

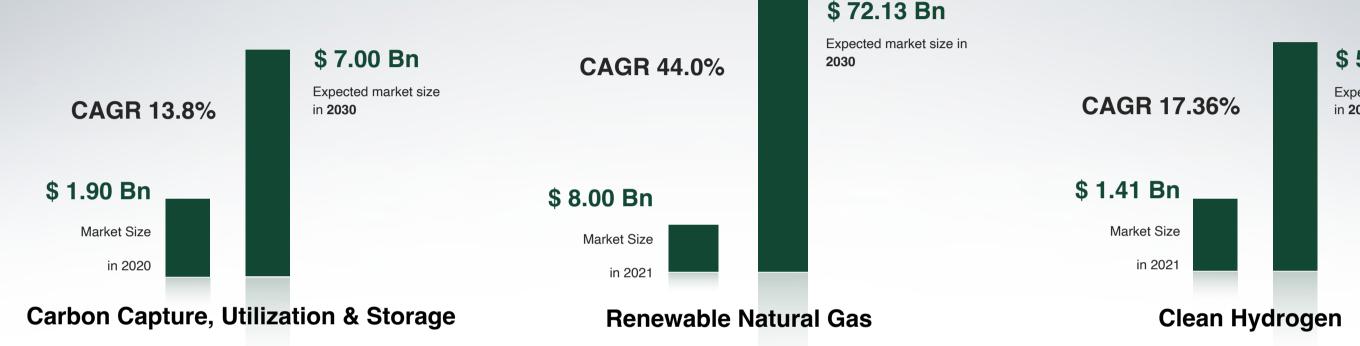
**Baseload Renewables** 







Standard Carbon Technology is the confluence of **3 growing energy transition markets**:



	<b>KEY GROWTH DRIVERS</b>
Cost-efficient RE (solar and wind) generation	Transmission and congestion constra
and clean hydrogen solutions.	require flexibility and storage solution

ransmission and congestion constraints that require flexibility and storage solutions.

Write-downs and early retirements on

stranded hydrocarbon energy assets.



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Price volatility of fossil fuels and renewable

Source: Precedence Research. Allied Market Research.



electricity.

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#### Standard Carbon

\$ 5.95 Bn

Expected market size in 2030

Compliance with decarbonization targets, policies, and regulations.

Federal state and local tax incentives for renewable energy, carbon capture, and clean hydrogen production.

# **Energy Transition Challenges**

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### **Decarbonizing Hard-to-Abate Utilities and Industries**

Intermittent Renewable Energy (RE) is not compatible with Power Utilities and Industry that rely on a large-scale supply of affordable, reliable, and secure hydrocarbons for heat and electricity

## **Transmission Congestion and Curtailment of RE**

Inverter-based RE creates unique challenges that compromise grid-reliability and safety causing delayed interconnection, increased reliance on hydrocarbon energy and less-favorable economic outlook for RE.

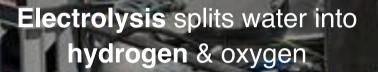
### **Pure Hydrogen Concerns**

Pure Hydrogen is technically difficult to transport and is not without significant safety concerns. Widespread adoption of hydrogen as a fuel will require massive overhauls to energy infrastructures, liability laws and regulations.



# **Standard Carbon Technology**

CO2 Conversion Technology – uses electricity to recycle CO2 in Renewable Natural Gas







Hydrogen is used directly, or

# WHY RNG?



**Clean and** Valuable Fuel

RNG is carbon-neutral, storable and transportable within the vast natural gas network.



Long-Term **Energy Storage** 

RNG is the only deployable long-term storage solution that provides reliable firm capacity.

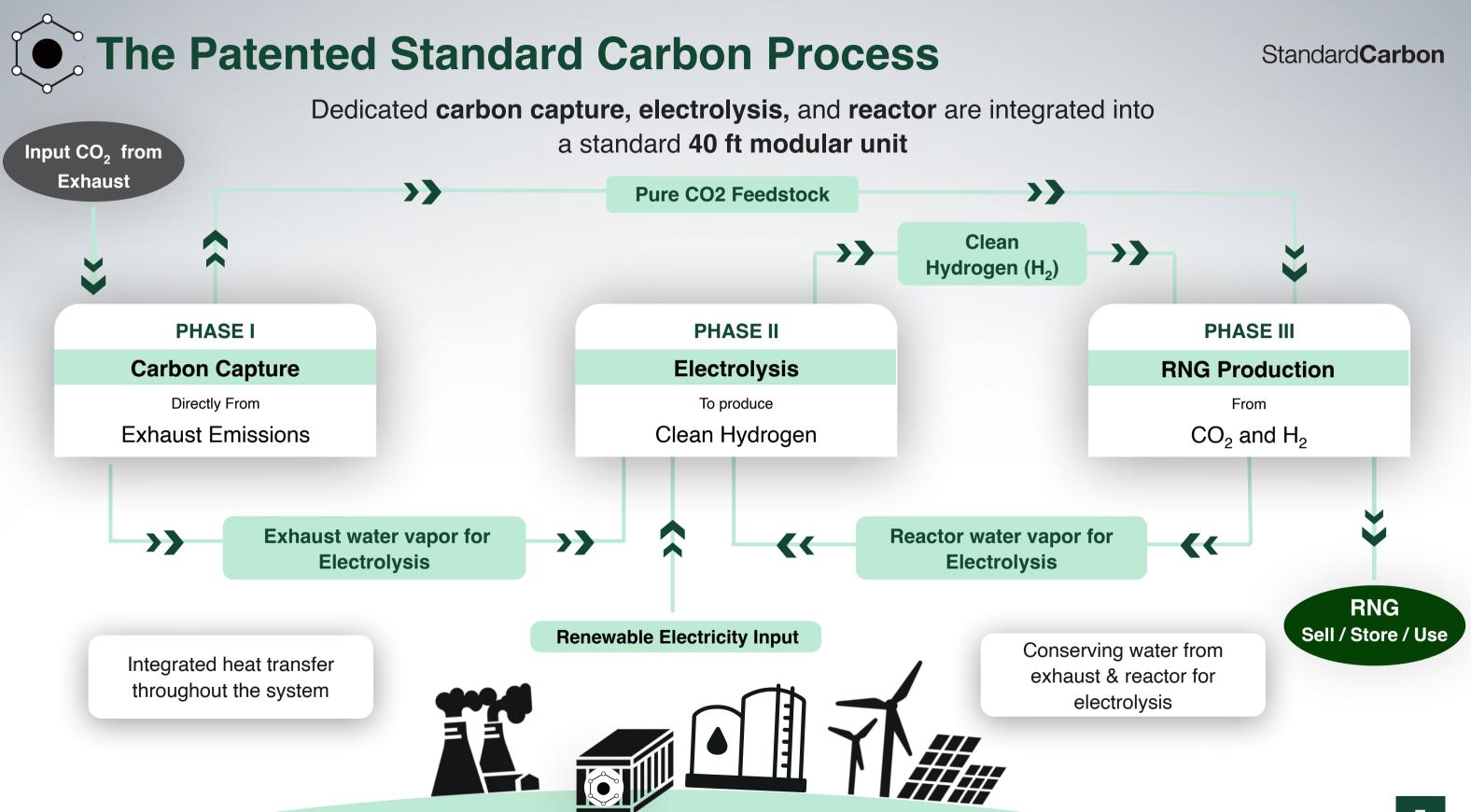
RNG is the key to rapid decarbonization of utilities and industries that depend on hydrocarbons for heat and power.

Source: Clean Energy Wire Private & Confidential | 2023

#### Standard Carbon

# combined with CO2 to create RNG





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# **Standard Carbon's Solution**

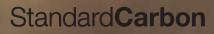
Patented CO<sub>2</sub> Conversion Technology: creates clean H<sub>2</sub> and combines it with captured CO<sub>2</sub> to produce Renewable Natural Gas  $(CH_{a})$ , paving the way to rapid decarbonization.

> Avoiding early retirement and write-downs of energy assets **Decarbonizing Power Utilities and Industries**

Relieving transmission congestion and curtailment by diverting excess energy **Clean Hydrogen Production** 

Avoiding technical and liability concerns by combining clean hydrogen with pure CO<sub>2</sub> to produce **Renewable Natural Gas (CH<sub>4</sub>)** 

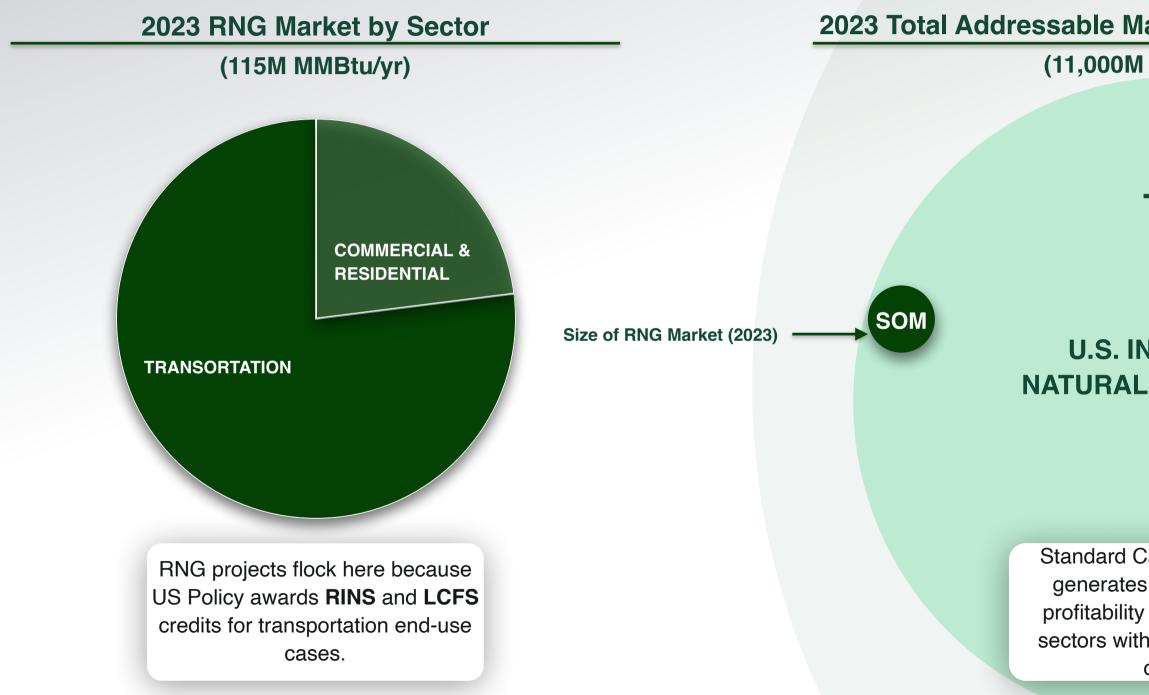
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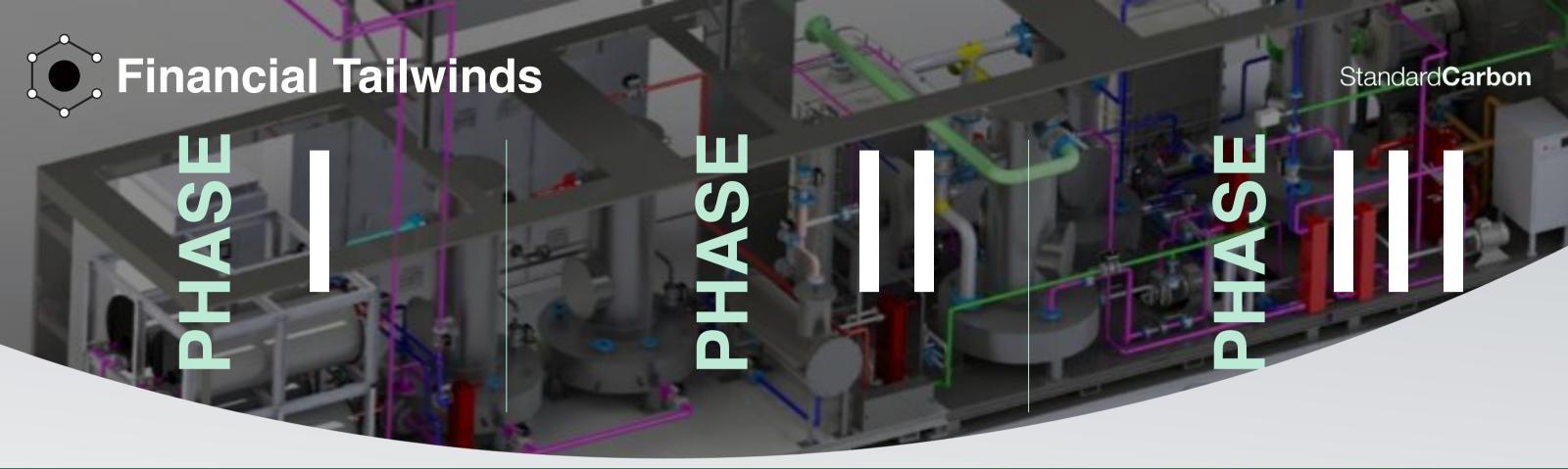
Standard Carbon

### 2023 Total Addressable Market with Standard Carbon (11,000M MMBtu/yr)

## TAM

### U.S. INDUSTRIAL NATURAL GAS MARKET

Standard Carbon Technology generates industry leading profitability in **non-transport** sectors without RINS & LCFS credits.



## Large Financial Incentives for Standard Carbon's Inputs, Processes and Products

### **Carbon Capture**

45Q Federal Tax Credit (\$60 / Metric Tonne CO2 Captured)

Qualifies for Carbon Credit Trading Systems

## **Electrolysis**

Extended ITC & PTC (Investment and Production Tax Credit) for Renewable Electricity

10% CAGR in US deployed RE puts downward pressure on PPA costs

45V Clean Hydrogen Tax Credits (\$3 / kg of Clean Hydrogen Produced equivalent to >\$30 / MMBtu of RNG)

Connects with premium RNG markets (RNG Premium is >\$20 / MMBtu)

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## RNG

# Patents, Trade Secrets, and Key Know-How

Core process, controls and modularization is patent protected as well as heat-transfer and configuration which increase efficiency and scalability. Electrolyzer hardware and software is patent pending. All current and future patents are owned by Standard Carbon Technology LLC.

• Patent does not limit to using specific hardware components, allowing for future integration of 3rd party innovations and technologies.



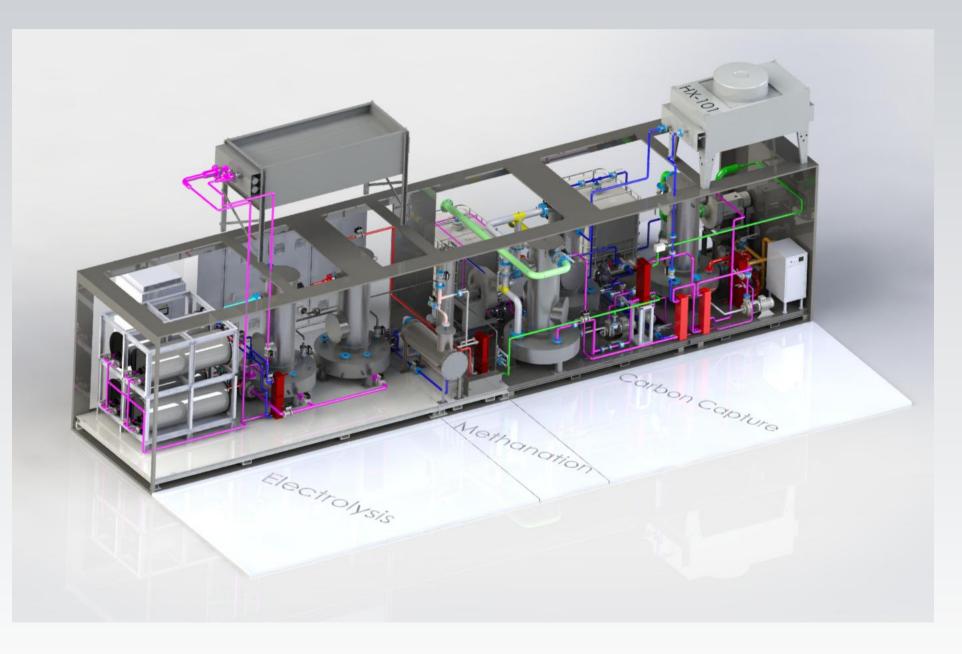
**Awarded**: <u>US patent # 11,091,408</u> "Integration of Carbon Dioxide Absorption and Water Electrolysis into Methanation" covers process integration into one modular unit, heat transfer and synergism between performances to maximize efficiency.



**Awarded**: <u>US patent # 17,528,587</u> - "Methanation and Recovery Method, System, and Apparatus" covers product geometry, algorithmic software controls and hardware configurations.

**Future**: US patent for Short-Interval Alkaline Electrolyzer hardware, configuration, seals, stacks and software. Patent will protect the electrolyzer as a stand-alone unit for multiple applications.

 Potential to patent other aspects of the technology including the methanation chamber, and liquid CO<sub>2</sub> storage system.





4/2022 PILOT DEMONSTRATION Miniaturization of main components with 10kw electrolyzer

9/2022

achieves %99.9 pure hydrogen

12/2021 PROOF OF CONCEPT First lab-scale CO2 to CH4 conversion

8/2021 1st US PATENT AWARDED Combining the 3-phase process into a modular unit

# **Decarbonizing Industry in 2024**

4/2023

Protected by multiple patents, and following successful completion of the first commercial installation, Standard Carbon is staged to scale performance and manufacturing capacity by orders of magnitude

#### Standard Carbon

8/2023 COMMERCIAL INSTALLATION Complete 1MW unit recycling 1420 MT CO2 into Natural Gas

2nd US PATENT AWARDED Covering product geometry, algorithmic software controls and hardware configuration

ELECTROLYZER DEMONSTRATION COMPLETE Original 100kw electrolyzer design and construction



## EV Supercharge



Standard Carbon's first commercial demonstration in Israel arbitrages off-peak grid electricity to power premium-priced EV supercharging stations. This closely monitored demonstration is achieving technical KPI's while exploring a practical, revenue-generating application. 3 GW Utility



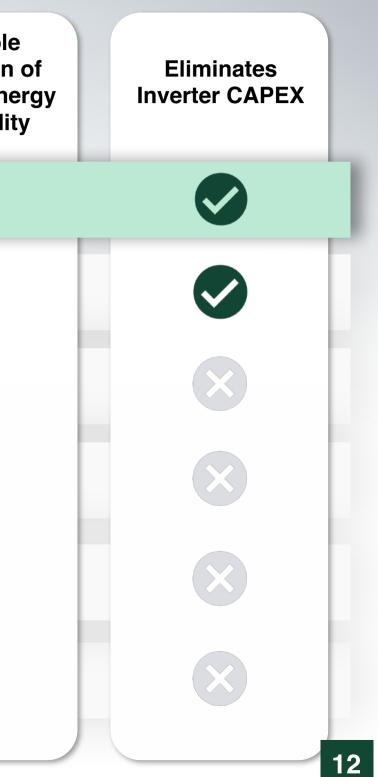
Q1 2024

In partnership with Israel's national grid operator, at a 3 GW combined cycle natural gas power station. This project will demonstrate the ability of Standard Carbon technology to integrate with utilitypower infrastructures and deliver reliable, carbon-neutral power to the nation's electrical grid.

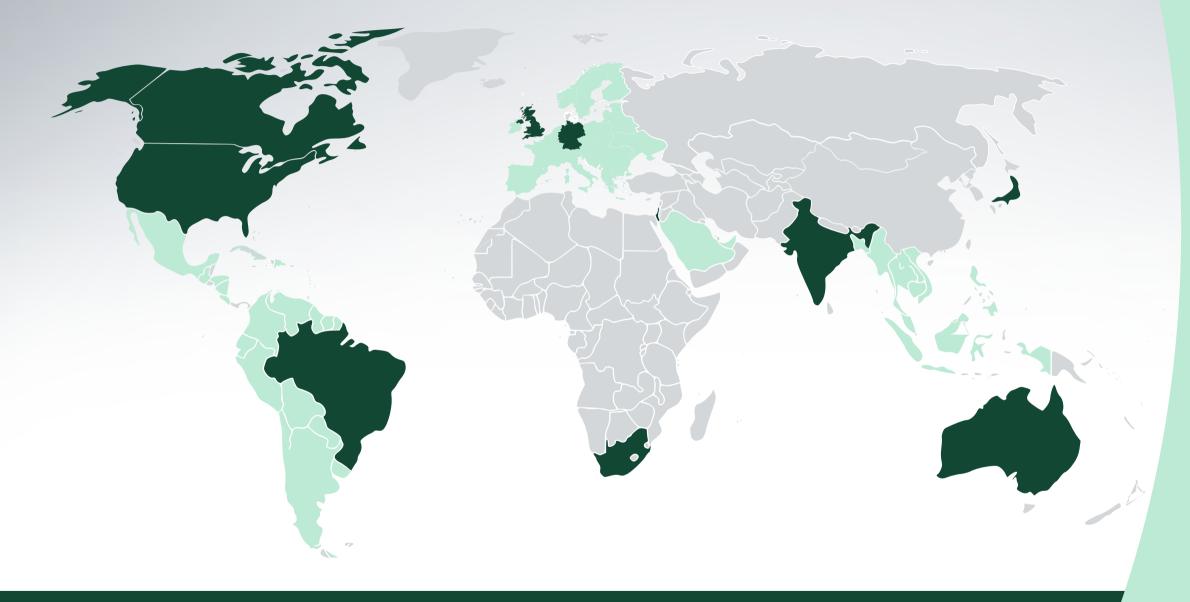




	>90% CO <sub>2</sub> Elimination from Combustion Emissions	Increases Grid Flexibility	Long-Duration RE Storage	Scaleable Production Net-Zero Ene Commodit
Standard Carbon				
H <sub>2</sub> PRO				
Carbon Engineering	0			×
Synhelion Solar fuels				
Highview Power®				
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#### **GEOGRAPHIES TO REACH**

**Primary Target :** USA, Canada, Israel, UK, Germany, Australia, Japan, Brazil, South Africa, India

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Secondary Target : Central & South America, Europe, Saudi Arabia, UAE, SE Asia

#### Standard Carbon

#### **Primary Sectors to Reach**

Heavy industrial manufacturing users with significant decarbonization goals;

Cement Steel Aluminum Plastics

#### **STAGE I**

Manufacturing Facilities Utility RE Projects Utility Heat and Power EV Charging Anaerobic Digesters

#### **STAGE II**

Renewable Energy Storage Gas Distribution Networks Global Shipping Green Ammonia



Build an institutional narrative as the leading provider of RNG for industry and utility power markets.

Sign voluntary off-take contracts for 100M MMBtu annually. Oversee EPC of 13 GW of electrolyzer capacity by 2026.

אוויזאו לי והנרטה

Raise & deploy \$3 billion of project level equity. Arrange a \$3 billion project level debt facility.





Four key counter parties are critical for successful deployment at scale:



#### **Project Equity Investors**

Want to See KPI's Achieved

Need to be convinced that the project will deliver target returns within defined timeline and risk parameters.

**EPC** 

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**Cautious with Contract Commitments** 

Need to negotiate standard contracts that include defined performance criteria, build timelines, and costs for the Standard Carbon technology.



## **Industrial Off-take** Customers

Cautious with Operational Integrity

Need to be convinced that the insertion of Standard Carbon's technology into their processes will deliver the projected carbon reduction benefit without disrupting normal commercial operations.

Executing milestones will lead to a financial flywheel...

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#### **Project Finance Lender**

Risk Averse, High Due-Diligence Bar

Contracts between Standard Carbon. EPC and Off-taker will convince the project finance lender of the project's bankability.

Projects will qualify for a direct loan or loan guarantee from the US Department of Energy's Loan Program Office.





#### Dell Perelman CEO

- Over 3 decades of experience as General Counsel & Chief of Staff for the American Chemistry Council representing petrochemical interests
- JD & LLM in Environmental and Energy Law

#### Boris Dvinsky - Vice President and Investor Relations

- Founder of Elaris Technologies: An algorithmic trading system managing \$150m AUM
- Managed a \$250m derivatives book at HSBC, NY
- Senior researcher at Millennium Partners
- MS in Financial Mathematics from University of Chicago

#### Benyamin Clayman - Vice President and Business Development

- Serial investor with multiple exits & strong history of sales and management of engineering teams & product
- Founder of Israel Center for Entrepreneurship
- US Army Reserve Officer
- BA from University of Chicago



American' Chemistry Council









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StandardCarbon

#### Chief of Staff & General Counsel American Chemistry Council

Apr 2003 – Jan 2020  $\cdot$  16 yrs 10 mos Washington DC

	Founder/CEO		
TONS	Borana Solutions		
	2021 - Present · 2 yrs 3 mos		

#### Founder/CEO

Elaris Technologies 2014 - Present · 9 yrs 3 mos

#### **Managing Partner**

Concentus Partners 2017 - Present · 6 yrs 3 mos

#### **Managing Partner**

2711 Ventures Feb 2016 - Present · 7 yrs 2 mos

#### Founder

Israel Center for Entrepreneurship Jan 2016 - Present · 7 yrs 3 mos

#### Chaplain

United States Army Reserve · Part-time Jun 2020 - Jun 2022 · 2 yrs 1 mo



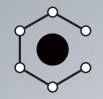
# Let's Connect!

standardcarbon.com



info@standardcarbon.com





Pilot Demonstration 10/2022

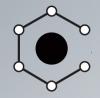
CO2

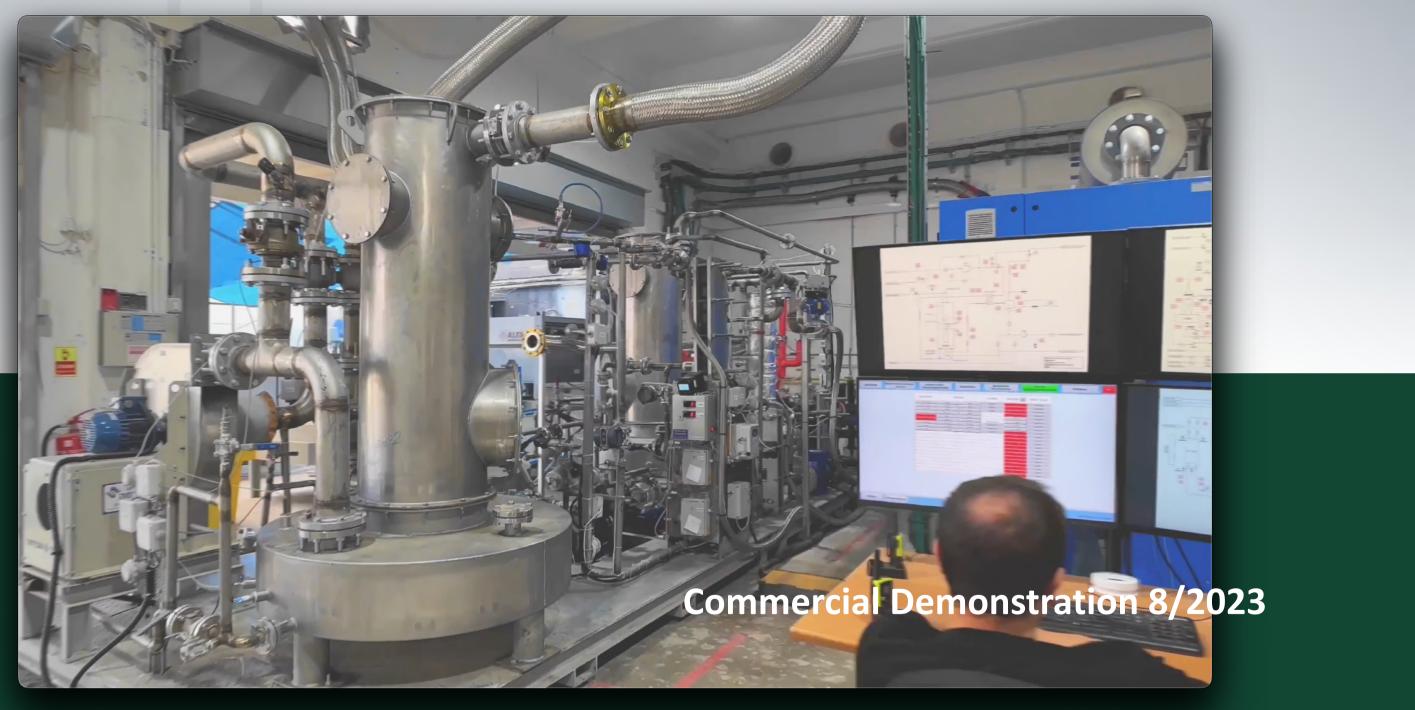
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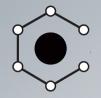
















# **Commercial Demonstration 8/2023**

