



**KHIMOD**  
ALCEN

**Bio360Expo**

**Pathways for  
producing SAF**



# Towards a net-zero world

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***KHIMOD is aiming at net-zeroing industrial sectors such as waste, concrete, steel, air or maritime transportation thanks to the production of green gases and synthetic fuels.***

# KHIMOD

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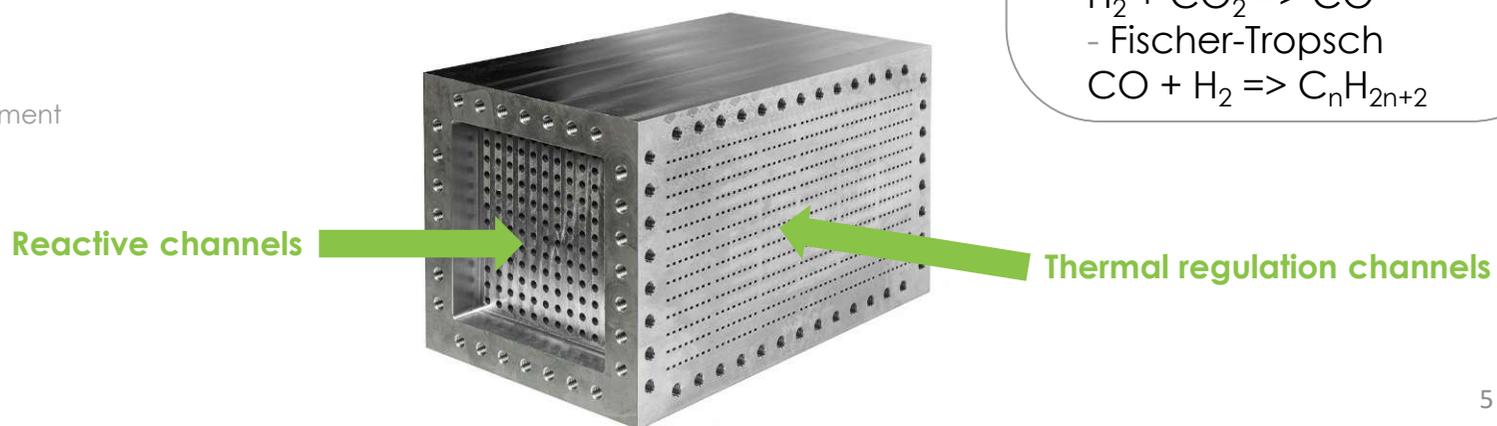
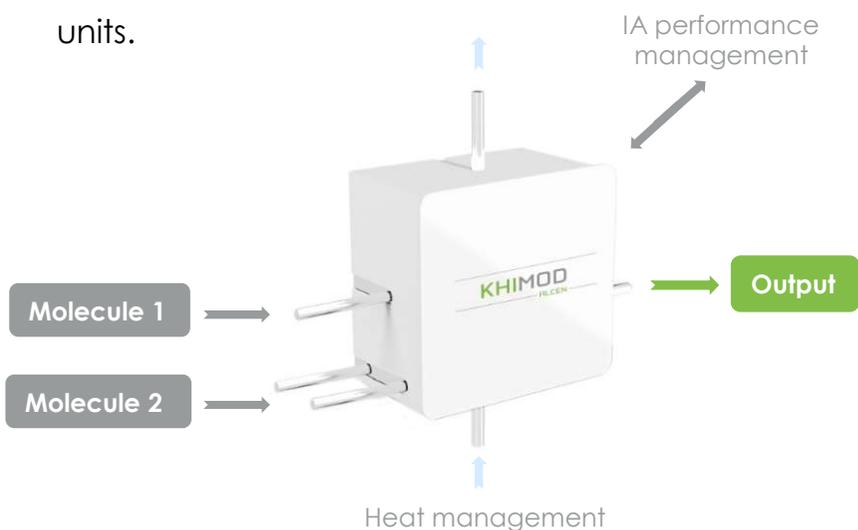
- A technical solution provider
- +20 years of technical development
- Proven technology
- Successful track record
- Industrial manufacturing capacity
- Committed team
- Strong shareholder base

# How do our solutions work?



# Our technology

Combining different kinds of molecules with a **specific catalyst** in a specifically designed **Heat Exchanger/Reactor (HER)** allows KHIMOD to **produce all kinds of molecules** from the simplest to the most complex and from small scale to large scale units.



## CORE REACTIONS

### e-Methane

- WGS  
 $\text{CO} + \text{H}_2\text{O} \Rightarrow \text{H}_2$
- Sabatier  
 $\text{CO}/\text{CO}_2 + \text{H}_2 \Rightarrow \text{CH}_4$

### e-Methanol

- $\text{CO}/\text{CO}_2 + \text{H}_2 \Rightarrow \text{CH}_3\text{OH}$

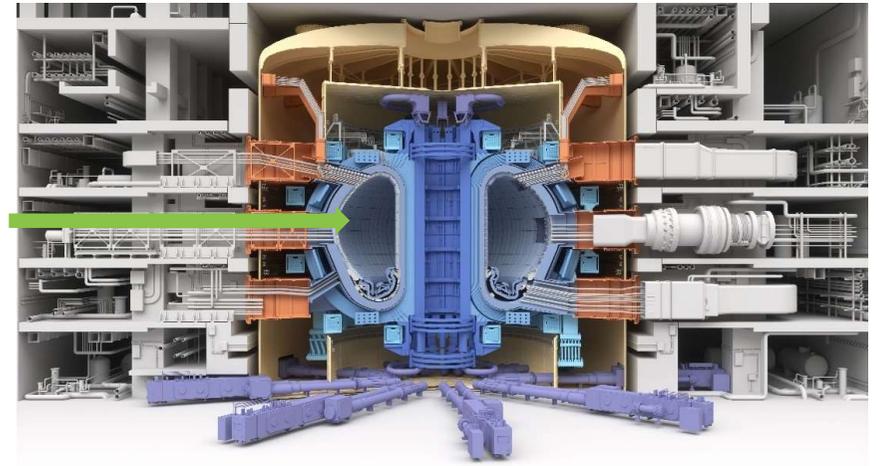
### e-Crude

- rWGS  
 $\text{H}_2 + \text{CO}_2 \Rightarrow \text{CO}$
- Fischer-Tropsch  
 $\text{CO} + \text{H}_2 \Rightarrow \text{C}_n\text{H}_{2n+2}$

# The ITER experience

**ITER:** an international (35 countries) project aiming at building the world's largest tokamak, a magnetic fusion device designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy based on the same principle that powers our Sun and stars.

First wall panels



Taylor-made metal sheet design



Alternating piling of reactive and thermal regulation channels



Diffusion bonding  
1000°C & 1000 bar  
to obtain a monobloc HER



HER ready to be equipped

# Our proposal

## PRODUCTS



- Wide range of Heat Exchanger-Reactors
- Designed and manufactured by KHIMOD

## UNITS



- Stand-alone units
- 5 core reactions
- Up to 900 Nm<sup>3</sup>/h
- Designed by KHIMOD

## SERVICES



- FEED
- Engineering
- Commissioning
- Training
- Maintenance

# HER range



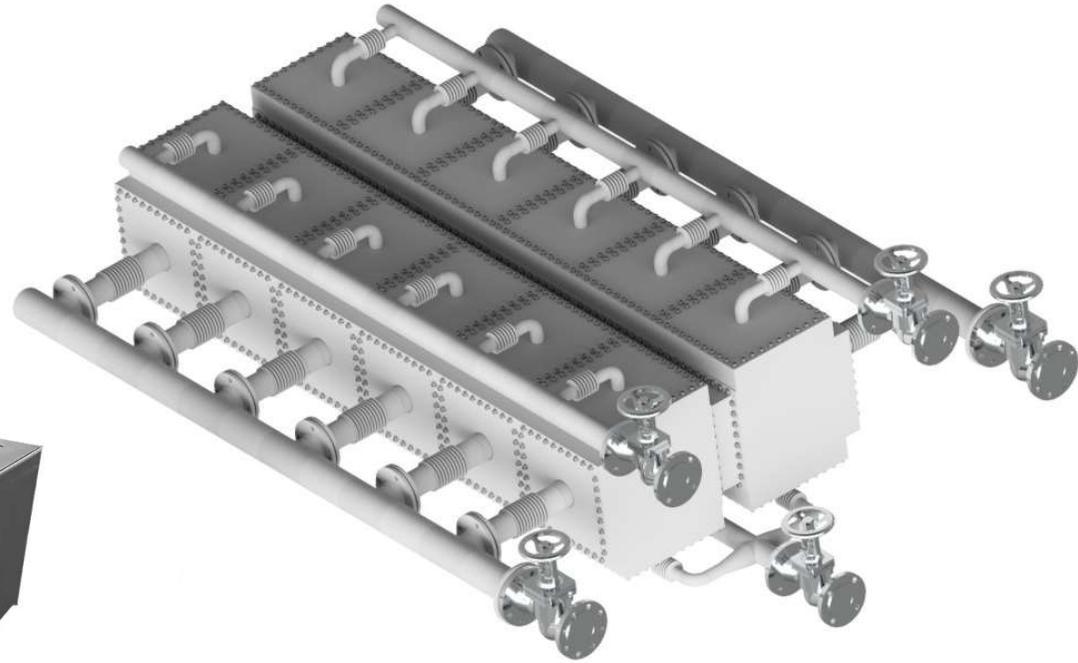
K1



K3

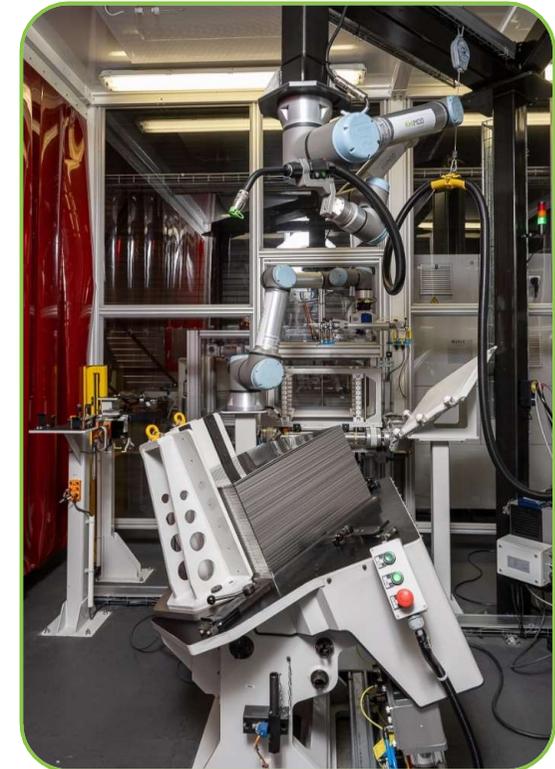


K5



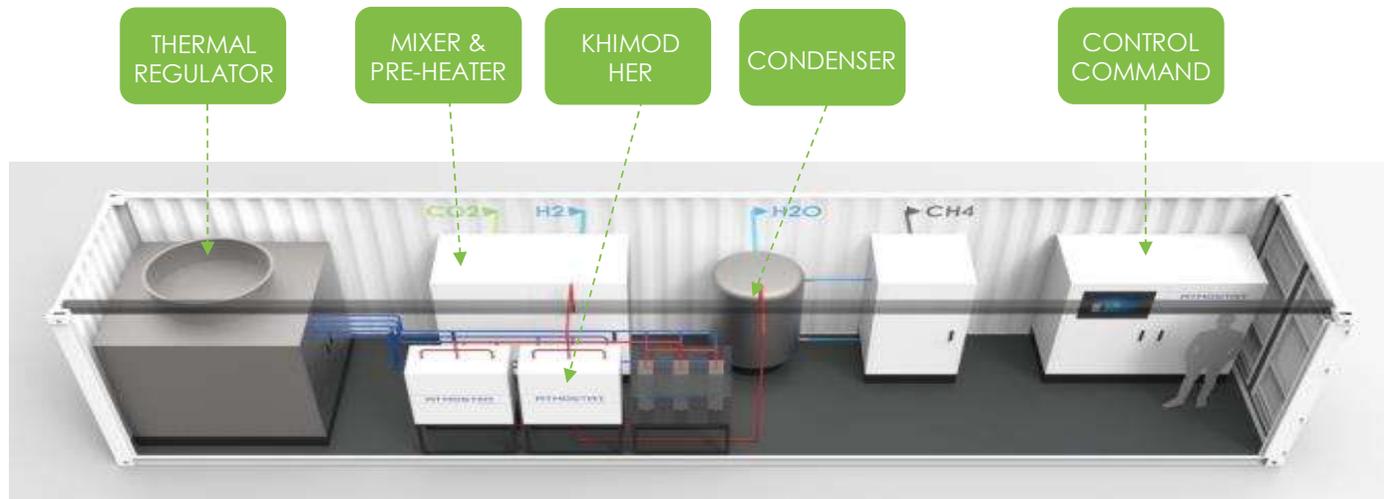
K10

# Industrial site in the Paris region

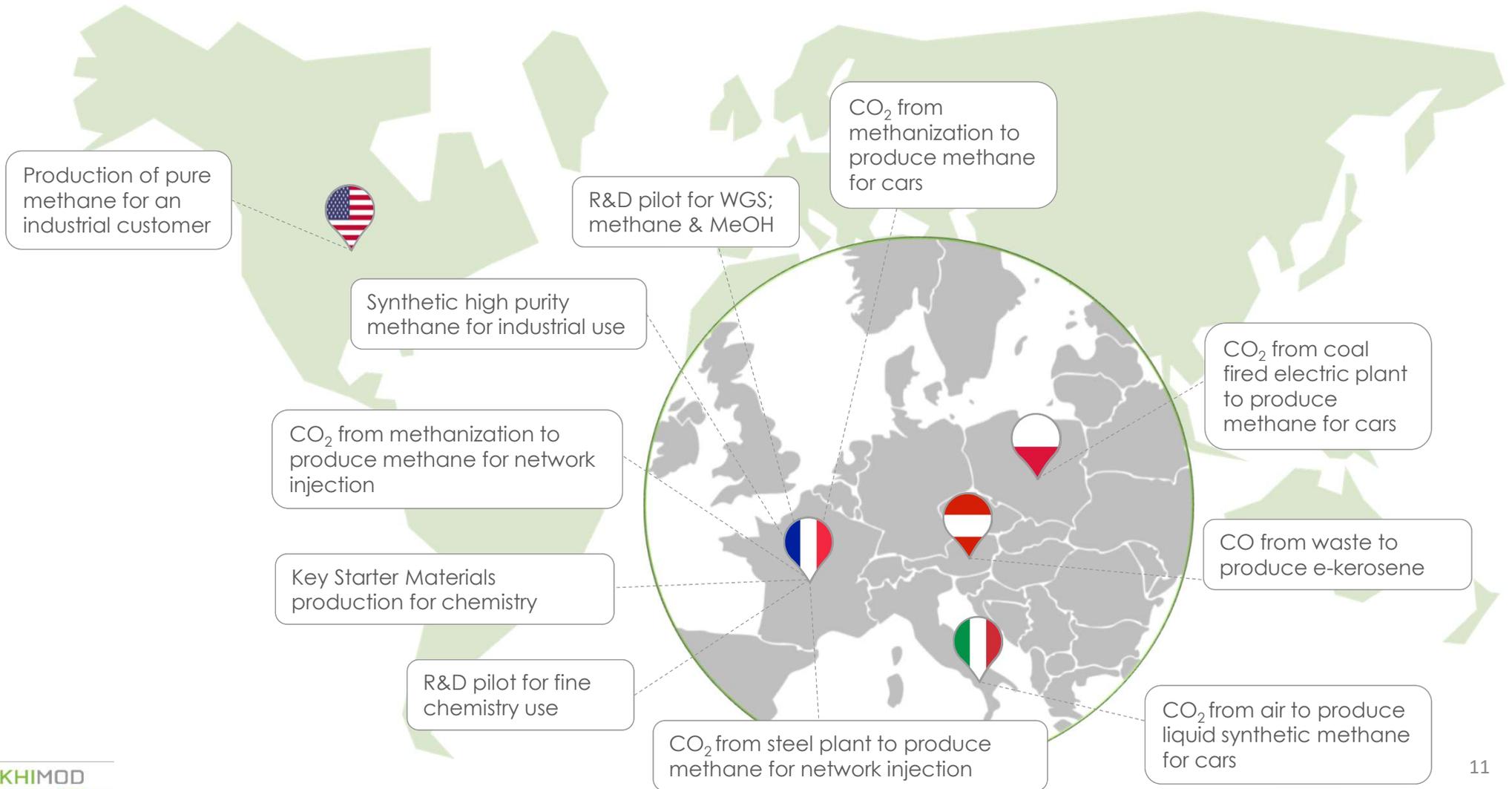


- KHIMOD owns an industrial manufacturing site in **the suburbs of Paris**
- The nominal production capacity is **15,000 Nm<sup>3</sup>/h per year (~ 200 K5/year)**
- Equivalent to **234k tons of CO<sub>2</sub>** which can be processed every year

# A modular architecture of systems



# Some references



# A few examples

Jupiter 1000



Méthycentre



Avebio



Use-Case

Power-to-X

Waste-to-X

Power-to-X

Molecule

E-methane

E-methane

SAF

Main Partners



storengy

Elyse 

Status

In Operation

Commissioning

Project Started

# JUPITER 1000

One of the World's biggest Power-to-Gas project in Operation





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