SOLUNA
HOLDINGS

The future of renewable energy is computing.

April 2024

Legal Disclosure & Disclaimer

This presentation includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act that reflect our current views with respect to, among other things, our operations, business strategy, interpretation of prior development activities, plans to develop and commercialize our products and services, potential market opportunity, financial performance and needs for additional financing. We have used words like "anticipate," "believe," "could," "estimate," "expect," "future," "intend," "may," "plan," "potential," "project," "will," and similar terms and phrases to identify forward-looking statements in this presentation.

The forward-looking statements contained in this presentation are based on management's current expectations and are subject to substantial risks, uncertainty and changes in circumstances. Actual results may differ materially from those expressed by these expectations due to risks and uncertainties, including, among others, those related to our ability to obtain additional capital on favorable terms to us, or at all, the success, timing and cost of ongoing or future operations, the lengthy and unpredictable nature of the project development, and technology process and businesses in which we currently engage or may engage.

These risks and uncertainties include, but may not be limited to, those described in our filings with the SEC. Forward-looking statements speak only as of the date of this presentation, and we undertake no obligation to review or update any forward-looking statement except as may be required by applicable law.

The material in this presentation has been prepared by Soluna and is general background information about Soluna's activities, current as at the date of this presentation and is provided for information purposes only. It should be read in conjunction with Soluna's periodic and continuous disclosure announcements filed with the Securities and Exchange Commission. This presentation provides information in summary form only and is not intended to be complete. Soluna makes no representation or warranty, express or implied, as to the accuracy, completeness, fairness or reliability of any of the information, illustrations, examples, opinions, forecasts, reports, estimates and conclusions contained in this presentation. It is not intended to be relied upon as advice or a recommendation to investors or potential investors and does not take into account the investment objectives, financial situation, taxation situation or needs of any particular investor. Due care and consideration should be undertaken when considering and analyzing Soluna's future performance and business prospects. THIS PRESENTATION IS NOT INTENDED TO SERVE AS A FORECAST OF ANY SUCH FUTURE PERFORMANCE OR PROSPECTS. An investor must not act on any matter contained in this document but must make its own assessment of Soluna and conduct its own investigations and analysis. Investors should assess their own individual financial circumstances and consider talking to a financial adviser, professional adviser or consultant before making any investment decision. This document does not constitute an offer, invitation, solicitation or recommendation with respect to the purchase or sale of any security in Soluna nor does it constitute financial product advice. This document is not a prospectus, product disclosure statement or other offer document under United States federal or state securities law or under any other law. This document has not been filed, registered or approved by regulatory authorities in any jurisdiction.

This presentation contains statistical and market data that we obtained from industry publications, reports generated by third parties, and third-party studies. Although we believe that the publications, reports, and studies are reliable as of the date of this presentation, we have not independently verified such statistical or market data.

Any projection, forecast, estimate or other "forward-looking" statement in this presentation only illustrates hypothetical performance under specified assumptions of events or conditions that have been clearly delineated herein. Such projections, forecasts, estimates or other "forward-looking" statements are not reliable indicators of future performance. Hypothetical or illustrative performance information contained in these materials may not be relied upon as a promise, prediction or projection of future performance and are subject to significant assumptions and limitations. In addition, not all relevant events or conditions may have been considered in developing such assumptions. READERS OF THIS DOCUMENT SHOULD UNDERSTAND THE ASSUMPTIONS AND EVALUATE WHETHER THEY ARE APPROPRIATE FOR THEIR PURPOSES. SOME EVENTS OR CONDITIONS MAY NOT HAVE BEEN CONSIDERED IN SUCH ASSUMPTIONS. ACTUAL EVENTS OR CONDITIONS WILL VARY AND MAY DIFFER MATERIALLY FROM SUCH ASSUMPTIONS. READERS SHOULD UNDERSTAND SUCH ASSUMPTIONS AND EVALUATE WHETHER THEY ARE APPROPRIATE FOR THEIR PURPOSES. This presentation may include figures related to past performance or simulated past performance as well as forecasted or simulated future performance. Soluna disclaims any obligation to update their views of such risks and uncertainties or to publicly announce the results of any revision to the forward-looking statements made herein.

Use of Projections and Illustrations - this presentation contains certain financial forecasts and illustrations. Neither Soluna's nor Soluna's independent auditors have studied, reviewed, compiled or performed any procedures with respect to the projections for the purpose of their inclusion in this presentation. The material in this presentation is for illustrative purposes only and should not be relied upon as being necessarily indicative of future results.

In addition to figures prepared in accordance with GAAP, Soluna from time to time presents alternative non-GAAP performance measures, e.g., EBITDA, adjusted EBITDA, adjusted net profit/loss, adjusted earnings per share, free cash flow, both on a company basis and on a project-level basis. Project level measures may not take into account a full allocation of corporate expenses. These measures should be considered in addition to, but not as a substitute for, the information prepared in accordance with GAAP. Alternative performance measures are not subject to GAAP or any other generally accepted accounting principle. Other companies may define these terms in different ways. See our annual report on Form 10-K for the year ended December 31, 2023 for an explanation of how management uses these measures in evaluating its operations.

Soluna harnesses the power of computing to address a huge problem for renewable energy

—

wasted energy.

Our data centers are

18% greener

**than typical data centers**

& ready to drive sustainable AI

Our computing projects

return capital invested in under 2.5 years

3
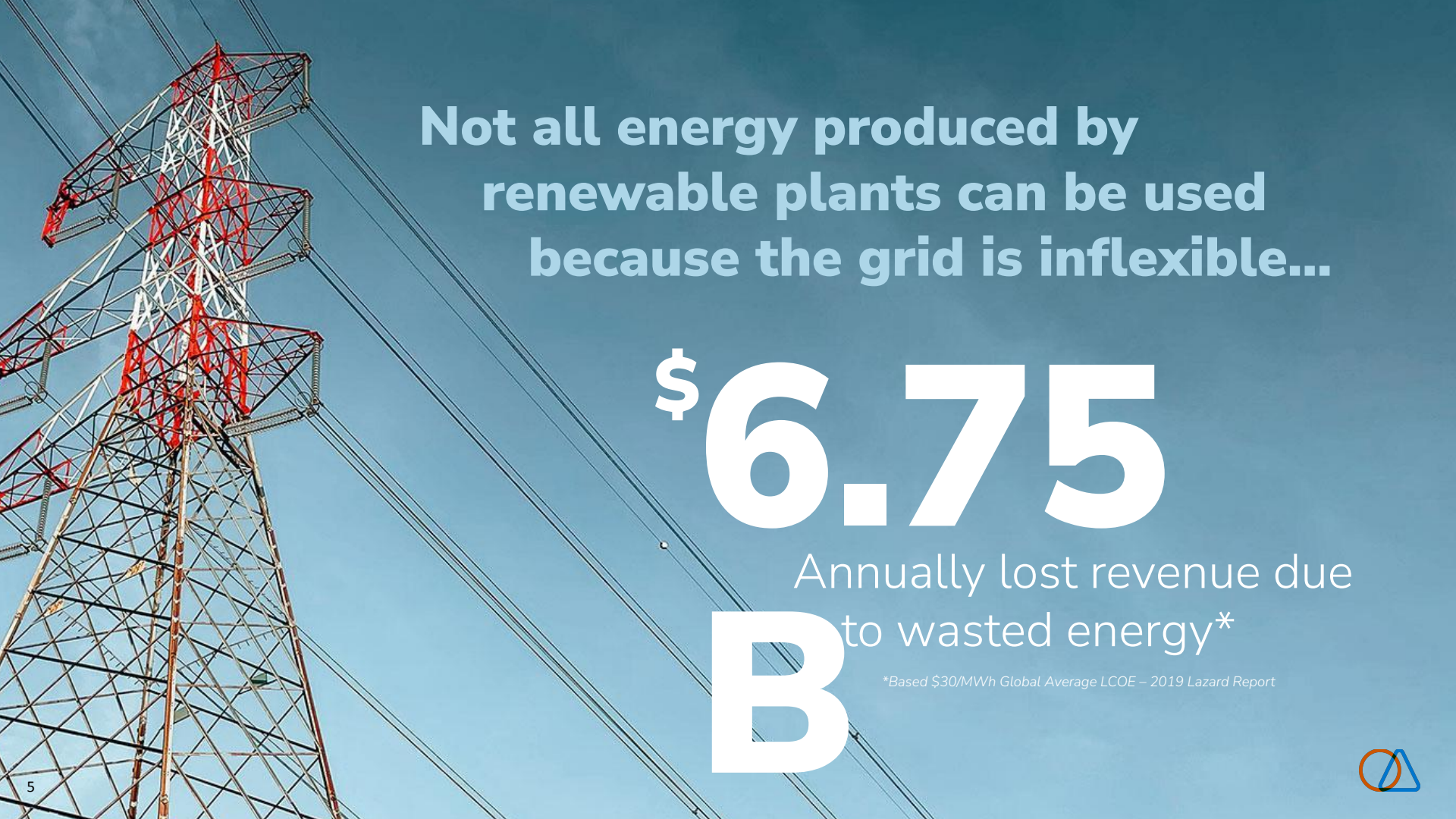
All forms of renewable energy are growing faster than ever

FORECAST

GW Installed Worldwide

Legend:
- Hydro
- Ocean
- Bioenergy
- Geothermal
- PV Utility-Scale Systems
- PV Distributed Systems
- Concentration Solar Power
- Offshore Wind
- Onshore Wind
- Renewables Dedicated to H2 Production

2011-2016

2017-2022

2023-2028
Main Case

2023-2028
Accelerated Case
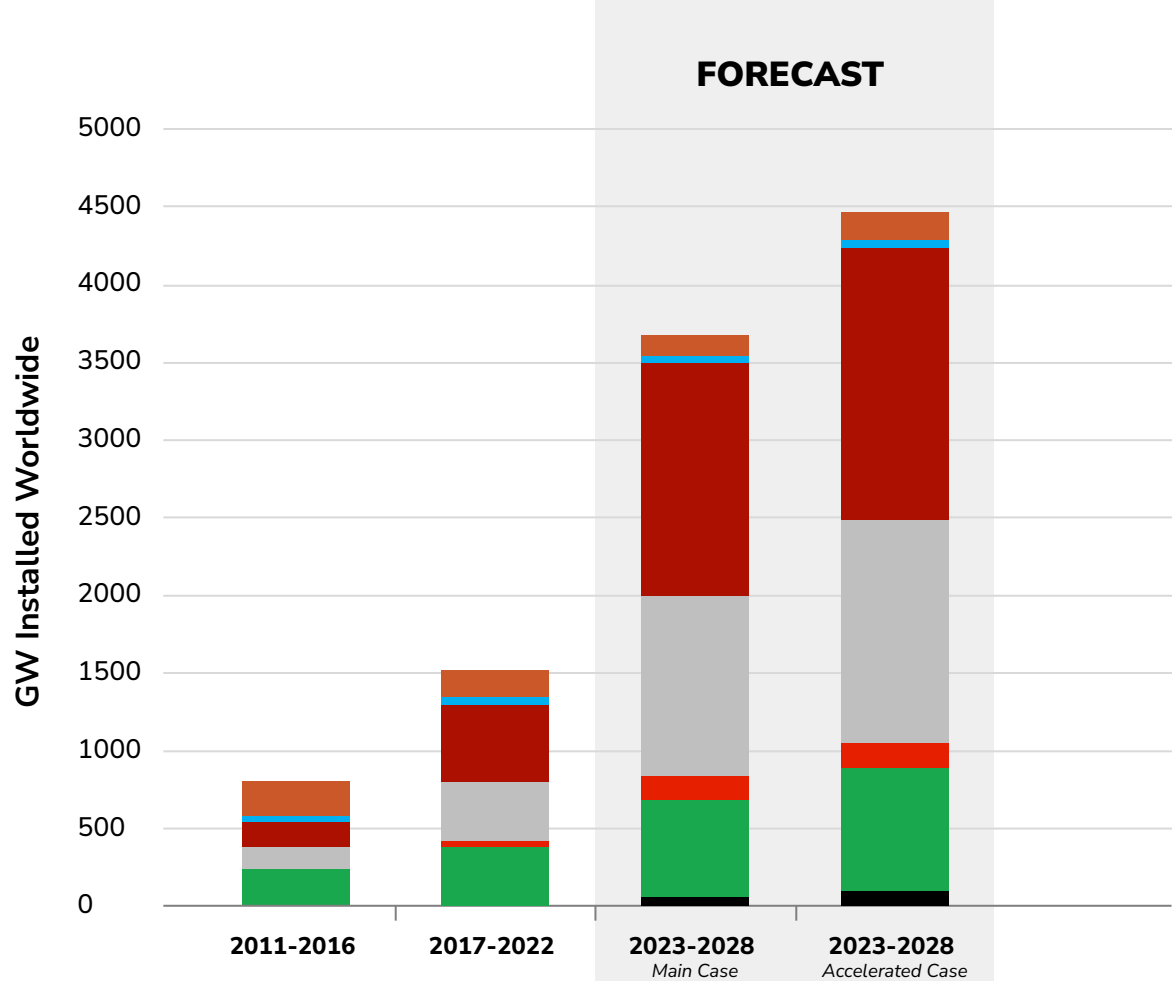
Source: IEA.org

Not all energy produced by renewable plants can be used because the grid is inflexible...

$6.75B

Annually lost revenue due to wasted energy*

*Based $30/MWh Global Average LCOE – 2019 Lazard Report

The future of renewable energy is computing...

If it's used to perform...

Artificial Intelligence | **Machine learning** | **Natural language processing** | **Bitcoin Mining**

There is a growing demand for computing power that will account for 20% of global energy consumption by 2030. What if we could build data centers that could buy excess renewable energy that would otherwise be wasted?

Storage is not yet sufficiently scalable...

Transmission upgrades face too many challenges & take too long...
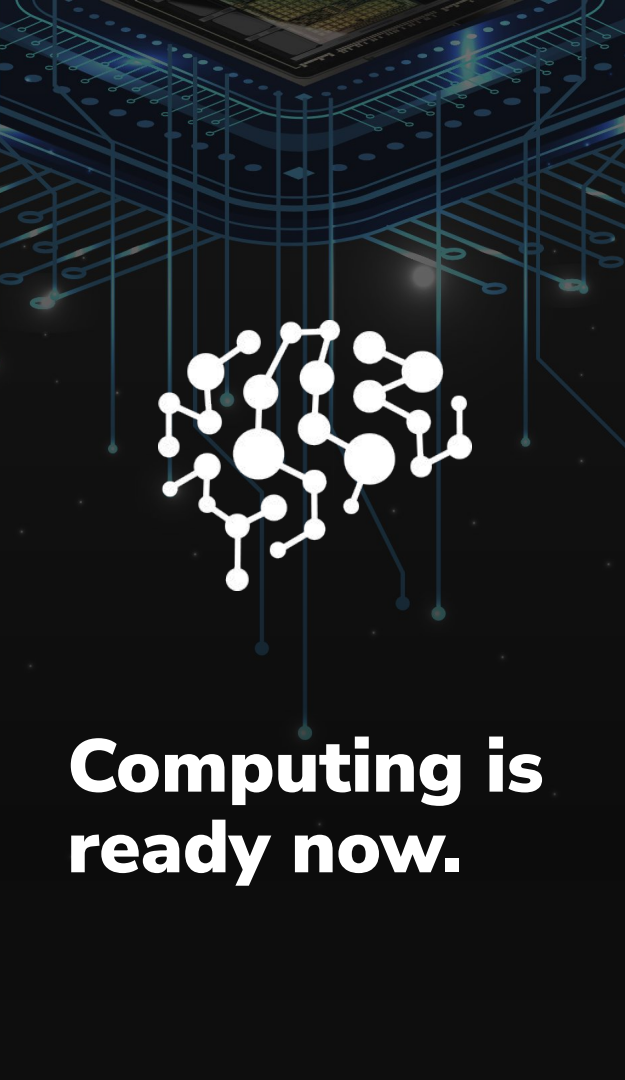
Computing is ready now.
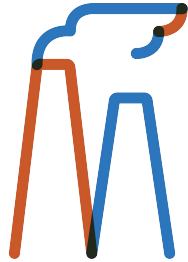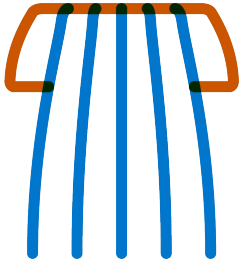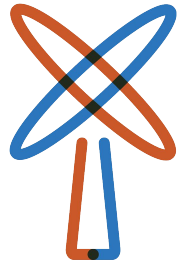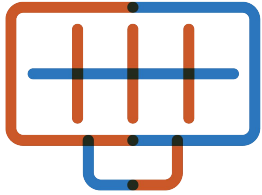
Excess energy from renewable sources

High Performance Computing

Company Overview

Soluna develops data centers co-located with renewable power plants, turning their wasted energy into sustainable computing resources.

Why Soluna

Power producers and computing partners choose Soluna because of our **four pillars of expertise**

Project Development

Energy Markets

Computing Technology

Project Finance
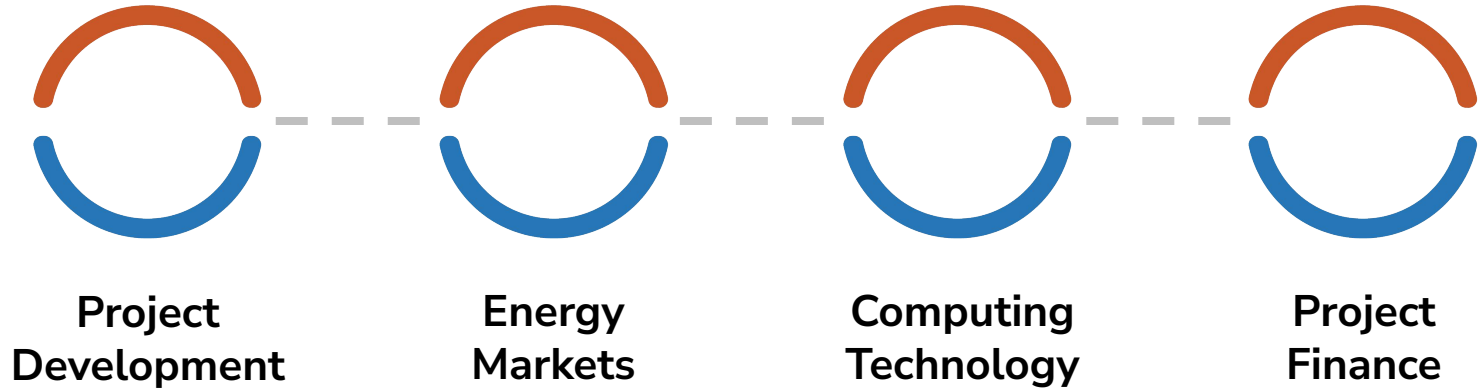
Unique Interconnection Strategy

Behind-the-Meter Structure Allows Our Modular Data Centers to Remain Flexible, Drawing Power from the Grid or Renewable Power Plant and Provide Ancillary Services
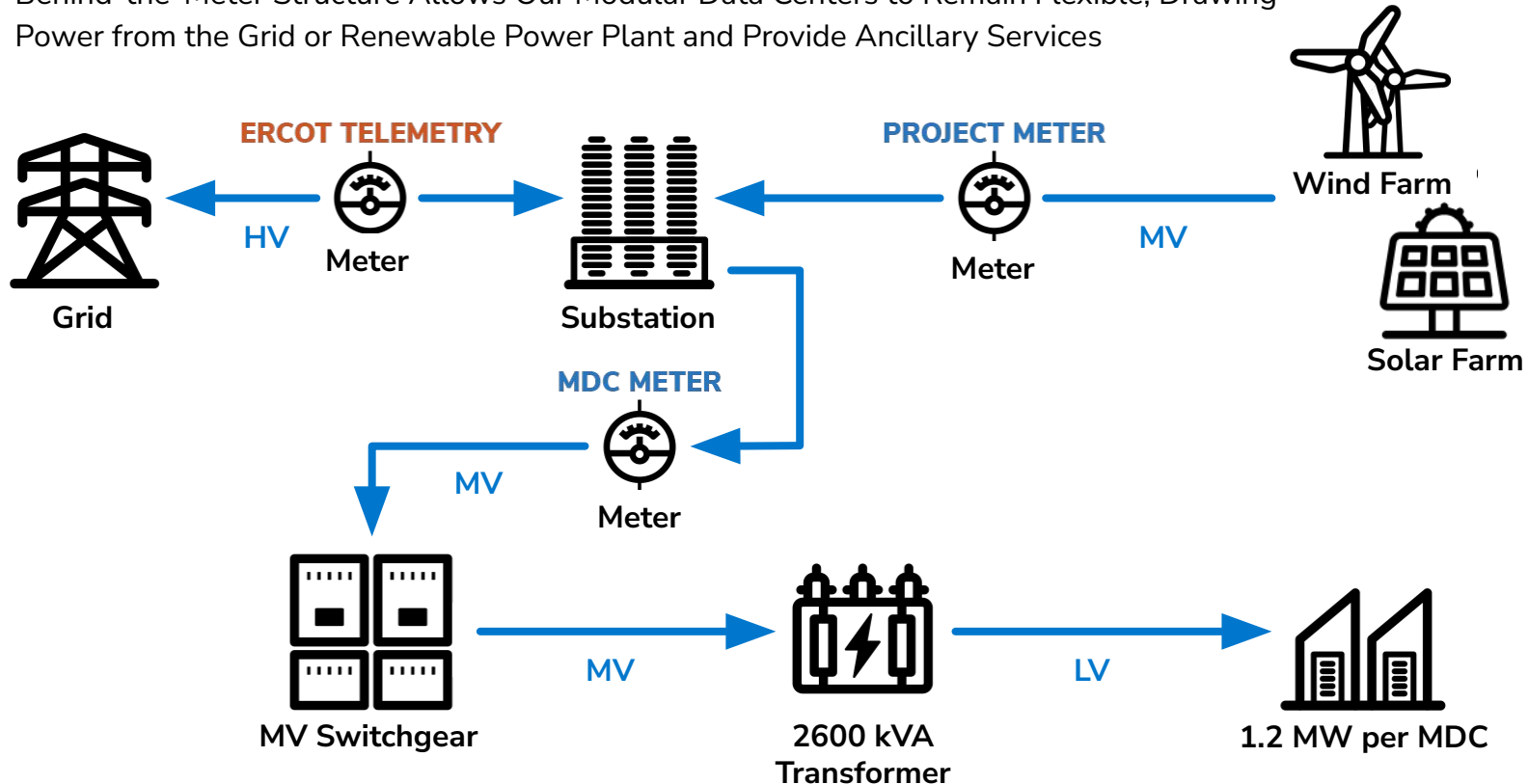
How We Source Power for Our Data Centers

CURTAILED ENERGY

Economic/Technical curtailment from negative LMP.

We purchase energy at a fixed price.

MDC*

SUBTRACTIVE ENERGY

Energy that would have gone to grid without the load.

We purchase energy at Project Settlement Point Price (SPP).

GRID ENERGY

Energy that is sourced from the grid in excess of plant production.

We purchase energy at Load Zone Settlement Point Price (SPP) + Load Ratio Share(LRS) charges.

* Soluna Modular Data Center.

How We're Solving the Wasted Energy Problem

We build data centers that consume curtailed renewable energy

150 MW Wind Farm

7%	18%	25%	19%	35%	40%
2016	2017	2018	2019	2020	2021

+ 50 MW Data Center

3%	8%	13%	8%	18%	23%
2016	2017	2018	2019	2020	2021

+150 MW Data Center

0%	0%	1%	1%	2%	1%
2016	2017	2018	2019	2020	2021
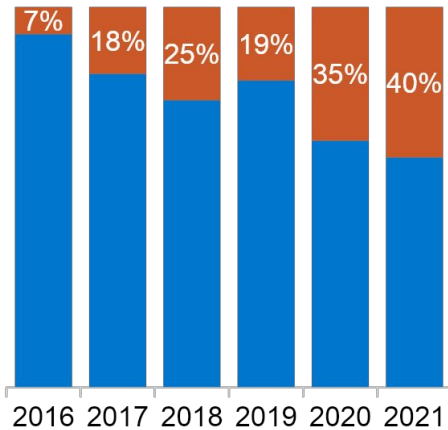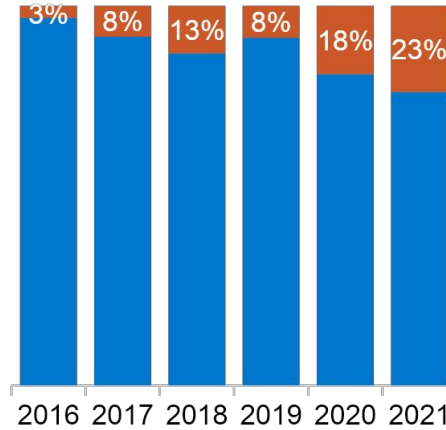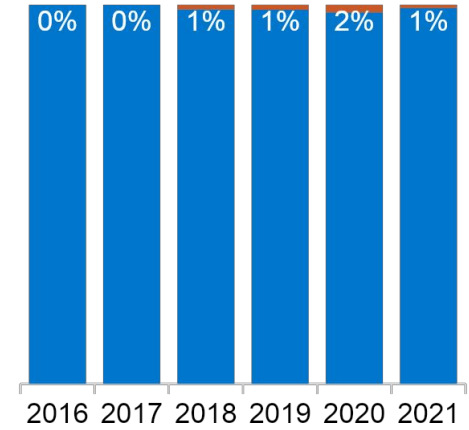
■ Metered Generation   ■ Curtailed Energy

Our Data Centers Are More Productive Batteries

Purpose-built to efficiently convert curtailed renewable energy into high performance computing.
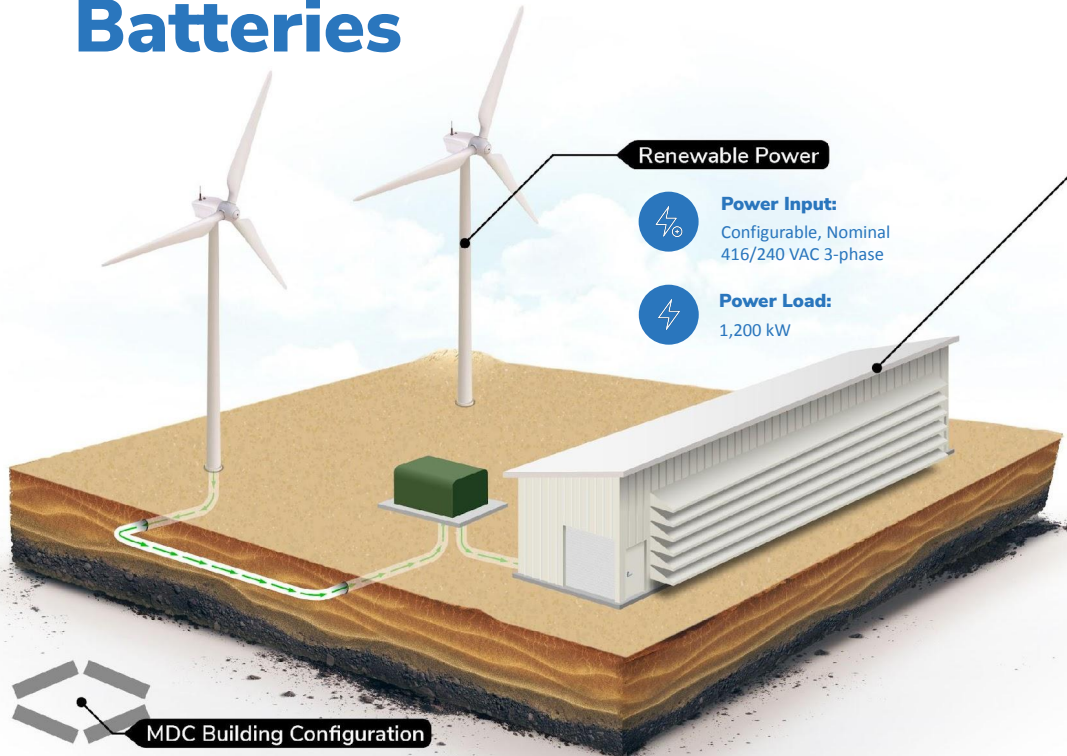
Renewable Power

Power Input:
Configurable, Nominal 416/240 VAC 3-phase

Power Load:
1,200 kW

Modular Data Center

Monitoring:
Full Remote Monitoring for Operations and Security

Diagnostics and Maintenance:
AI Driven Built-In-Test

Autonomous Operations:
Designed for operation and maintenance by technician level personnel

Processing:
GPU, FPGA, ASIC

Network Input:
10 Gig Ethernet, Wireless Backup

Emergency Shutdown Time:
2s

Boot Time:
90s

Variable Consumption:
1% - 100%

Graceful Shutdown Time:
15-90s (Depending on Processing Configuration)

Physical Dimensions:
70' x 12' x 14' pre-fabricated buildings

MDC Building Configuration

Maestro **OS** Is Our Force Multiplier

Control

Enhancing equipment lifespan and reducing failures through multiple redundancies.

Complete automation of fans, miners, PDUs, power infrastructure, and network.

Implementing robust and redundant computing systems at both the MDC and site levels to eliminate single points of failure.

Utilizes a cloud-based simulator for pre-deployment testing of software and algorithms.

Operations

Real-time tracking of miners, PDUs, networking equipment, and power infrastructure enables centralized site management and remote diagnostics.

Comprehensive diagnostic and alerting system empowers operators to swiftly detect issues and take immediate action.

Pinpoints the exact location of miners and equipment, facilitating the identification of anomalies quickly.

Power

Extensible architecture allows for quick adaptation of algorithms, facilitating seamless integration with various grid and behind-the-meter configurations.

Capable of accepting multiple grid and power stimuli to feed the algorithm.

Achieves 99% curtailment in less than 60 seconds.

Achieves full power restoration within 8 minutes.

Our data centers are 18% greener than typical data centers

Net Carbon Emissions
April 2022 – March 2023

Emissions (MT) /Year

180,000

160,000

140,000

120,000

100,000

162,228

-18%

132,834

ATC Hub West
(typical data center)

Project Dorothy
(Soluna data center)

Source: RESurety

19
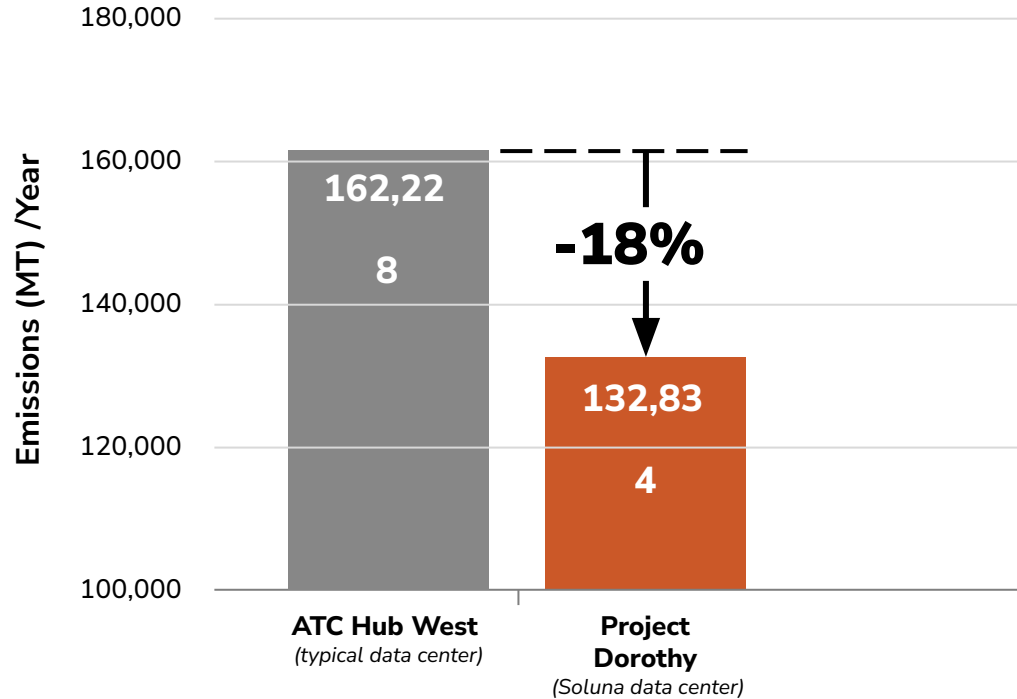
How Soluna Makes Money

Prop Bitcoin Mining

- **Soluna or JV owned Bitcoin mining machines**
- *Bitcoin sold daily*
- *Soluna provides Managed Infrastructure Services*

Grid Ancillary Services

- **Compensation to act as behind-the-meter flexible load for the grid**
- *Paid on $ / MWh basis by Utility or Grid Operator*

Hosting for Bitcoin Miners

- **Third-party machines hosted at Soluna Data Centers**
- *Soluna provides Managed Infrastructure Services*

High Performance Computing

- **GPU Cloud – AI/ML, simulation, visualization, predictive analytics, and deep learning**
- *GPU machines could be hosted or owned by Soluna at Projects*

Renewable Computing

Sustainable. Scalable. AI.

———

There is a growing demand for computing power that will account for **20% of global energy consumption by 2030.**

Generative AI | **Machine learning** | **Natural language processing** | **Scientific computing**

Renewable Energy has a wasted energy problem

AI needs more sustainable energy
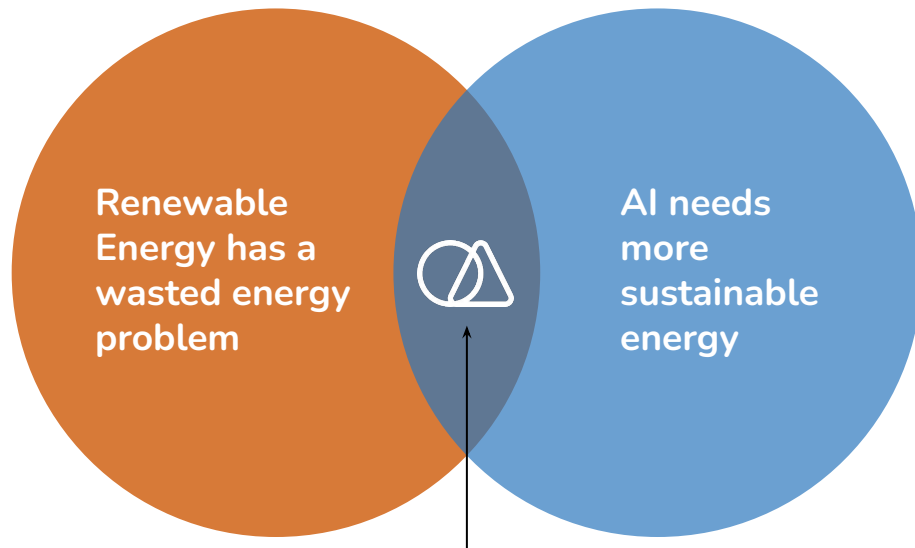
SOLUNA CLOUD™

Sustainable Infrastructure for Scalable AI

AI is the fastest growing technology today

Time it took for selected online services to reach one million users

COMPANY	LAUNCHED	TIME		1 YEAR		2 YEARS		3 YEARS
Netflix	1999							3.5 years
Kickstarter*	2009					2.5 years		
Airbnb**	2008					2.5 years		
Twitter	2006				2 years			
Foursquare**	2009		13 months					
*	2004		10 months					
Facebook	2008	7 months						
Dropbox	2008	5 months						
Spotify	2010	2.5 months						
Instagram**	2022	**5 days**						
ChatGPT								
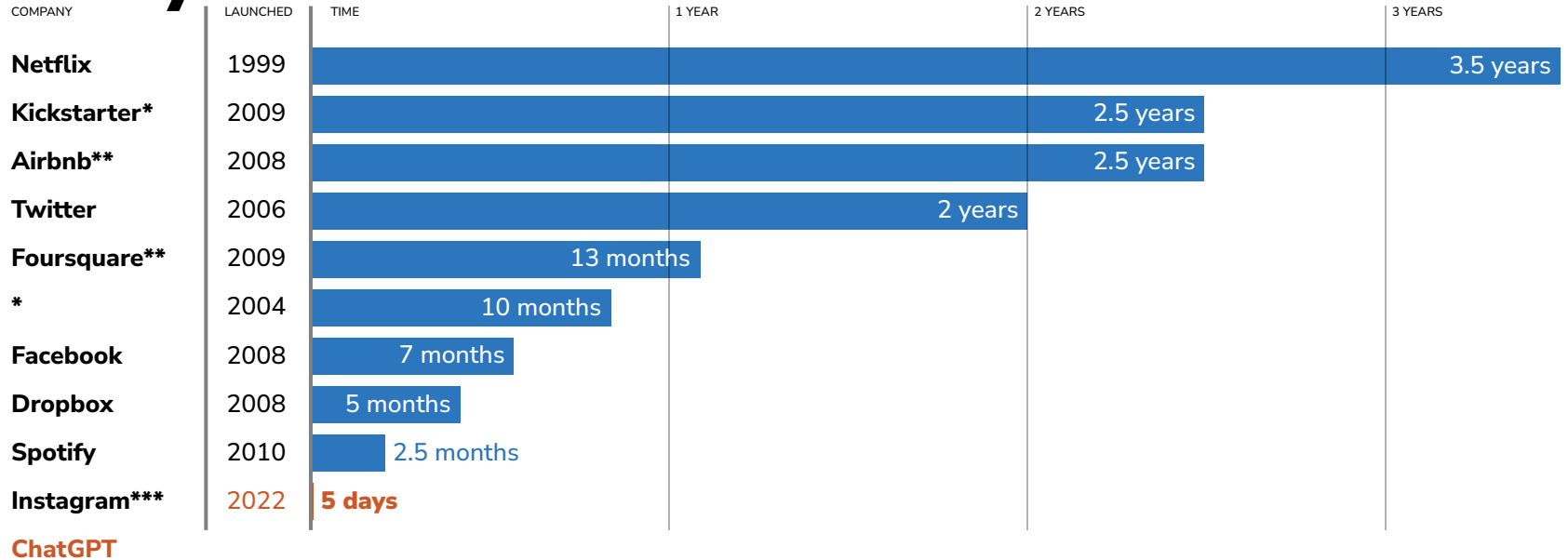
* one million backers: ** one million nights booked. *** one million downloads
Source: Company announcements via Business Insider/LinkedIn/Statista

AI's hidden challenges

AI is hungry

AI computing's energy density and space needs exceed current hyperscale data center capabilities. Energy demand for AI is projected to exceed the entire current data center levels. Some estimates put it at 20-30GW.
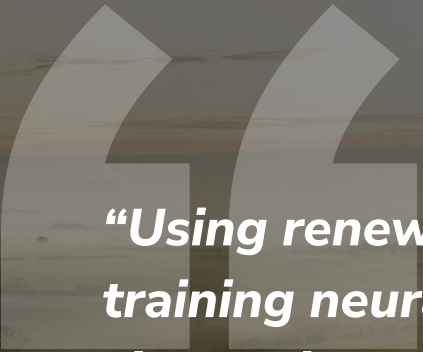
AI is thirsty

Traditional data centers, particularly those utilized for AI, exhibit substantial water consumption. Microsoft used an estimated equivalent of 2.8 Million glasses of water to train ChatGPT-3 due to the current cooling design of traditional data centers.

AI is dirty

Traditional data centers are responsible for 2% of overall U.S. greenhouse gas emissions. GPT-3, Gopher, BLOOM, and OPT had more than 900 tonnes of carbon emissions.

"Using renewable energy grids for training neural networks is the single biggest change that can be made. It can make emissions vary by a factor of 40, between a fully renewable grid and a full coal grid."

- Alexandra Luccioni, Hugging Face

The Lifecycle of AI

Gen AI is batchable: Parts of the Generative AI lifecycle are perfect computing applications for co-location with renewable power plants, because they are inherently batchable.

■ **Batchable process**

■ **Real-time process**

Training

A new model is created from scratch by learning from a large corpus of text. The phase requires the largest number of resources. For example, an iteration of OpenAI's GPT-3 was trained on 10,000 NVIDIA V100 GPUs for 15 days.

Fine Tuning

A pre-trained model is trained further on a smaller, task-specific dataset. This phase is where customers may take an off-the-shelf pre-trained model ad fine-tune it to their proprietary information.

Inferencing

Using a pre-trained model to generate predictions or outputs based on input data. This is 'using' the AI, such as when ChatGPT gives a response, or Stable Diffusion generates an image.

Soluna's AI Data Center Strategy

Soluna's Helix Data Centers are purpose-built for AI, with a unique access to power.

Soluna's behind-the-meter structure allows flexibility for its proprietary data centers - drawing power from the grid or serving as a renewable power plant and providing ancillary services.

This results in scalable, green, plug and play Helix Data Centers with industry-leading metrics.

Direct Liquid Cooling

Green Power

Plug & Play

Scalable

Zero Water
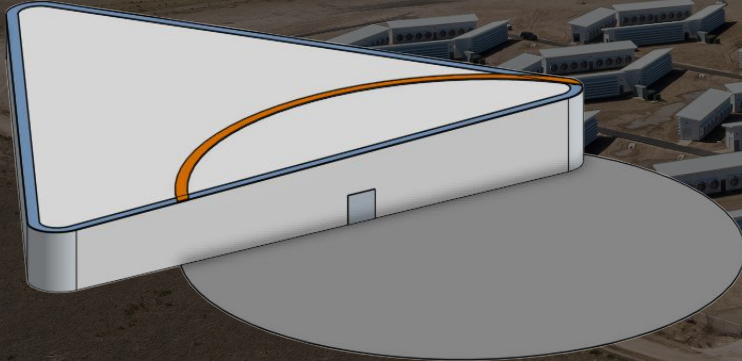
We have a massive pipeline of wasted renewable energy to power high performance computing.

Meet the Soluna Leadership Team

150 years of combined experience in starting, managing, and leading companies

John Belizaire
Chief Executive Officer

Michael Toporek
Executive Chairman

John Tunison
Chief Financial Officer

Dipul Patel
Chief Technology Officer

Mary O'Reilly
Chief People Officer

Jessica Thomas
Chief Accounting Officer

Phillip Ng
VP, Corporate
Development

Larbi Loudiyi
VP, Power

Dan Golding
Advisor

Operational Highlights

2024

Key Operating Metrics [1]

NASDAQ

SLNH / SLNHP

MW MANAGED

75 MW ▶ 291 MW [2]

INSTALLED HASHRATE

2.5 EH/s [1]

AVERAGE POWER COST*

<$29 / MWh [3]

CURTAILED ENERGY MONETIZED

43,203 MWh [4]

POWER USAGE EFFECTIVENESS (PUE)

1.01

BITCOIN MINERS DEPLOYED

~24,000 [1&5]

AVERAGE J / TH/s

~30 J / TH/s

(1) All numbers are as of March 31st, 2024
(2) Sophie (25 MW - operational) + Dorothy 1 (50MW - operational) + Dorothy 2 (50 MW – In Development) + Kati (166 MW – In Development)
(3) 3-month average (December 2023 - February 2024)
(4) Since inception of the Dorothy project.
(5) Includes a mix of Prop Miners and Hosted Miners.
*Levelized Cost of Energy - Calculates present value of the total cost of building and operating a power plant over an assumed lifetime.

Project Dorothy 1A

CAPACITY

25 MW

INSTALLED HASHRATE

949 PH/s

POWER USAGE EFFECTIVENESS

1.01

POWER SOURCE

Wind

CURTAILED ENERGY CONSUMED

19,601 MWh[2]

MODEL

Hosting

ENERGIZATION

Operational

AVERAGE 3-MONTH ANNUAL LCOE*

~$28 / MWh[1]

PARTNER

Spring Lane Capital

(1) 3-month average (December 2023 - February 2024)
(2) Since inception of the Dorothy 1A project.
*Levelized Cost of Energy - Calculates present value of the total cost of building and operating a power plant over an assumed lifetime.

31

Project Dorothy **1B**

CAPACITY
25 MW

INSTALLED HASHRATE
817 PH/s

POWER USAGE EFFECTIVENESS
1.01

POWER SOURCE
Wind

CURTAILED ENERGY CONSUMED
11,301 MWh[2]

MODEL
Prop Mining

ENERGIZATION
Operational

AVERAGE 3-MONTH ANNUAL LCOE*
~$28 / MWh[1]

PARTNER
Navitas Global

(1) 3-month average (December 2023 - February 2024)
(2) Since inception of the Dorothy 1A project.
*Levelized Cost of Energy - Calculates present value of the total cost of building and operating a power plant over an assumed lifetime.

Project Sophie

CAPACITY
25 MW

MODEL
Hosting

INSTALLED HASHRATE
778 PH/s

ENERGIZATION
Operational

POWER USAGE EFFECTIVENESS
1.02

AVERAGE 3-MONTH ANNUAL LCOE*
~$29 / MWh[1]

POWER SOURCE
Hydro/Gri d

PARTNER
None

(1) 3-month average (December 2023 - February 2024)
*Levelized Cost of Energy - Calculates present value of the total cost of building and operating a power plant over an assumed lifetime.

Project Pipeline

Project Dorothy 2

CAPACITY

50 MW

POWER SOURCE

Wind

PARTNER

TBD

MODEL

Hosting & AI

ENERGIZATION

Design & Planning

AVERAGE ANNUAL LCOE

~$27 / MWh

Project Kati

CAPACITY

166 MW

POWER SOURCE

Wind

PARTNER

TBD

MODEL

Hosting

ENERGIZATION

Development

AVERAGE ANNUAL LCOE

~$30 / MWh

We have a growing pipeline of   projects

Data Centers & Pipeline

25MW ▷
Sophie

Operating

100MW ▷
Dorothy

50MW Operating

166MW ▷
Kati

Design & Development*

2GW+ long-term pipeline with large IPPs and infrastructure funds in the US and beyond

Powered by

*Design – design and development activities with the IPP underway and submission to ERCOT LFL started.
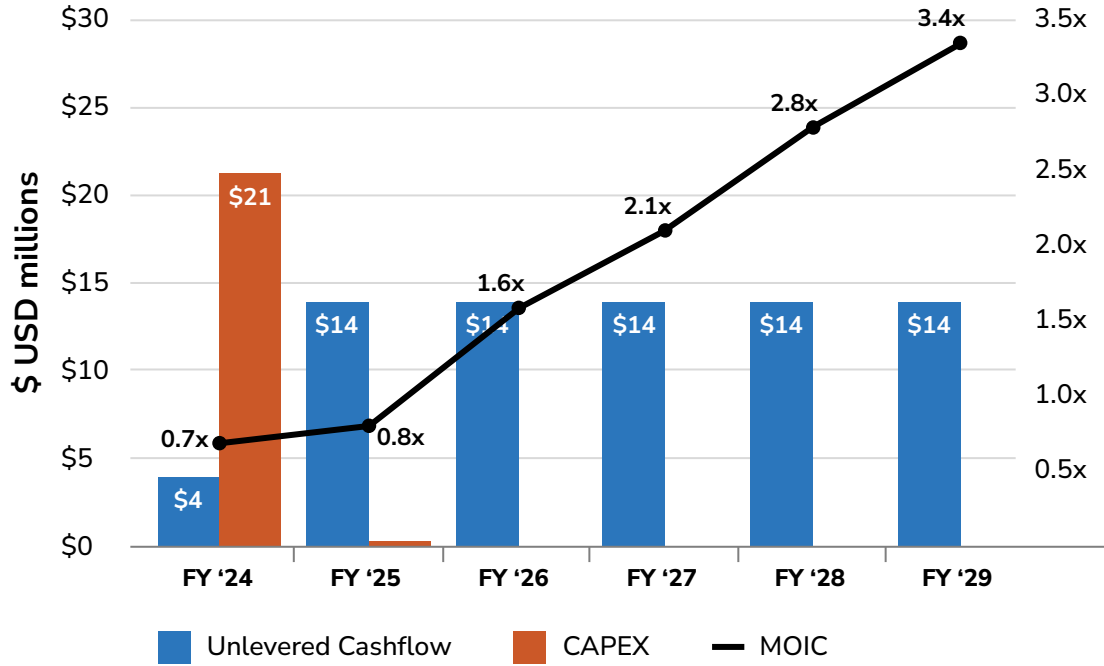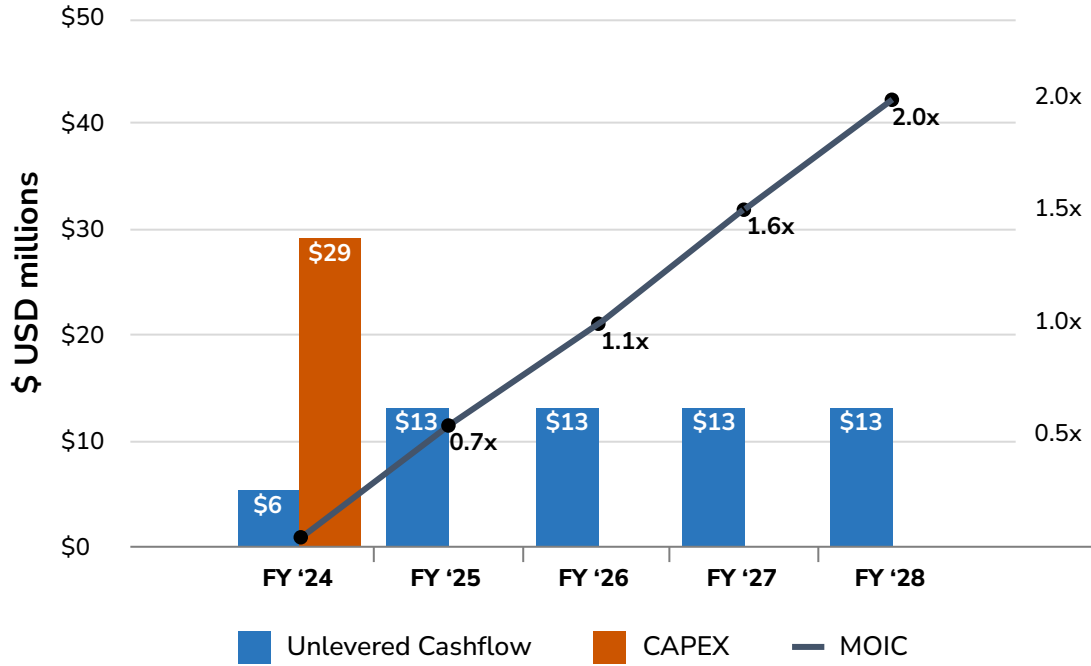
Financial
Results
2023

Data Center Economics | Bitcoin Hosting

Compute (MW)	48.0
Construction timeline	6 months – 50% complete 12 months – 100% Complete
Total Capex	$21.6mm
Run Rate EBITDA	$14.0mm
MOIC / IRR	3.4x / >45%
Payback (Months)	~27 Months

Chart — $ USD millions vs MOIC by fiscal year:

- FY '24: Unlevered Cashflow $4, CAPEX $21, MOIC 0.7x
- FY '25: Unlevered Cashflow $14, MOIC 0.8x
- FY '26: Unlevered Cashflow $14, MOIC 1.6x
- FY '27: Unlevered Cashflow $14, MOIC 2.1x
- FY '28: Unlevered Cashflow $14, MOIC 2.8x
- FY '29: Unlevered Cashflow $14, MOIC 3.4x

Legend: Unlevered Cashflow — CAPEX — MOIC

Data Center Economics | Generative AI

Compute (MW)	1.0
Construction timeline	6 months – 25% complete 9 months – 100% Complete
Total Capex	$29.5mm
Run Rate EBITDA	$13mm
MOIC / IRR	2x / >40%
Payback (Months)	~27 Months

Chart — $ USD millions (left axis) / MOIC multiple (right axis):

- FY '24: Unlevered Cashflow $6, CAPEX $29, MOIC 0.0x
- FY '25: Unlevered Cashflow $13, MOIC 0.7x
- FY '26: Unlevered Cashflow $13, MOIC 1.1x
- FY '27: Unlevered Cashflow $13, MOIC 1.6x
- FY '28: Unlevered Cashflow $13, MOIC 2.0x

Legend: Unlevered Cashflow — CAPEX — MOIC

Revenue Quarterly Trend **FY 2023**

(in 000's)

Includes Revenue % Change
Quarter over Quarter
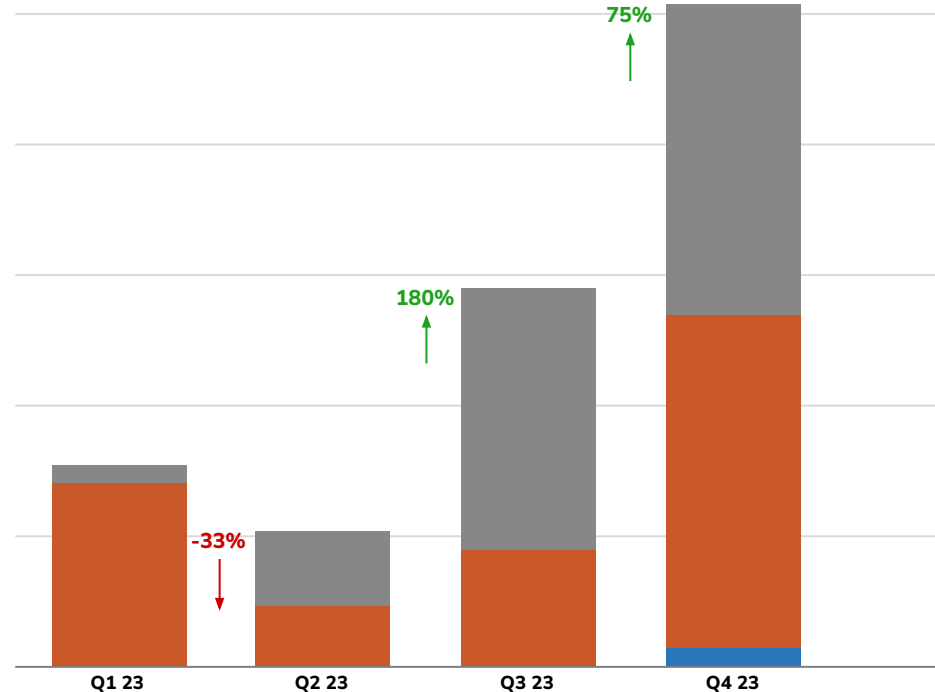
	Q1 23	Q2 23	Q3 23	Q4 23
Data Hosting Revenue	286	1,153	4,011	4,745
Cryptocurrency Mining Revenue	2,796	915	1,786	5,105
Ancillary Services Revenue	—	—	—	286
Grand Total	3,082	2,068	5,797	10,118

Gross Profit Quarterly Trend FY 2023
(in 000's)

Legend:
- Total Revenue
- Total Cost of Revenue
- Gross Profit

Chart data points (Gross Profit):
- Q1 23: (66)
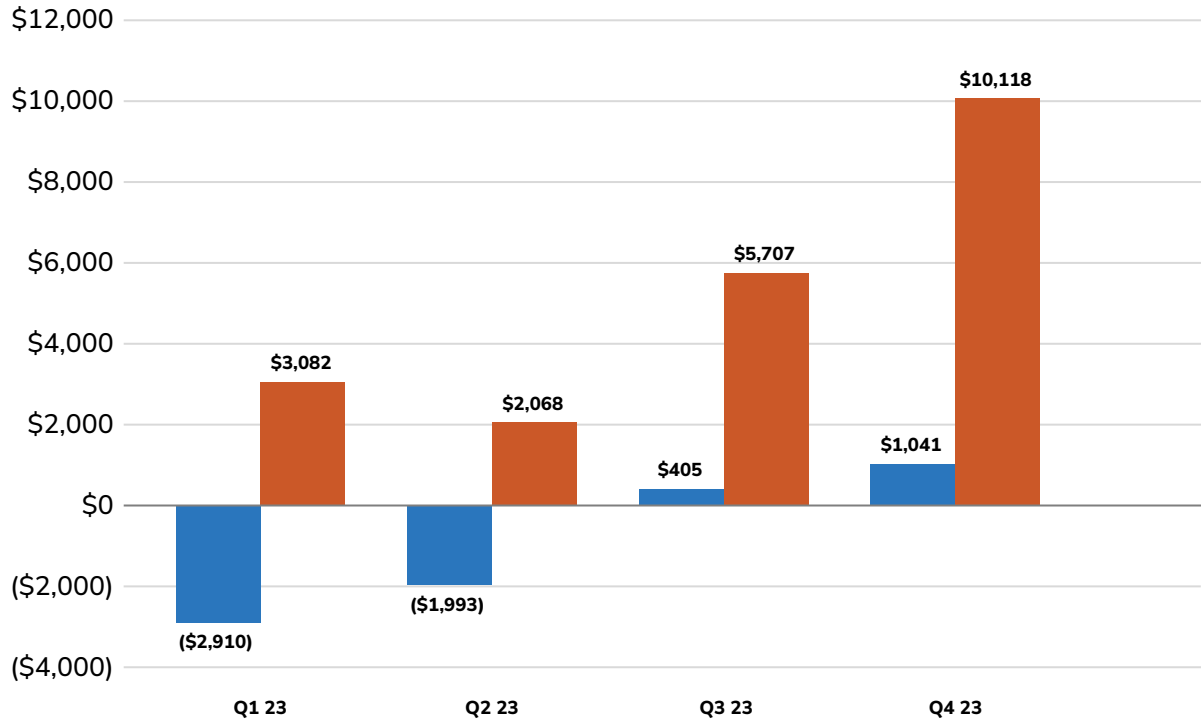- Q2 23: (389)
- Q3 23: 1,406
- Q4 23: 4,284
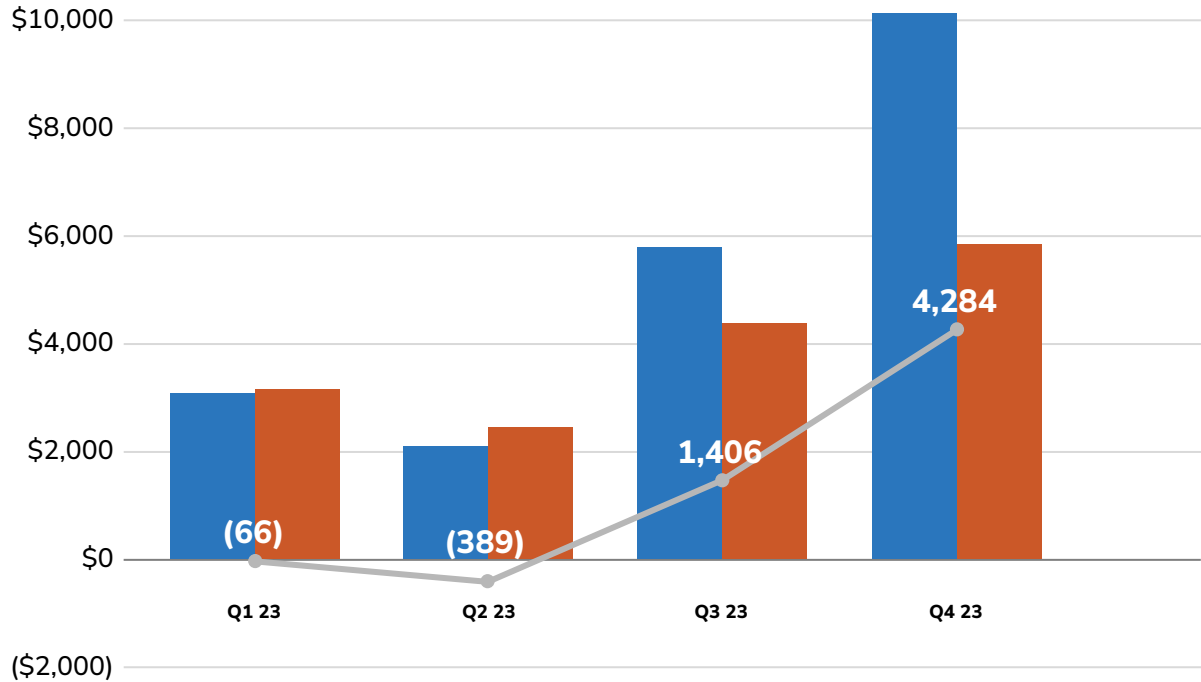
Certain prior quarter amounts have been reclassified for consistency in the current quarter presentation.

Adjusted EBITDA & Revenue FY 2023 by Quarter (in 000's)

Adjusted EBITDA

Revenue

Enterprise Value

$ mm, except share prices	12/31/2023	12/31/2022	$Chg
Stock Price	*$ 4.00*	*$ 6.50*	
x Basic Shares Outstanding	*2.546*	*0.789*	
Fully Diluted Common Equity Value	**$ 10.19**	**$ 5.13**	**$ 5.06**
(+) Series A Preferred Stock @ Market	$ 11.02	$ 4.90	
(+) Series B Preferred Stock @ Face	$ 6.25	$ 6.25	
Fully Diluted Equity Value incl. Preferred	**$ 27.46**	**$ 16.27**	**$ 11.18**
EV Adj.			
(-) Cash & Cash Equivalents	$ (9.40)	$ (1.82)	
(+) Total Debt	$ 19.54	$ 23.55	
Net Debt Adj.	**$ 10.15**	**$ 21.73**	**$ (11.59)**
Enterprise Value before Minority Interests (NCI)	**$ 37.60**	**$ 38.00**	**$ (0.40)**
(+) Minority Interests	**$ 26.85**	**$ 4.41**	**$ 22.44**
Enterprise Value	**$ 64.45**	**$ 42.41**	**$ 22.04**