Heliogen

First Quarter 2022

Earnings Presentation



REPLACING FOSSIL FUELS WITH CONCENTRATED SUNLIGHT

Heliogen

Disclaimer

Forward-Looking Statements

This presentation contains forward-looking within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended These statements are often, but not always, made through the use of words or phrases such as “may,” “should,” “could,” “predict,” “potential,” “believe,” “will likely result,” “expect,” “continue,” “will,” “anticipate,” “seek,” “estimate,” “intend,” “plan,” “projection,” “would” and “outlook,” or the negative version of those words or other comparable words or phrases of a future or forward-looking nature. Forward-looking statements include but are not limited to, the Company’s projected financial information and guidance, commercial strategy and progress, market growth, potential additional public-sector funding and reaching key milestones. These forward-looking statements are not historical facts and are based on current expectations, estimates and projections about our industry, management’s beliefs and certain assumptions made by management, many of which, by their nature, are inherently uncertain and beyond our control. Accordingly, we caution you that any such forward-looking statements are not guarantees of future performance and are subject to risks, assumptions and certainties that are difficult to predict. Although we believe that the expectations reflected in these forward-looking statements are reasonable as of the date made, actual results may prove to be materially different from the results expressed or implied by the forward-looking statements. Important factors that could cause our actual results to differ materially from those indicated in these forward-looking statements include, but are not limited to the following: our ability to recognize the anticipated benefits of our recently consummated business combination, which may be affected by, among other things, (i) our financial and business performance, including risk of uncertainty in our financial projections and business metrics and any underlying assumptions thereunder; (ii) our ability to execute our business model, including market acceptance of our planned products and services and achieving sufficient production volumes at acceptable quality levels and prices; (iii) our ability to access sources of capital to finance operations, growth and future capital requirements; (iv) our ability to maintain and enhance our products and brand, and to attract and retain customers; (v) our ability to scale in a cost-effective manner; (vi) changes in applicable laws or regulations; (vii) the ongoing impacts of the COVID-19 pandemic and the potential impacts of Russia’s invasion of Ukraine on our business; (viii) developments and projections relating to our competitors and industry; (ix) our ability to access sources of capital to finance operations, growth and future capital requirements; (x) our ability to protect our intellectual property; and the other risks, uncertainties and factors described in the “Risk Factors” section in our amended Annual Report on Form 10-K/A for the annual period ended December 31, 2021 and other documents filed by the Company from time to time with the Securities and Exchange Commission. If one or more events related to these or other risks or uncertainties materialize, or if our underlying assumptions prove to be incorrect, actual results may differ materially from what we anticipate. Many of the important factors that will determine these results are beyond our ability to control or predict. Accordingly, you should not place undue reliance on any such forward-looking statements. Any forward-looking statement speaks only as of the date on which it is made, and, except as otherwise required by law, we do not undertake any obligation to publicly update or review any forward-looking statement made in this investor presentation, whether as a result of new information, future developments or otherwise. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make. New factors emerge from time to time, and it is not possible for us to predict which will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Heliogen Q1 Earnings Call Agenda

- Business Overview
- Review of First Quarter Events
- Execution Progress
- Commercial Agreement Update
- Guidance and Financial Update

The Heliogen Opportunity and Approach

The Opportunity

- Heavy industry is a critical market for decarbonizing technologies and is currently underserved
- Renewable energy for heavy industry must be near constantly available and cost effective

Our Technology-Focused Approach

- Provides clean thermal energy which can be used to make steam, electric power, or green hydrogen
- AI + software + computing power can simplify and reduce hardware, installation, and maintenance costs
- High-volume, modular manufacturing techniques will enable reliability, scale and learning curve cost reductions

First Quarter 2022 and Subsequent Highlights

First Quarter 2022 Highlights

- Signed full project agreement with Woodside for deployment of a commercial-scale module
- Entered into collaboration agreement with Woodside to jointly market Heliogen's technology in Australia
- Began site preparation and setup of manufacturing and R&D facility in Long Beach, CA
- Awarded exclusive right from US Bureau of Land Management (BLM) to lease Brenda Solar Energy Zone for green hydrogen production

Subsequent 2022 Highlights

- Finalized and executed exclusive lease with BLM in Brenda Solar Energy Zone
- Announced partnership with Hanwha Power Systems for production of supercritical CO_2 (sCO_2) power block to be initially deployed for Woodside project
- Rapid prototyping capabilities and pilot production lines operational at Long Beach Facility

Key Commercial and Execution Milestones in 2022

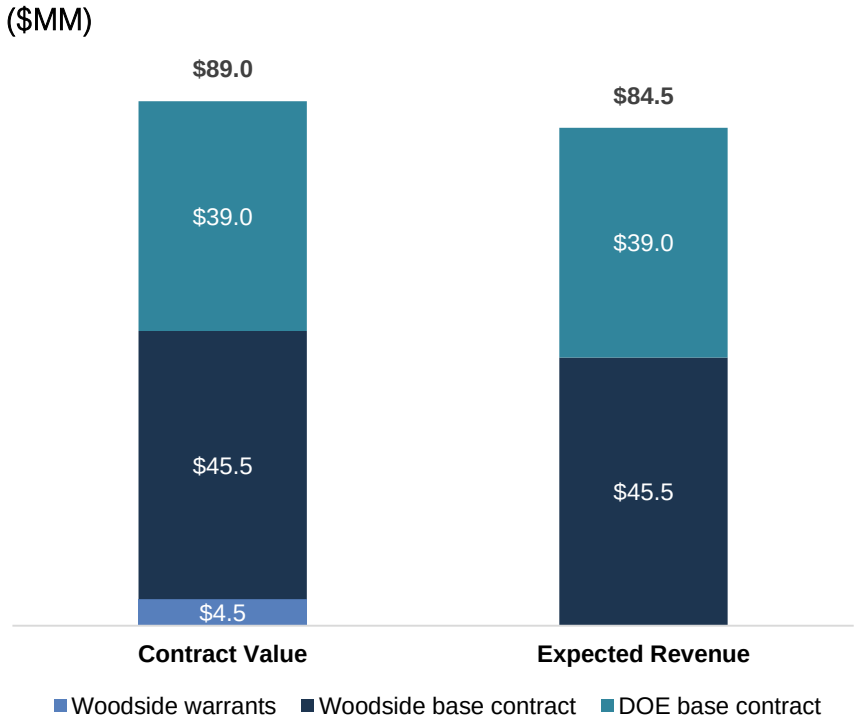
Area	Milestone	Expected Timing	Status
Commercial	First module contracted	1H 2022	Complete
	Second module contracted (third module = stretch target)	2H 2022	
Execution	First groundbreaking	2H 2022	
	Assembly line heliostat production	2H 2022	
	Key supply chain partners announced	2H 2022	Ongoing
	Testing of cleaning functionality for autonomous robots	2H 2022	

Woodside Project Summary – Contract Value, Revenue, and Cost

- Under US GAAP, Woodside project considered long-term, fixed price contract
- Woodside project composed of two contracts that total $89 million:
  - $39.0 million US Department of Energy (DOE) contract
  - $50.0 million(1) Woodside contract
- The Woodside contract has terms that do not allow full contract value to be booked as revenue under GAAP
  - Woodside's $50.0 million reduced by $4.5 million for the issuance of warrants
- Expected cash receipts from Woodside of $50.0 million and of $35.1 million(2,3) from DOE to Heliogen
- Total expected project loss of ~$35 million based on estimated total project costs of ~$115 million
  - Loss must be taken when known; partial loss taken in 4Q21 (~$2 million), remainder in 1Q22 (~$33 million)

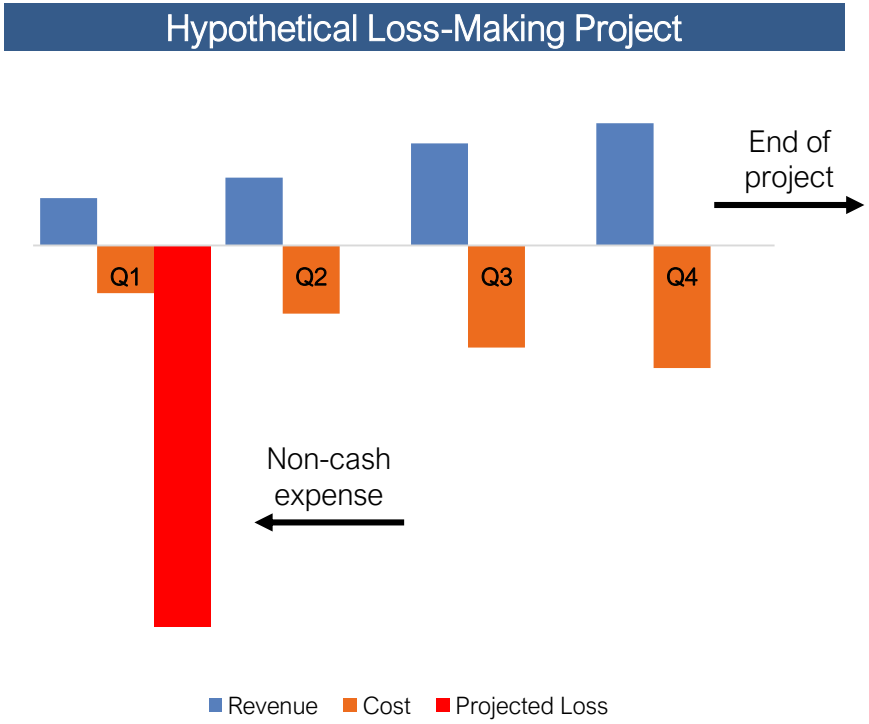
(1) Project reimbursable up to $50 million
(2) Across four budget periods, the first of which is underway
(3) $3.9 million of $39.0 million paid directly to federally funded research & development center

Contract Value vs. Expected Revenue



Illustrative Loss Recognition of Long-Term Fixed-Price Contracts

- Since total forecast cost is projected to exceed total contract revenue, US GAAP requires entire expected loss to be recognized in period when loss is evident and estimable
- After expected loss is recognized, revenues and costs are recognized over duration of project in proportion to total cost incurred using percentage of completion revenue recognition
- No additional gross profit or loss is recognized on project after initial loss is recognized unless project estimates change



Note: Assumes no changes in total estimated cost to complete, which would affect project loss

Guidance and Financial Update

Key 2022 Performance Metrics		
Primary Metric	**Modules Contracted**	**2 – 3**
Secondary Metric	**Revenue**	**$20 – $25 million**

First Quarter 2022 Financial Highlights			
($ in millions)	**1Q 2022**	**FY2021**	**FY2020**
Revenue	$3.5	$8.8	$0.2
R&D	$9.6	$13.5	$3.6
SG&A	$20.4	$29.8	$3.7

Financial Highlights

- Reaffirmed 2022 guidance
- Revenue of $3.5 million in-line with full-year 2022 guidance
  - Back half-weighted revenue expected
- One module contracted; additional discussions ongoing
- Multiple sources of potential additional public-sector funding available with several applications submitted

Heliogen's Advantages

- **Differentiated Product**: The only public solar technology company focused on decarbonizing industrial energy production
- **Cutting-edge Software Makes It Work:** Utilizes artificial intelligence, software and cost-effective computation power to simplify and reduce hardware production, installation and maintenance costs and to generate more energy
- **Durable Competitive Advantages:** Extensive patent portfolio, trade secrets and learnings enable Heliogen to maintain and defend its competitive advantages
- **Large and Growing Market:** Forecast capex investment of ~$8.5 trillion for renewable energy and >$150 billion for hydrogen by 2030
- **Vertical Integration:** Allows utilization of Heliogen's AI across entire value chain to reduce costs
- **The Right Management Team:** Expertise in technology, financial management, EPC, manufacturing and solar design and sales well-suited to Heliogen's needs

Heliogen has the potential to profitably transform the world's energy production and meaningfully address climate change

Heliogen

Appendix

How Our Patented Innovations Make A Huge Difference

- **We can achieve higher temperature heat**
  Higher temperatures up to 1000°C means ability to enable broader industrial applications, higher capacity factors, and lower-cost storage
- **We need less frequent calibration AND are more precise**
  Closed-loop AI + computer vision control means there is NO temporary pre-calibration – our units are continuously calibrated
- **We can use fewer materials** – more bytes and fewer atoms
  Use software instead of steel to achieve accuracy and efficiency
- **We can use less manual labor**
  Heliostat can be made in factory instead of in the field, with potential for autonomous maintenance and installation

Heliogen’s AI-driven technology is designed to capture, concentrate and refine sunlight into **cost-efficient energy on demand**.

This low-carbon energy can be available as heat, power, or hydrogen fuel in modular deployments.

HelioHeat

HelioHeat™ provides heat of up to 1000°C to power industrial processes or mining.



~ 1 mile →

Delivery range approximately 1 mile

HelioPower

HelioPower™ delivers the HelioHeat solar thermal energy to a heat engine to produce electrical power.

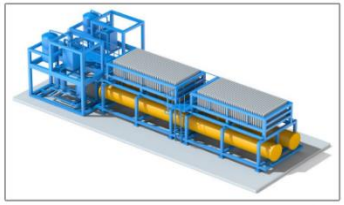


~ 100 miles →

Delivery range approximately 100 miles

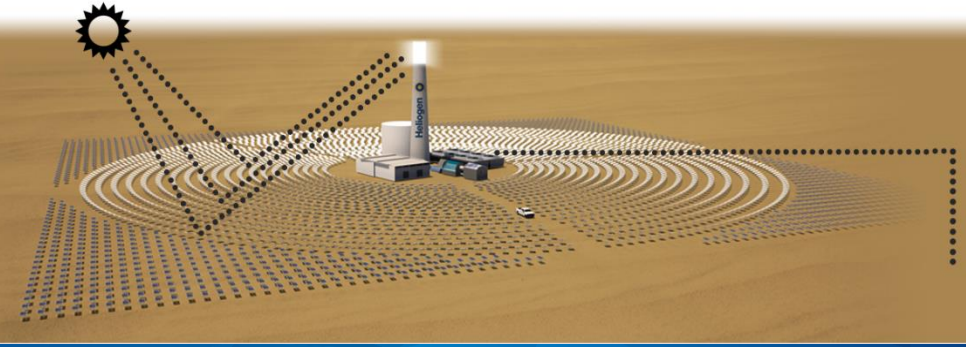
HelioFuel

HelioFuel™ systems couple a HelioPower plant with a large-scale water electrolyzer to produce green Hydrogen fuel.



> 10,000 miles →

Delivery range greater than 10,000 miles.



The collected sunlight is processed and converted to:

- HelioHeat
- HelioPower
- HelioFuel

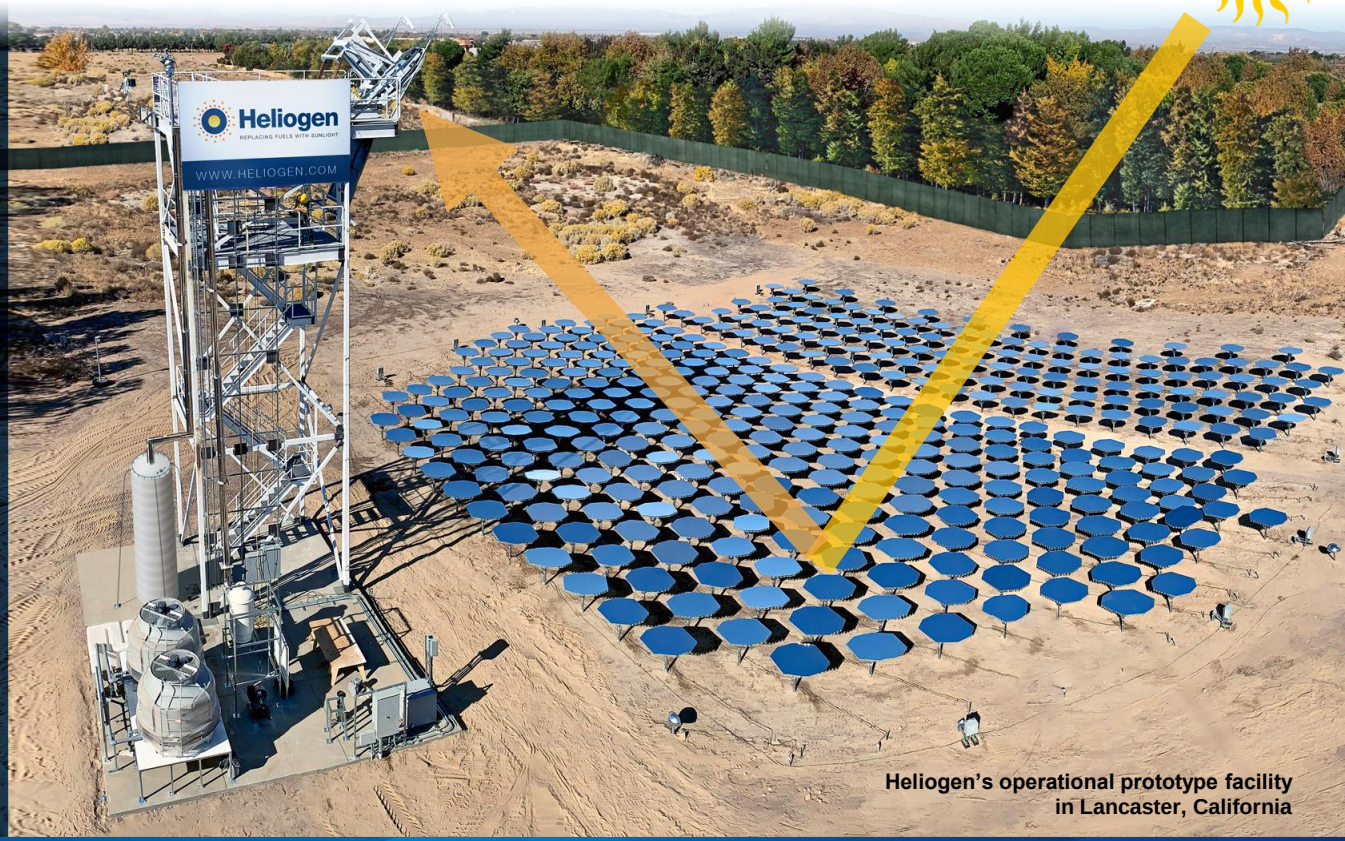
Heliogen aims to produce near always-available and transportable renewable energy – cost-effectively



The Heliogen Process

Heliogen's closed-loop system uses computer vision to identify the precise position of every single mirror, then make micro-adjustments in real time to achieve a perfect focus. Closed-loop means that the mirrors are pointed more accurately with optical feedback, not just mechanical stiffness

1. Reflect sun rays to top of tower
2. Generate high temperatures in solar receiver
3. Store heat in solid media
4. Heat exchanger brings heat to heat engine
5. Heat engine makes power
6. Optional electrolyzer makes Hydrogen



Heliogen's operational prototype facility in Lancaster, California

We believe our patented system is the first ever to achieve closed-loop tracking enabling cost-effective ultra-high temperatures at commercial scale



The sky is very bright next to the sun, and the intensity decreases further away

Heliogen's Heliostat Operating System (H.O.S.)

The cameras measure the intensity of sky reflected in each mirror.

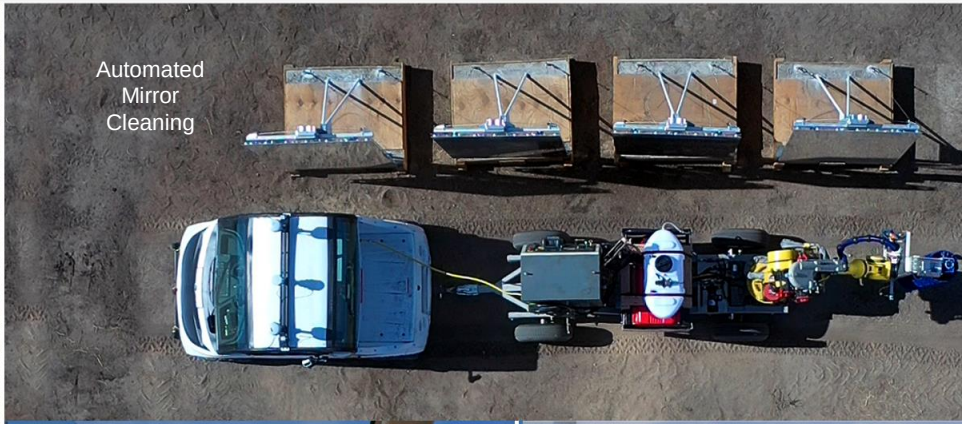
Using these four intensity measurements, we calculate the mirror orientation and therefore the direction of the beam, allowing real-time perfect tracking.

H.O.S. is the first commercial closed-loop heliostat field control system.

Heliogen

ICARUS: Heliogen's AI-powered autonomous robots designed to lower installation & maintenance costs











*Robots expected to be enhanced & deployed in 2023 starting with maintenance

Heliogen