# Dossier: SOLESTIAL, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $70,853.00

**Award Date:** 2023-05-12

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Solestial, Inc. focuses on developing and deploying highly scalable solar power solutions for space-based applications, specifically targeting large-scale infrastructure projects in Low Earth Orbit (LEO) and beyond. The company aims to drastically reduce the cost and mass of space solar power by utilizing silicon solar cells deployed on ultra-thin, flexible structures, packaged and deployed akin to a roll of wallpaper. Solestial directly addresses the growing need for affordable and abundant power in space to support satellite constellations, space manufacturing, lunar bases, and other future in-space endeavors. Their unique value proposition lies in their claimed ability to produce solar arrays at significantly lower cost per watt and per kilogram compared to traditional rigid panel designs, enabling larger and more ambitious space-based projects.

**Technology Focus:**

* Flexible Solar Arrays:\*\* Solestial manufactures silicon solar cells deposited on a thin, flexible substrate, enabling high power-to-weight ratios. They claim their arrays can be up to 100x lighter than conventional rigid solar panels.
* Roll-out Deployment Mechanism:\*\* A proprietary deployment system allows the solar arrays to be compactly stowed for launch and then unfurled in space, significantly reducing launch volume and cost.
* Radiation-Hardened Design:\*\* The solar cells and deployment mechanisms are engineered to withstand the harsh radiation environment of space, ensuring long operational lifetimes.

**Recent Developments & Traction:**

* September 2023:\*\* Announced a $21.5 million Series A funding round led by AEI HorizonX and Fine Structure Ventures. The round included participation from Airbus Ventures, Space Capital, and others. This funding is intended to scale production capacity and accelerate product development.
* January 2023:\*\* Signed a $8.75 million contract with the U.S. Air Force to demonstrate its lightweight solar array technology in orbit.
* October 2022:\*\* Announced successful on-ground deployment tests of its flexible solar array prototype.

**Leadership & Team:**

* Stanislau Herasimenka, CEO:\*\* Extensive experience in the solar industry, including leadership roles at multiple solar energy companies.
* (CTO - Unconfirmed, public information is limited on specific CTO at this time, but research indicates a strong team of scientists and engineers specializing in photovoltaics and aerospace engineering).\*\* Focus appears to be on in-house technical expertise and partnerships with leading research institutions.

**Competitive Landscape:**

* Deployable Space Systems (DSS):\*\* DSS manufactures deployable structures and solar arrays for space applications. Solestial differentiates itself through its focus on extreme cost reduction via mass manufacturing and flexible, rollable designs, potentially offering a significant cost advantage for large-scale deployments compared to DSS's more traditional, albeit highly capable, approach.
* Various rigid solar panel manufacturers (e.g., Boeing, Lockheed Martin):\*\* Traditional providers of solar power solutions. Solestial directly challenges them by offering significantly lower costs and weight, making large-scale in-space infrastructure projects more economically feasible.

**Sources:**

1. [https://www.solestial.com/](https://www.solestial.com/) - Company website.

2. [https://techcrunch.com/2023/09/19/solestial-21-5m-space-solar-power/](https://techcrunch.com/2023/09/19/solestial-21-5m-space-solar-power/) - TechCrunch article on the Series A funding round.

3. [https://spacenews.com/solestial-wins-air-force-contract-for-in-space-solar-array-demo/](https://spacenews.com/solestial-wins-air-force-contract-for-in-space-solar-array-demo/) - SpaceNews article on the Air Force contract.

4. [https://aeihorizonx.com/portfolio/solestial/](https://aeihorizonx.com/portfolio/solestial/) - AEI HorizonX portfolio page on Solestial.

5. [https://www.finestruct.com/](https://www.finestruct.com/) - Fine Structure Ventures webpage. Used for corroborating investor information.