

Fluence Energy (FLNC)

Buy
25 May 2022

[REDACTED] (Equity Research Committee)

[REDACTED] (Quantitative Research Committee)

[REDACTED] David Boateng (Sustainability Research Committee)

Sustainable Investment Group at UC San Diego



A Siemens and AES Company

Business Overview (ER)



Recommendation: Buy

Who is Fluence?

Business Description

- Battery storage manufacturer that creates storage solutions for high capacity energy needs using Lithium and scalable modular designs
- Delivered on 150 energy projects around the world constituting more than 4,000 MW of energy
- Currently in 30 international energy markets based in Asia, EMEA, and America
- Responsible for 20% of the renewable energy grid in Australia

Financial Overview

Share Price (5/5): \$8.76

52 Week Range: \$34.87– \$4.96

Market Capitalization: \$1.60 B

P/E: -15.75X

EV/Revenue: 0.51X

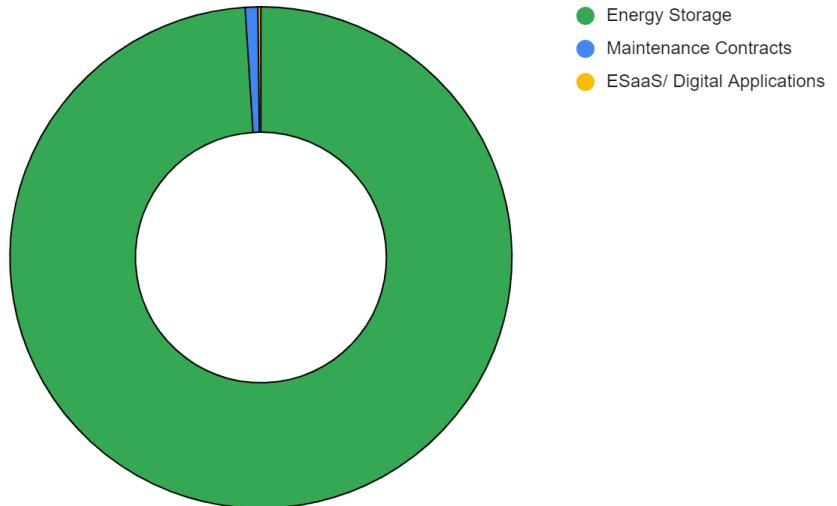
EBITDA: -\$125.3M

Revenue Breakdown

Business Segments

- Energy Storage Products
 - Gridstack
 - Sunstack
 - Edgestack
- Operational Services
 - Guided Service
 - Shared Service
 - Complete Service
 - Asset Management
- Digital Applications
 - Fluence IQ

Breakdown



Product Portfolio

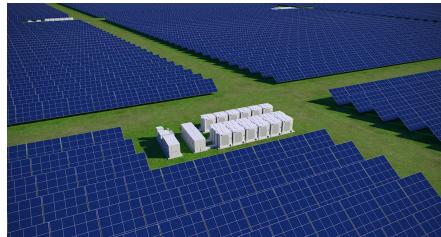
Fluence Gridstack

- Utility grade energy storage system for grid-scale applications.



Fluence Sunstack

- Co-located solar capture & energy storage system for renewable energy developers.



Fluence Edgestack

- Energy storage system for commercial and industrial customers to reduce overall energy load and demand.



Recent Developments

Strategic Partnerships

- May 5, 2022: Fluence was selected to be Taiwan's public power company's energy storage solution for one of the country's largest energy storage projects.
- April 21, 2022: Fluence partnered with Centrica to be the energy storage solution for Google's Data Center in Belgium to serve as a proof of concept for replacing diesel generators at other Google Data centers.

Expansion through Acquisition

- April 11, 2022: Fluence announced an agreement to acquire Nispera, who's advanced technology helps customers monitor, analyze, forecast, and optimize the performance and value of renewable energy assets.





Industry Overview: Energy Storage

Industry Features

- Business models
 - Production
 - Transmission & Distribution
 - Trading
 - Consumption
 - Revenue streams (Cost Avoidance, Investment Deferral, Price Arbitrage)
- Battery Chemistries
 - Lithium-ion
 - Common metals (i.e. nickel)
 - Flow
 - Alternatives (thermal, lead, sodium)
- Regulatory Limitations
 - Lack of standardization
 - Outdated regulatory policy and market design
 - Perception of high prices

Industry Trends

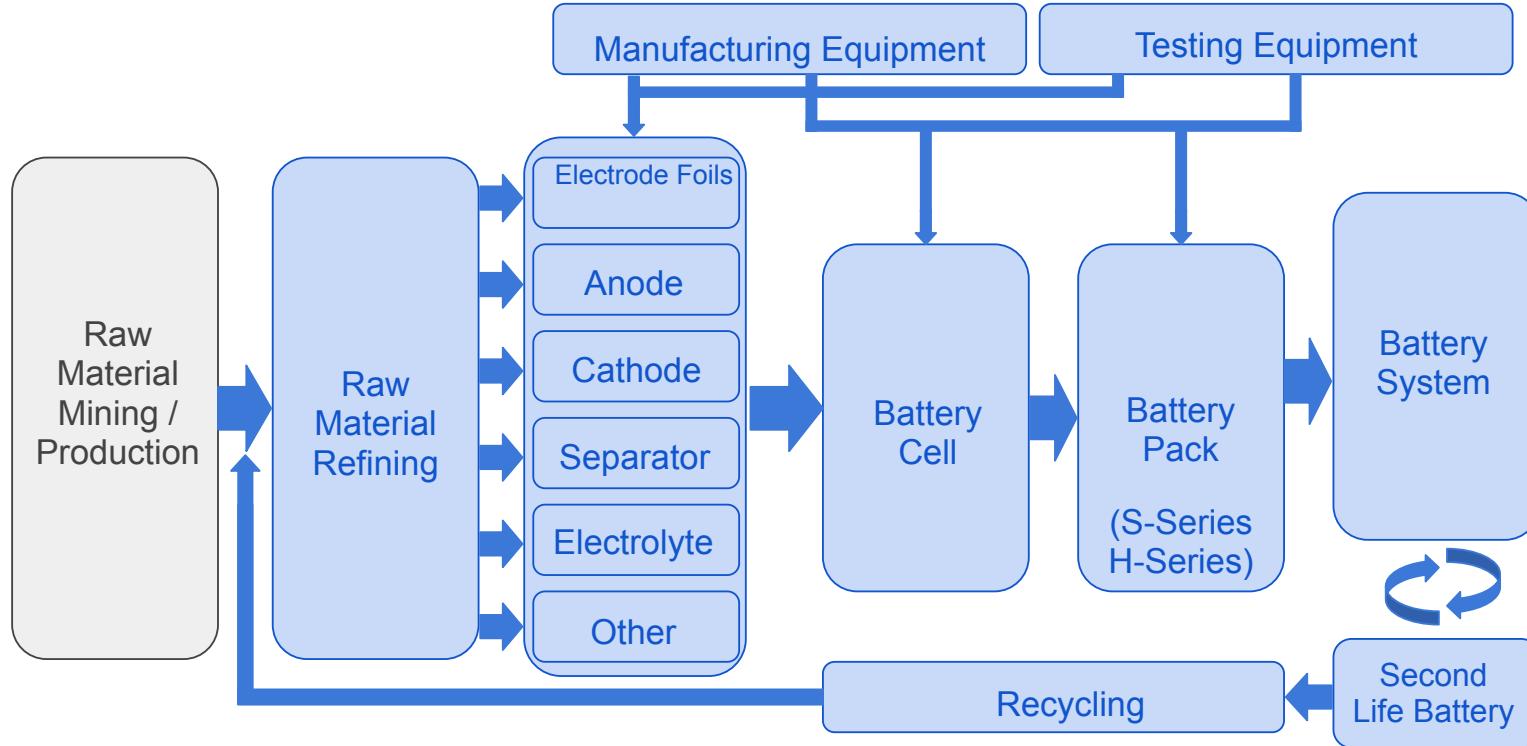
2029 Total Addressable Market: \$31B

CAGR: 28.7%

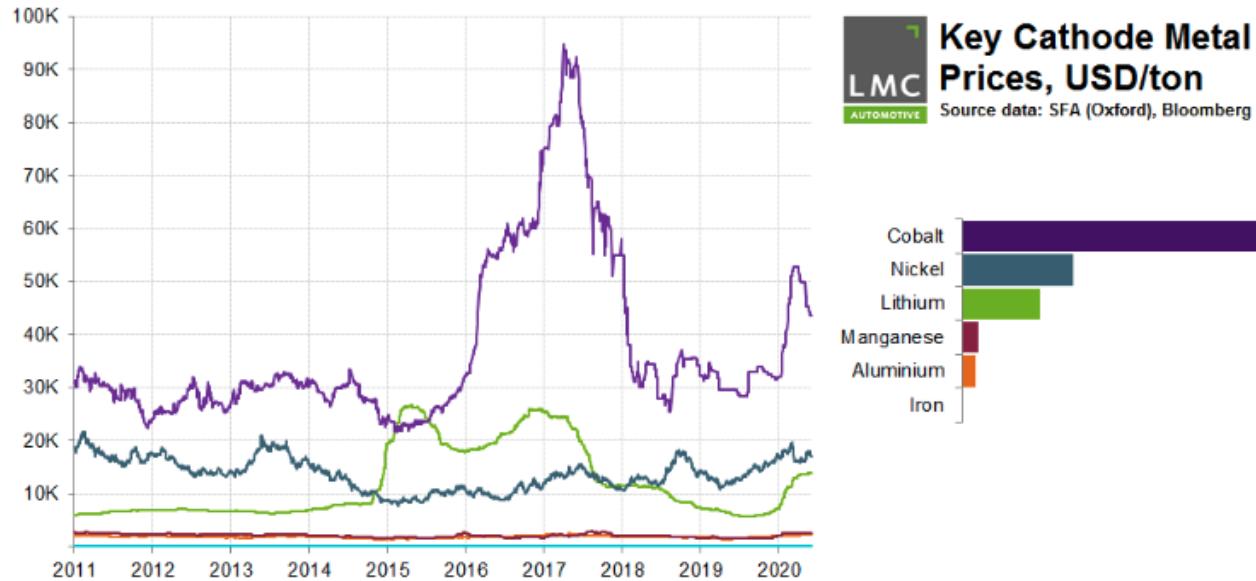
2010-2017: 80% reduction in Lithium-ion battery prices

- Growth across U.S. market
 - 2019: 163 large-scale battery storage systems (BSS) in operation
 - 2019: 83% of small-scale BSS located in California
 - 2019: 402 small-scale BSS in operation
 - 2020: 60% of large-scale BSS located in California & Midwest/Tri-state area
- Future Outlook
 - 2015-2019: 27% decline per year in battery storage costs
 - 2021-2023: 10K MW capability

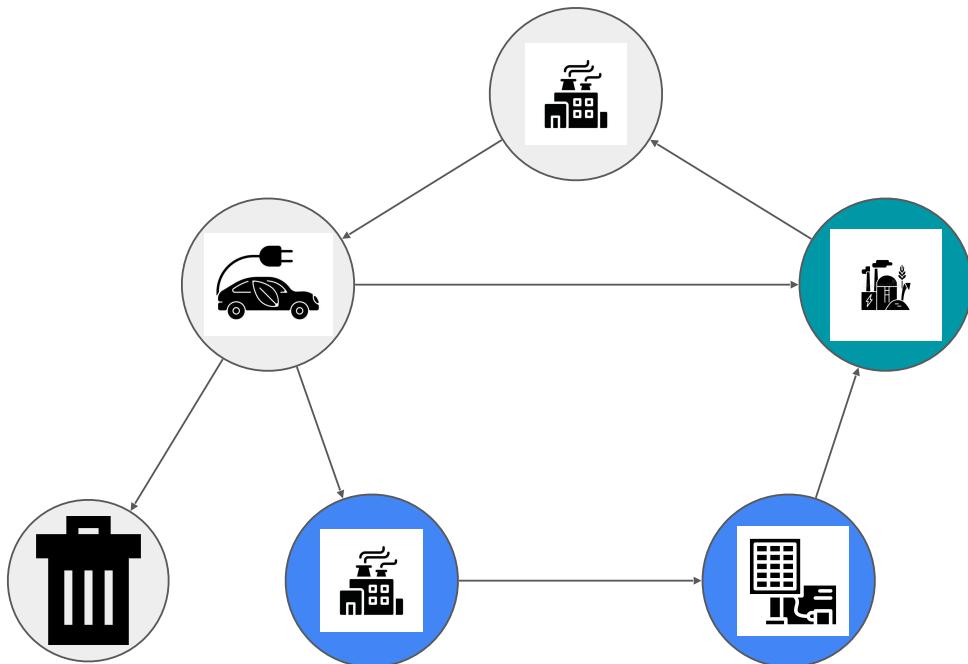
Value Chain



Value Chain: Cathode Metal Price Analysis



Value Chain Analysis



Feasibility of Adoption

- Technical
 - Solid-state Li-ion
 - Supply & Consume Energy
- Market
 - Co-located battery storage
 - Lower installation costs
- Commercial
 - Wholesale (ISO & RTO)
 - Federal & State policy action

Catalyst: Increase in Demand for Battery Storage

- As an energy storage provider, Fluence is a pivotal part in transitioning our power grids to an all renewable energy system to combat the volatility of energy creating currently seen in wind and solar power.
- Currently projected that for every 3.4 MW produced by a solar farm, there will be 1 MWh of storage needed
 - Small Scale Utility farms typically average around 5 MW
- There is expected to be a total of 1TWh of renewable energy storage needs currently forecasted in the global renewables economy between now and 2030.

Risk: Dependency on Lithium Prices

Risk

The energy solutions created by Fluence rely on lithium as a key production material.

Lithium is projected to decrease in price over the coming years but due to increased demand by EV manufacturers the decrease in price may be affected by an increase in demand.

Mitigating Factors

- Lithium prices may decrease because of the opening of a production facility in California by Berkshire Hathaway Energy in the Salton Sea that is expected to meet the lithium demands for the entire US.
- The demand for battery storage will not fall due to lithium prices because of the Renewable Portfolio Standards, that 38 states follow, that require a percentage of a state's energy to be renewable sustaining the market for battery storage

Sharpe effect (Quant)

Formula and Calculation of Sharpe Ratio

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

where:

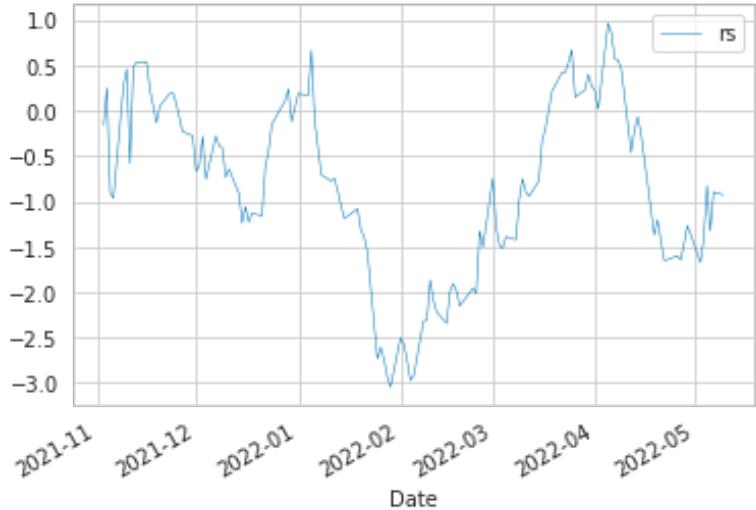
R_p = return of portfolio

R_f = risk-free rate

σ_p = standard deviation of the portfolio's excess return

- The [risk-free rate of return](#) is the theoretical return attributed to an investment that provides a guaranteed return with zero risks
- This ratio is a measure of risk-adjusted return. As it adjusts a portfolio's past performance—or expected future performance—for the excess risk that was taken by the investor.
- Sharpe ratios above 1.0 are generally considered "good," as this would suggest that the portfolio is offering excess returns relative to its volatility.

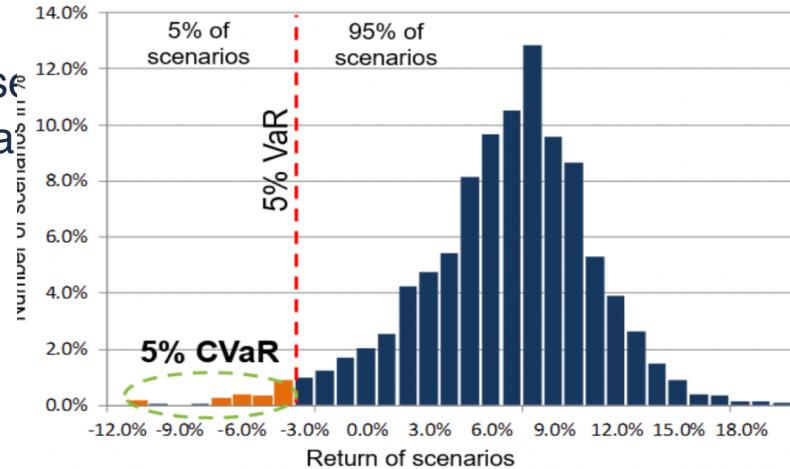
Sharpe Effect



- Unstable
- Negative Sharpe ratio: it either means the risk-free rate is greater than the portfolio's return, or the portfolio's return is expected to be negative.
- Becoming to be more stable and reaching higher sharpe ratio after the end of 2021.

ES (Expected Shortfall)

- Calculated by averaging all of the returns in the distribution that are worse than the Value at Risk of the portfolio at a given level of confidence
- For instance, for a 95% confidence level, the expected shortfall is calculated by taking the average of returns in the worst 5% of cases.



ES (Expected Shortfall)

$$CVaR = \frac{1}{1 - c} \int_{-1}^{VaR} xp(x) dx$$

where:

$p(x)dx$ = the probability density of getting a return with value “ x ”

c = the cut-off point on the distribution where the analyst sets the VaR breakpoint

VaR = the agreed-upon VaR level



```
print("The 95% CVaR (Student-t) is {:.2f}%".format(CVaR_t*100))
```

The 95% CVaR (Student-t) is 12.72%



Valuation

\$34.01

Upside

High 90% YoY revenue growth rate;
management projections from 2021 10-K
Filing and Quarterly Earnings Call.

- COGS falls by 30% over 5 years

\$8.79

Base

60% YoY growth rate; higher than the
Energy Storage industry average growth
rate of 28.7%

- COGS falls by 30% over 5 years

\$0.00

Downside

28.7% YoY growth rate; assumes that
Fluence's growth remains stagnant, and
COGS does not decrease as expected.

- COGS falls by 20% over 5 years

DCF: Upside

Assumptions

LIVE SCENARIO

Revenue Growth (% Change)	21.3%	96%	98%	92.0%	93.0%	86%
Cost of Goods Sold (% of Revenue)	110.2%	102%	88.0%	76.90%	74.0%	80%
SG&A (\$ of Revenue)	5.6%	10.3%	7.4%	6.6%	4.3%	3.0%
R&D Expenses (% of Revenue)	3.4%	3.5%	3.7%	6.0%	3.3%	2.6%
Depreciation & Amortization (% of Revenue)	0.7%	1.0%	1.20%	2.0%	1.5%	2.0%
Tax Rate (% of Earnings Before Tax)	0.0%	1.1%	1.1%	1.1%	1.1%	1.1%

Intrinsic Value

Enterprise Value	5,889,590,760
Plus: Cash	36,829,000
Less: Debt	100,000,000
Equity Value	5,826,419,760

Market Value

Market Cap	1,500,733,985
Plus: Debt	100,000,000
Less: Cash	36,829,000
Enterprise Value	1,563,904,985

Rate of Return

Current Price	8.76
Target Price	34.01
TP Upside	288%
IRR	▼

Equity Value/Share

34.01

Equity Value/Share

8.76

DCF: Base

Assumptions

LIVE SCENARIO

Revenue Growth (% Change)	21.3%	60%	60%	60%	60%	60%
Cost of Goods Sold (% of Revenue)	110.2%	102%	88.0%	76.90%	74.0%	80%
SG&A (\$ of Revenue)	5.6%	7.0%	7.4%	6.6%	4.4%	3.1%
R&D Expenses (% of Revenue)	3.4%	3.5%	3.7%	6.0%	3.3%	2.6%
Depreciation & Amortization (% of Revenue)	0.7%	1.0%	1.20%	2.0%	1.5%	2.0%
Tax Rate (% of Earnings Before Tax)	0.0%	1.1%	1.1%	1.1%	1.1%	1.1%

Intrinsic Value

Enterprise Value	1,569,687,82
Plus: Cash	36,829,000
Less: Debt	100,000,000
Equity Value	1,506,516,82

Equity Value/Share

8.79

Market Value

Market Cap	1,500,733,985
Plus: Debt	100,000,000
Less: Cash	36,829,000
Enterprise Value	1,563,904,985

Equity Value/Share

8.76

Rate of Return

Current Price	8.76
Target Price	8.79
TP Upside	0%
IRR	▼

DCF: Downside

Assumptions

LIVE SCENARIO

Revenue Growth (% Change)	21.3%	28.7%	28.7%	28.7%	28.7%	28.7%
Cost of Goods Sold (% of Revenue)	110.2%	102%	90.0%	90.0%	90.0%	90.0%
SG&A (\$ of Revenue)	5.6%	10.3%	9.3%	9.3%	9.3%	9.3%
R&D Expenses (% of Revenue)	3.4%	4.0%	4%	4.0%	4.00%	4.0%
Depreciation & Amortization (% of Revenue)	0.7%	7.0%	7.0%	7%	7.0%	7.0%
Tax Rate (% of Earnings Before Tax)	0.0%	1.1%	1.1%	1.1%	1.1%	1.1%

Intrinsic Value

Enterprise Value	(252,972,544)
Plus: Cash	36,829,000
Less: Debt	<u>100,000,000</u>
Equity Value	(316,143,544)

Market Value

Market Cap	1,500,733,985
Plus: Debt	100,000,000
Less: Cash	<u>36,829,000</u>
Enterprise Value	1,563,904,985

Rate of Return

Current Price	8.76
Target Price	-
TP Upside	1.85
IRR	-121%

Equity Value/Share

(1.85)

Equity Value/Share

8.76

Comparable Companies Analysis: Energy Storage

5/25/2022	Market Data					Financial Data		Valuation (FY+1)		
	Company Name	Price (\$/share)	Shares (M)	Market Cap (\$M)	Net Debt (\$M)	EV (\$M)	Revenue (\$M)	EBITDA (\$M)	EV/Revenue x	EV/EBITDA x
Fluence		\$8.76	1.80	\$1,600	\$100.00	(\$210.16)	\$984	\$65	-0.2x	-4.9x
Nuuve		\$6.32	18.97	\$120	\$3.59	\$16.54	\$4.19	(\$30)	16.5x	-3.5x
EOS Energy		\$1.13	54.45	\$62	\$107.70	\$128.36	\$3.1	(\$102)	41.4x	-43.0x
ESS Tech		\$4.18	152.66	\$638	\$3.76	\$587.00	\$0	(\$74)		-9.3x
Average									19.2x	-15.2x
Median									16.5x	-7.1x

Thank you!