



**Green Fortress Engineering**

*ENERGY STORAGE BREAKTHROUGH*

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**HYDROGEN ULTRA-STORAGE**



# Green Fortress Engineering



*NSF Funded*

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## Who We Are

- GFE: A Pioneer in Green Energy Solutions.
- A Dual Revenue and Double Bottom Line opportunity
- Spin-Up C-corp. from Indiana University
- **NINE** US Patents – all are issued & active:

8,691,115    8,456,562    9,416,326    8,845,772

8,518,856    7,721,601    7,833,418    8,673,811    10,093,875

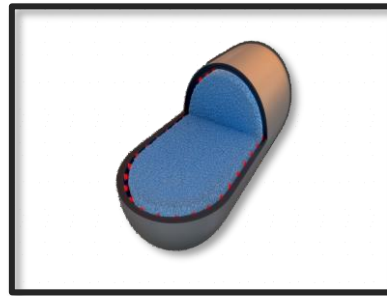


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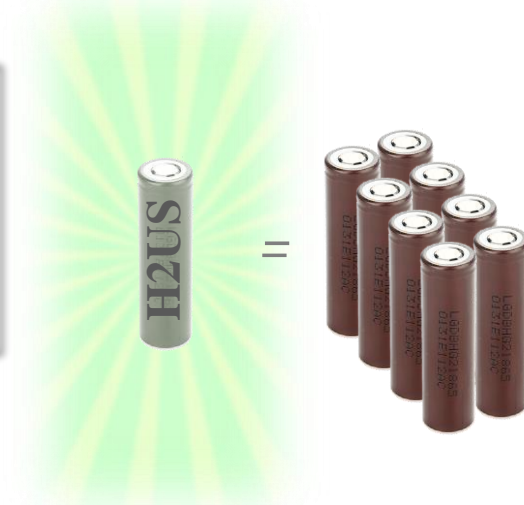
Product: **H2US** Hydrogen (H<sub>2</sub>) Ultra Storage

Low Cost

High Density



*H<sub>2</sub> Storage Vessel*



DOES THE WORK OF  
**EIGHT**  
Li-ion BATTERIES

**AT  $\frac{1}{10}$  THE COST**

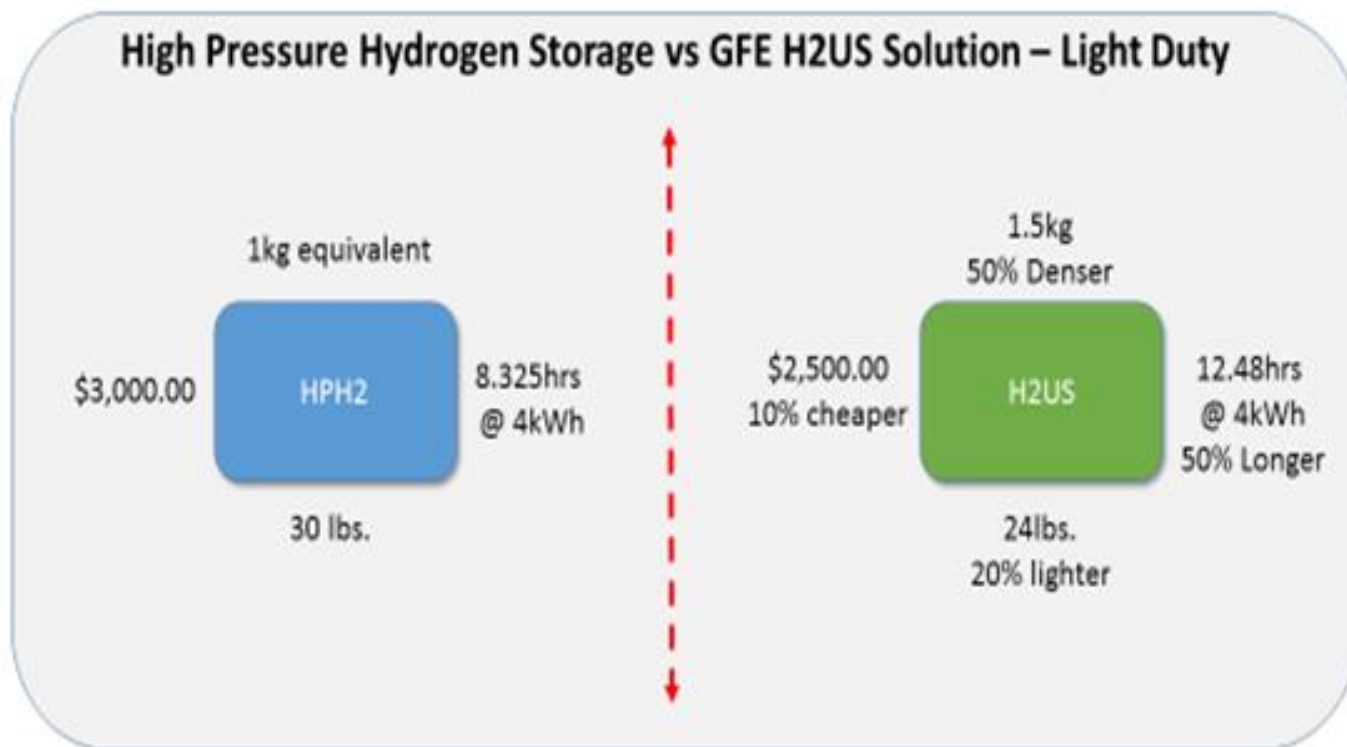


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## H2 Ultra Storage

### Advantage GFE

Assuming identical vessel size and different storage system peripherals requirements

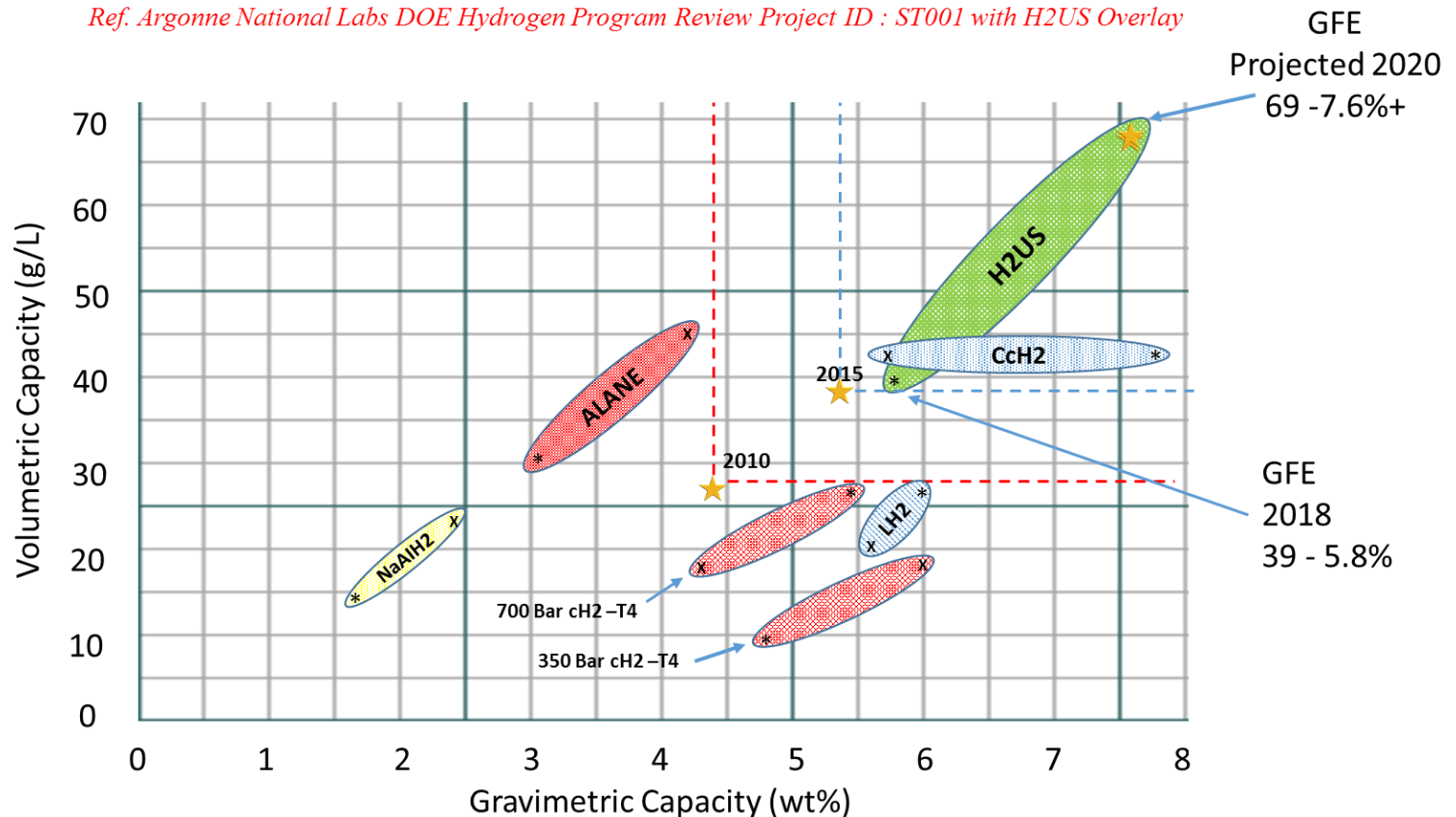




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## ANL Analysis - 5.6kg Usable H<sub>2</sub>

*Ref. Argonne National Labs DOE Hydrogen Program Review Project ID : ST001 with H<sub>2</sub>US Overlay*

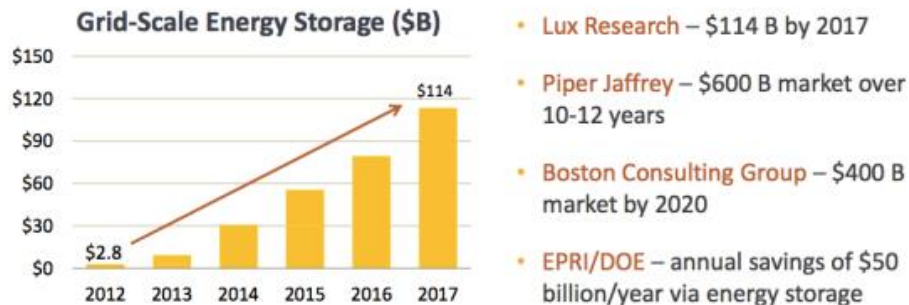




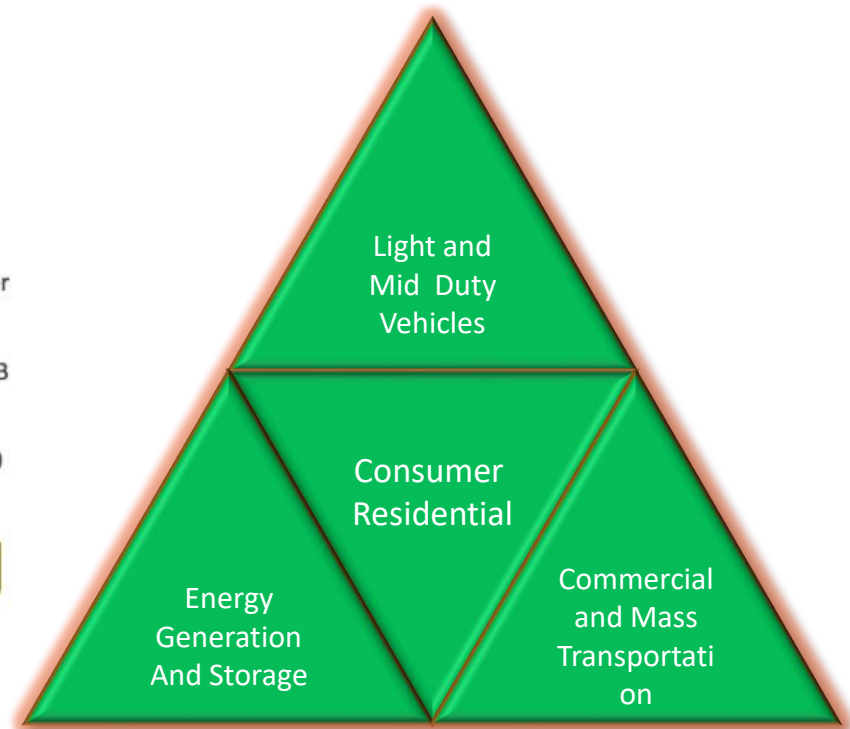
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- Hydrogen market: 154 billion USD 2022

## Energy Storage Market Potential



Plenty of market potential... for the right product at the right price





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## Beachhead Markets

- Fork lift trucks
- Drones
- Light-duty cars & trucks
- Portable electronics







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## Competitive Analysis

Competitor	Strength	Weakness	GFE Response	Advantage GFE
Cella - Alane	<ul style="list-style-type: none"><li>• Cartridge based System</li><li>• Stable with long shelf life</li></ul>	<ul style="list-style-type: none"><li>• Co-Combustion with Diesel = carbon emissions</li><li>• High Pressure</li><li>• Not rechargeable</li></ul>	GFE's H2US is a low pressure, emissions free solution. Rechargeable	✓
Luxifer Gas Cylinders - G-Stor H2	<ul style="list-style-type: none"><li>• Light Weight for High Pressure system</li></ul>	<ul style="list-style-type: none"><li>• High Pressure</li><li>• Moderate density</li><li>• Large Foot Print</li></ul>	GFE's H2US is a compact, high density, low pressure solution	✓
Toyota Miria H2 Storage	<ul style="list-style-type: none"><li>• Early adoption</li><li>• Fixed internal market</li></ul>	<ul style="list-style-type: none"><li>• High pressure</li><li>• Moderate density</li><li>• Limited application dual tank system</li><li>• Proprietary</li></ul>	GFE's H2US is a Low pressure, high density, single tank system that can be used in many applications.	✓
BMW CCH2	<ul style="list-style-type: none"><li>• Stores H2 gas at lower temp at 350 bar.</li><li>• 50% more H2 storage capacity than typical 700 bar tanks</li></ul>	<ul style="list-style-type: none"><li>• High Pressure</li><li>• Moderate density</li><li>• Large Foot Print</li></ul>	GFE's H2US is a compact, high density, low pressure solution	✓





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STRENGTHS  
OPPORTUNITIES

WEAKNESSES  
THREATS

- Low-cost
- Fast charge
- Highly efficient
- Scalable
- Safe

- Mobile & portable use
- Stationary & backup use
- Super-clean, super-green
- Distributed, global solution
- Universal energy storage

- Hydrogen generation
- Fuel cell adoption
- Infrastructure
- Regulations
- Early-stage R&D

- Battery breakthrough
- Supercapacitor breakthrough
- MOF breakthrough
- Disinformation campaign
- Status quo defenders

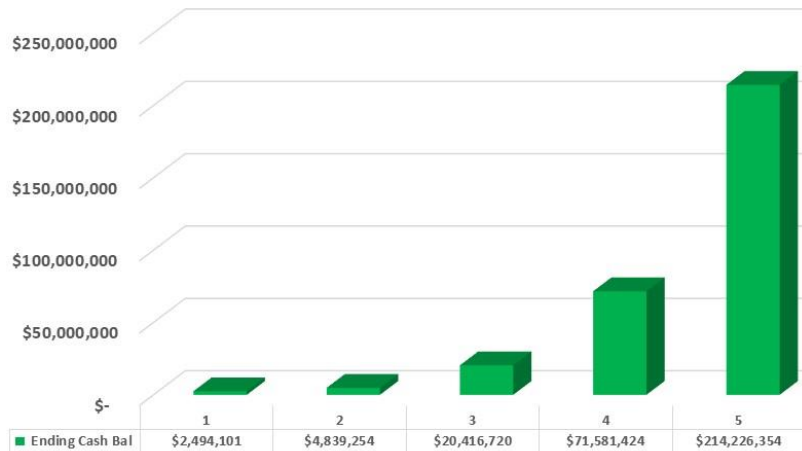


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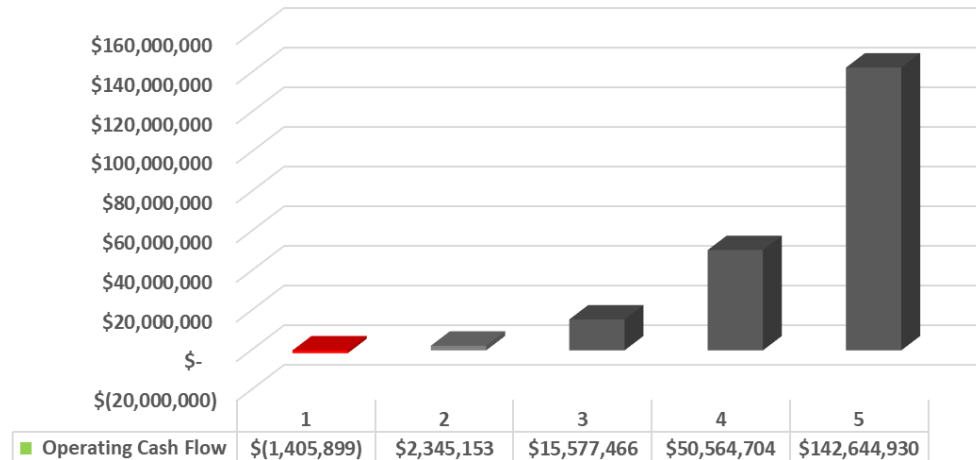
## Five Year Financials

Annual Summary	2022	2023	2024	2025	2026
Beginning Cash	\$ 50,000	\$ 2,494,101	\$ 4,839,254	\$ 20,416,720	\$ 71,581,424
Revenues	\$ 1,250,000	\$ 8,150,000	\$ 30,500,000	\$ 88,500,000	\$ 245,400,000
Expenses	\$ 2,655,899	\$ 5,804,847	\$ 14,922,534	\$ 37,335,296	\$ 102,755,070
Operating Cash Flow	\$ (1,405,899)	\$ 2,345,153	\$ 15,577,466	\$ 50,564,704	\$ 142,644,930

Five Year Ending Cash Balance



Five Year Net Cash Flow





# Green Fortress Engineering

## Management Team

- **Dr. Peter Schubert** P.E. CEO, Primary Inventor, Lead Technologist

Peter holds 43 US patents, plus 13 more in the EU, and has published over 100 technical papers. He has been the principal investigator on grants from NASA, DOE, NSF, DoD, and USDA for projects worth in total about \$4.5M. Peter has started five companies, and is currently the CEO and majority shareholder in GFE, Inc. He also is a full rank professor at IUPUI and conducts research into renewable energy technologies. He was a Technical Fellow at Delphi Electronics & Safety, having 20 years experience in the automotive industry.

- His doctoral thesis from Purdue was in silicon device processing.
- MS ECE degree is from Univ. of Cincinnati (Ohio)
- BA degree in Physics from Washington University (St. Louis)
- Licensed Professional Engineer, State of Illinois.

- **Dr. Randall Gatz** – Senior Business Executive

He was VP of R&D at Fournier SA and was involved in the development of several pharmaceutical products which contributed to the multibillion dollar business volume of Fournier SA. He managed the budget of a three hundred person research effort and the multimillion dollar budgets that accompany such a research effort. He was Director of new project evaluation at Debiopharm SA, a drug development company located in Lausanne Switzerland with a business volume in excess of one billion dollars. Randall was founder and CE of a start-up company Ophtghalmopharma SA and was involved in the business development, financial, scientific and management of Ophthalmopharma. Randall received his degrees in Pharmacology and Physiology from the University of Kentucky 1973 and was awarded a post-doctoral fellowship at the Max-Planck Institute for Experimental Medicine and was hired as an assistant professor following that fellowship. Gatz has worked with Peter Schubert since 2012.

- **Mr. Cyrus Summerlin** – Principal Investigator

Cyrus is a serial entrepreneur having started, developed and sold numerous companies in multiple sectors. These endeavors have brought significant exposure to the venture capital world, with strong emphasis on marketing and product development. Cyrus was also recently selected for Forbes 30 under 30 list in 2020 for his work in consumer technology.

- Cyrus is currently the acting COO for Extra, a fintech company which he co-founded that has created the first credit building debit card.
- Cyrus is the PI for a GFE project from the North American subsidiary of Sumitomo Electric Group, called Innovation Core SEI, Inc., and directly interfaces with Indiana University for the research part of the contract

- Our **University partners** give us access to highly-prized resources.
  - Fully-equipped chemistry lab and analytical equipment
  - Post-doctoral researchers and grad students
  - Co-funding with federal grants



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## Fund Raising

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- Seeking \$3,100,000 in equity
  - To finalize development, build prototypes, and launch commercialization of the H2 Ultra Storage system
- Pre-money valuation at \$6,000,000
  - Based upon the number of patents (9) and patent applications (2) we have, NSF funded work to date on the H2US project, and our revenue projections.
- Additional equity free dollars
  - Current funded research by Innovation Core SEI, Inc.
  - Other federal grants pending.