Helion Energy

Executive Summary

Mission

By exploiting a proven revolutionary fusion energy breakthrough, Helion Energy will disrupt the energy market with limitless, low cost, carbon free, electricity.

The Product – The Fusion Engine: An Immediate, Low-Cost Solution for Clean, Safe Energy

Based on a recent breakthrough scientific discovery, the Fusion Engine is the only demonstrated fusion energy source capable of producing both on demand and baseload power at low cost and with minimal environmental impact. Employing a patented staged electromagnetic compressor and direct energy conversion, the Fusion Engine efficiently harnesses fusion energy employing fuel derived solely from water. This IAEA award winning and DOE validated prototype generated the required fusion energy output that allows for commercialization of economical fusion by 2019. By removing complex tritium systems and steam turbines, the Fusion Engine can be constructed faster and with reduced capital costs. And unlike current nuclear systems, Helion's fusion technology is inherently safe and generates only clean byproducts. Helion holds the key to unlock the long sought after promise of endless fusion energy.

Market Demand

The annual worldwide expenditure on electricity is over 3 trillion dollars. It is estimated that over 25 trillion dollars will be invested by 2030 to meet this increasing demand. The Fusion Engine is scalable and compatible with centralized and distributed infrastructure and can access new undeveloped and remote markets. The market is currently lacking a carbon free source of electricity that can meet demand for baseload and on demand power.

Competitive Advantage

Helion Energy is uniquely qualified to succeed in bringing the Fusion Engine to market:

- Helion's technology is the only proven, practical, reactor assembly in existence with greater fusion output than any private competitor.
- The Fusion Engine was designed from the ground up to be a competitive commercial device, yet is based on demonstrated physics, technologies and Helion's patented scientific breakthrough.
- The world renowned scientific and technical team has a deep knowledge of the science, and unique experience in the technologies and the scales required for a commercial reactor.
- The science of the Fusion Engine has been rigorously demonstrated and peer reviewed.
- Helion has radically reduced risk by validating the technology with over $5 M in DOE funding.
- The Fusion Engine is compact (semi-truck sized) will be able to generate lower cost electricity than current baseload power sources.
- The management team won the 2013 National Cleantech Open Energy Generation competition and awards at the 2014 ARPA-E Future Energy Startup competition.

Revenue Model

Helion Energy's long term strategy is to generate revenue based on a royalty model of electricity produced with projected electricity prices of 40-60 $/MWhr. Penetration of the new capacity market is estimated at 20% of market growth (2.5%) per annum eventually reaching 50% of new power generation worldwide – $52 B/yr. Gradual displacement of existing plants provides for continued growth to 20% of world electrical generation after 20 years with a net return of over $300 billion. Early revenue

is generated by sale of electricity produced by the pilot plant. Acquisition and exit opportunities exist after pilot plant operation in 2019.

Capital Requirements - Financials

Helion Energy's technology has received $4+ M non-dilutive U.S. Department of Energy seed funding to demonstrate the concept at increasing scales. The team has contributed another $100k towards business development and ongoing technology development. Helion Energy is seeking a $35M Series B. This three year round has several funding gates and will demonstrate a reactor scale fusion core that will exceed the performance of any fusion energy source ever built. Series B will also demonstrate direct electricity generation and finalize the commercial power plant design. Subsequently, a commercial 50 MW pilot plant will be constructed over a two year period .

Helion Team

Dr. David Kirtley, Chief Executive Officer

An NSF, NASA, and DOD fellow, Dr. Kirtley has 13 years of experience in nuclear engineering, fusion, and aerospace. He leads the MSNW propulsion research and development and has raised more than $5 M in government technology funding.

Dr. John Slough, Chief Science Officer

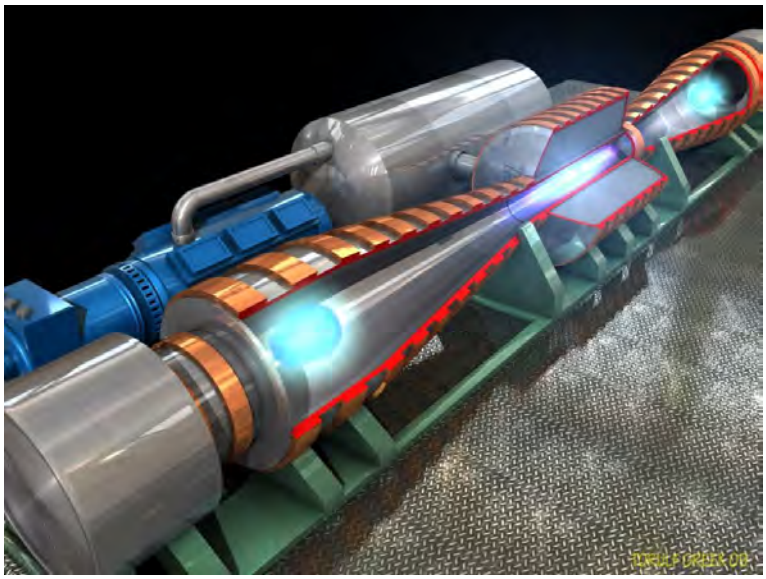
Dr. Slough has conducted more than 30 years of fusion research and is the founder and director of research at MSNW. John is the inventor of the Fusion Engine and an award winning, world leading expert in fusion plasmas. Dr. Slough has raised more than $15 M in government grants in his career.

Mr. Chris Pihl, Chief Technology Officer

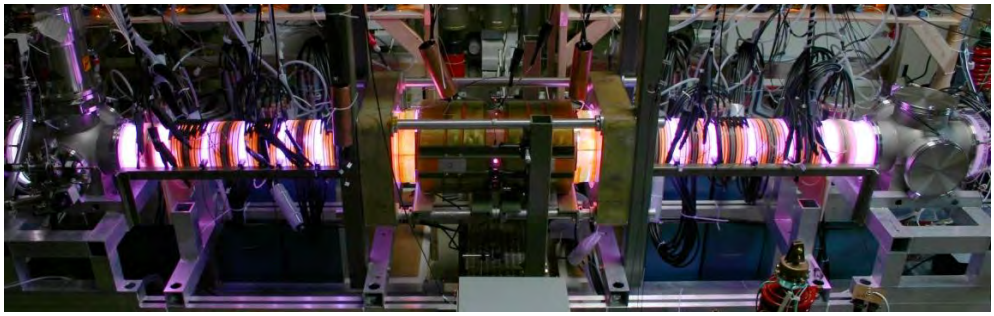
Mr. Pihl holds a degree in Innovation Management and founded Pulse Power Solutions. He brings 23 years of industry, 10 years of fusion experience and designed the breakthrough validation devices.

Dr. George Votroubek, Principal Scientist

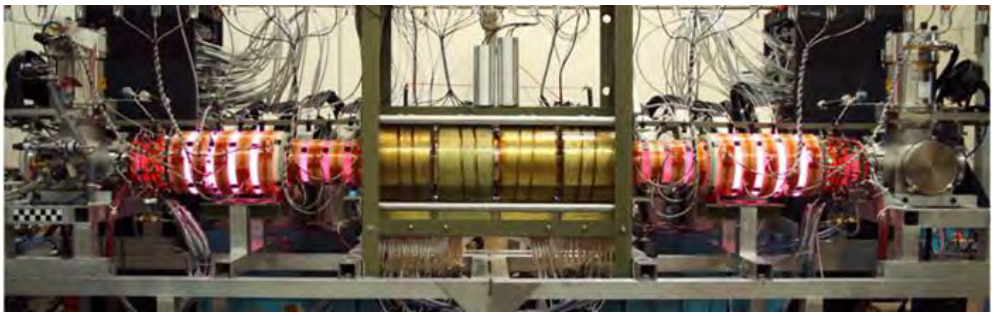
Dr. Votroubek is an experimental plasma physicist with 16 years in fusion.



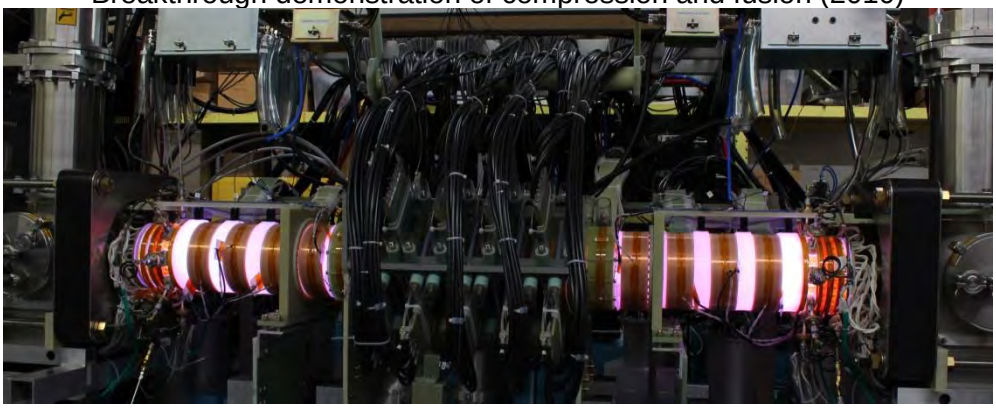
Artistic representation of a 50 MW Fusion Engine module



Breakthrough demonstration of merging and stability techniques (2008)



Breakthrough demonstration of compression and fusion (2010)



Fourth prototype demonstrating high field compression (2013)