## The Energy Venture Investment Summit

# **ANERICAN HYDROGEN**



MOSSADAMS













## **THURSDAY, FEBRUARY 17** 9:35 AM (MT)



*The Future of Distributed Hydrogen Generation and Carbon Management* The Energy Venture Investment Summit Golden, CO 2022





American Hydrogen combines extensive engineering and manufacturing expertise to provide holistic infrastructure development solutions to the rapidly expanding hydrogen market.

Our team brings a 100+ year track record of successful implementation experience across the broader energy sector.





## American Hydrogen: An Energy Transition Joint Venture



- Midstream Infrastructure Developer
- Headquartered in Tulsa, OK
- Project Management (PMO)
- Engineering, Procurement, Construction (EPC)
- Asset Operations
- Crude & Natural Gas Gathering, Cryogenic Facilities, Amine Treating Systems, Tank Farms, Terminal Loading, Compressor & Pumping Stations

- Design and Manufacture Natural Gas Processing and Treating Technologies
- Fabrication Facility in Midland, TX
- Original Equipment Manufacturer (OEM)
- Commissioning & Start Up
- Amine Treaters, Stabilizers, Dehydrators, Fractionators, Membranes, liquid & gas conditioning systems



## Management Team



Greg Brooks President

- 35+ years energy industry experience
- President of Lone
   Cypress Energy Services, former VP of Eng. at
   Frontier Energy Services,
   VP Ops. at Seminole
   Energy, Founder at
   Impact Energy
- B.S. Petroleum
   Engineering, University
   of Oklahoma



Chris Villegas Chief Operating Officer

- 25+ years energy industry experience
- CEO of Reset Energy, Founder of HES, former COO at AEI Group
- B.S. Chemical Engineering, Texas Tech University



Ben Ciotti Chief Technology Officer

- 10+ years energy industry exprience
- Manager of technology and product development
- Former design engineer specializing in heat transfer and fluid flow
- B.S. Chemical Engineering, Texas A&M University





#### Nick Rohleder Chief Financial Officer

Former Portfolio Manager at New American Energy
Forbes 30 under 30 honoree, energy
M.A. Environmental Studies, University of Pennsylvania, M.S. Sustainability Management, Columbia University

#### Stephen Brooks Chief Commercial Officer

- VP of Eng. at Lone Cypress Energy Services, former Director of Engineering at UMC Energy Solutions
- B.S. Petroleum
   Engineering, University
   of Oklahoma, M.A.
   Business Administration,
   University of Tulsa

## Hydrogen: The Bridge in the Energy Transition





## Historical Hydrogen Markets



Source: IEA



Source: DOE

### Hydrogen: The Future of Clean Fuels



Source: IEA

#### **Projected Demand**



Metric Ton of Hydrogen per County, Normalized by County Area

#### Source: NREL

## Our Technology



#### HydroGEN-1,000

#### Modular Steam Methane Reformers (SMR):

- Facility Sizes: 1-ton/day, 5-ton/day, 10-ton/day
- Modular, distributed hydrogen generation facilities
- Proven technology with nearly a century of operating history
- React natural gas and steam to generate hydrogen
- Water-gas shift reaction:
  - CO + H2O  $\rightarrow$  CO2 + H2 (+ small amount of heat)
- Target Markets: Mobility, Agriculture, Oil & Gas
- Provisional Patent filed for proprietary SMR design

#### Integrated Carbon Capture, Storage, & Utilization (CCSU):

#### **Electrolyzers**



- Steam-methane reforming reaction:
  - CH4 + H2O (+ heat)  $\rightarrow$  CO + 3H2

• Traditional alkylamine (amine) treating process Integration with SMR increases operational efficiencies • Proprietary thermodynamic capture and storage process • Ability to develop sequestration infrastructure (i.e., injection well, surface facilities, associated pipelines)

 Convert electricity to hydrogen through electrolysis process • Strategically aligned with electrolyzers manufacturers in UK Target Markets: Renewable Electricity

## **Execution Capacity**

By leveraging our experience in natural gas treating and processing, American Hydrogen has created a fully-integrated solution for the development, implementation, and operation of hydrogen generation infrastructure.



**Engineering Design** 

**Front-end engineering and** systems integration certified by professional engineers licensed in all **50 states** 

#### Manufacturing

**OEM for SMR and BOP** infrastructure, supported by 100,000 sq. ft. fabrication facility

**Project & Construction** Management

**Experienced project** management and construction team with track record of successful implementation







Commissioning & Operations

Start up assistance, facility and equipment commissioning, field support, and operations

## **Commercial Offerings**



#### Hydrogen As A Service

- Develop, own, and operate hydrogen generation facilities and takeaway infrastructure.
- Asset commercialization via take or pay contracting with hydrogen end-user.
- Partner with E&P for carbon management via EOR or permanent sequestration.

#### **Turnkey Generation Facilities**

- End-to-end technical execution based on customer-specified facility.
- Front-end engineering, equipment manufacturing and procurement, project management, construction and commissioning.
- Operations option as a service.



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#### **Technology Sales & Licensing**

- Engineering design and manufacturing for technology sales.
- License SMR and storage IP to 3rd party developers.

## Strategic Partnerships











#### Matrix Service Company (Nasdaq: MTRX)

- Engineering design and construction
- Utility and Power Infrastructure, Process and Industrial Facilities, Storage and Terminal Solutions
- Hydrogen storage system engineering design and implementation

#### **Saulsbury Industries**

- to support the environmental and renewable programs of the future.
- Engineering & Construction support

#### Neuman & Esser Group (NEA)

- nontraditional gas applications
- Hydrogen compression, refueling stations

#### **Tulsa Heaters Midstream**

- Leading designer and manufacturer of fired heaters for the Midstream industry and beyond
- Hydrogen-fed heaters and burner systems

#### **Cross River Infrastructure Partners**

- Platform of next-generation sustainable infrastructure business services
- Project development, financial services, and commercialization
- Offtake structuring and hydrogen "as a service" contracting

• Full-service engineering, procurement, fabrication, and construction company that specializes in building the infrastructure

• Leading manufacturer of reciprocating and diaphragm compressors, and compression systems for both traditional and

## Value Proposition







#### **Cost Savings**

- Strategically site hydrogen generation near point of consumption
- Reduced transportation expenses
- Right-sized generation designed for specific applications

#### **Reliable Supply**

- · Focus on small to medium distributed demand centers
- Hydrogen generation servicing a specific customer base ensures optimal supply availability
- Modular and scalable supply solutions

#### Sustainable Product

- Blue Hydrogen far more sustainable than gray alternatives
- Integrated carbon capture and storage (CCS) system Heat exchange between SMR and CCS increases operational
- efficiencies
- CI Scores < 5 g CO2/MJ







#### **Purity Guarentee**

- Systems designed to meet the highest purity specifications
- 99.999% Ultra-High Purity
- Suitable for fuel cell applications

## Looking Forward

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#### Strategic Partnerships

- MOU Partners Martrix Services Company (NASDAQ: MTRX), Saulsbury Industries, Neuman & Esser, Tulsa Heaters Midstream, Inc.
- JV with O&G Entities with active EOR operations or prospective carbon sequestration sites.
- Transportation Logistics Firms



#### **Market Creation**

- Industrials
- Transportation Fuels
- Agriculture
- Oilfield Decarbonization
- Power Generation
- Utilities





#### Capitalization

- Currently Project Financing via SPV structure
- Seeking Capital Partner
  - Equity participation at the parent
  - Programmatic Capital
    - Allocation

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