



OPXBIO – Good Chemistry

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Low-Cost, Sustainable BioBased Products

Team.

- Founded May, 2007
- Based in Boulder, CO
- Technology spin-out from Univ. of Colorado
- 48 employees with strong, experienced senior executive team
- \$22.4M raised in 3 rounds with MDV, Braemar, Altira, and X/Seed

Technology.

- Proprietary EDGE™ genome & metabolic engineering platform
- Faster, lower cost engineering of more effective microbes
- Flexible technology platform applicable to multiple feedstocks and products
- Increasing advantage with successive products

Value.

- Commercializing BioAcrylic into existing \$8 billion growing market
- Proving technology and economics at pilot scale – advancing to demo in 2011
- Strategic development and joint venture partners
- \$6 million DOE / ARPA-E Collaborative Agreement for 2nd product line – Fatty Acid Esters (BioDiesel)

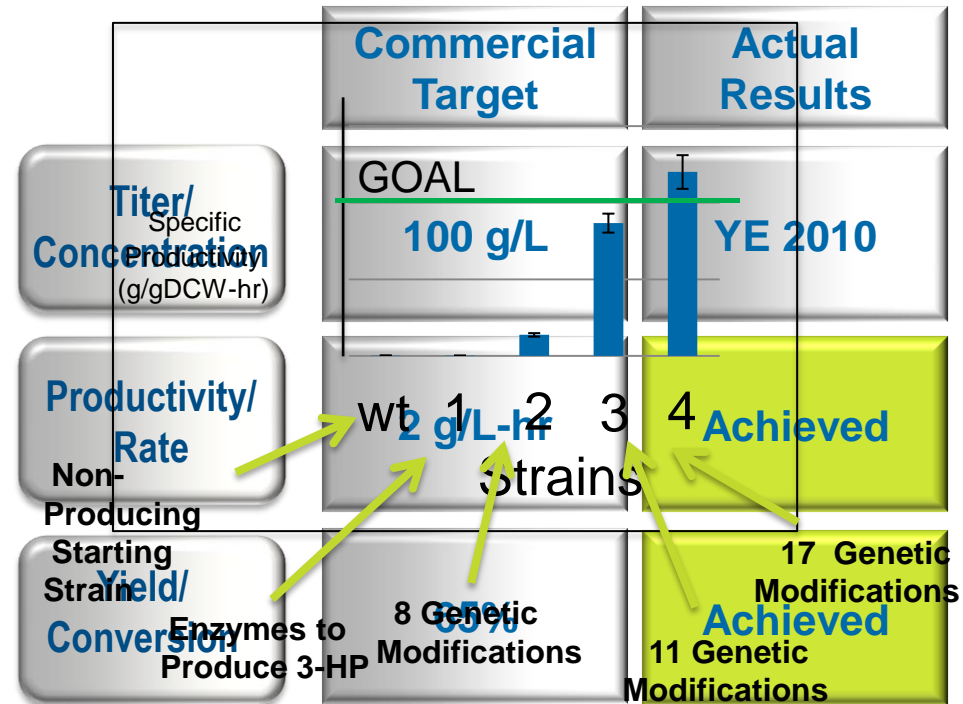
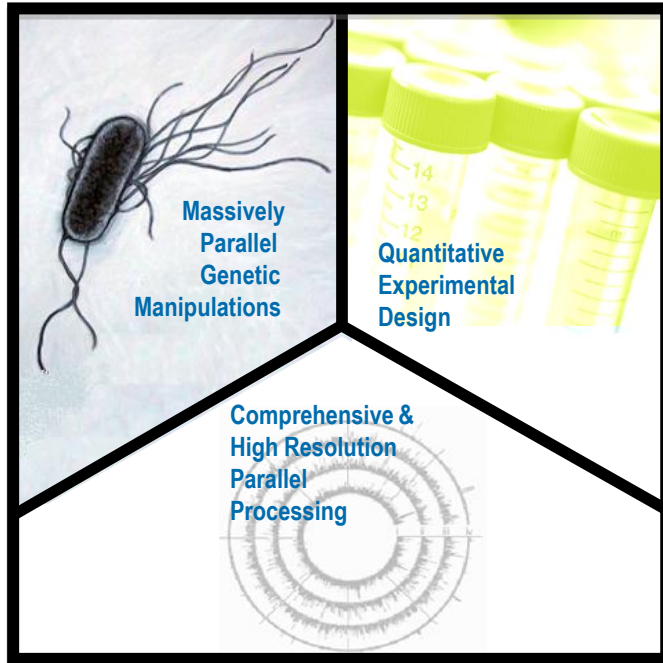
Renewable BioAcrylic

**Lower Cost, Reduced Carbon, Less Petroleum
\$8 Billion Global Market**



EDGE™ Technology Platform good chemistry.

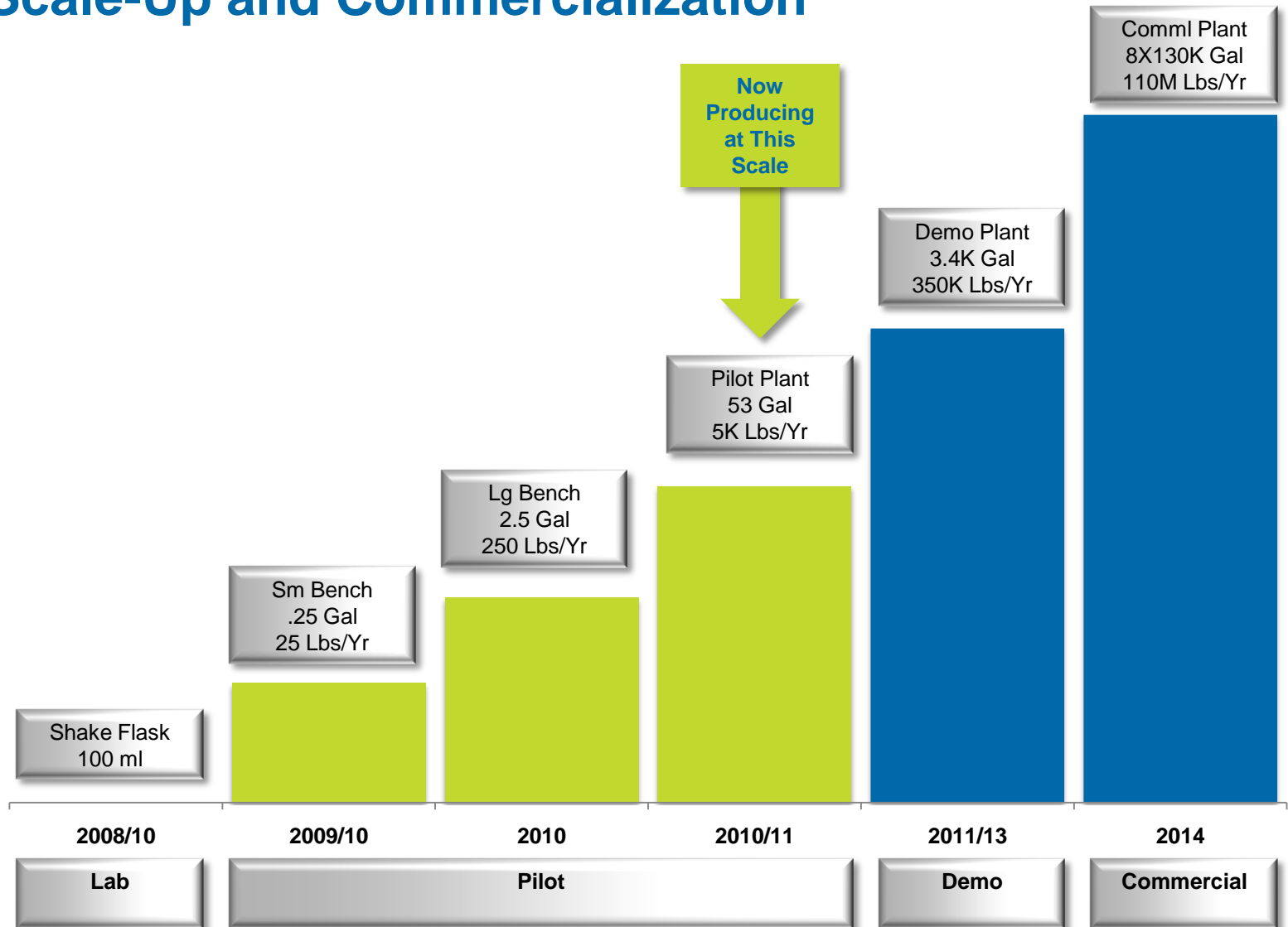
Efficiency Directed Genome Engineering



On Track for Commercial Microbe and Process into Demo

BioAcrylic Development Plan

Scale-Up and Commercialization



Chemicals

- Value in Mass & Function
- Smaller Scale
- Smaller Capital Needs
- Higher Margins

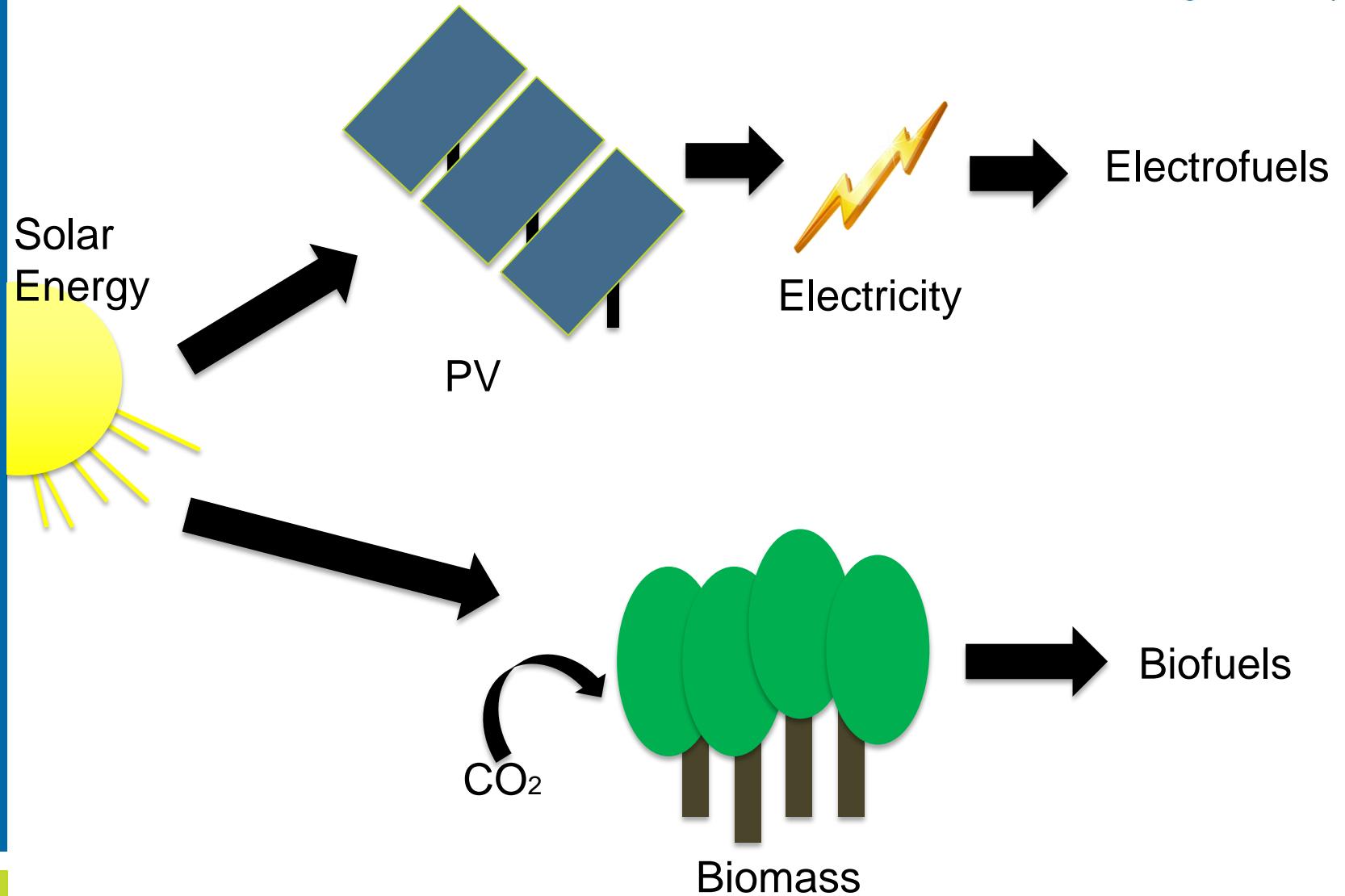
Fuels

- Value in Energy
- Very Large Scale
- Large Capital Requirements
- Low Margins

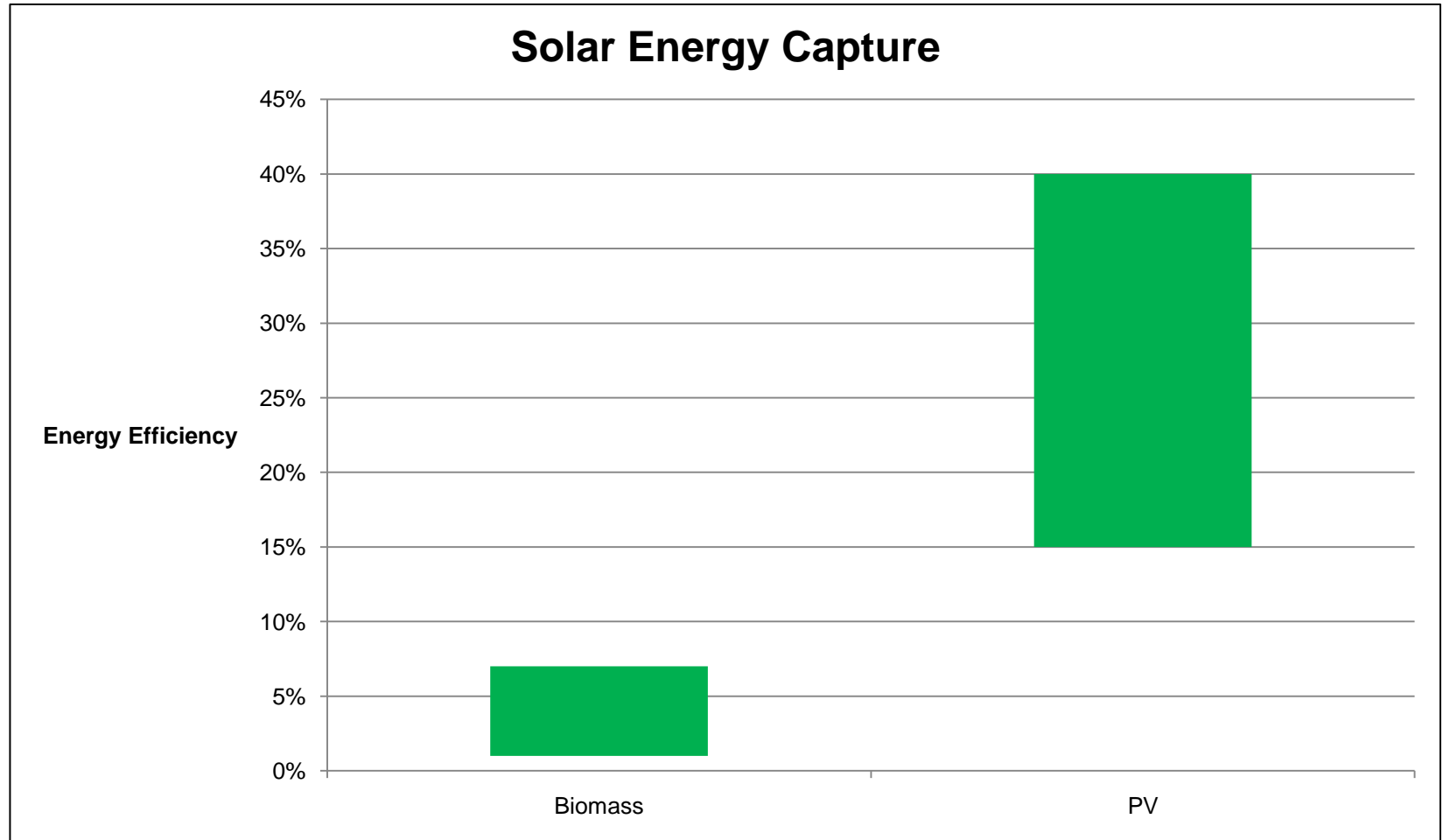
Ideal BioFuels

- **Renewable**
- **Infrastructure Compatible**
 - Energy Dense Liquid Fuels
 - Fit into existing Distribution System.
- **Cost Competitive**
 - Equivalent cost to petroleum-derived products

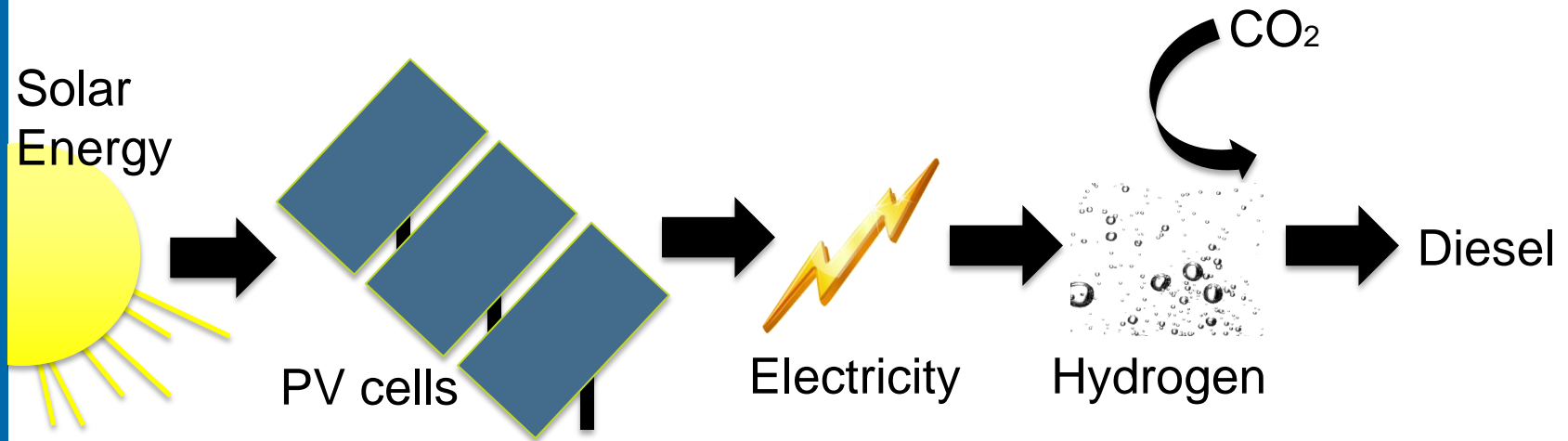
Electrofuels



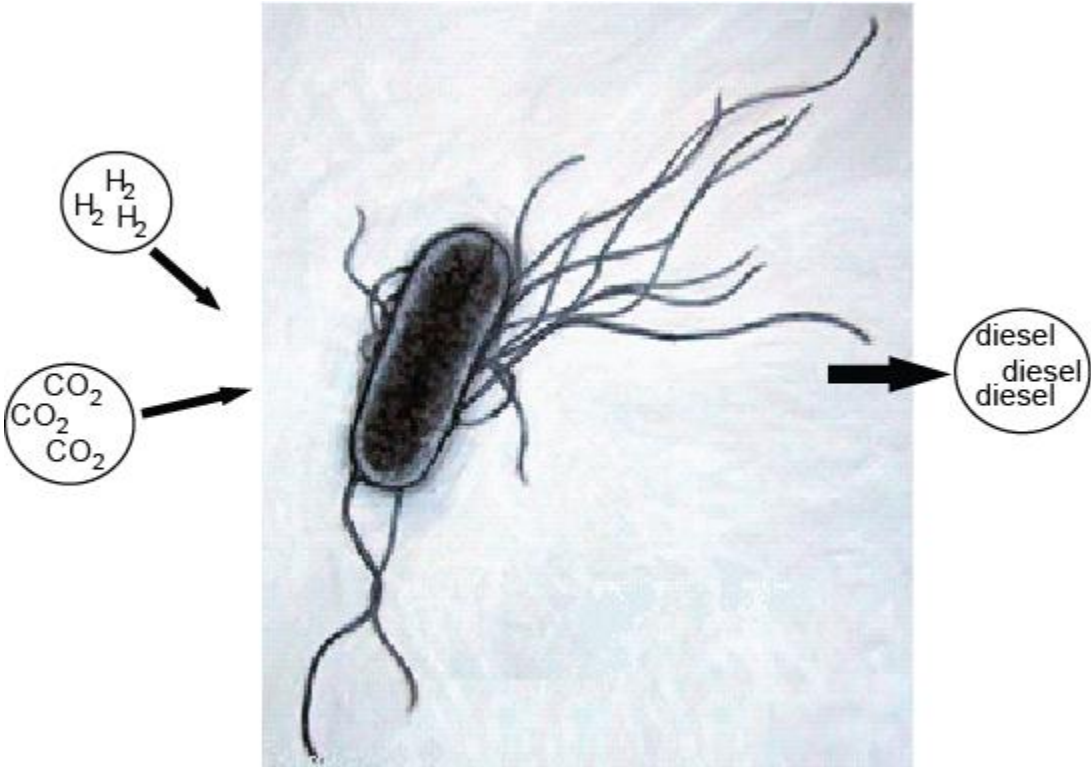
Energy Comparison



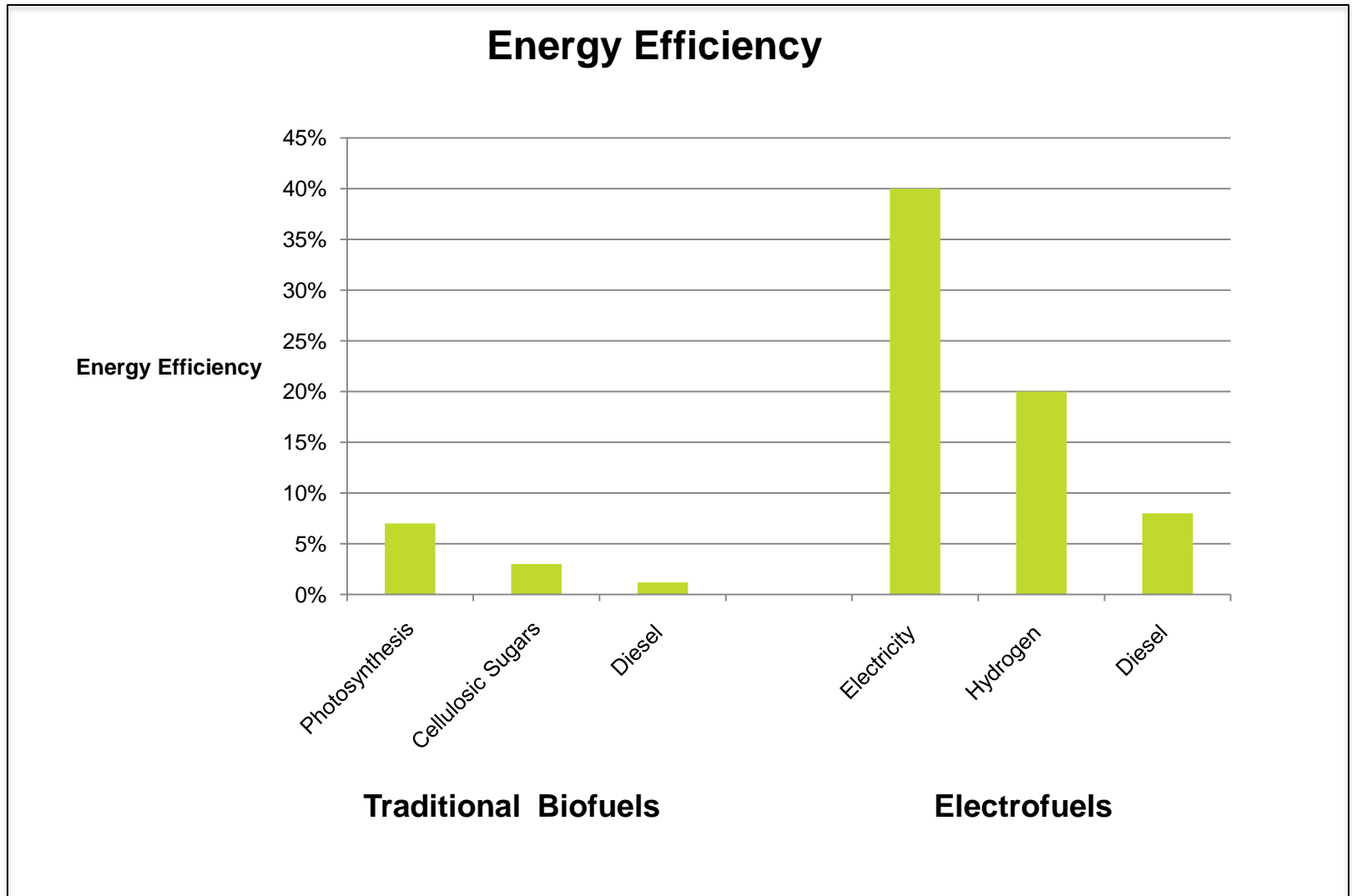
Filling the Technology Gap



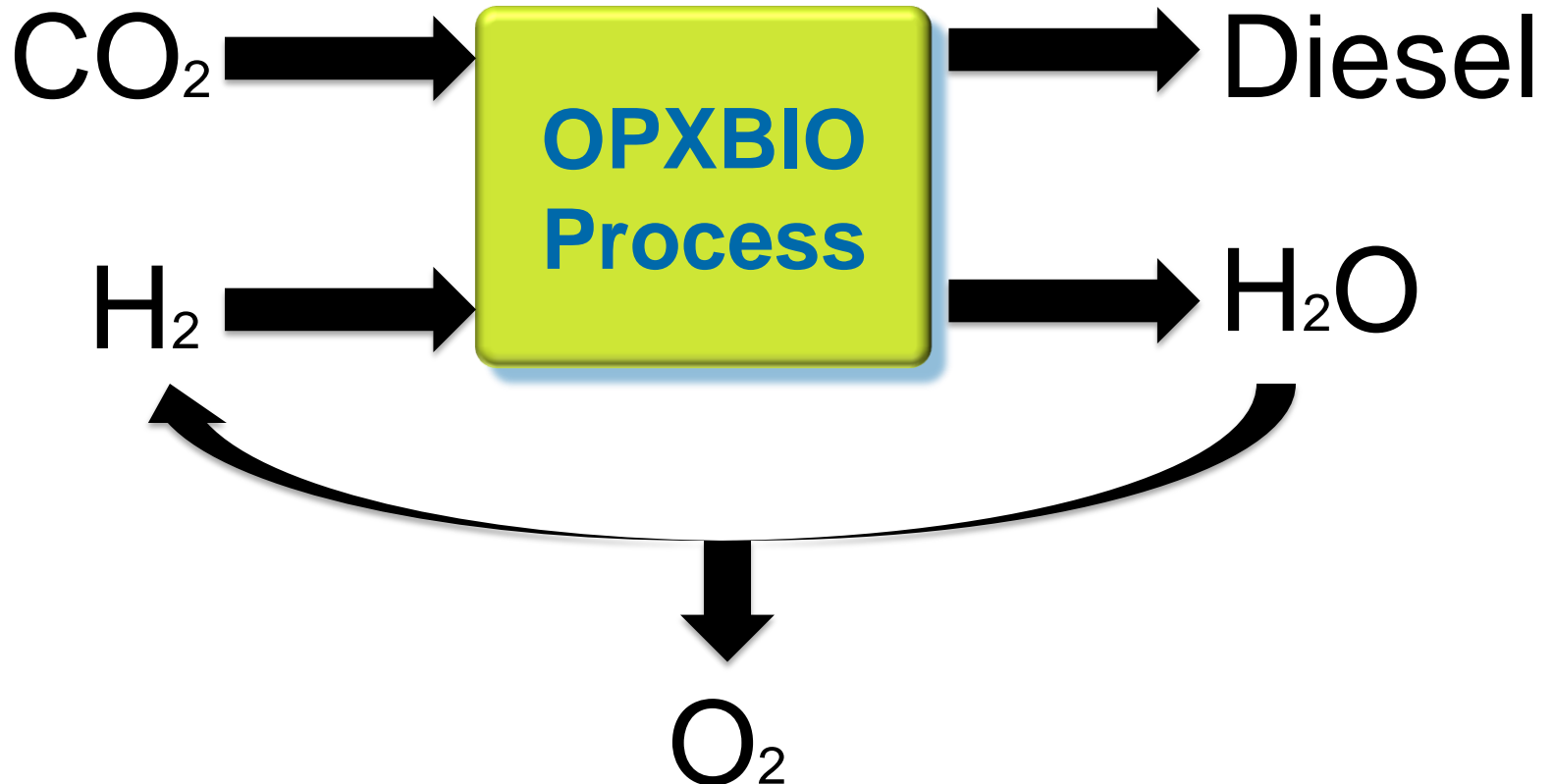
OPXBIO Microbe



Energy Efficiency



Proposed Process



Moving Forward

Technology Partners

- Process Engineering and Scale Up
- Product Recovery and Qualification
- Technology Integration

Feedstock Partners

- Sources of Hydrogen
- Sources of CO₂

Downstream Market Partners

- Distribution Capability
- Access to Markets

Commercialization

- Capital Funding



opxbio.com