

Thermolytic Materials

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One Process

For Clean Hydrogen

Sustainable Materials

and Carbon Capture



Commodity & Energy Carrier

H₂
Hydrogen

*Growing 2–4X
by 2050*

150
B\$/yr

SMR

Steam Methane Reforming



830

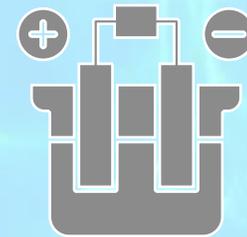
MMt-CO₂ /yr

2.3%

of global CO₂
emissions

Electrolysis

of Water



< 1%

Of Market

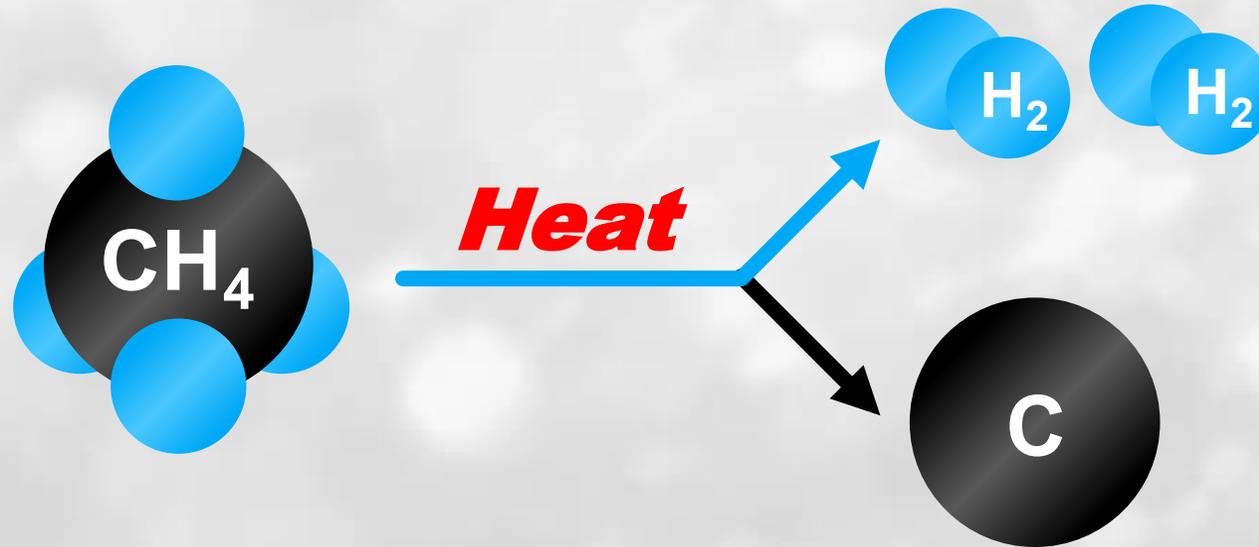
High cost
of H₂

>4 \$/kg



Hydrocarbon Pyrolysis

A Better Hydrogen Process



97% less CO_2
than SMR

Purer H_2
than SMR

83% Less Energy
than Electrolysis

Valuable Co-product
In Carbon

Lower cost H_2
than either



SMR = Steam Methane Reforming

A Modular Process

> 98%
pure H₂

Complete Conversion

In a single pass. Purely thermal process.

- 45%
Electricity

Direct Heat Recovery

Integrated heat exchanger. Recovers more heat at lower cost.

∞
Repeatable

Modular reactors

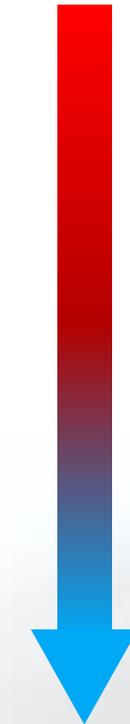
Mass manufactured from low-cost materials. Repeatable for any scale.

99.99
%

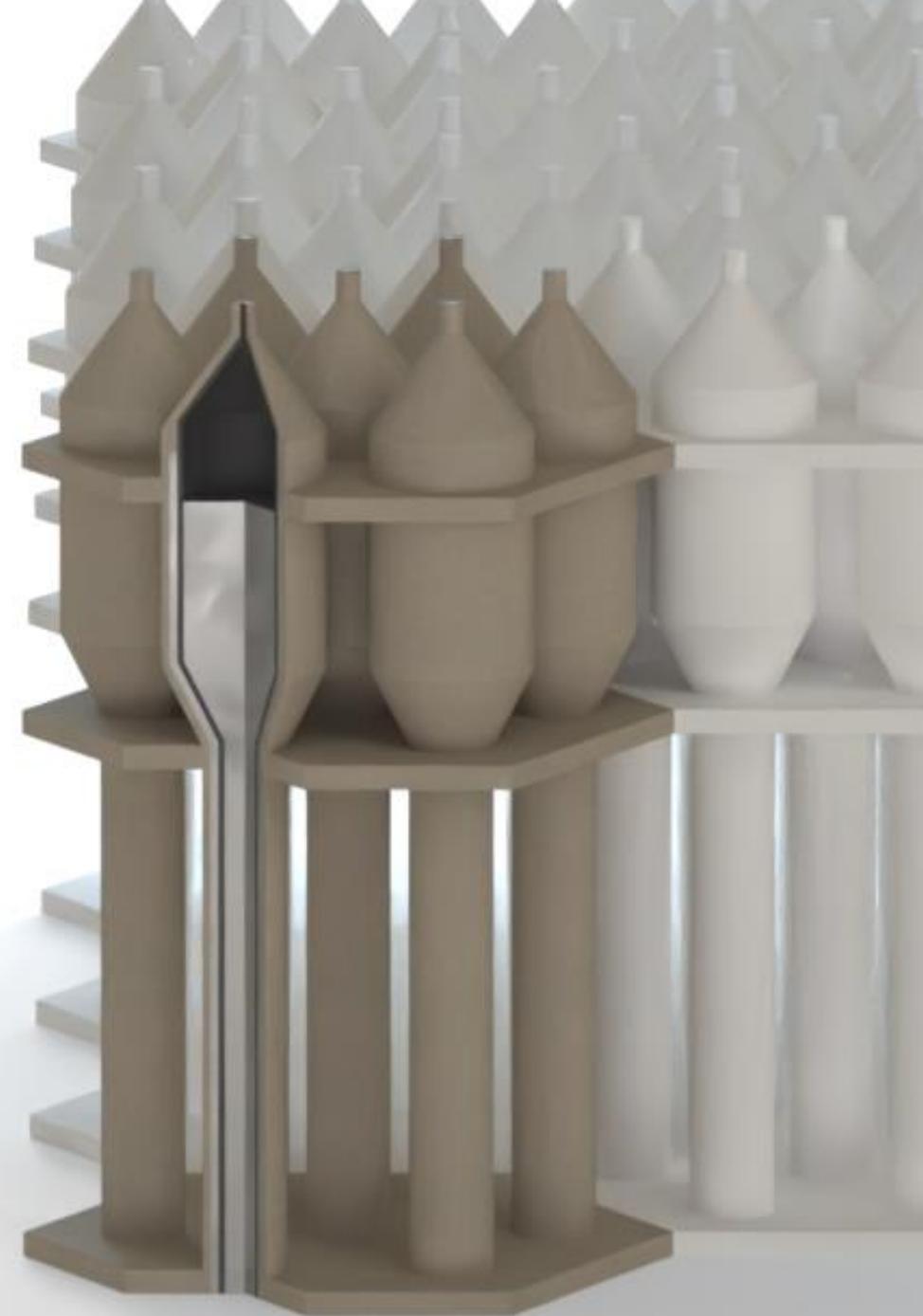
Carbon Purity

Meets pure standards for any application

HOT
At top



COOL
At bottom



Carbon Capture

Bio-energy with Carbon Capture and Utilization

Much lower Energy Intensity than DAC



Sunlight & CO₂

Raw Biomass

Processed Biomass

Thermolytic's Process

Three Products

4.5 Gt
12% today

CO₂ Offset Potential

250 MMT-H₂/yr; 37.8 Gt-CO₂/yr;

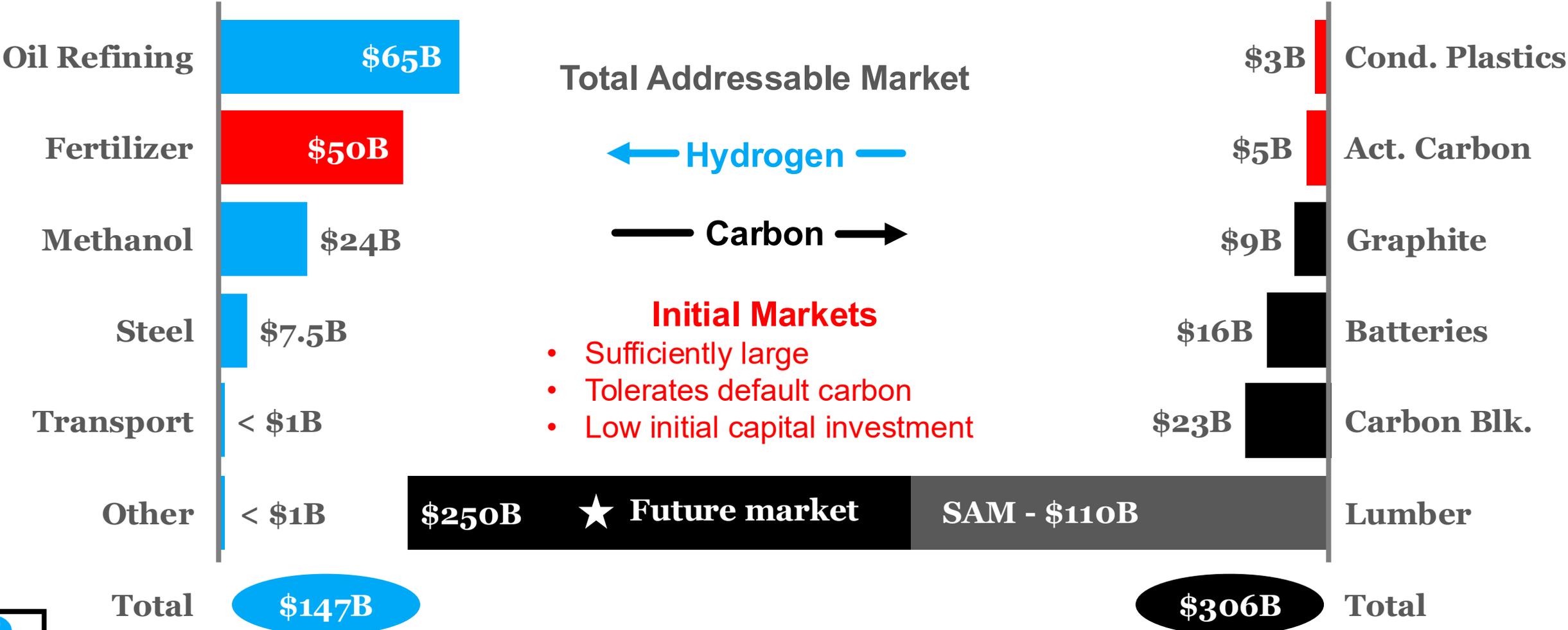
\$50
per tonne

Carbon Credit Price

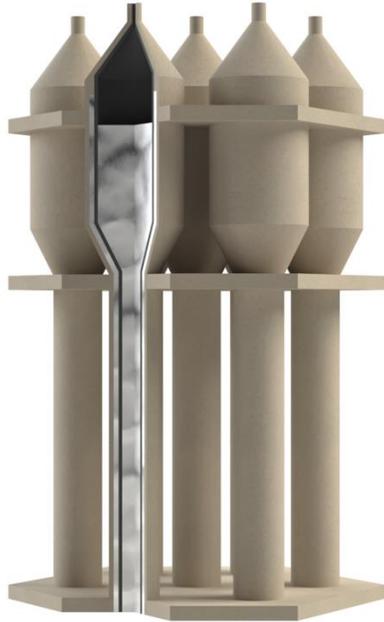
For atmospheric CO₂. Price to break even with natural gas.



H₂ and Carbon market worth ~\$450B



Three Revenue Streams



Process Licensing, Equipment & Service

Sell proprietary components, but use off-the-shelf where possible.



Carbon Raw & Processed

We buy the carbon from customers, handle the logistics, and either resell raw carbon or process it and sell



Hydrogen

H₂ toll in licensing agreement;
Pivot to owner-operator model once cash flow can sustain it.



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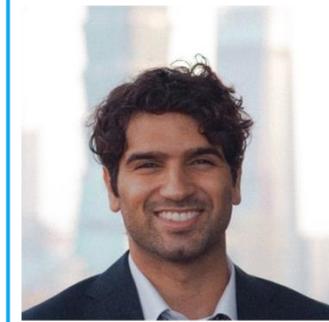
*A team with diverse
skillsets working to
make a decarbonized
world possible.*



Braden Gilleland
PhD at MIT



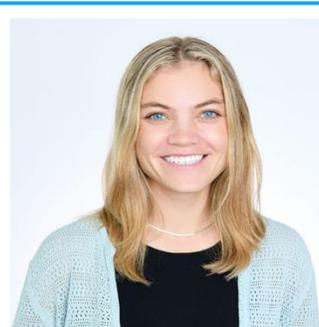
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