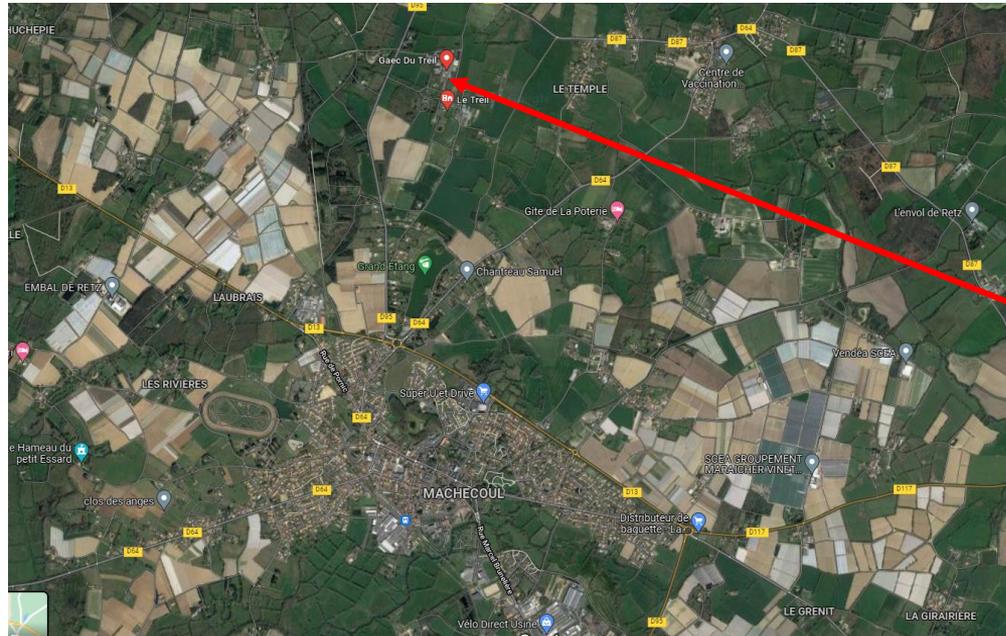


Michael Engelhardt,  
Founder





# Today: agriPure® and CO2

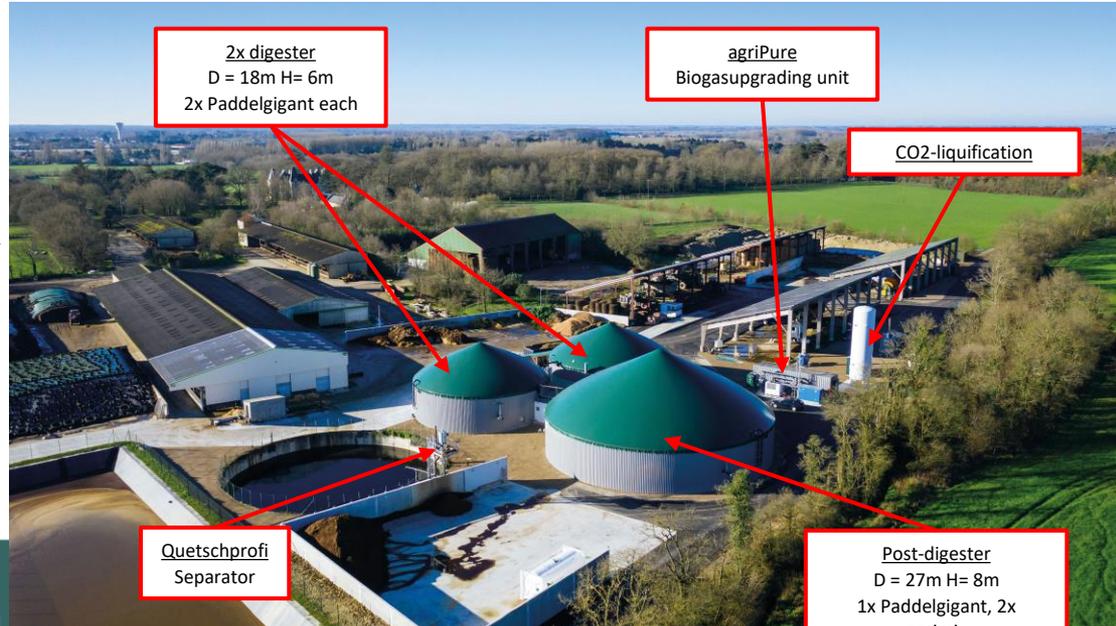




## Today: agriPure<sup>®</sup> and CO2

### Project timeline:

- 10/2017 - signed offer for agriPure 250
- 01/2019 - start of construction
- 10/2019 - Commissioning
- 09/2020 - Repowering to agriPure 265
- 09/2020 - Repowering CO2 liquification
- 04/2022 - Repowering to agriPure 500  
→ CO2-liquification at 3.000 t CO2/a





Bior





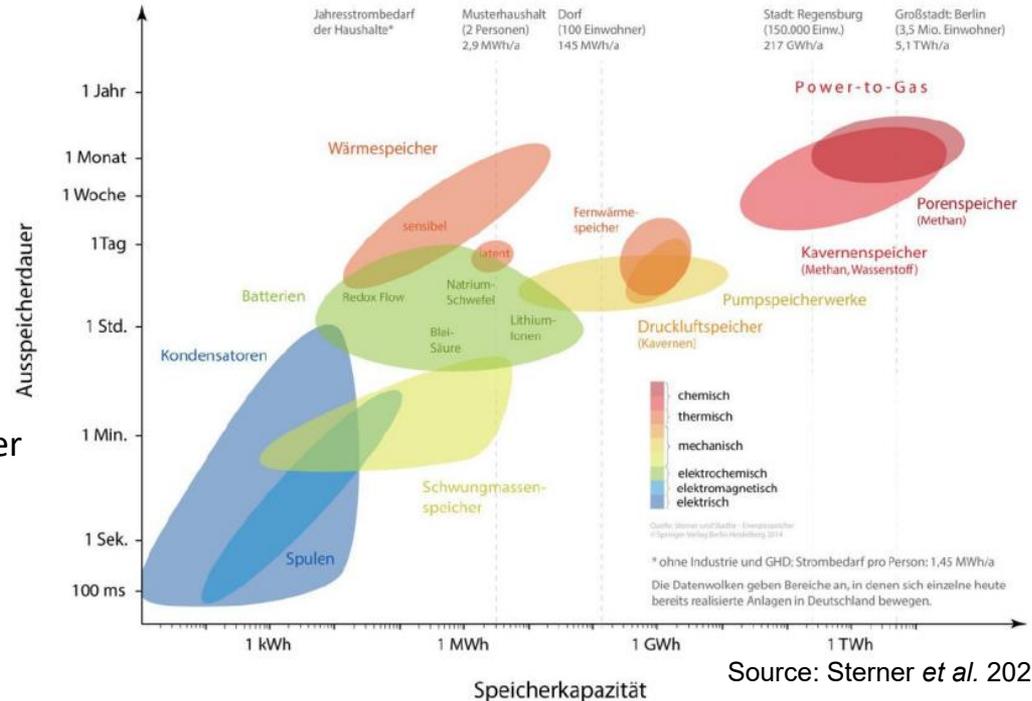
## And tomorrow: We have a storage problem

### Short term storage (days, hours)

- Lithium-Batteries 0,01 TWh
- Pumped storage 0,04 TWh

### Seasonal storage (weeks, month)

- Gasgrid & storage > 300 TWh
- Equivalent to 300 mio. 1 MWh-Batteriespeicher



Source: Sterner et al. 2021

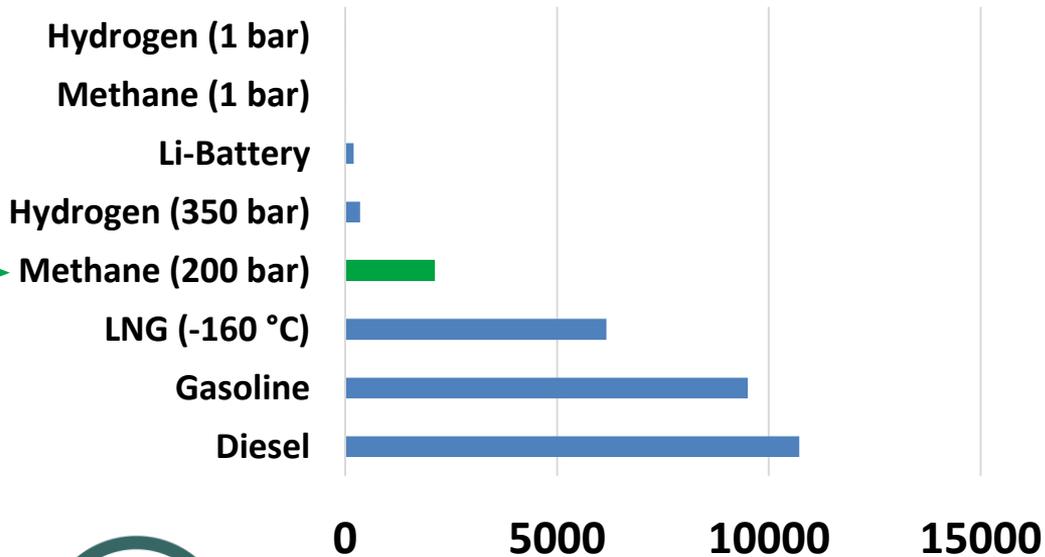




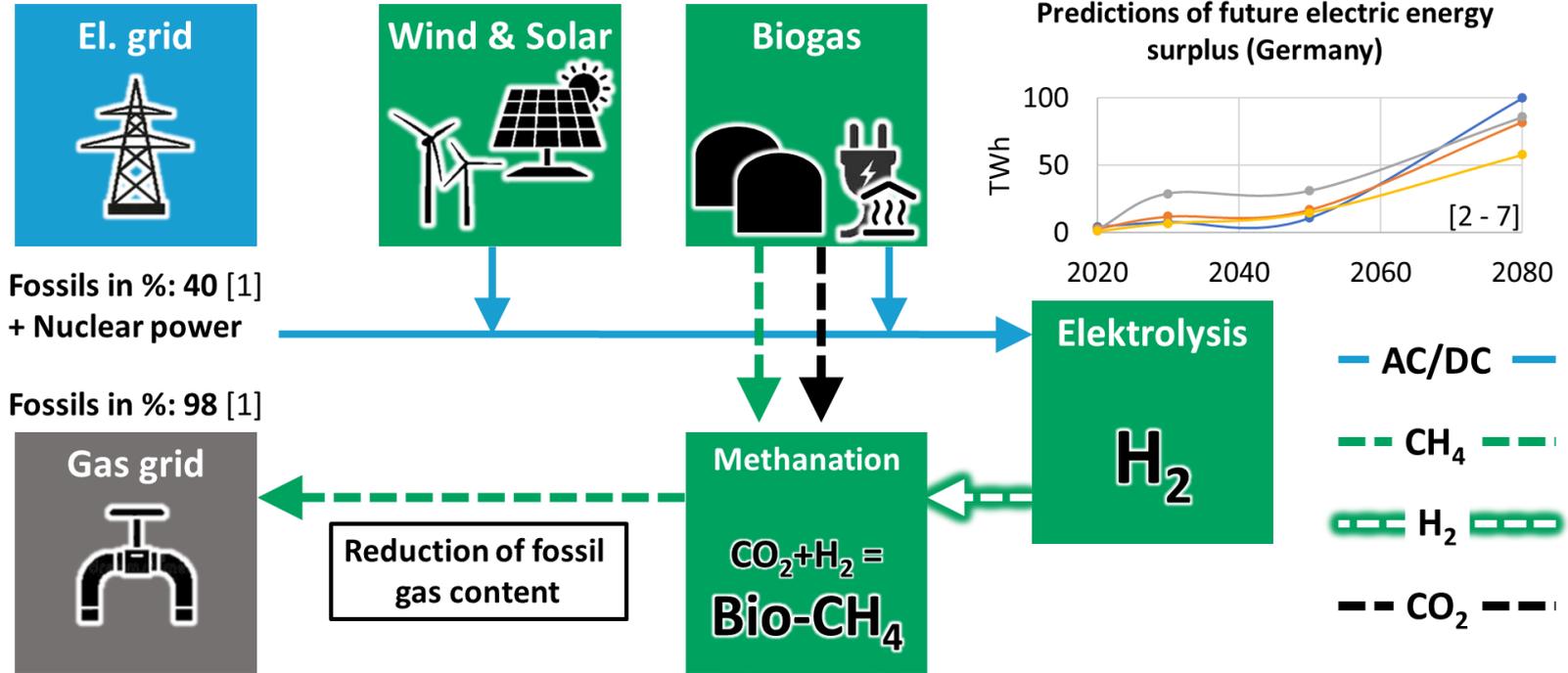
# Seasonal Methane Storage

- Existing gasgrid
- Easy transport
- Longlivity
- Defossilisation of the gas grid
- **High energy density**
- **Already financed infrastructure**
- **Cross-sector usability**

Volumetric energy density Wh/L

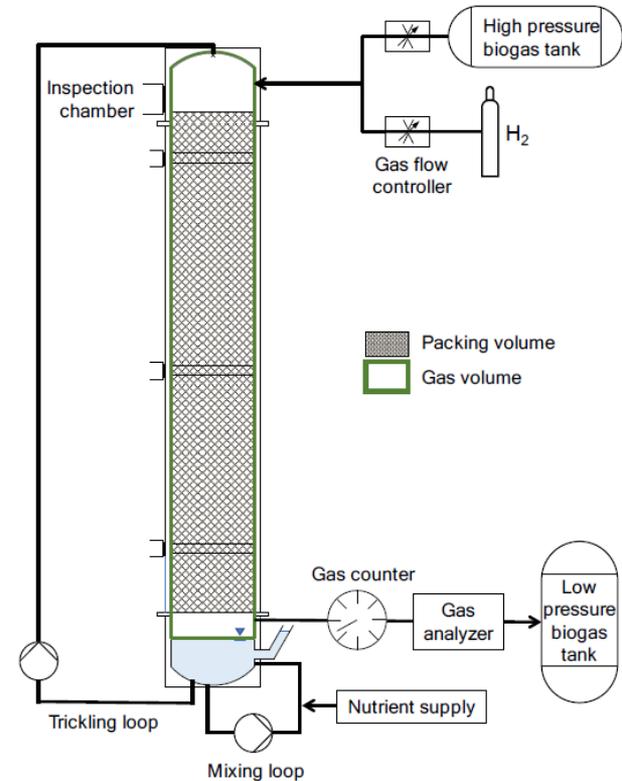


# Research and Development: Methanation



## Biological methanation

- **Mixed Culture:** Inoculum from biogas or sewage sludge
- **Trickling Bed Reactor:** Packing material (carrier media)
- **Feed Gases:** Renewable hydrogen + biogas (CO<sub>2</sub> + CH<sub>4</sub> + H<sub>2</sub>S)
- **Additives:** Trace elements & sulfur
- **Product Gas:** 95–99% methane purity, depending on residence time (remaining: H<sub>2</sub> + CO<sub>2</sub>)





# Biomethane and CO2 recovery from biogas – today's and tomorrow's utilization



Laboratory



Technical scale



Reality

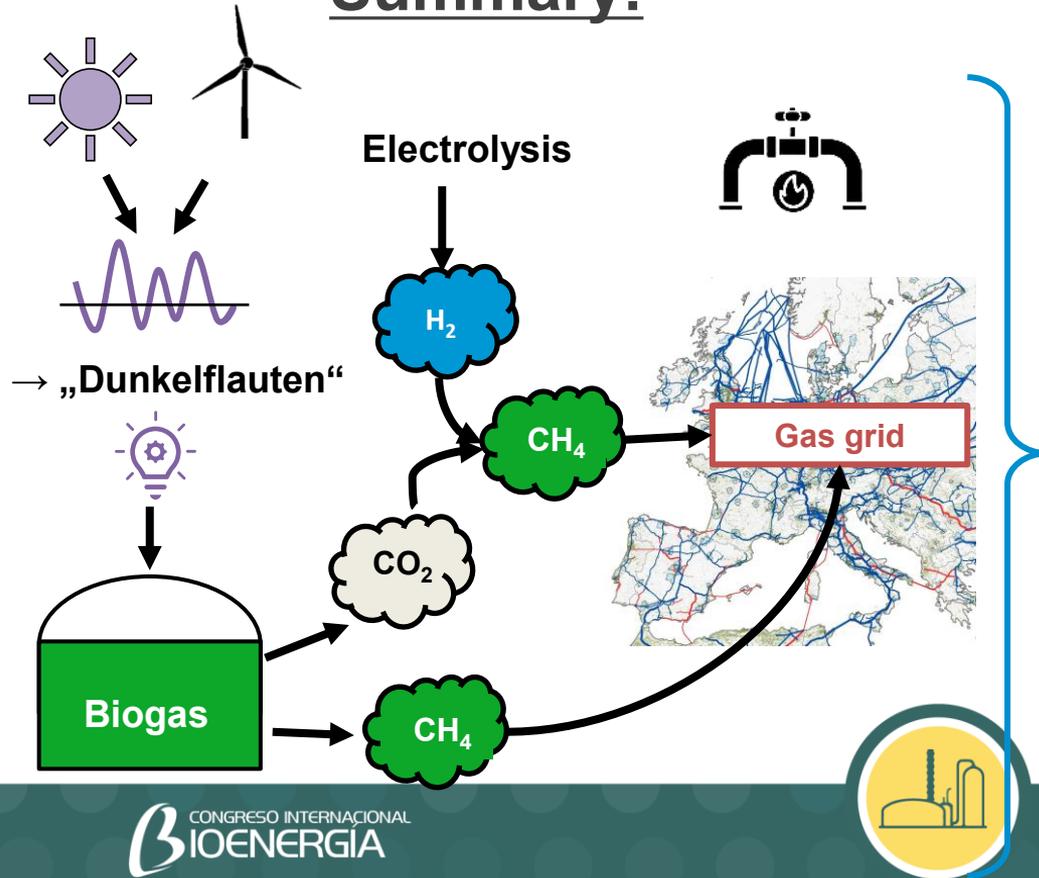
Link: [gicon.de/methanisierung/start](http://gicon.de/methanisierung/start)

## Patented:

- DE 10 2011 051 836.A1
- DE 10 2013 209 734.A1
- EP 14731164.1
- DE 10 2023 112 234.7

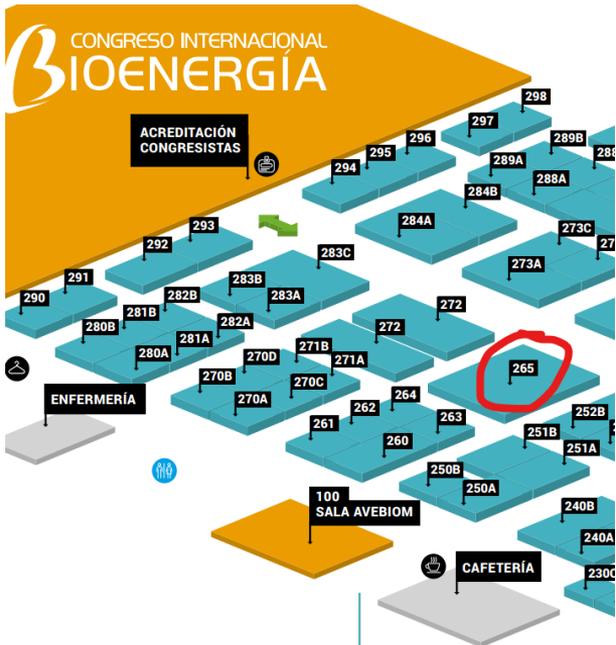


## Summary:



## Effects:

- More seasonally stored energy
- Climate protection (CO<sub>2</sub> utilisation)
- Relief for the electricity grid
- Use of surplus electricity
- Without H<sub>2</sub> grid expansion
- **Natural gas grid = energy storage**



# CONGRESO INTERNACIONAL BIOENERGÍA

VALLADOLID 1-2.OCT.2025



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