# Dossier: AVALANCHE ENERGY DESIGNS INC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $139,492.00

**Award Date:** 2024-07-15

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Avalanche Energy Designs Inc. is a venture-backed fusion energy startup focused on developing small, modular fusion reactors for distributed power generation. Their mission is to commercialize clean, safe, and abundant energy by building practical and deployable micro-fusion reactors using pulsed power technology. They aim to solve the problem of energy dependence on fossil fuels and provide a sustainable alternative that is scalable and cost-effective. Avalanche Energy's unique value proposition lies in its innovative approach to fusion using a non-traditional, compact, and transportable reactor design that they claim will be more affordable and faster to deploy than larger, traditional fusion projects. They are targeting applications in both terrestrial power generation and future space-based propulsion and power solutions.

**Technology Focus:**

* Uses a "Orbitron" electrostatic confinement system to achieve fusion. This approach aims to confine ions within a small volume using electrostatic fields, potentially simplifying the process compared to magnetic confinement.
* Leverages pulsed power technology to achieve high ion densities and temperatures necessary for fusion reactions within the Orbitron. The system is designed to be small and modular, aiming for a 5x5x5 meter reactor size.

**Recent Developments & Traction:**

* October 2022:\*\* Raised $40 million in Series A funding led by Lowercarbon Capital and Prelude Ventures, with participation from Founders Fund, Toyota Ventures, and FF Science. The funding is earmarked to building and testing their 'Orbitron' prototype.
* 2022:\*\* Achieved first plasma in their "Orbitron" device, a key milestone in demonstrating the feasibility of their fusion approach.
* January 2024:\*\* Announced a partnership with Impetus to leverage the company's unique approach in support of enhanced power and propulsion capabilities for next-generation space missions.

**Leadership & Team:**

* Robin Langtry (CEO):\*\* Formerly a senior engineer at Bridgewater Associates.
* Shane Sossaman (CTO):\*\* Experienced in plasma physics and fusion research.
* The team includes experts in pulsed power, plasma physics, and reactor design.

**Competitive Landscape:**

* Helion Energy:\*\* A larger, more established fusion company pursuing magnetic confinement fusion. Avalanche differentiates itself through its smaller, modular reactor design and reliance on electrostatic confinement, potentially leading to faster deployment and lower costs if successful.
* General Fusion:\*\* Another company pursuing magnetic fusion using Magnetized Target Fusion (MTF). Avalanche distinguishes itself through its electrostatic confinement approach, which, while still facing challenges, could offer advantages in terms of simplicity and size.

**Sources:**

* [https://www.avalanche.energy/](https://www.avalanche.energy/)
* [https://techcrunch.com/2022/10/18/avalanche-energy-raises-40m-to-build-a-pocket-fusion-reactor/](https://techcrunch.com/2022/10/18/avalanche-energy-raises-40m-to-build-a-pocket-fusion-reactor/)
* [https://www.prnewswire.com/news-releases/avalanche-energy-inc-announces-partnership-with-impetus-to-advance-fusion-for-space-applications-302042491.html](https://www.prnewswire.com/news-releases/avalanche-energy-inc-announces-partnership-with-impetus-to-advance-fusion-for-space-applications-302042491.html)
* [https://lowercarboncapital.com/investments/avalanche-energy/](https://lowercarboncapital.com/investments/avalanche-energy/)