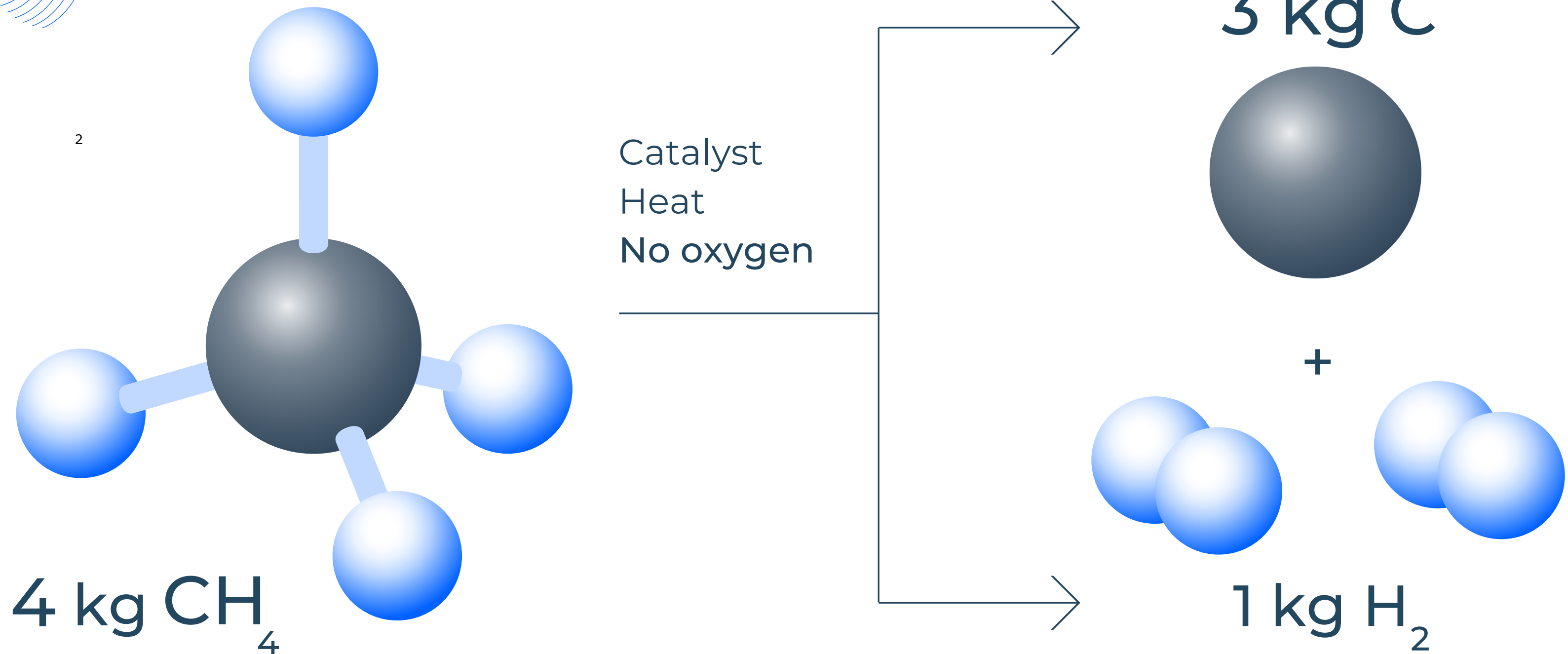




IS METHANE SPLITTING THE KEY TO DECARBONIZING INDUSTRY AND  
SECURING LOCAL PRODUCTION OF CRITICAL MATERIALS?

BIO 360 EXPO 2024

# WHAT IS METHANE SPLITTING?

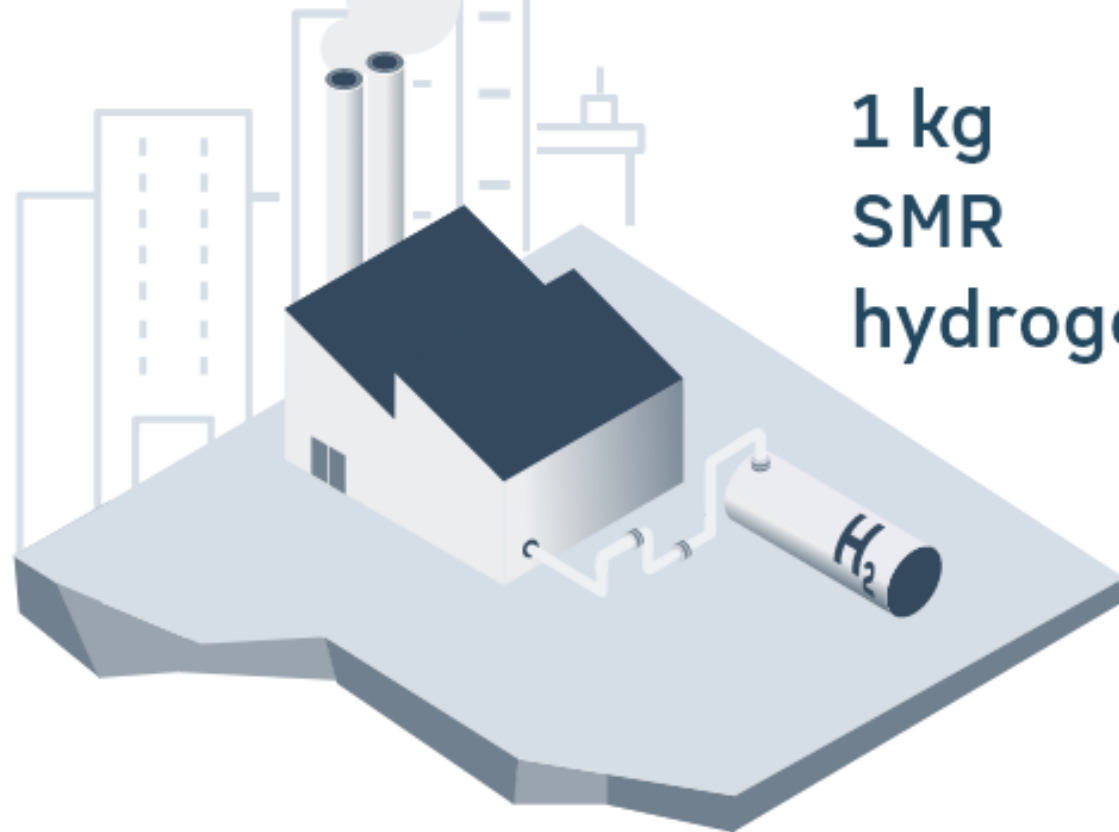


# HOW DO WE DECARBONIZE INDUSTRY?

SMR hydrogen  
production  
emissions

9 kg CO<sub>2</sub> into  
the atmosphere

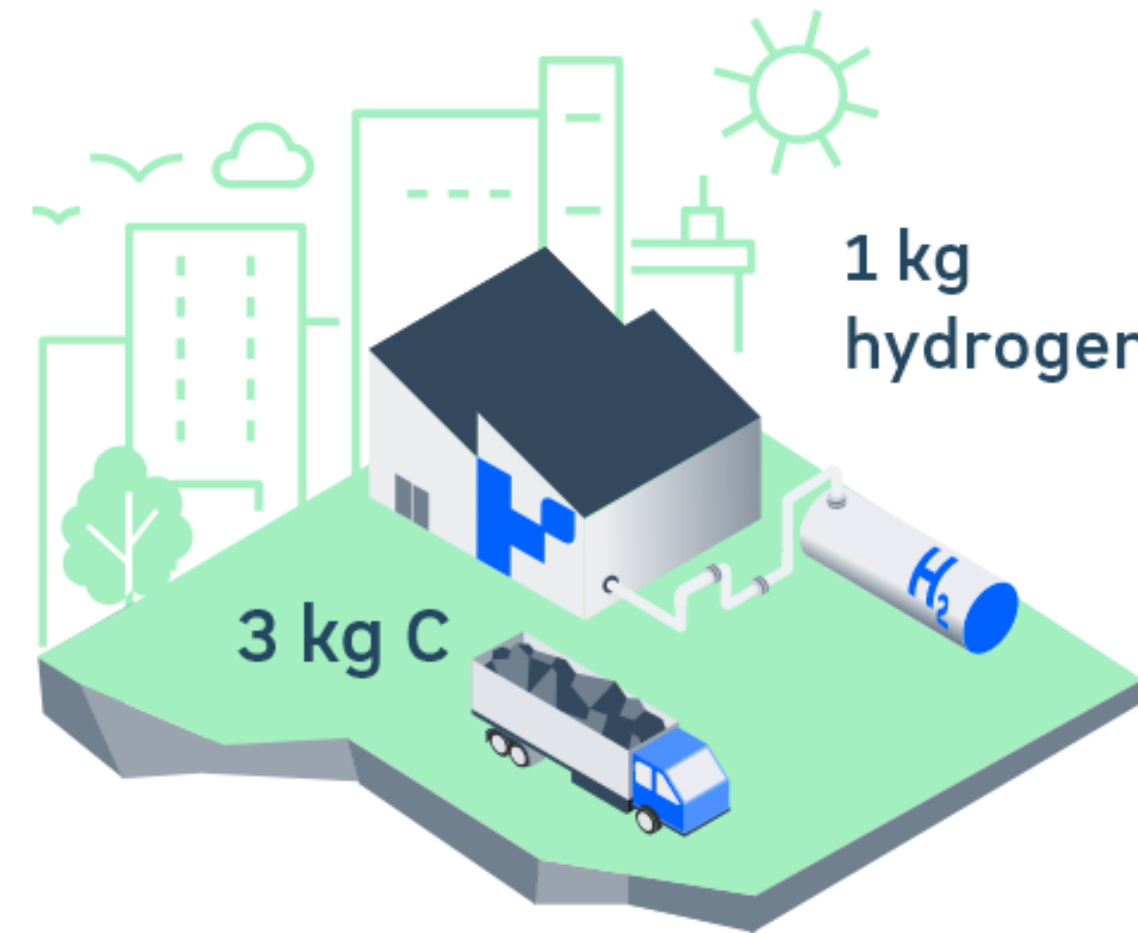
1 kg  
SMR  
hydrogen



No emissions from  
Hycamite's process

1 kg  
hydrogen

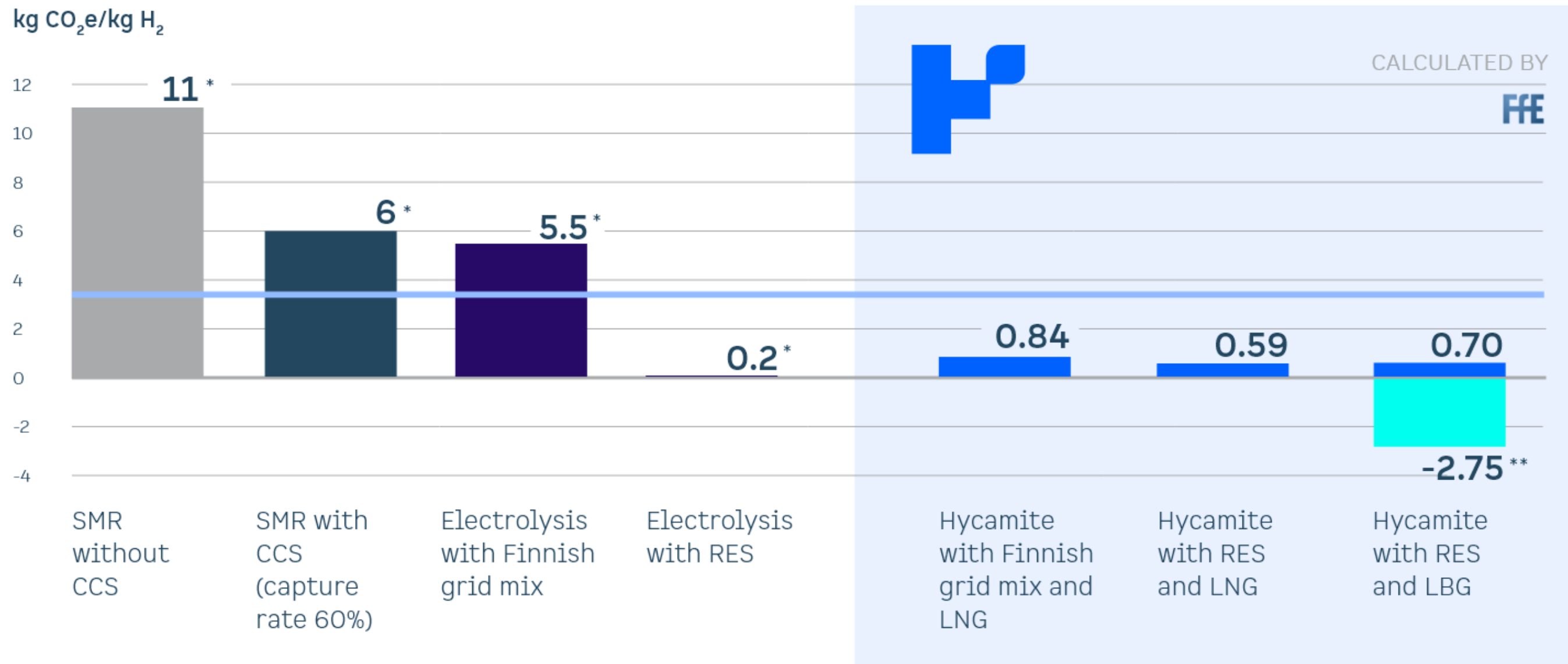
3 kg C



**SMR:** steam methane reforming

Source: [sciencedirect.com/science/article/abs/pii/S0360319921014920](https://www.sciencedirect.com/science/article/abs/pii/S0360319921014920)

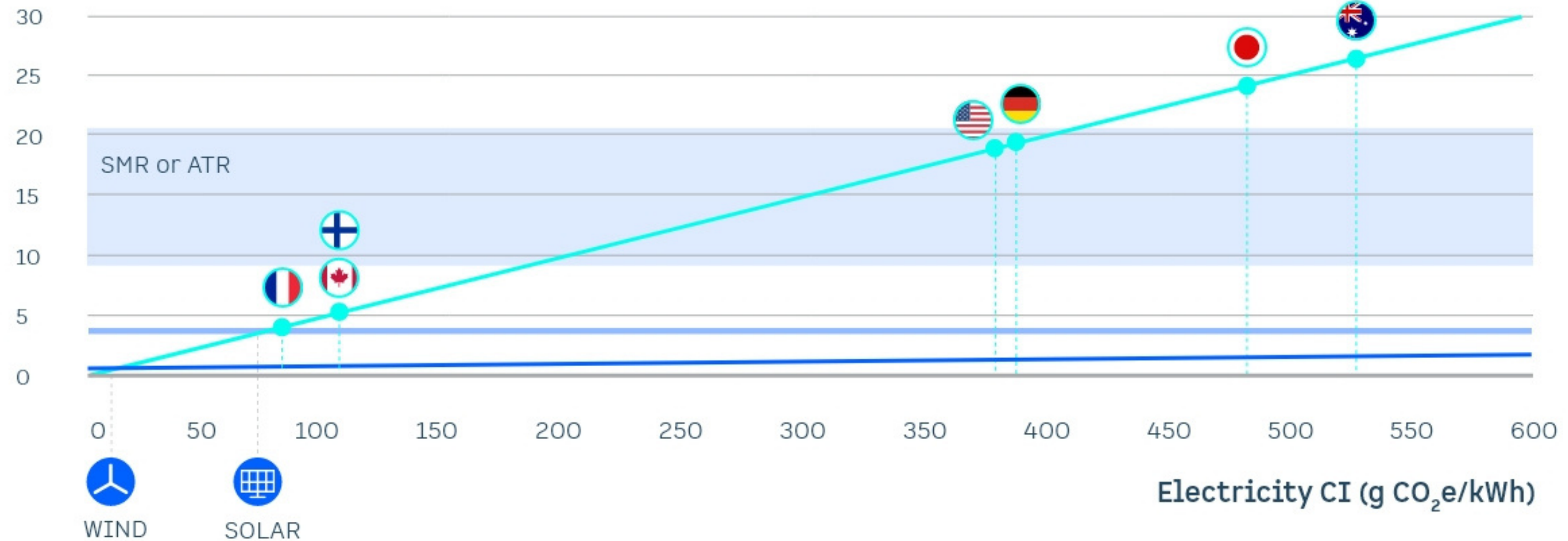
# CAN METHANE SPLITTING TURN HYDROGEN PRODUCTION INTO A CARBON SINK?





# IS GREEN ALWAYS CLEAN?

Footprint (kg CO<sub>2</sub>e/kg H<sub>2</sub>)



■ Electrolysis\* 
 ■ Hycamite\*\* 
  Low-carbon hydrogen limit\*\*\* 
 ○ Grid averages

\* [ourworldindata.org/grapher/carbon-intensity-electricity](https://ourworldindata.org/grapher/carbon-intensity-electricity)

\*\* Hycamite's emissions are based on the EU LNG mix (upstream) and the shown electricity CI

\*\*\* EU renewable H<sub>2</sub> and Japan: 3.4 kg CO<sub>2</sub>e/kg H<sub>2</sub>, U.S.A. and Canada: 4 kg CO<sub>2</sub>e/kg H<sub>2</sub>

**ATR:** autothermal reforming

**SMR:** steam methane reforming

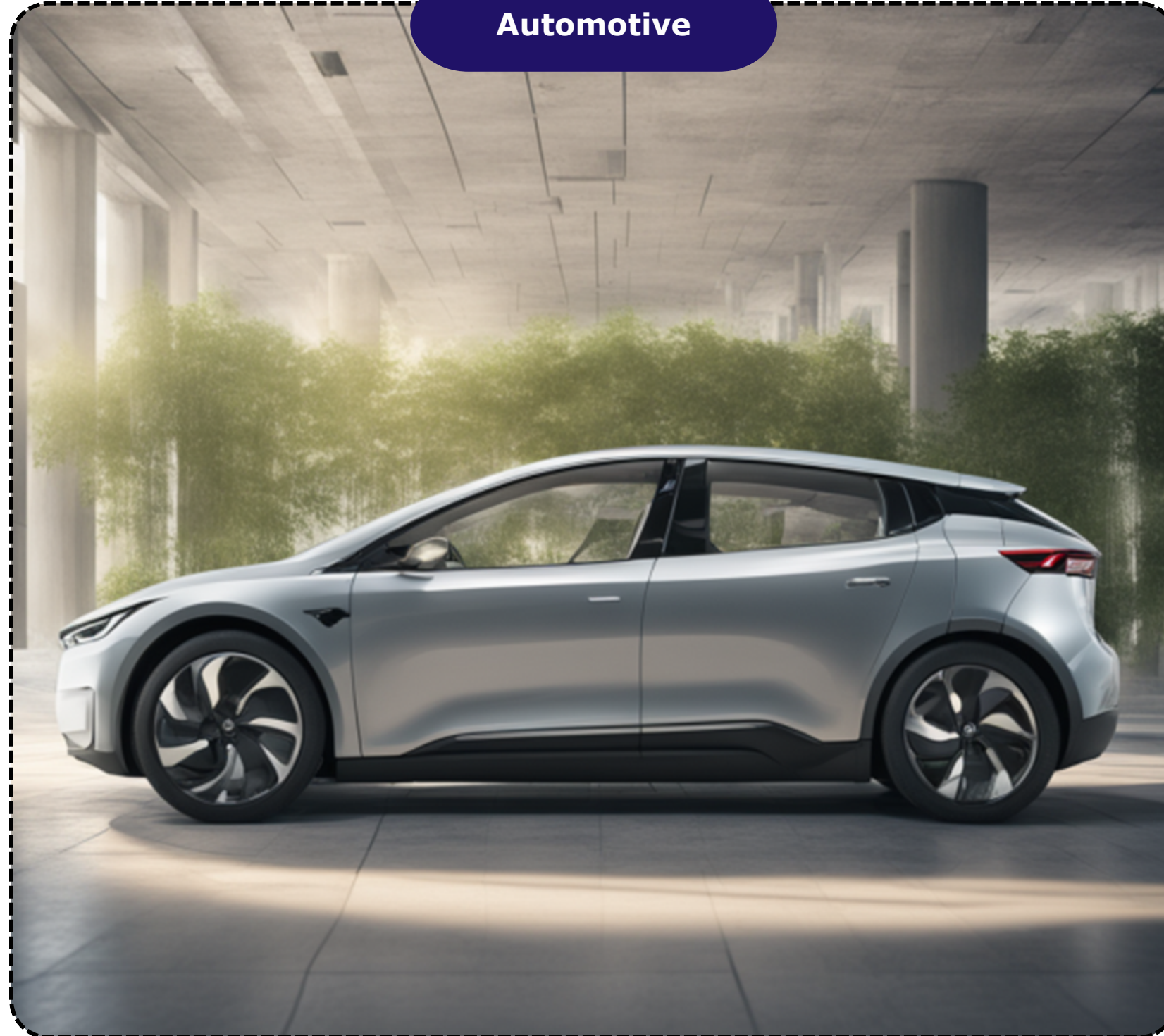


# CAN METHANE SPLITTING SECURE LOCAL PRODUCTION OF CRITICAL MATERIALS?

**Aerospace**



**Automotive**



**Polymers**



**Cement**



**Supercapacitors**





# WHO ARE WE?

A deep-tech startup on clean hydrogen and high-quality carbon

- Industrial-scale low-carbon hydrogen production
- Solid, high-value carbon products
- Technology based on over 20 years of research at the University of Oulu
- More than 40 hycamates with different nationalities
- International, strategic investors
- Global coverage of strategic partners
- Industrial-scale demonstration plant capacity 2 ktn hydrogen per annum

Coming:  
Customer Sample  
Facility

Offices

Pilot

Laboratory





# CUSTOMER SAMPLE FACILITY

**2 kt of H<sub>2</sub> &  
6kt of solid carbon**  
production capacity

**18 kt CO<sub>2</sub> p.a.**  
emission reductions  
(compared to SMR)

**2024**  
Operational

**Three different  
reactors for testing**  
2 industrial  
1 marine

Kokkola, Finland

## Partners

**SWECO** 

  
ENVINEER

CLIMATE  
FUND

**ABB**

 **Hulteberg**  
CHEMISTRY & ENGINEERING

**BUSINESS  
FINLAND**





# THANK YOU

▶ **NATASCHA SKOG**  
VP, Hydrogen

▶ **EMAIL**  
[natascha.skog@hycamite.com](mailto:natascha.skog@hycamite.com)

▶ **PHONE**  
+358 50 559 5575

