Fourth Quarter and Full Year 2022 Earnings

Heliogen

Disclaimer

Forward-Looking Statements

This presentation contains certain forward-looking statements 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. Statements that are not historical in nature, including the words “anticipate,” “expect,” “suggests,” “plan,” “believe,” “intend,” “estimates,” “targets,” “projects,” “should,” “could,” “would,” “may,” “will,” “forecast” and other similar expressions are intended to identify forward-looking statements. These forward-looking statements include, but are not limited to, statements regarding the development of our production facilities, building our revenue backlog, progressing our commercial projects, reducing our cost structure, achieving our financial and operational goals and future growth opportunities. Forward-looking statements are predictions, projections and other statements about future events that are based on current expectations and assumptions and, as a result, are subject to risks and uncertainties. Many factors could cause actual future events to differ materially from the forward-looking statements in this press release, including but not limited to: (i) our financial and business performance, including risk of uncertainty in our financial projections and business metrics and any underlying assumptions thereunder; (ii) changes in our business and strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects and plans; (iii) 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; (iv) our ability to maintain listing on the New York Stock Exchange; (v) our ability to access sources of capital to finance operations, growth and future capital requirements; (vi) our ability to maintain and enhance our products and brand, and to attract and retain customers; (vii) our ability to scale in a cost effective manner; (viii) changes in applicable laws or regulations; (ix) developments and projections relating to our competitors and industry; and (x) our ability to protect our intellectual property. You should carefully consider the foregoing factors and the other risks and uncertainties disclosed in the “Risk Factors” section in Part I, Item 1A in our Annual Report on Form 10-K/A for the annual period ended December 31, 2021 and other documents filed by Heliogen from time to time with the Securities and Exchange Commission. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and Heliogen assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise.

Today's Agenda

- Strategic Initiatives
- Recent Execution Progress
- Financial Update
- Closing Remarks

Fourth Quarter and Full Year 2022 Earnings Updates

2023 Strategic Priorities

Announced on February 16, 2023, following CEO transition

Closing sales

- Prioritize Heliogen's fastest path to growing its revenue backlog
- Emphasize industrial steam: the product with the highest level of technical readiness and near-term impact
- Demonstrate product-market fit effectively and prove the value of Heliogen's technology to customers

Installing commercial-scale projects

- Data unlocks demand: Provide commercial-scale, real-world operating data for prospective customers

Extending liquidity runway

- Cut costs and streamline the organization by focusing efforts on driving tangible, immediate results
- Position Heliogen for a future capital raise

Progress on Strategic Priorities

Closing sales	• Signed contract for engineering services for a potentially large, long-term customer • Applying a customer-centric lens on how we integrate our technology into existing facilities to deliver a simplified operational experience for customers
Installing commercial-scale projects	• Completed the preliminary design for the Proxima hydrogen project in Lancaster, CA • Secured a 120-acre site with a lease agreement with purchase option; includes water rights

Extending liquidity runway	• Began implementing cost reduction initiatives which include
	  • Deferring capital expenditure until we sign additional contracts
	  • Reducing operating expenses, including headcount
	  • Limiting R&D to a small group focused on key long-term differentiators

Heliogen Has Made Significant Progress Since Public Debut

2021

December 2021: Heliogen becomes publicly traded on NYSE as HLGN

2022

February 2022: Awarded Exclusive Rights at Brenda Solar Energy Zone

February 2022: Announced site prep for Long Beach manufacturing facility

March 2022: Signed contract for commercial-scale demonstration project with Woodside Energy

May 2022: Began testing & implementation of supercritical SCO_2 system with Hanwha Power Systems for Woodside project

August 2022: Announced partnership with Dimensional Energy for production of sustainable aviation fuel

September 2022: Held first Investor & Analyst Day in Long Beach, CA

September 2022: Completed build-out of Long Beach production facility

October 2022: Selected to receive $4.1 Million award from US DOE to decarbonize cement production

November 2022: Entered into an MOU with City of Lancaster for a green hydrogen facility

December 2022: Successfully performed automated installation of Gen. 5 heliostats

2023

March 2023: Formed Board of Directors Strategy Committee to oversee implementation of long-range plan and strategic initiatives

March 2023: Completed preliminary design and secured site for Proxima green hydrogen project

March 2023: Achieved successful accumulation of over 125 hours of operational life and 25 miles travelled on ChariotAV in customer environment

Financial Update

Fourth Quarter and Full Year 2022 Financial Highlights		
($ in millions)	**4Q 2022**	**FY2022**
Revenue	$4.7	$13.8
R&D	$11.8	$38.3
SG&A	$20.5	$81.2

Financial Highlights

- FY2022 revenue near the high end of $12-$14 million guidance
- Revenue primarily from progress on Capella project for Woodside and DOE
- Selected to receive an additional $4.1 million award from US Department of Energy
- Inflation Reduction Act expected to provide meaningful tailwinds for Heliogen and its prospective customers

Appendix

Heliogen is aiming to build a multibillion-dollar business against the multitrillion-dollar energy transition opportunity

We are addressing the dramatic rise and volatility of fossil fuel prices

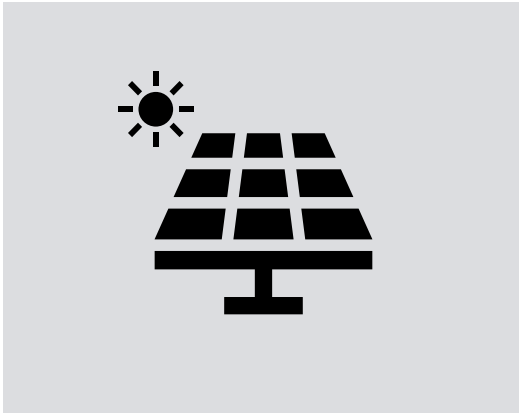
Our technology is a breakthrough that offers what global customers need now

Five Fundamental Characteristics That Set Heliogen Apart

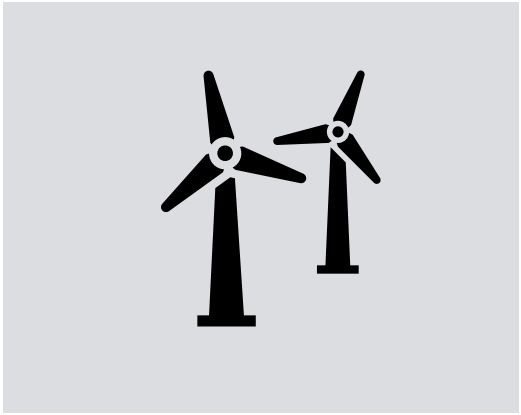
1. **Durable Competitive Advantages:** Extensive patent portfolio, trade secrets and learnings will enable Heliogen to maintain and defend its competitive advantages
2. **Cutting-edge Software Makes It Work:** Utilizes artificial intelligence, software and cost-effective computation power to simplify and reduce hardware production, installation and maintenance costs and to generate more energy
3. **Vertical Integration of AI:** Allows utilization of Heliogen's AI across entire value chain to reduce costs
4. **Modularity Enables Scalability and Execution:** Our offerings are modular, making it possible to scale to our customers' behind-the-meter needs while also supporting more efficient execution
5. **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

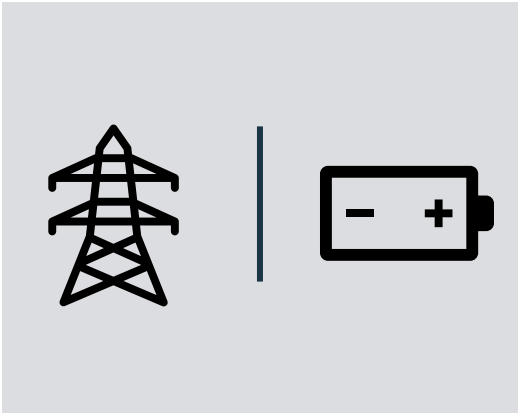
There Is Currently No Efficient Way to Abate Industrial Emissions



Solar power is only available while the sun is shining



Wind power is only available while the wind is blowing



Methods to store or transport renewable energy are expensive

Heavy industry is directly responsible for 25% of global emissions(1), but lacks an efficient way to reduce its carbon intensity; industrial energy must be consistently available, cost-effective and reliable

(1) *"The Challenge of Decarbonizing Heavy Industry," (Brookings Institution, June 2021) https://www.brookings.edu/research/the-challenge-of-decarbonizing-heavy-industry/*

Heliogen's Offerings: Energy on Demand

Heat

Heliogen converts solar thermal energy into steam for heat-intensive industrial processes

Industries
Mining, Petrochemicals, Metal Processing, Food and Beverage
Delivery range
Up to ~1 mile (approx.)

Power

Combining solar thermal energy and storage with power blocks will generate dispatchable electric power

Industries
Utilities, Data Centers
Delivery range
Up to ~100 miles (approx.)

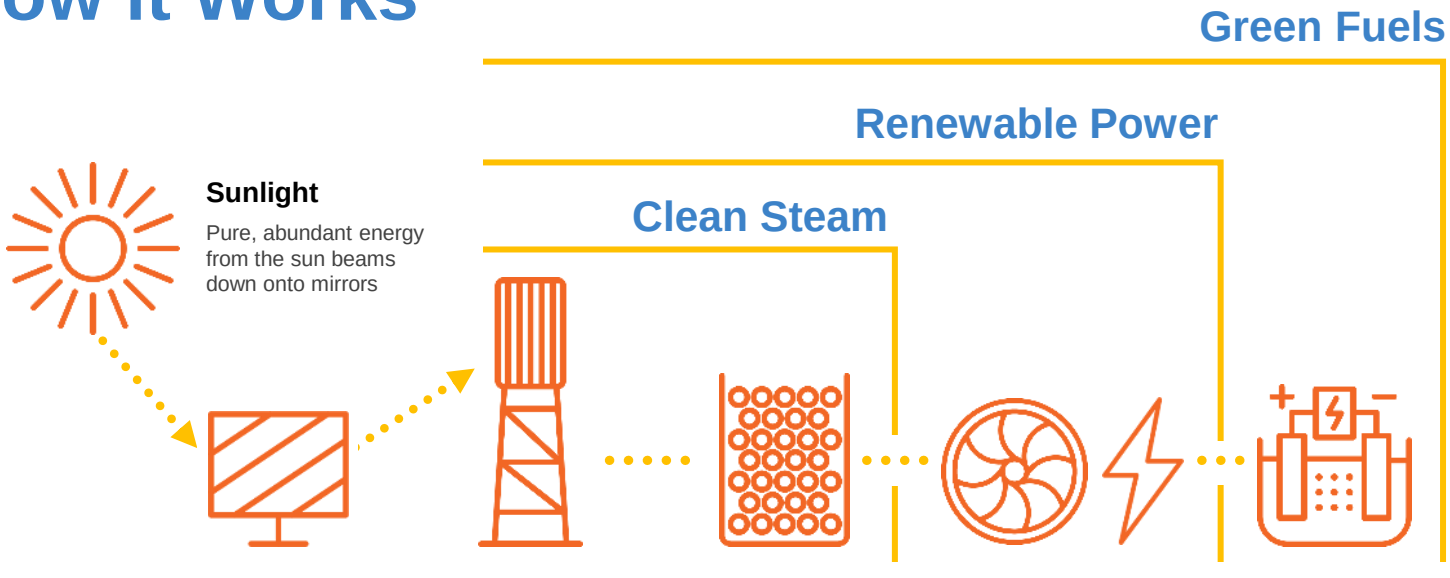
Fuel

Heliogen couples carbon-free steam and/or power with electrolyzers to produce green hydrogen fuel

Industries
Transportation, Heavy Equipment, Chemicals
Delivery range
Up to ~10,000 miles (approx.)

HelioHeat represents near-term growth opportunity;
HelioPower further expands the enormous opportunity set

How it Works


Green Fuels
Renewable Power
Clean Steam
Sunlight
Pure, abundant energy from the sun beams down onto mirrors
Heliostats
An array of computer-controlled mirrors (heliostats) collects and concentrates sunlight
Receiver Tower
Captured sunlight produces carbon-free thermal energy
Storage
Heat will be accumulated safely in thermal energy storage to be dispatched as needed
Turbine / Generator
Generated heat then drives a supercritical CO_2 power block producing on demand electricity
Electrolyzer
Heat and electricity can drive an electrolyzer to make green hydrogen fuel

Inflation Reduction Act – A win for all

New incentives catalyze the industrial decarbonization and boost project economics, giving the industry some much-needed certainty

ITC Potential for Solar Energy Facilities

10% added to the ITC if a project is in low-income or energy communities

10% added to the ITC if content is domestically sourced

30% base ITC for solar facilities construction if PWAR+ is met

Additional credit and funding opportunities being explored as further guidelines emerge

**Production Tax Credit ; + Prevailing Wage Apprenticeship Requirements*

On top of the Investment Tax Credit (“ITC”), the bill benefits Heliogen and our partners from multiple angles:

Hydrogen

- Hydrogen PTC* at **$3.00 per kg** cost savings

Advanced Manufacturing

- Production credits for manufacturing eligible clean energy components

Thermal Energy Storage

- The Act extends the ITC to energy storage equipment

Sustainable Aviation Fuel

- SAF gets a boost with a credit of up to $1.75/gallon of SAF

DOE Loan Guarantee Program

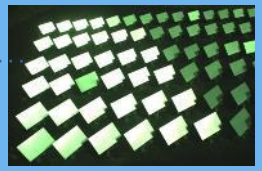
- An additional **$3.6 billion** for the Title 17 loan program, raising the total funds available to **$40 billion**.

Our patented control system is the first ever to dynamically track thousands of mirrors with real-time feedback

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

Sun & intensity gradient

4 cameras



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.

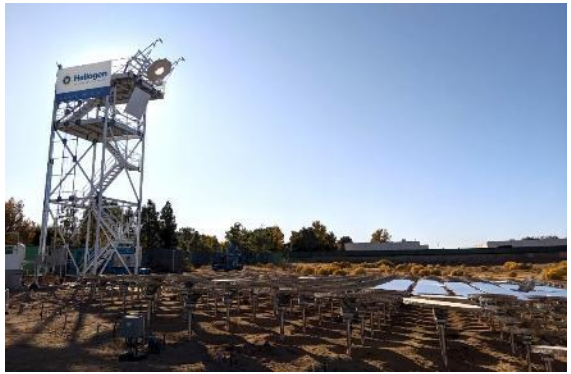
H.O.S. is the first commercial closed-loop heliostat field control system.

Lancaster Solar Concentrating Facility

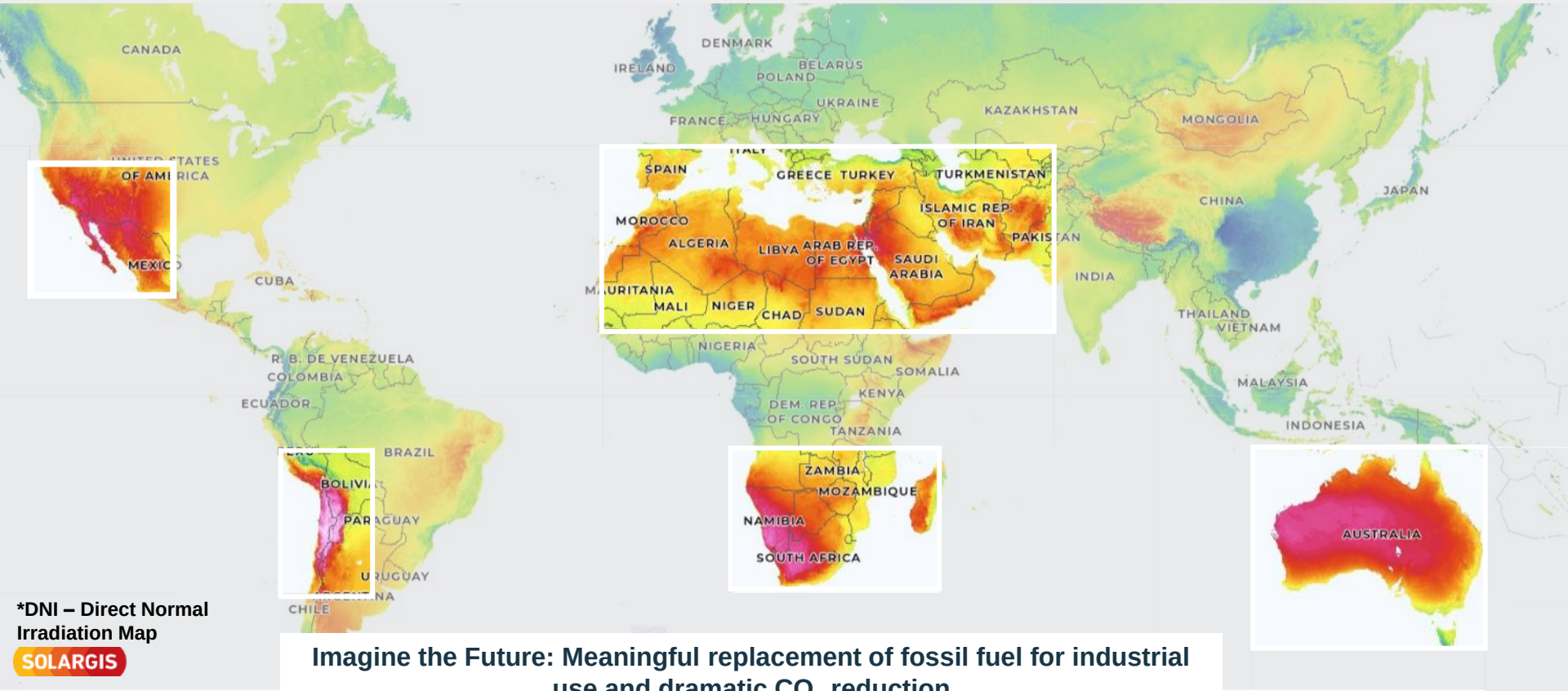
Since 2019, Heliogen has operated a concentrating solar thermal energy facility in Lancaster, California

Technologies are tested and validated here before moving to commercial-scale applications

- Successful green hydrogen production demonstration with Bloom Energy
- First field test of autonomous installation/maintenance robots
- Plan to produce sustainable aviation fuel (SAF) with Dimensional Energy on-site



Heliogen's Bold Vision: 1000s of Towers in the 5 Sunniest Areas on Earth



*DNI – Direct Normal Irradiation Map

SOLARGIS

Imagine the Future: Meaningful replacement of fossil fuel for industrial use and dramatic CO_2 reduction

Heliogen