INITIATION OF COVERAGE REPORT

TECHNOLOGY

Soluna Holdings, Inc.

SLNH: Initiating Coverage - Growing at the Intersection of Green and AI with Renewable Computing

February 11, 2025
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KEY POINTS

- **Soluna is on a mission to make renewable energy a global superpower using computing as a catalyst.** The company designs, develops, and operates digital infrastructure that transforms surplus renewable energy into global computing resources. Soluna's pioneering data centers are strategically co-located with wind, solar, or hydroelectric power plants to support high-performance computing applications, including Bitcoin mining, generative AI, and other compute-intensive applications. Maestro OS™, which is its proprietary software, helps energize a greener grid, while delivering cost-effective and sustainable computing solutions, and superior returns.

- **As all forms of renewable energy are growing faster than ever,** Soluna is at the intersection of AI computing needs and renewable energy—renewable computing. About 30-40% of produced renewable energy is unused.

- **Soluna has historically focused on Bitcoin mining, but it is now adding AI/HPC computing.** The company now has more than 2,600 MW of energy for data center projects in its pipeline. Soluna's addressable market, which is both substantial and growing, is currently ~$70 billion and is expected to grow at a 15-20% CAGR for the next decade to ~$250 billion.

- **As of October 2024, Soluna had ~478 MW of data center capacity across seven projects in operation, construction, or development,** up from 145 MW in October 2022, which is more than 3x growth. Construction of its flagship project, Dorothy 2, is underway as the foundations for the first 30 MW have been poured, with modular data center (MDC) fab and framing underway.

- **Soluna's revenue has been growing significantly Y/Y** as it ramped up new projects over the last four quarters, with Y/Y revenue growth of 142%, 307%, 368%, and 30%. The company is not yet profitable.

- **Soluna's comparables include crypto mining, power generation, and data center companies of similar sizes.** The comparables have a median P/S of 6.8x, with Soluna trading at a significant discount of 0.4x, which is a 95% discount.

- **CEO John Belizaire joined us for a fireside chat on February 10, 2025.** Click [here] to access. Those interested can find previous reports on [Soluna] on our website.

KEY STATISTICS

Ticker:Exchange	SLNH:NASDAQ
Current Price	$1.73
52-Week Range	$1.40-$8.80
Average Volume (30-Day)	507,342
Shares Outstanding (MM)	10.6
Market Cap ($MM)	$18.4
Fiscal Year-End	December

PRICE PERFORMANCE

SLNH   02/10/2025

## COMPANY OVERVIEW

Soluna is on a mission to make renewable energy a global superpower using computing as a catalyst. The company designs, develops, and operates digital infrastructure that transforms surplus renewable energy into global computing resources. Soluna's pioneering data centers are strategically co-located with wind, solar, or hydroelectric power plants to support high-performance computing applications, including Bitcoin mining, generative AI, and other compute-intensive applications. Maestro OS™, which is its proprietary software, helps energize a greener grid, while delivering cost-effective and sustainable computing solutions, and superior returns.

Figure 1. Soluna's Position
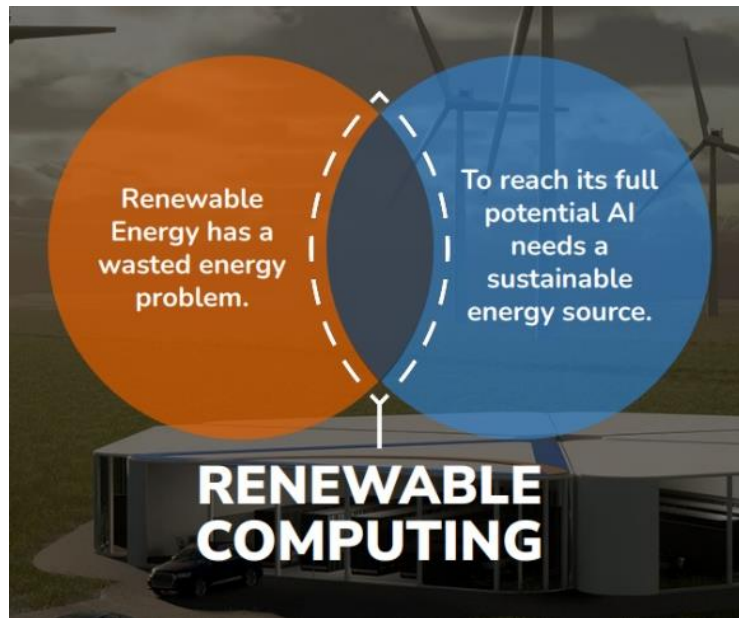
Source: Company Reports, Water Tower Research

Soluna is currently focused on growing its AI Cloud partnership with HPE, launching new AI data centers from its expanding pipeline, completing construction on Project Dorothy 2, designing its new data center (Helix), optimizing EBITDA of its projects, using project financing to grow, expanding its pipeline, and moving projects through to shovel readiness, capital formation, construction, and profitability.

How It Works

Soluna is able to source low-cost power for its data centers by bringing demand to where renewable electricity is generated but not fully utilized. The intermittent nature of renewables and congestion on the grid results in significant amounts of electricity from renewable projects being unsold or curtailed. Soluna can purchase that power at a low fixed cost and in turn help improve the economics for developers and support growth.

The company's data centers are designed and purpose-built to work with the intermittent nature of renewable power. The data centers are a series of small modular prefabricated buildings that can easily be installed and linked together and flexibly scale energy consumption, unlike typical 24/7 large-scale warehouse-like data centers. Moreover, they are laid out so they can use ambient air for cooling and heating, eliminating the cost and environmental impact of climate systems and water usage. The new AI data centers will integrate with these power plants as well and support the most demanding AI applications using the latest direct-liquid-cooling designs.

The Market

Soluna takes advantage of its low power costs to use its data centers to host computing for large customers. AI computing is driving data center usage up and Soluna is starting to build out to meet the demand. The company has historically focused on Bitcoin mining, but it is now adding AI/HPC computing. Soluna's addressable market, which is both substantial and growing, is currently ~$70 billion and is expected to grow at a 15-20% CAGR for the next decade to ~$250 billion.

The Problem Soluna Solves

Soluna provides a solution to the problem of the intermittent nature of renewable energy projects. By bringing demand to the source of generation (collocating renewable power with computing), the company's data centers can make renewable projects more attractive to developers (by buying curtailed power) as well as grid operators (by providing demand response), while at the same time supply much needed green energy powered computing capacity. As energy storage is not yet sufficiently scalable and transmission upgrades face too many challenges, renewable computing is what is needed.

The Soluna Way

Simply put, Soluna tackles wasted energy through digital infrastructure. As it optimizes the grid and serve its customers, it fuels its growth, funding further expansion to make renewable energy a superpower.

Figure 2. Soluna's Cycle
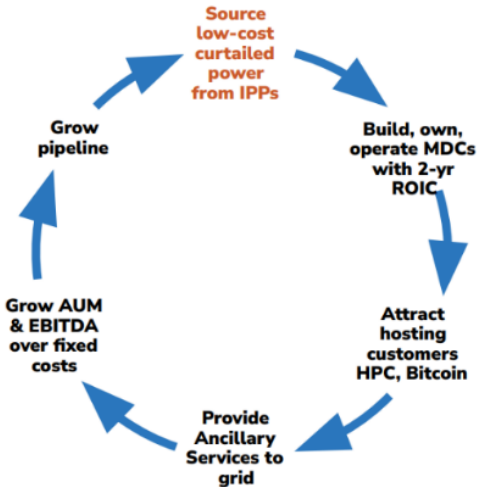
Source: Company Reports, Water Tower Research

Revenue Sources

Soluna has two revenue streams and operating companies: (1) Soluna Digital (prop and hosting of Bitcoin mining, and grid services); and (2) Soluna Cloud (high-performance computing / AI infrastructure).

Figure 3. Soluna's Business Segments

Source: Company Reports, Water Tower Research

ADDRESSABLE MARKET

Soluna's addressable market is both substantial and growing.

Current Size:

- **2023:** Valued at around $70.6 billion (according to Fortune Business Insights).
- **2024:** Estimated at $73.9 billion (according to Grand View Research).

Projected Growth:

- **CAGR:** Expected to grow at a significant rate, ranging from 15.6-19.4% per year depending on the source.
- **Forecast (2029):** Projected to reach $155.09 billion (Mordor Intelligence) or $272.2 billion by 2032 (SNS Insider).

Key Factors Driving Growth:

- **Increasing demand for data storage and processing:** Fueled by cloud computing, AI, IoT, and big data analytics.
- **Growing environmental concerns and regulations:** Pushing for more sustainable IT infrastructure.
- **Rising energy costs:** Making energy efficiency a critical factor for data center operators.
- **Corporate social responsibility (CSR) initiatives:** Many companies are seeking to improve their environmental footprint.

Figure 4. Soluna's Addressable Market ($ blns.)
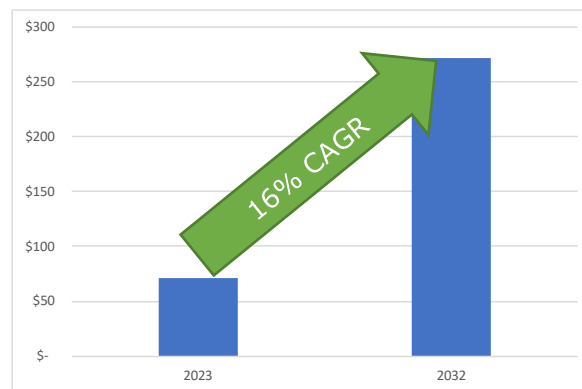
Sources: Water Tower Research, Fortune Business Insight, SNS Insider

OPERATIONS

Modular Data Centers

The company builds and operates MDCs located at the site of a renewable energy generation project. In contrast to typical data centers that use warehouse-like buildings with a large footprint, extensive cooling systems, and are geared for 24/7 operations, Soluna's MDCs are 100% green and wake up quickly based on demand. The Soluna MDC only needs to be up 95% of the time and is air-cooled so more of the power is available for computing. Additionally, it only needs limited bandwidth to perform all its functions, with a cost of 1/10 the price of mainstream data centers.

**Figure 5. Soluna Data Center Construction at Dorothy**

Source: Company Reports, Water Tower Research

Soluna's data centers are compact in their layout but are designed to have very efficient thermodynamics and can manage their climate with only ambient air. The buildings use low-speed fans and extended louvers for cooling, and the arrangement of the building in the shape of a diamond helps to optimize airflow and wind impact. Not only does this avoid the costs and environmental impact of typical climate systems or water, but it also allows for more power to be available for computing as very little needs to be diverted to climate systems.

The systems are purpose-built for batchable computing applications and are capable of shutting down in as little as 15-90 seconds (depending on the processor configurations) and booting up in 90 seconds. This is made possible by Soluna's proprietary data center operating system called Maestro OS™. The data center systems and electrical design are agnostic in terms of the type of processors used and can support multiple systems within the same building. The sites are remotely monitored by technician-level personnel who use a combination of AI-driven testing as well as on-site diagnostics and maintenance.

Figure 6. Server Racks Inside a Soluna Data Center (Bitcoin)
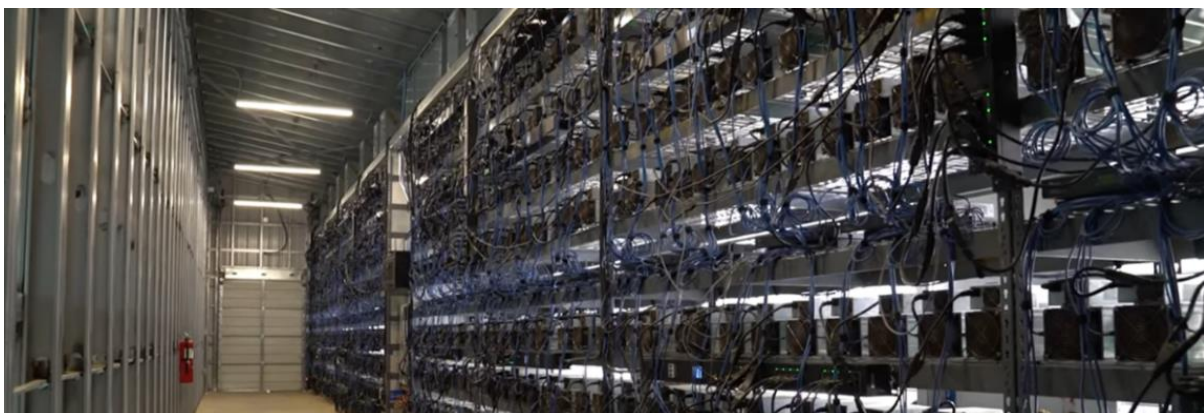
Source: Company Reports, Water Tower Research

Further, Soluna's projects benefit the local communities by creating several local jobs from construction and maintenance to technical management. The company also offers on-site training to employees.

Soluna has plans to expand its business into the fast-growing AI industry with a whole new data center design for generative AI training, tuning, and inferencing. This includes the development of an advanced data center design called Helix.

THE PROBLEM SOLUNA SOLVES

Overview of Electricity Generation and the Grid

Most people in the US and developed nations take for granted that electric power is available when they want and in whatever quantity they want—just put a plug into the outlet in the wall. However, behind the scenes, it's a very complex system with several moving parts.

Broadly, there are two types of electric power generation systems: (1) distributed generation (DG), where the power is generated and consumed on or very close to the site of generation; and (2) centralized power, which accounts for most of US electricity, whereby electricity is generated by large and efficient plants that are typically located away from where the electricity is consumed. To get power to consumers, it is sent out over a network of high-voltage transmission lines before the voltage is 'stepped down' and distributed to the end users. The network is referred to as "the grid".

Figure 7. Centralized Electricity Generation

Source: Institute for Energy Research, Water Tower Research

The grid needs to be balanced, meaning that the supply of electricity is matched with the demand for electricity; otherwise, localized or widespread blackouts can occur. Operators of the grid face the dual challenges of variable supply and constantly shifting demand. Demand from end users fluctuates throughout the day based on general living habits and also the weather. The amount of available electricity generated also varies. Plants are sometimes offline for maintenance, renewable power is a function of the elements, and there are challenges of transmitting power to demand centers as well as changing commodity prices that affect the price of available power.

Figure 8 shows a typical demand curve. Electricity demand ramps up as people start waking up and turning on lights. It then wanes as the sun provides more lighting and people go to work but then increases into the evening as people turn on lights, cook dinner, and watch TV, leading to a decline in demand as people go to sleep. Summer loads are typically higher than winter loads and the amount of total demand will also fluctuate based on the weather; during the hotter days, fans and air conditioners will drive 'peak demand'.

Figure 8. Electricity Demand Curves
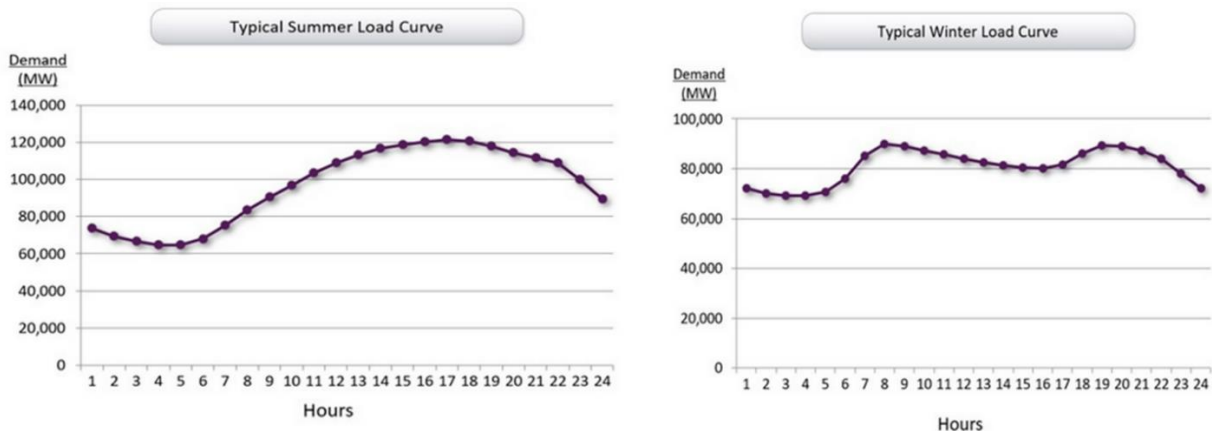
Source: Enerdynamics, Water Tower Research

Twenty years ago, electricity generation mainly consisted of 'baseload' large coal and nuclear plants as well as natural gas plants that could be ramped up and down with demand as it moved. By 2021, renewables (led by wind) accounted for 21% of US electricity generation and are forecast to reach 42% by 2050 according to the EIA 2021 Annual Energy Outlook.

Figure 9. US Electricity Generation by Source

U.S. electricity generation by major energy source, 1950-2021

billion kilowatthours

Legend: petroleum and other, renewables, nuclear, natural gas, coal

U.S. electricity generation from renewable energy sources, 1950-2021

billion kilowatthours

Legend: solar, wind, geothermal, biomass, hydroelectric
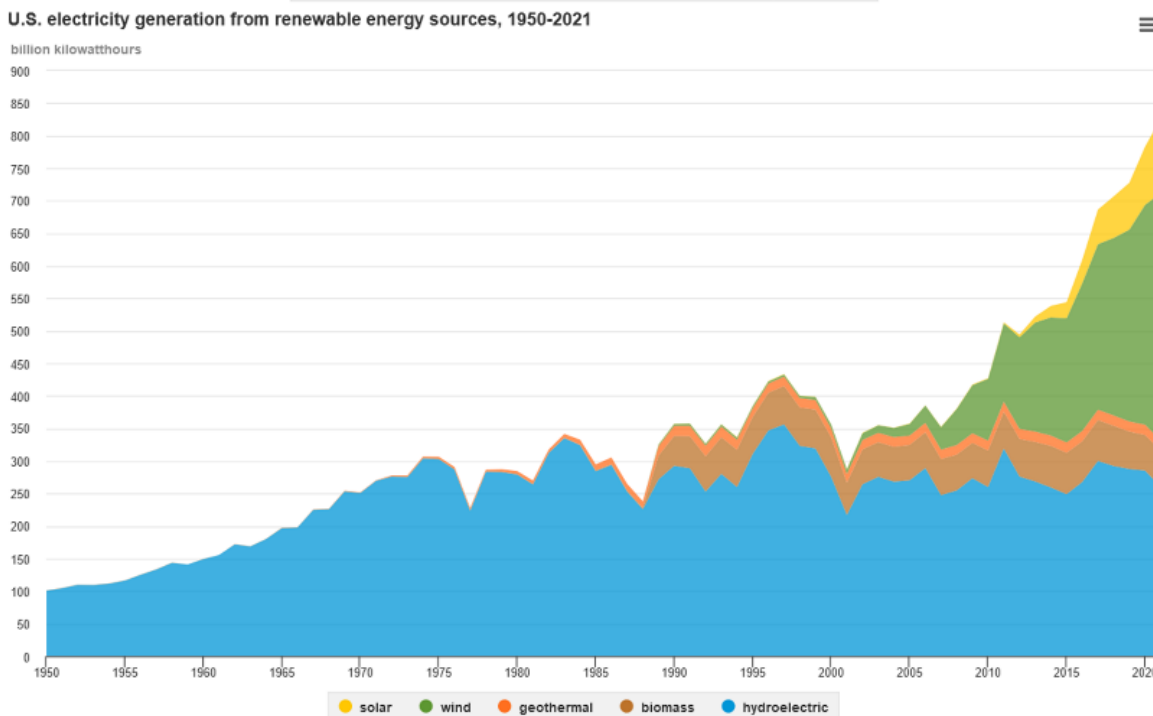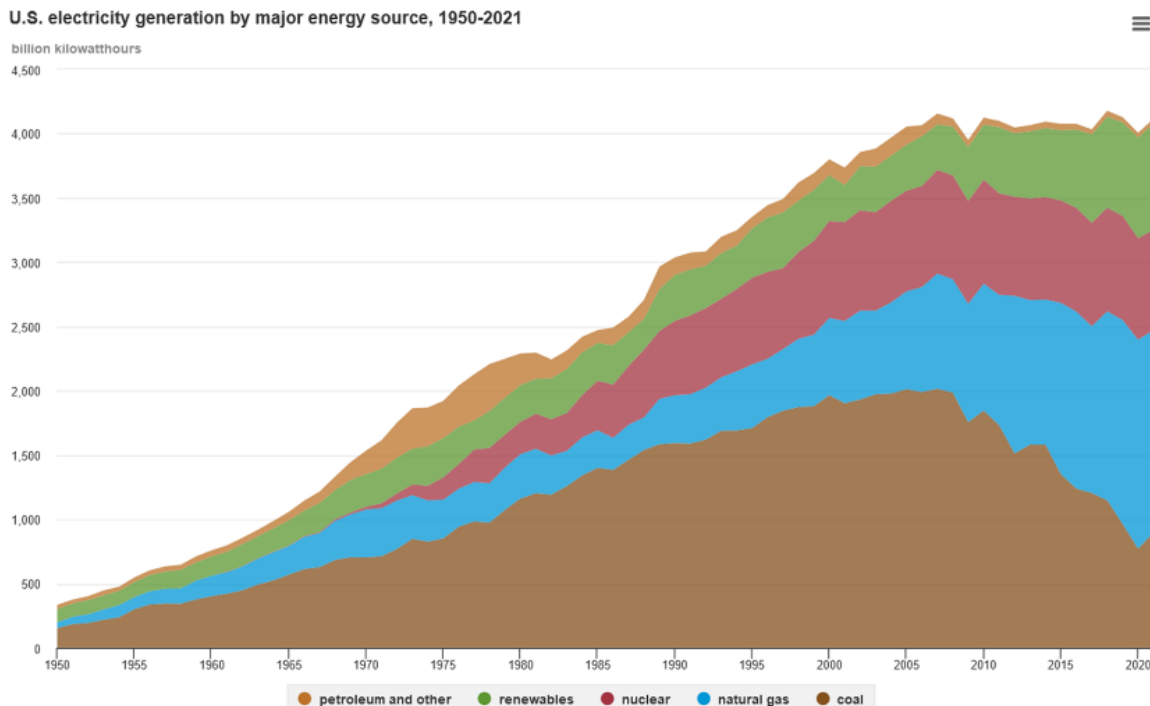
Source: Energy Information Agency, Water Tower Research

The challenge with renewables is that there is no control over when or how much the wind blows or the sun shines and they typically do not line up with times of peak demand. In Figure 10, we show that most wind energy is generated at night when demand for electricity is lowest, while peak solar generation occurs in the middle of the day when electricity demand dips.

Figure 10. Wind and Load

Source: ERCOT, Water Tower Research

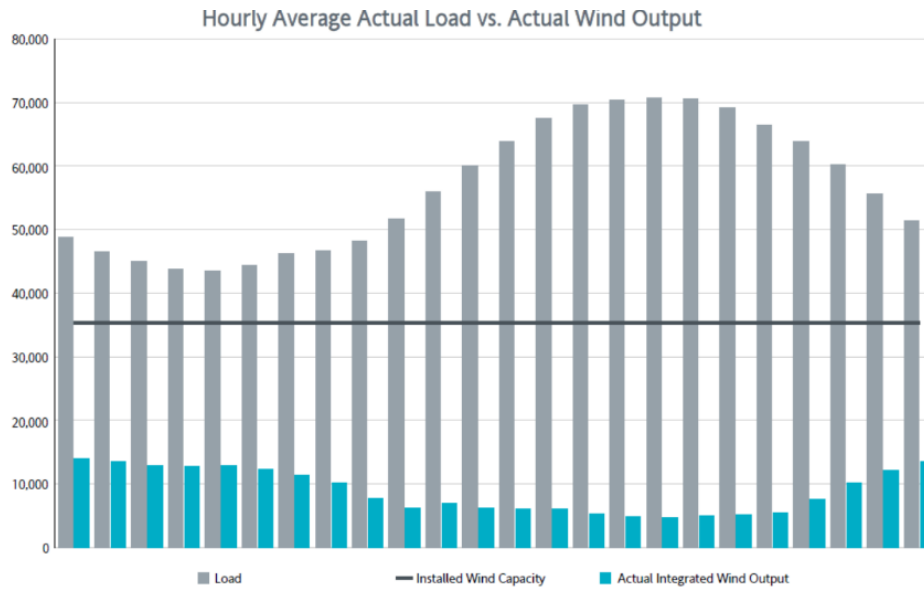Traditional energy power plants can reduce fuel inputs to lower the amount of power they generate but wind, solar, and hydro plants cannot. Further, as more renewable plants connect to the grid, the transmission network becomes congested (exacerbated at times of high generation), making it challenging for renewable power generated to reach the demand center. This causes renewable plants to 'curtail' or 'spill' the electricity that could be sold (and production tax credits earned). As more intermittent power generation joins the grid, this problem will likely grow. Using data from regional transmission organizations and independent system operators, Soluna estimates that at the end of 2021, there were 14.9 TWh of wind and solar generation curtailed, an increase from 7.9 TWh in 2017. Figure 11 shows the amount of curtailed power at a Texas wind farm between 2016 and 2020.

Figure 11. Curtailed Energy Production at a Wind Farm
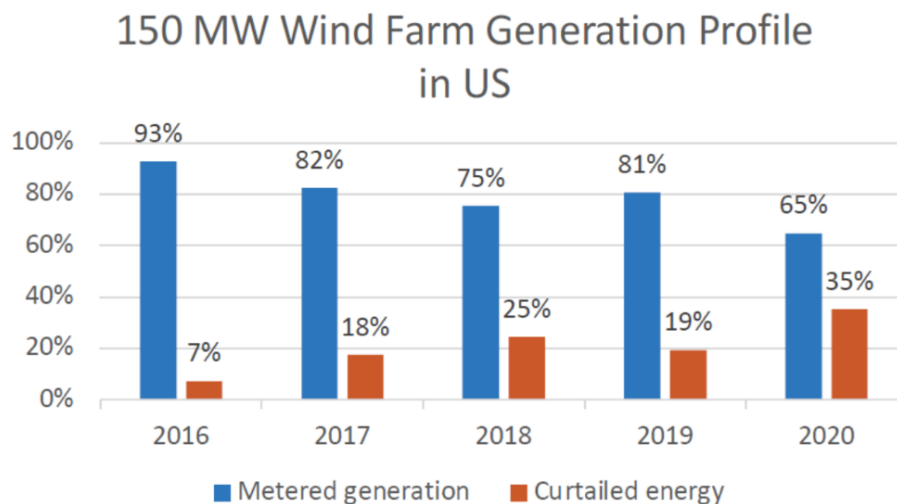
Source: Company Reports, Water Tower Research

Another challenge is that large-scale renewable projects are typically located away from demand centers. A good example is in Texas, where the best winds are in the western part of the state, but most demand is in the southeastern part of the state.

The Curtailment Problem

A solution to the curtailment problem is to add energy storage to intermittent projects or the grid, and upgrade and build new transmission capabilities.

Transmission

The challenges with adding transmission are time, cost, and permitting/land acquisitions rather than technology.

Figure 12. High Power Transmission Lines

Source: Transmission World, Water Tower Research

A standard industry cost metric is ~$1 million per mile of transmission, however, that number can be considerably higher depending on the terrain and labor availability. A transmission project can be derailed at many points in its decade-long timeframe from conception to completion. Failure to gain regulatory approval at the federal/state/local level, opposition from environmental groups and communities worried about their negative impacts, or the refusal of any landowner to cooperate are ever-present risks and have led to several high-profile project failures. A notable example of this is the Northern Pass transmission project that sought to build a 192-mile transmission line to bring renewable energy from Quebec into New Hampshire. Initially proposed in 2008, following years of local, state, and federal challenges, the utility trying to build the project abandoned it in mid-2019 after spending $318 million over the 10+ years.

With its green approach to power and computing, Soluna is able to provide compute as a lower electricity cost, a key component of the cost of computing today. For example, Soluna has secured some of the lowest energy costs in the Bitcoin mining industry as seen below.

Figure 13. Soluna's Electricity Cost vs. Peers
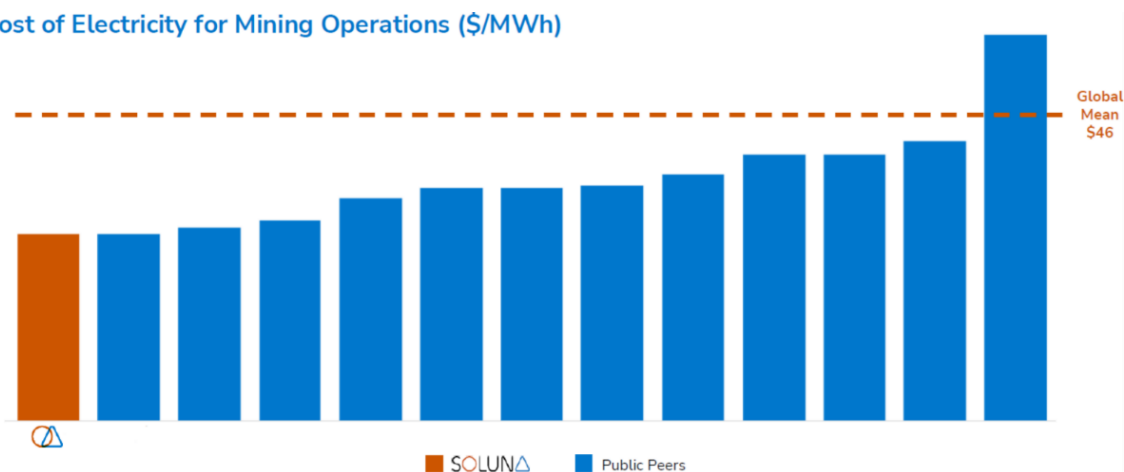
Source: Company Reports, Water Tower Research

DATA CENTER PROJECTS

Soluna has a growing pipeline of projects of 2.6+ GW with significant independent power producers (IPPs) and infrastructure funds.

Figure 14. Soluna's Project Pipeline

	PROJECTS	MW
Total Long-Term Pipeline	2,616	2,616
Total Curtailment Assessment Completed (YTD)	2,616	2,616
Active Term Sheet Negotiations	1,160	1,160
Shovel Ready, PPA, or Signed Term Sheets	403	403
Average Data Center Project Size	150	150
Total Power Partners	12	
Average Projects per Power Partner	2	
States	2	
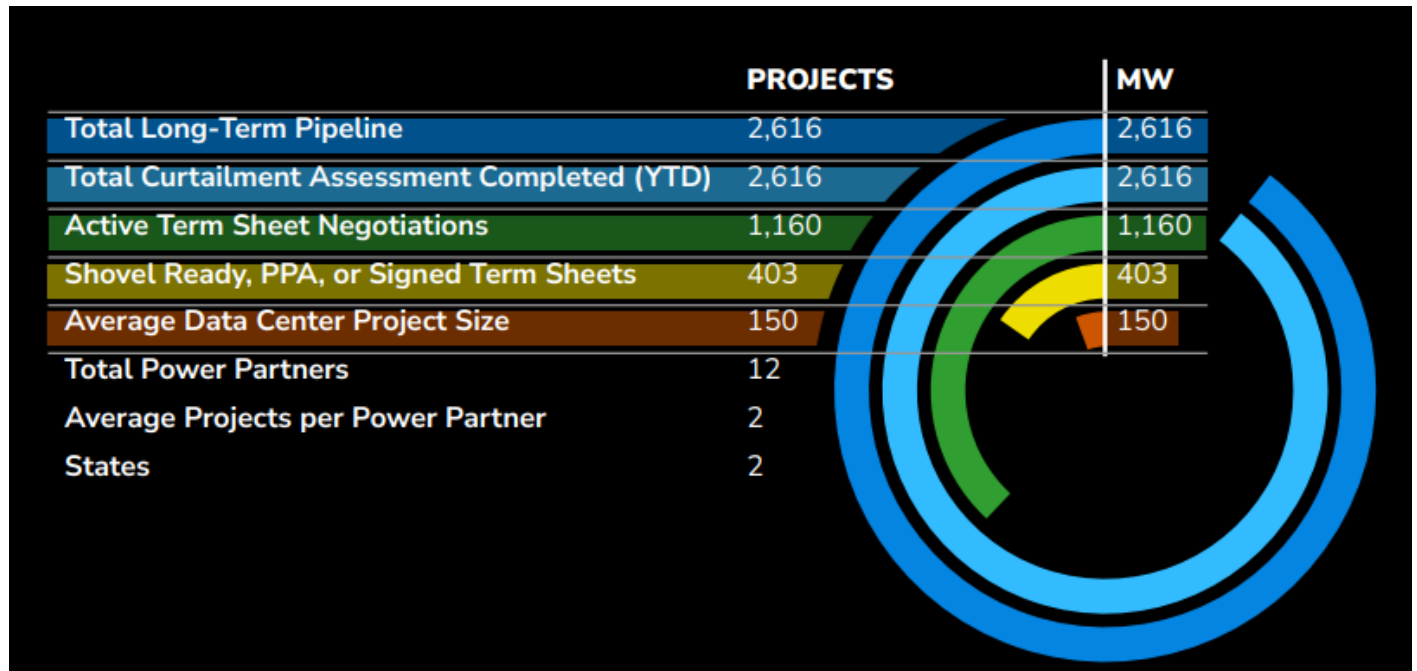
Source: Company Reports, Water Tower Research

Breaking Soluna's current pipeline into nine stages highlights the progression of the company's projects from planning through to operation.

Figure 15. Soluna's Project Pipeline in Stages

Stage #	Activity	MW
1	Curtailment Assessment	2,213
2	Term Sheet Signed	187
3	PPA & Land Lease	0
4	Engineering, Feasibility, & Reg Studies	166
5	ERCOT/iSO Planning Completed	0
6	Shovel Ready	0
7	Capital Formation & Customer Development	0
8	Construction	50
9	Energized/COD – Operating	75

Source: Company Reports, Water Tower Research

3Q24 Snapshot of Projects

As of October 2024, Soluna had ~478 MW of data center capacity across seven projects in operation, construction or development, up from 145 MW in October 2022, which is more than 3x growth. Construction of the company's flagship project, Dorothy 2, is underway as the foundations for the first 30 MW have been poured, with MDC fab and framing underway.

Figure 16. Data Center Projects

Project	Location	Power	MW	Model	Status	Partner
Dorothy 1A	TX	Wind	25	BTC Hosting	Operating	Spring Lane
Dorothy 1B	TX	Wind	25	BTC Mining	Operating	Navitas
Sophie	KY	Grid	25	BTC Hosting	Operating	N/A
Dorothy 2	TX	Wind	48	BTC Hosting	Construction	Spring Lane
Grace	TX	Wind	2	AI Hosting / Cloud	Development	TBD
Kati	TX	Wind	166	BTC Hosting / AI	Development	TBD
Rosa	TX	Wind	187	BTC Hosting / AI	Development	TBD

Source: Company Reports, Water Tower Research

The company provides a breakdown of profitability by project, allowing investors to track the progress of the company's plans in some detail. In 3Q24, Dorothy 1A was the most profitable (gross profit of $1.2 million) and Ada was still ramping up (cost of $2.9 million with no revenue as of yet).

Figure 17. Revenue & Cost of Revenue by Project Site (3Q24)

(Dollars in thousands)	Digital					Cloud	
	Project Dorothy 1B	Project Dorothy 1A	Project Sophie	Other	Digital Subtotal	Project Ada	Total
Cryptocurrency mining revenue	$ 2,811	$ -	$ -	$ -	$ 2,811	$ -	$ 2,811
Data hosting revenue	-	3,515	756	-	4,271	-	4,271
High-performance computing service revenue	-	-	-	-	-	-	-
Demand response services	-	-	-	443	443	-	443
Total revenue	2,811	3,515	756	443	7,525	-	7,525
Cost of cryptocurrency mining, exclusive of depreciation	1,963	-	-	-	1,963		1,963
Cost of data hosting revenue, exclusive of depreciation	-	2,025	521	9	2,555	-	2,555
Cost of high-performance computing services	-	-	-	-	-	2,859	2,859
Cost of revenue- depreciation	1,076	284	152	-	1,512	-	1,512
Total cost of revenue	$ 3,039	$ 2,309	$ 673	$ 9	$ 6,030	$ 2,859	$ 8,889
Gross Profit	$ (228)	$ 1,206	$ 83	$ 434	$ 1,495	$ (2,859)	$ (1,364)

Source: Company Reports, Water Tower Research

FINANCIALS

Historical Earnings Model

Soluna's revenue has been growing significantly Y/Y as it ramps up new projects over the last four quarters.

Figure 18. Soluna Income Statement Model

Soluna Holdings, Inc.	12/2021	03/2022	06/2022	09/2022	12/2022	03/2023	06/2023	09/2023	12/2023	03/2024	06/2024	09/2024
Sales	3,636	9,316	8,676	6,372	4,183	3,082	2,068	5,797	10,118	12,549	9,675	7,525
Sales Growth (YoY)					15%	-67%	-76%	-9%	142%	307%	368%	30%
Cost of Goods Sold (COGS) incl. D&A	3,838	8,859	10,109	11,188	6,350	3,138	4,837	6,769	8,212	8,018	7,968	11,293
COGS excluding D&A	569	2,112	4,609	2,800	1,135	81	1,830	3,138	4,272	4,031	3,999	7,360
Depreciation & Amortization Expense	3,269	6,747	5,500	8,388	5,215	3,057	3,007	3,631	3,940	3,987	3,969	3,933
Gross Income	-202	457	-1,433	-4,816	-2,167	-56	-2,769	-972	1,906	4,531	1,707	-3,768
SG&A Expense	2,990	7,255	7,249	8,064	6,141	6,747	4,136	2,723	4,171	3,994	5,382	5,248
Research & Development	0	0	0	0	0	0	0	0	0	0	0	0
Other SG&A	2,990	7,255	7,249	8,064	6,141	6,747	4,136	2,723	4,171	3,994	5,382	5,248
EBIT (Operating Income)	-3,192	-6,798	-8,682	-12,880	-8,308	-6,803	-6,905	-3,695	-2,265	537	-3,675	-9,016
Nonoperating Income - Net	-20	0	-1,618	-986	-1,463	-66	-237	-447	-1,172	22	-70	-6
Other Income (Expense)	-20	0	-1,618	-986	-1,463	-66	-237	-447	-1,172	22	-70	-6
Interest Expense	1,879	2,881	3,305	1,671	519	1,374	439	495	393	424	449	821
Gross Interest Expense	1,879	2,881	3,305	1,671	519	1,374	439	495	393	424	449	821
Unusual Expense - Net	0	0	750	41,153	17,349	-264	2,223	810	1,711	3,227	5,600	-1,203
Impairments	0	0	750	28,836	18,536	209	169	41	157	130	0	0
Excpl Chrgs - Others	0	0	0	12,317	-1,187	-473	2,054	769	1,554	3,097	5,600	-1,203
Pretax Income	-3,895	-9,679	-14,355	-56,690	-27,639	-7,979	-9,804	-5,447	-5,541	-3,092	-9,794	-8,640
Income Taxes	41	-547	-251	-547	-2	-547	-547	569	-543	-548	-649	-547
Consolidated Net Income	-3,936	-9,132	-14,104	-56,143	-27,637	-7,432	-9,257	-6,016	-4,998	-2,544	-9,145	-8,093
Minority Interest	0	0	0	-272	-108	-370	-482	646	1,704	2,710	1,728	-903
Net Income	-3,936	-9,132	-14,104	-55,871	-27,529	-7,062	-8,775	-6,662	-6,702	-5,254	-10,873	-7,190
Discontinued Operations	1,127	226	7,547	-21	170	0	0	0	0	0	0	0
Preferred Dividends	0	0	0	0	0	0	0	0	0	2,108	2,675	2,786
Net Income available to Common	-2,809	-8,906	-6,557	-55,892	-27,359	-7,062	-8,775	-6,662	-6,702	-7,362	-13,548	-9,976
Per Share												
EPS (recurring)	-5.11	-16.05	-10.73	-46.07	-23.16	-8.38	-6.41	-4.43	-2.20	-1.82	-2.11	-1.40
EPS (basic)	-5.11	-16.05	-11.67	-95.07	-41.64	-8.17	-7.79	-4.85	-2.67	-2.62	-2.97	-1.29
Basic Shares Outstanding (M)	0.55	0.55	0.56	0.59	0.66	0.86	1.13	1.37	2.51	2.81	4.56	7.74
Total Shares Outstanding (M)	0.55	0.52	0.52	0.62	0.75	1.02	1.19	1.45	2.51	2.84	5.23	7.65
EPS (diluted)	-5.11	-16.05	-11.67	-95.07	-41.64	-8.17	-7.79	-4.85	-2.67	-2.62	-2.97	-1.29
Diluted Shares Outstanding (M)	0.55	0.55	0.56	0.59	0.66	0.86	1.13	1.37	2.51	2.81	4.56	7.74
Total Shares Outstanding (M)	0.55	0.52	0.52	0.62	0.75	1.02	1.19	1.45	2.51	2.84	5.23	7.65
Earnings Persistence	41.36	39.60	43.68	59.77	63.90	56.13	55.75	65.19	72.50	69.84	78.34	77.83
EBITDA												
EBITDA	77	-51	-3,182	-4,492	-3,093	-3,746	-3,898	-64	1,675	4,524	294	-5,083
EBIT	-3,192	-6,798	-8,682	-12,880	-8,308	-6,803	-6,905	-3,695	-2,265	537	-3,675	-9,016
Depreciation & Amortization Expense	3,269	6,747	5,500	8,388	5,215	3,057	3,007	3,631	3,940	3,987	3,969	3,933

Source: FactSet (all figures in thousands of US dollars, except per share and labeled items)

VALUATION

A hallmark of our research at WTR is that we do not offer specific stock recommendations and/or stock price targets. Our purpose is to help educate our readers about a company and some of the factors that we believe can be relevant to their choices about when and if to invest in a particular issue. We do offer data about how the stock has been valued historically—typically, using conventional metrics—and sometimes we present data that juxtapose historical valuations among issuers that are believed to be comparable.

Soluna's comparables include crypto mining, power generation, and data center companies of similar sizes. The comparables have a median P/S of 6.8x, while Soluna is trading at a significant discount of 0.4x, which is a 95% discount.

Figure 19. Soluna Comp Table

Ticker	Company	Stock Price	Market Cap (mn)	Enterprise Value (mn)	Price-to-Sales	Avg Vol (3m)	52 Wk Low	52 Wk High	% of 52 Wk Range
ANY-US	Sphere 3D Corp.	$0.77	$19	$52	0.8x	415,583	$0.67	$2.73	5%
APLD-US	Applied Digital Corporation	$7.79	$1,736	$886	7.7x	18,269,610	$2.36	$11.25	61%
BTBT-US	Bit Digital, Inc.	$3.09	$474	$321	4.7x	14,942,730	$1.76	$5.74	33%
BTCM-US	BIT Mining Limited Sponsored ADR Class A	$2.38	$26	$49	0.6x	91,148	$1.79	$4.88	19%
BTCS-US	BTCS, Inc.	$2.69	$51	-$1	21.6x	589,780	$0.95	$5.41	39%
BTOG-US	Bit Origin Limited	$0.45	$4	$18	0.8x	152,284	$0.40	$6.39	1%
CIFR-US	Cipher Mining Inc	$5.97	$2,076	$945	13.0x	10,873,490	$2.61	$7.99	62%
CLSK-US	Cleanspark, Inc.	$11.33	$3,182	$1,536	7.1x	57,650,230	$8.04	$24.72	20%
DLR-US	Digital Realty Trust, Inc.	$168.07	$55,751	$61,862	10.3x	1,054,351	$131.42	$198.00	55%
CORZ-US	Core Scientific Inc	$12.56	$3,507		6.6x	7,553,408	$2.61	$18.63	62%
GREE-US	Greenidge Generation Holdings Inc. Class A	$1.14	$13	$100	0.2x	393,698	$1.09	$5.45	1%
HUT-CA	Hut 8 Corp.	$29.81	$2,793	$1,199	12.5x	1,321,177	$9.15	$45.20	57%
LMFA-US	LM Funding America Inc	$1.92	$10	$2	0.4x	17,608	$1.75	$6.11	4%
MIGI-US	Mawson Infrastructure Group Inc	$0.72	$13	$69	0.2x	273,641	$0.62	$2.96	4%
RIOT-US	Riot Platforms, Inc.	$11.64	$4,003	$1,821	10.6x	35,000,580	$6.36	$18.36	44%
WULF-US	TeraWulf Inc.	$5.03	$1,941	$581	15.0x	38,174,100	$1.57	$9.30	45%
	median		$1,105	$321	6.8x	1,187,764	$1.78	$7.19	36%
SLNH-US	Soluna Holdings, Inc.	$1.83	$19	$43	0.4x	878,096	$1.40	$8.80	6%
	premium (discount)				-95%				

Source: FactSet

COMPETITION

There are several players involved with crypto mining operations, ranging from individuals using one or more systems to industrial-scale mining farms with thousands of systems. The mining business is global and not dominated by any particular individual or organization. Soluna believes Riot Platforms, Inc. Core Scientific, Inc. ,Cipher Mining Inc. ,Hut 8 Mining Corp., Hive Blockchain Technologies Ltd., Bitfarms, Ltd., Cleanspark, Inc., Iris Energy Limited Bit Digital, Inc., TeraWulf Inc., and Greenidge Generation Holdings Inc. are its closest crypto mining competitors.

RISKS

Prices of cryptocurrencies are extremely volatile and can result in lower-than-expected revenues when the mined cryptocurrencies are converted into dollars.

The cryptocurrency mining industry is very competitive and Soluna may have difficulty keeping pace with technological developments in the industry and could face difficulty in obtaining new equipment.

Regulatory changes or actions may have a material impact on the company's operations and adversely affect the profitability of mining cryptocurrencies.

As the company transitions into an AI cloud service provider, its business may be affected by the current severe shortage of advanced semiconductors needed for processing of AI-related large language models.

MANAGEMENT

Figure 20. Soluna Leadership

| John Belizaire | Michael Toporek | John Tunison | Dipul Patel | Mary O'Reilly |
| Chief Executive Officer | Executive Chairman | Chief Financial Officer | Chief Technology Officer | Chief People Officer |

Source: FactSet

John Belizaire has served as a member of the Board and as Chief Executive Officer of Soluna Computing since October 2021. Prior to joining Soluna, Mr. Belizaire was the founder and CEO of FirstBest, a transformative insurance software company acquired by Guidewire Software, and Theory Center, an e-commerce software company acquired by BEA Systems. Before becoming an entrepreneur, he was the lead architect for Intel's Digital Enterprise Group. Mr. Belizaire has a B.S. in Computer Science and a Master of Engineering in Computer Science from Cornell University.

Michael Toporek has served as the Chief Executive Officer of Soluna Holdings since November 2020 and since 2003, has served as the Managing General Partner of Brookstone Partners. Prior to founding Brookstone Partners in 2003, Mr. Toporek was both an active principal investor and an investment banker. He began his career in Chemical Bank's Investment Banking Group, later joining Dillon, Read and Co., which became UBS Warburg Securities Ltd. during his tenure, and SG Cowen and Company. Mr. Toporek currently serves on the Board of Trustees of Harlem Academy and on the Board of Directors of Capstone Therapeutics Corp. Mr. Toporek has a B.A. in Economics and an M.B.A. from the University of Chicago in Finance/Accounting.

John Tunison has served as Chief Financial Officer since April 2024, joining Soluna from Verdant Specialty Solutions, an Open Gate Capital Portfolio Company where he was CFO. Tunison has held multiple leadership roles in energy and financing, including with Trussway, Velocys plc, Ascend Performance Materials, Univar, and Shell Oil Company. A former nuclear engineer and submarine officer with the US Navy, he also holds an M.B.A. in Finance from the University of Rhode Island and a bachelor's degree in political science from the U.S. Naval Academy.

Dipul Patel has served as the Chief Technology Officer of Soluna since 2018 having previously founded and sold Ecovent Systems, a climate control systems company. Earlier in his career, he worked at Lockheed Martin focusing on Ballistic Missile Defense programs and multiple advanced radar and electronic warfare systems. He received a B.S. from Drexel University, a master's in Electric Engineering from the University of Pennsylvania and an MBA from the Massachusetts Institute of Technology where he serves as an Entrepreneur in Residence and Lecturer.

Mary O'Reilly has served as Chief People Officer at Soluna Computing since September 2021. Mary has spent the last 20 years in operations and organizational development roles helping build startups and transform large media organizations. Prior to Soluna, Mary was the Chief Operating Officer of nonprofit Farm Sanctuary, and VP of Human Resources at Viacom, bringing the brands MTV, Vh1, TV Land and Comedy Central into the digital content landscape. Before Viacom, she helped build and scale several media and technology startups including Meadowlark Media, Dstillery, CBS Interactive, Alloy and Organic, Inc. Mary is an advisor to several startup organizations through SHINE People, the people & talent advisory collective she founded. She is also a volunteer at iMentor and The David Lynch Foundation, bringing meditation to veterans and at-risk populations. She is an early member of Chief, the private membership network focused on connecting and supporting women executive leaders. Mary holds a BA degree in Psychology from Antioch University.

ABOUT THE ANALYST

John Roy
Managing Director

Prior to Water Tower Research, John worked as a lead analyst at UBS, covering IT Hardware, Communications Equipment, and IT Services. During his 20 years covering technology stocks on the sell-side, he was also a lead analyst covering IT Hardware and Nanotechnology at Merrill Lynch; and Alternative Energy, Advanced Materials and Nanotechnology at W.R. Hambrecht, and at Janney Montgomery Scott. Before his sell-side equity research career, John was a lead software architect at J.P. Morgan, an AI sales engineer at Neuron Data, and a systems engineer and AI researcher at Hughes Aircraft.

John holds a Ph.D. in Computer Science from the University of California, Irvine, a MSEE degree from the University of Southern California, and a BSEE degree from the University of California, San Diego where he was a Regents Scholar.

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