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COMPANY: STEM Inc. | NYSE: STEM
INDUSTRY: Energy Storage

PRICE (AS OF CLOSE
01/10/2023)
USD 8.95
MARKET CAP
USD 1.4 BN

STEM Inc. (“STEM” or the “Company”) is an energy storage systems provider that went public via SPAC in 2021. Like many of its vintage, STEM has all the hallmarks of a failed SPAC: its COO quit, it wildly missed its near-term pre-SPAC revenue and profit projections, its auditor has repeatedly warned of deficient internal controls, it’s deeply unprofitable, and it hemorrhages cash.

Yet STEM continues to trade at a high valuation on its claim that its special AI enabled software platform has a growing pipeline of high-margin, long duration, and recurring software revenues. This is nonsense.

Our extensive due diligence has uncovered that undisclosed to investors, STEM is financing its flagship customer to purchase energy storage systems from STEM. Rather than a “big win” and proof that STEM could compete for big utility scale projects, we think STEM won its supposed flagship deal by surreptitiously paying for it.

Why? Because we believe that STEM’s software business is a mirage, and that STEM is misleading investors by disguising service revenues from leasing hardware as software revenues. Apart from a busted recent acquisition, almost all of STEM’s purported software revenues are derived from STEM’s misleading categorization of system leases as ‘software’ revenues. Worse still, 87% of these leased energy storage systems are not even owned by STEM, but by unconsolidated special purpose vehicles. In reality, STEM’s purportedly special software business generates a tiny fraction of the revenue claimed by the Company. We think this explains STEM’s audit warnings over revenue recognition and the strange internal control and accounting deficiencies revealed in STEM’s SEC filings.

The remaining portion of STEM’s purported “software” revenues are derived from the early 2022 acquisition of AlsoEnergy, which appears to be a bust after only a few months. STEM grossly overpaid for the deal, and in its latest quarterly earnings call, STEM warned that AlsoEnergy’s revenues were shrinking and that its solar AUM had declined 22% in Q3 2022 alone.

STEM has very little cushion. We calculate that without STEM massively stretching its payables, STEM’s operating cash flows would have been **negative \$170 million** in the last 12 months ending Q3 2022!

Rather than trade as a burgeoning software business at 3x revenues, we believe that the market will come to value STEM as a low-margin hardware reseller and systems integrator which is uninvestable on account of undisclosed customer financing, accounting red flags, and misleading claims regarding its software revenues. Ultimately, we think that STEM’s only real talent lies in raising money from the capital markets and selling stock.

- 1. Undisclosed to Investors, STEM Finances Flagship Customer.** In February 2022, at the same time STEM announced a substantial earnings miss, it announced the signing of a flagship \$500 million deal with Available Power, a new customer, for up to 1GW/2GWh of energy storage in Texas. Characterized by sell-side analysts as a “great win,” the Available Power deal was so big that it was larger than STEM’s total energy storage AUM at the time. The deal was supposedly an endorsement of STEM’s software platform and evidence that STEM could compete for large utility-scale front-of-the-meter projects. Yet **undisclosed to investors**, interviews with a former STEM executive and solar industry experts revealed that **STEM is contributing development capital to Available Power to finance the deal.** The deal is just beginning, so the accounting details are murky, but we question whether STEM will use this arrangement to recognize revenues, profits and cash flows effectively paid for by STEM. Yet the larger point is that investors would have thought much differently about the flagship deal if they had known STEM is surreptitiously funding purchases from STEM. Rather than evidence that STEM can compete for utility-scale projects, we think this shows clearly that STEM cannot win big deals it doesn’t pay for.
- 2. Software Mirage: STEM’s Software Revenues are a Tiny Fraction of Reported.** STEM’s stock trades at a premium on its claim that its low-margin hardware sales are accompanied by high-margin software revenues from its Athena AI platform,

which STEM claims has a growing pipeline of recurring future revenues. Prior to the acquisition of AlsoEnergy, STEM claimed to generate \$20.5 million in FY 2021 from “services revenue.” STEM’s management stated unequivocally that “100%” of this services revenue line was from “software revenue.” **In our view, this is a lie.** Rather, almost all of this services revenue is not from software, but from a legacy business under which STEM leases hardware to customers in what it calls “host customer arrangements.” These arrangements, which STEM are winding down, are akin to hardware leases with a small software and services component, yet STEM tries to claim that 100% of the revenues from these contracts are software. Incredibly, STEM does not even own the majority of the systems being leased. 87% of the systems are owned by unconsolidated special purpose vehicles, yet STEM uses an accounting gimmick to claim their revenue as its own. By disguising these low-margin, no-growth contract leases as software revenues, we think STEM fools investors into believing that STEM has a meaningful software business in order to garner a substantially higher valuation multiple. Excluding the busted AlsoEnergy acquisition and the host customer lease arrangements, we think that STEM’s actual recurring software revenues are **99% less than the \$20.5 million in purported software revenues claimed by STEM.**

- 3. AlsoEnergy: STEM Massively Overpaid for a Shrinking and Busted Business.** Like many other 2021-vintage SPACs, STEM badly missed its 2021 revenue and gross profit projections. To save its stock, in February 2022, STEM acquired AlsoEnergy Holdings, Inc. (“AlsoEnergy”) for \$695 million, funding the cash portion of the deal with \$460 million in convertible green bonds. Rather than buy a strong and growing software business, evidence suggests that STEM grossly overpaid for this desperate acquisition. AlsoEnergy’s cornerstone investor, a Canadian listed private equity group, valued AlsoEnergy at only \$134 million just ten months prior to the deal. In other words, the target’s cornerstone investor valued the target at 81% below STEM’s purchase price only months before the acquisition. It is now obvious why. **In STEM’s latest quarterly results, STEM admitted that AlsoEnergy’s revenues declined 2% YoY and that its solar monitoring AUM declined 22% in just the last quarter alone.** AlsoEnergy’s solar AUM and revenue growth were both major motivations behind the acquisition, so to see both collapse so quickly indicates that the deal is already a bust.
- 4. STEM Misleads Investors with Bogus non-GAAP Operating Metrics.** After its financial performance fell off a cliff, STEM tried to divert investors’ attention away from its dire GAAP financials towards its self-created non-GAAP “key-operating metrics,” including *Pipeline*, *Bookings*, *Contracted Backlog*, and *Contracted Annual Recurring Revenue* (“*CARR*”). Management pitches these metrics as being the key underlying drivers of STEM’s growth prospects and future revenues. We find them grossly misleading, and a diversion tactic to distract investors’ attention from the carnage of STEM’s business. First, STEM’s *Pipeline* is meaningless, as it includes any potential customers STEM’s sales team has called about a deal. *Bookings*, *Contracted Backlog* and *CARR* are worse, because investors are directed to use these metrics as a proxy for near- and medium-term revenues. But in the fine print, STEM admits these metrics include “**executed customer contracts, without binding purchase orders, [that] are cancellable without penalty by either party.**” In other words, STEM’s trophy non-GAAP metrics are not binding orders, but indications of interest from customers that can be cancelled. This is reminiscent of [Lordstown Motors](#), which disguised non-binding letters of interest as EV truck pre-sales to deceive investors about future revenues and demand for its product. Ultimately, we view STEM’s operating metrics as an exercise in hiding the ball. Not only do we think they are meaningless, but misleading distractions.
- 5. Deteriorating Cash Flows and Payables.** STEM is no stranger to a liquidity crisis. At the time of its SPAC, STEM had just \$9.9 million of cash and an accumulated deficit of \$490 million. Despite continuing to feverishly raise money from the capital markets, STEM continues to pile up losses and bleed cash. STEM reported **negative \$49 million of EBITDA and negative \$101 million in operating cash flow LTM Q3 2022.** In the past 12 months, STEM’s payables (measured at period end) stretched from 141 days to 252 days¹ providing a \$69 million positive impact to STEM’s cash flows. **Were it not for stretching payables, we calculate that STEM’s cash flows from operations would have been negative \$170 million over the last 12 months ending Q3 2022!** STEM’s mounting losses and cash outflows are severe, and in our view, add credence to our view that STEM is window dressing its business with questionable accounting games.
- 6. Heavy Insider Selling.** Those who know best are selling at a frenetic pace. Despite the decline in STEM’s stock price, insiders have continued to dump shares, even at the lows. The Inflation Reduction Act provided a lifeline

¹ Calculated as End of Period payables / Trailing 12 month cash COGs

to STEM's falling stock, yet since August insiders have sold an additional \$23 million in stock. STEM is a story stock, but insiders do not appear to believe the story.

Ultimately, STEM is valued on the misconception that it provides AI enabled software with high margins, long-term contracts and recurring revenues. The Company claims that as it sells new battery systems, software revenues will continue to be meaningful, will grow, and will remain sticky. Yet this is false. STEM's software revenues are tiny and are mostly derived from a failing acquisition (AlsoEnergy) plagued by shrinking revenues and falling AUM, or from accounting gimmicks such as STEM's misleading categorization of revenues from hardware leases as 'software' revenues. Despite its claims to the contrary, we think that STEM's purported software business is neither meaningful, differentiated, nor remotely sufficient to support STEM's current valuation.

Rather, STEM is a low-margin battery systems integrator competing for small-scale behind-the-meter projects, an increasingly cut-throat and competitive space. Historically, STEM carved out a small niche taking advantage of California subsidies on small behind-the-meter projects for commercial and industrial customers at breakeven margins.

To show top line growth, STEM has tried to pivot to larger scale front-of-the-meter projects. Yet the competitive landscape is brutal, with most projects procured by a formal bidding process in which STEM struggles because it is charging a markup on hardware purchased from battery suppliers. According to an industry expert specializing in utility scale front-of-the-meter projects, despite the Company's claims to investors, STEM is a non-player in this space:

*"We work with everybody. We see everything [in utility scale front-of-the-meter storage]. **Nobody ever talks about STEM. Only Wall Street.** Nobody ever looks at the distribution list and [asks] where is STEM? They are not even on the list. STEM is not even on the distribution list that RFPs get sent to. They are still regarded by utility scale developers as a behind-the-meter developer."*

"No one uses [Athena] [in the front-of-the-meter space]. I don't know anyone that uses it. I know people that use Fluence's. I know people that use Tesla's."

"I don't see STEM at all in the FTM space that we're covering. We run a lot of the large utility solicitations. We do procurement on behalf of a lot of developers and EPCs. We don't see [STEM] bidding. They just wouldn't be price competitive amongst the masses of other companies, integrators and developers that are bidding on these storage projects."

"They've been around long enough. I don't have a single buyer that says shall we send the RFP to STEM. They're just not even talked about and not even thought about all these utility scale projects."

- Solar Industry Project Experts

According to our conversations with industry experts, STEM is a non-player in utility-scale front-of-the-meter projects because at that level, developers either self-integrate or go directly to larger, well-established industrial automation players such as Emerson, Rockwell, ABB and Siemens who package control systems and software. Sophisticated and repeat solar players are unwilling to pay STEM a markup on batteries, and STEM's AI software is a non-factor.

STEM is left to compete with Wartsila, Fluence, FlexGen, and others on smaller behind-the-meter projects (under 10 MW) being developed by what one expert described as "rookie buyers." But the landscape is equally as competitive, and one expert claimed that STEM is not even at the same table as these peers.

"STEM is nothing like Fluence or Wartsila. Not at the same table as them... First time buyers of energy storage, they go to your Fluence's Wartsilas, FlexGen, IHI, Doosan, and then STEM probably gets the rest of the market share. A second time buyer, if they have like enough support staff will self-integrate."

- Solar Industry Project Expert

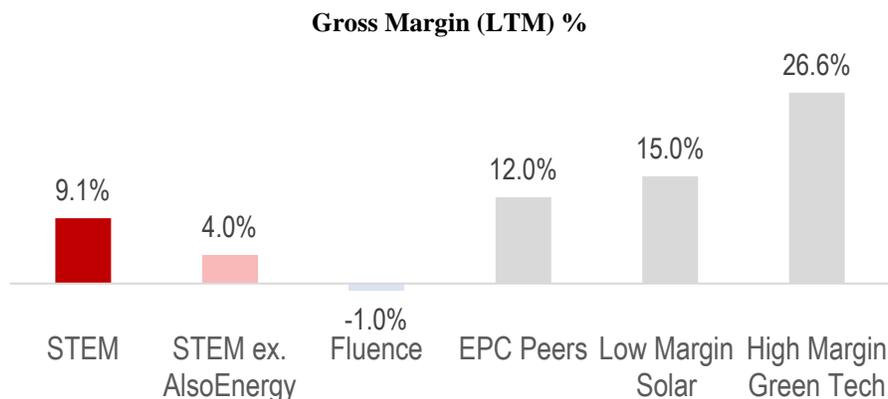
One expert speculated that this space was so competitive that STEM's only hope was to finance developers to win projects, in effect "buying" revenues. We think this game is already afoot, and that undisclosed to investors, STEM is financing its flagship deal.

Nor will the Inflation Reduction Act ("IRA") provide any meaningful relief. According to the industry experts, the IRA is a tailwind for battery OEMs who are already raising prices given the tight supply of hardware and rising demand. This will squeeze already razor-thin developer margins, providing further incentive for solar developers to self-integrate or engage other consultants to cut out the middleman and avoid STEM's markup on reselling hardware. When hardware was cheaper and supply was not as tight, perhaps developers could justify purchasing batteries through STEM – but with rising prices, projects are increasingly unlikely to be competitive if customers are paying STEM a markup on equipment.

As we lay out in this report, apart from the shrinking software revenues from the busted AlsoEnergy deal, almost all of STEM's purported software revenues were from hardware leasing contracts in STEM's legacy hosting business (which STEM expects to phase out in the coming years).

This is likely why organic service revenue showed no meaningful growth, hovering around ~\$5-6 million per quarter for the past seven quarters, even as hardware revenues have gone up 5x.² This also explains, in our view, why STEM likely stopped disclosing host customer and partnership service revenues in 2022 – to mislead investors from the embarrassing truth that its software revenue is a tiny fraction of reported services revenue.

In reality, we view STEM as a low margin hardware integrator for smaller scale behind-the-meter projects. Yet it trades at 3x NTM revenues. If STEM were to trade in line with low margin solar peers, it would trade at 1.9x revenues. But this is likely too generous, as STEM's gross margins (ex AlsoEnergy) have ranged from 0-5%. This is considerably lower than both low-margin solar and high-margin green tech peers.



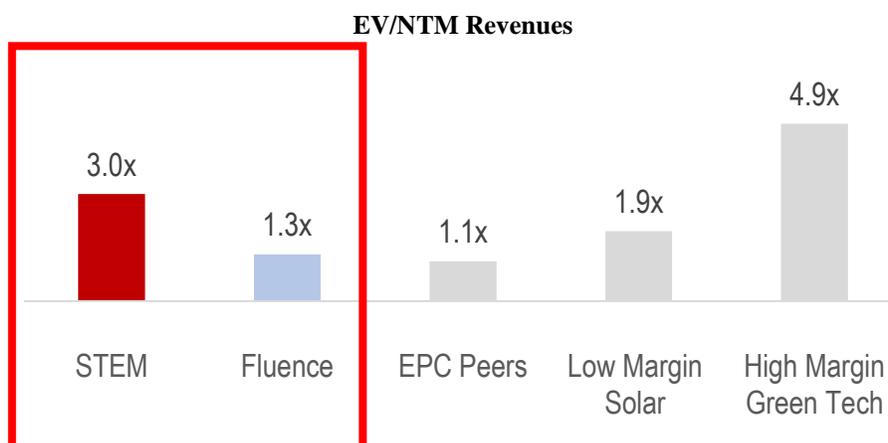
Source: Capital IQ. Peer medians shown.³

Rather, we think STEM is more akin to an EPC, but with the difference that EPCs tend to have greater scale, longer operating histories and a track record of sustained profitability. At an EPC multiple, STEM would trade at 1.1x NTM revenues.

The closest competitor is Fluence (NASDAQ: FLNC), whose software revenues account for just 1% of TTM sales. Whereas STEM trades at 3x NTM revenues, Fluence trades at just 1.3x NTM revenues, a multiple more befitting an unprofitable hardware business.

² As of Q2 2022, before STEM changed its revenue disclosures.

³ High Margin Green Tech: ENPH, SEDG, NOVA, RUN, BE, CHPT, TSLA. Low Margin Solar: FSLR, ARRY, SPWR, CSIQ. EPC Peers: FLR, J, ACM, PWR, MTZ, KBR



Source: Capital IQ. Peer medians shown. As of 01/10/2022.

Meanwhile, STEM continues to lose money at a frenetic pace. On the surface, STEM burned \$101 million in the last twelve months, making it appear as though it has some cushion on its cash balance of \$294 million at the end of Q3 2022. Yet the severity of its cash losses was masked only by a deterioration in working capital and a blowout in payables.

In the past 12 months, STEM's payables (measured at period end) stretched from 141 days to 252 days⁴ providing a \$69 million positive impact to STEM's cash flows. **Were it not for stretching payables, we calculate that STEM's cash flows from operations would have been negative \$170 million over the last twelve months.**

STEM's Cash Flows Adjusted for Payables

USD M	FY19	FY20	FY21	LTM Q3-22
Payables inc. accrued liabilities	20	30	54	157
Cash and liquid investments	13	7	921	294
Adjusted EBITDA (reported)	(33)	(25)	(30)	(49)
CFFO Reported	(30)	(34)	(101)	(101)
Adjustment for increased payables				(69)
Issuance of warrants for services			(9)	
Adj. CFFO (Blue Orca)	(30)	(34)	(110)	(170)

Source: Company Filings

Note: Adjustment for payables assumes STEM's DPOs stay constant at 141 days

Barring a further blowout to payables, STEM's cash burn going forward will likely be staggering. At the current rate of cash burn, STEM's seemingly large cash balance (\$294 million as of Q3-2022) will not last much more than 18 months.

Put simply, what appeared at first to be a margin of safety begins to look worrisome as interest rates remain high and STEM continues to incinerate cash.

We think insiders understand this as well, which is why they have used the temporary bump from the Inflation Reduction Act to sell more than \$23 million in stock since August. We think STEM plays accounting games, which adds further context to its disclosures of weak internal controls and warnings from its auditors. STEM has all the red flags of a failed SPAC. Why would this time be different?

⁴ Calculated as End of Period payables / Trailing 12 month cash COGs

I. Undisclosed to Investors, STEM Finances Flagship Customer

Our extensive due diligence has uncovered that undisclosed to investors, STEM is financing its flagship customer to purchase energy storage systems from STEM. Rather than a “big win” and proof that STEM could compete for big utility scale projects, we think STEM won its supposed flagship deal by surreptitiously paying for it.

On February 24, 2022, STEM announced its FY21 results, including a substantial guidance miss, which was a major negative surprise to investors. But STEM tried to distract investors by announcing, on the same day, that it had signed a flagship \$500 million deal with a new customer, Available Power, for up to 2GWh of energy storage projects.

Stem's Athena® Software Selected by Available Power to Optimize Up to 2GWh Energy Storage Portfolio in ERCOT

2/24/2022

Value of award expected to exceed \$500 million across the project portfolio

Partnership provides Stem exclusive rights to 100 standalone energy storage projects in Texas

Source: [STEM Press Release February 2022](#)

Available Power: Project Win of Up to 1 GW

Value of award expected to exceed \$500M across the project portfolio

AVAILABLE POWER

Strategic partnership with developer Available Power to provide smart energy solutions in Electric Reliability Council of Texas (ERCOT) market

Exclusive rights to provide Athena optimization software under a 20-year contract for a portfolio of up to 100 sites

First 20 systems expected to be commissioned in early 2023

Demonstrates continued momentum in large scale front-of-the-meter (“FTM”) market driven by:

- Strong supply chain relationships
- Differentiated software, including wholesale energy market bidding

Demonstrates strength of channel strategy and customer diversity

stem © 2022 Stem, Inc. 5

Source: [STEM Q421 Presentation](#)

STEM described the deal as a strategic partnership for 100 front-of-the-meter (“FTM”) sites in Texas totaling 2GWh of energy storage. STEM’s press release claimed that the first 20 sites, worth \$100 million on a pro rata basis, would be deployed by early 2023. Sell side analysts lauded the deal as a “**great win.**”

This strategic partnership gives Stem exclusive rights to provide its proprietary Athena® smart energy storage software to energy storage systems at 100 front-of-the-meter (FTM) sites throughout the state of Texas. The project portfolio is expected to have a value of more than \$500 million and will be completed in phases, beginning with deployment of the first 20 systems by early 2023. Together, Stem and AP will be providing the state grid, operating under the Electric Reliability Council of Texas (ERCOT), with an additional one gigawatt (GW), or two gigawatt-hours (GWh), of flexible electric power for 20 years.

Source: [STEM Press Release February 2022](#)

The headline of STEM’s press release announcing the deal claimed that Available Power had “selected” STEM for its supposedly attractive Athena software, adding further credence to the misconception that STEM’s allegedly special software was driving deal flow to the Company.

To put the size of the deal in context, 1GW/2GWh was larger than STEM's total AUM at the time of the announcement. In other words, the Available Power deal was larger than the combined value of all of the projects STEM had done to date. Which is why both STEM and analysts consistently refer back to the Available Power deal on earnings calls as evidence of STEM's future performance, and the alleged attractiveness of its software platform.

Announced Deals – 2020-Present

Date	Project	MW	MWh	\$m
Jun-20	SK E&S		345	
Jun-20	Syncarpha		28	
Jan-21	California's SGIP		68	35
Jan-21	MWRA		85	
Feb-21	Today's Power	7	14	
Mar-21	Kearsarge			6
Jun-21	Ameresco	5	15	
Jun-21	Altus Power	3	2	
Jan-22	ENGIE North America	ND	ND	
Jan-22	NineDot Energy		110	
Feb-22	Available Power	1,000	2,000	500
Sep-22	InCharge	ND	ND	

Source: [Company Press-Releases](#)

But undisclosed to investors, the Available Power deal is being financed by STEM. When we spoke with a senior former STEM employee, the person told us that STEM was financing the project by contributing development capital to Available Power, a small nascent Colorado-based developer, which according to [LinkedIn](#) was founded in 2020 and has only 10 employees.

“With Available Power, we provided them “dev cap” And by providing that dev cap you can write yourself into that spec...

It's 100 sites. STEM provided the dev cap. That gave them access to that 100 sites to help develop those.”

- Former STEM Employee

We spoke with another solar industry expert who confirmed that STEM financed the Available Power deal and speculated that STEM's only chance to remain competitive was to finance projects, in effect “buying” revenues.

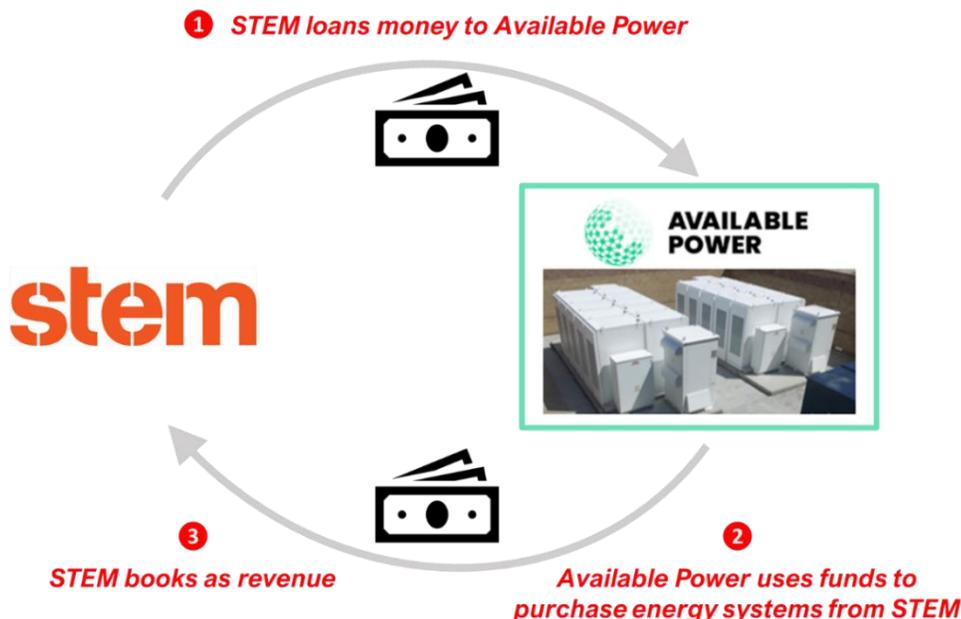
*“STEM is sitting on a pile of cash. And maybe they are not going to apply the same depth of and scrutiny of due diligence that traditional dev capital provider would. And **they're going to be able to buy themselves deals that way. That's what I see Available Power is.** ... They're a brand-new storage [developer]. They didn't have the experience or track record to maybe get money from someone like a Crayhill or one of these other banks. So STEM are like I'm going to give you the money, but if I do, you're going to have to go with us. **So that's sort of their lead generation right now.**”*

- Solar Industry Project Expert

STEM effectively pumped its stock price by announcing a big flagship deal without disclosing that it financed the customer with development capital. This was supposed to be STEM's flagship deal, doubling the size of STEM's AUM at the time of the announcement and a powerful endorsement of the attractiveness of STEM's software. Investors would have thought much less of this flagship deal had STEM admitted that it won the deal by surreptitiously agreeing to finance the customer's purchases from STEM.⁵

⁵ To be completely clear, there is no allegation of wrongdoing on the part of Available Power.

The project is just beginning, so the impact on STEM's financial results to date is unclear. We question whether this arrangement will allow STEM to recognize revenues on the purchase of hardware and software by Available Power from STEM using STEM's own cash. Without further disclosures from STEM, the details are murky, but the following graphic reflects our understanding of the potential flow of funds from STEM's balance sheet through Available Power and back to STEM.



Source: Blue Orca⁶

The timing of the deal also explains a new disclosure which began appearing in STEM's filings around this time. In its Q2 2022 filing, STEM disclosed that it formed a wholly-owned development subsidiary ("DevCo") in January 2022, to enter into joint ventures ("DevCo JVs") with third parties to develop energy storage projects. Under the proposed arrangement, STEM said that it plans to loan money to DevCo JVs, who will in turn use the funds to purchase energy storage systems from STEM.

From time to time, the Company, through an indirect wholly-owned development subsidiary ("DevCo") formed in January 2022, will enter into strategic joint ventures (each a "DevCo JV") with qualified third parties for the development of select renewable energy projects ("DevCo Projects"). In this structure, DevCo forms a new DevCo JV entity as the majority owner, with the developer as the minority owner. The purpose of the DevCo JV is to develop and sell DevCo Projects and secure Company hardware and software services for those projects. In DevCo Projects, the Company makes development capital contributions to fund project development. The Company will in some cases also elect to make cash advances to hardware suppliers to accelerate project construction timelines given long lead times to secure hardware. This business model is intended to allow the Company to opportunistically deploy its balance sheet by providing development capital to key partners in strategic markets and securing hardware upfront, in order to generate higher-margin software and services revenue via exclusive long-term services contracts under the DevCo Projects.

Source: [STEM 10-Q 2022 2Q, p. 10](#)⁷

But STEM did not, to our knowledge, ever disclose that this structure applied to Available Power. We think that investors would have reacted much differently to the announcement of STEM's flagship deal had they known STEM was using its balance sheet to fund the projects.

⁶ Note: The deal is just beginning so it is unclear whether STEM has recognized any revenues, profits or cash flows from the deal to date, or how such revenues would be treated from an accounting perspective.

⁷ It is unclear from STEM's disclosures at what stage in the process it plans to recognize revenues: whether it would be immediately or upon transfer of a controlling interest in the JV to its partner. Either would be deeply problematic.

It appears that STEM has struggled to win deals it does not pay for. As far as we can tell, the only major project announced by Available Power to date is a development project at Greenport Airport in Austin. According to Available Power, the Austin project will have a total capacity of 100MW/200MWh, with completion expected in mid-2024.

Available Power announces 200 MWh energy storage project with Greenport International Airport and Tech Center in Austin

NEWS PROVIDED BY
[Inflection Point Agency](#)
 September 07, 2022, 20:42 GMT

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AUSTIN, TEXAS, UNITED STATES, September 7, 2022
[/EINPresswire.com/](#) -- Energy storage developer, Available Power, LLC (Available Power), today announced it has closed a deal to develop a 100 megawatt (MW) / 200 megawatt-hour (MWh) battery energy storage system (BESS) to support the GREENPORT International Airport and Technology Center (GREENPORT) near Austin, Texas. GREENPORT is a private, net-zero-targeted international airport and technology campus with best-in-class partners.



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[Energy Storage Developer Available Power Announces Acceptance into](#)

the local utility system to help balance electricity generation and demand. The project is currently in advanced development, and has been placed in the ERCOT interconnection queue. Available Power plans to break ground on the project in late 2023, with commercial deployment targeted for mid-2024.

Source: [Available Power Press Release](#)

But according to a former employee we interviewed, **STEM is not providing hardware or software to the Austin AP Greenport Airport deal.**

Blue Orca: *"The Greenport Airport would be the first part of STEM's deal with [Available Power]?"*

Former STEM Employee: *"No, those are LGIA. And those are not part of the ERCOT 100. The ERCOT 100 is the name of that 2 GWh project...Available Power has projects outside of that that they're developing without STEM."*

- Former STEM Employee

It appears that when STEM was not financing the deal, Available Power chose not to use STEM.

STEM's valuation is predicated on the misconception that it is a software business with a growing pipeline of energy storage projects which investors hope will reverse STEM's negative EBITDA margins and abysmal cash flows. Accordingly, STEM trades largely on the promise of future revenues which it supports by a much-touted pipeline of energy storage project bookings. These new deals are thus crucial to the Company's valuation. None more so than STEM's flagship deal. Yet STEM concealed from investors that it financed this small nascent developer.

In our opinion, this is rotten. We question the accounting implications, but the larger point is that this sordid arrangement shows that STEM cannot win big utility scale front-of-the-meter projects it doesn't pay for.

II. Software Mirage: STEM's Software Revenues are a Tiny Fraction of Reported

STEM's stock trades at a premium on its claim that its low-margin hardware sales are accompanied by a meaningful high-growth and high-margin software business with sticky future revenues. This is nonsense. Rather, we think that STEM is misleading investors by disguising payments received from leasing hardware under a legacy deal structure as software revenues, a fabrication designed to fool investors into believing that STEM has a meaningful software business and garner a substantially higher valuation multiple.

STEM tells investors that it has two primary business lines (excluding the AlsoEnergy acquisition):

- **Hardware:** STEM resells energy storage systems purchased from third-party battery OEMs at a small markup.
- **Software:** Alongside this hardware, STEM sells its "AI enabled" energy optimization software called "Athena" under long term 10-20 year contracts.

Because reselling hardware purchased from battery OEMs is low margin and low value-add, investors are only excited about STEM's software offering; which the Company claims is an AI enabled secret sauce with high margins, robust growth and recurring revenues. The Athena software platform is the key to STEM's narrative. At its recent analyst day, the Athena software platform was mentioned 79 times; whereas the word battery was mentioned only 24 times.

But instead of disclosing a clear hardware/software revenue breakdown, STEM has a series of confusing categories and definitions, many of which have shifted over time. Prior to the acquisition of AlsoEnergy, STEM claimed to generate \$20.5 million in FY 2021 (or 16% of total revenues) from "service revenues." STEM explicitly tells investors that this service revenue is "**100% software revenue**," implying that these are the highly coveted, recurring AI Enabled Athena SaaS revenues.

USD M	FY19	FY20	FY21	LTM Q3-22
Hardware revenue	4.1	20.7	106.9	218.7
% total revenue	23%	57%	84%	84%
Services revenue	13.5	15.6	20.5	41.7
% total revenue	77%	43%	16%	16%
Total Revenue	17.6	36.3	127.4	260.3

Source: Company Filings

For example, on an earnings call, STEM's CFO confirmed that "100%" of the service revenue line was "software revenue."

Sean Michael Milligan
Williams Trading, LLC, Research Division

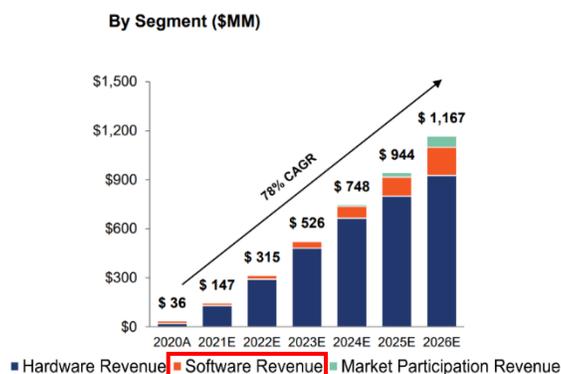
First, a little bookkeeping question. But on the service revenue line, is that 100% software-related revenue? Or is there another component of that?

William J. Bush
Chief Financial Officer

That is 100% software revenue.

Source: STEM Earnings Call Q3 2021

Likewise in its investor presentations, STEM labels these revenues as "software revenue."



Source: [STEM Presentation March 2021](#)

STEM claimed that 100% of its service revenues are software revenues, giving investors the misleading impression that its software business is a meaningful and growing source of revenues.

In our opinion, this is a lie. Rather, the vast majority of this service revenue is not from software, but from a legacy arrangement under which STEM derives revenues from leasing hardware (energy storage systems) to customers under what STEM calls “**host customer arrangements**.”⁸

Prior to going public via SPAC, STEM used a different sales model whereby instead of selling hardware to customers upfront, STEM would effectively lease battery storage systems to customers (typically under 10-year contracts). STEM stopped doing these types of deals in 2019 and refers to them now as legacy arrangements.

Disaggregation of Revenue

The following table provides information on the disaggregation of revenue as recorded in the consolidated statements of operations (in thousands):

	Year ended December 31,		
	2021	2020	2019
Partnership hardware and service revenue	\$ 107,135	\$ 20,713	\$ 4,076
Host customer service revenue	20,236	15,594	13,476
Total revenue	\$ 127,371	\$ 36,307	\$ 17,552

Source: [STEM 2021 10-K](#)

Revenue

We generate services and other revenue and hardware revenue. **Services and other revenue is mainly generated through arrangements with host customers** to provide energy optimization services using our proprietary cloud-based software platform coupled with a dedicated energy storage system owned and controlled by us throughout the term of the contract. Fees charged to customers for energy optimization services generally consist of recurring fixed monthly payments throughout the term of the contract and in some arrangements, an installation and/or upfront fee component. We may also receive incentives from utility companies in relation to the sale of our services.

Source: [STEM 10-Q Q3-2022](#)

Host customer arrangements are akin to a system lease and are neither high margin nor a source of growth or recurring future revenues. Software is a tiny component of the lease – the vast majority of the economics on the host customer lease arrangements are the customer’s contract payments to rent the battery storage hardware. In fact, STEM reported negative gross margins from these arrangements, with overall services gross margins of -35% in 2020 and -38% in 2021. That’s why STEM tells investors it is winding down these arrangements and refers to them as legacy deals. STEM guides that these contracts will expire beginning in 2025.

⁸ As we explain below, software is a tiny component of the “host customer arrangement,” but we estimate that 95% of the revenue under this structure is derived from the hardware.

What STEM obfuscates to investors, is that the lease payments from these legacy battery systems, booked as “host customer arrangements,” compose **almost all of the Company’s purported software revenues (excluding the acquisition of AlsoEnergy)**.

Excluding these host customer payments, we estimate that STEM’s true software revenues totaled just \$227,000 in FY21, which is 99% less than reported to investors. Rather, almost all of this purported software segment is from leasing hardware under the legacy host customer construct.

STEM Revenue Breakdown

	FY19	FY20	FY21
Hardware revenue	4.1	20.7	106.9
Services revenue (allegedly "100% software")	13.5	15.6	20.5
Legacy system leases (host customer revenue)	13.5	15.6	20.2
Recurring software (partnership service revenue)	0.006	0.051	0.227
Total revenue	17.5	36.3	127.4

Source: Company Filings

STEM ceased disclosing the service portion of partnership revenues in 2022. But in FY 2021, STEM’s disclosures show that it generated only \$227,000 from ‘partnership services,’ which we believe is likely a good proxy for the revenues generated by STEM’s allegedly coveted Athena AI software on sales of its energy storage systems.

STEM may push back with the counter argument that \$227,000 understates the total revenue from Athena because there may be additional revenue from Athena embedded in the host customer arrangements. This may be the case, but we estimate that the amount is unlikely to be much more than 5%-10% (max) of annual contract revenue,⁹ and **declining** as STEM winds down these arrangements. It is also worth noting that the host customer arrangements are **negative gross margin**, so even a small embedded software component in the contracts would hardly constitute the recurring, high-margin software revenue stream STEM pretends it is.

STEM Service Gross Margins

	FY19	FY20	FY21	LTM Q322
Service Revenue	13.5	15.6	20.5	41.7
(-) Cost of Service Revenue	(17.0)	(21.9)	(28.2)	(39.0)
Service Gross Margins	(3.5)	(6.3)	(7.7)	2.6
% Margins	-26%	-40%	-38%	6%

Source: Company Filings

Note: LTM impacted by positive contribution from AlsoEnergy

What’s more, STEM does not **even own most of these leased systems, but uses an accounting gimmick to recognize revenue from them anyways.**

- **SPV Accounting Gimmicks: STEM Does Not Even Own Vast Majority the Systems**

⁹ STEM fails to specifically disclose the revenues from Athena, including whether any Athena revenues are embedded in the host customer arrangements. But based on the hardware software mix of STEM’s partnership revenues (adjusted pro forma for the different contract structure) we estimate that this software component is likely in the region of 5%, and at most 10% if we generously stretch the assumptions in favor of STEM. Whichever way we cut it, almost all of the host customer revenues are from leasing hardware.

For additional context, we believe STEM won the host customer contracts with commercial customers based on its access to the California SGIP program, an incentive program that gave customers rebates for distributed self-storage. We don’t believe that Athena AI was a meaningful part of these deals.

The fingerprint of STEM's accounts reveal that, of the \$20 million of host customer payments reported as revenues by STEM in FY21, \$16.9 million (84%) were from energy systems owned by non-consolidated Special Purpose Entities ("SPEs").¹⁰ Only 16% of total host customer revenues were from energy systems actually owned by STEM.

STEM Host Customer Revenues

\$m	FY19	FY20	FY21
Host customer revenues	13.5	15.6	20.2
from systems owned by SPEs	8.8	12.8	16.9
from systems owned by STEM	4.7	2.8	3.3
% of revenues from systems owned by STEM	35%	18%	16%

Source: Company Filings

Before it went public via SPAC, STEM used Special Purpose Entities as a way of financing its sales with customers. Rather than sell the hardware to the customers, STEM would raise money from outside investors who financed the hardware by investing in, and lending to, an SPE. These SPEs would then sign 10 year lease-type arrangements with the end customers for the use of the equipment, which – along with any incentive payments from utility companies – would be used to repay investors and debtholders.

STEM discloses three SPEs as FYE 2021: SPV II, SPV III, and SPV IV, originally formed in 2015, 2016 and 2017 respectively. STEM provided less than 1% of the initial capital required to fund these SPEs' projects. STEM states in its filings that it lacks the power to direct these SPEs, so they are **not consolidated**. Nevertheless, STEM claims that it is still "required to include the assets, liabilities, **revenues and expenses of these entities in its consolidated financial statements.**"

Unconsolidated VIEs

SPV II, SPV III, and SPV IV

On January 23, 2015, June 7, 2016, and June 30, 2017 the Company entered into agreements to form three Limited Liability Companies: Stem Finance SPV II, LLC ("SPV II"), Stem Finance SPV III, LLC ("SPV III"), and Generate-Stem LCR, LLC ("SPV IV"), respectively. These agreements are accounted for as unconsolidated VIEs because the Company lacks the power to direct the activities that most significantly impact the economics of these entities. Although the Company is not the primary beneficiary of these entities, due to its significant continuing involvement in the generation of cash flows of the energy storage systems and legal responsibilities under the host customer contract, the Company is required to include the assets, liabilities, revenues, and expenses of these entities in its consolidated financial statements. The significant activities involve deciding which energy storage systems to be purchased by the

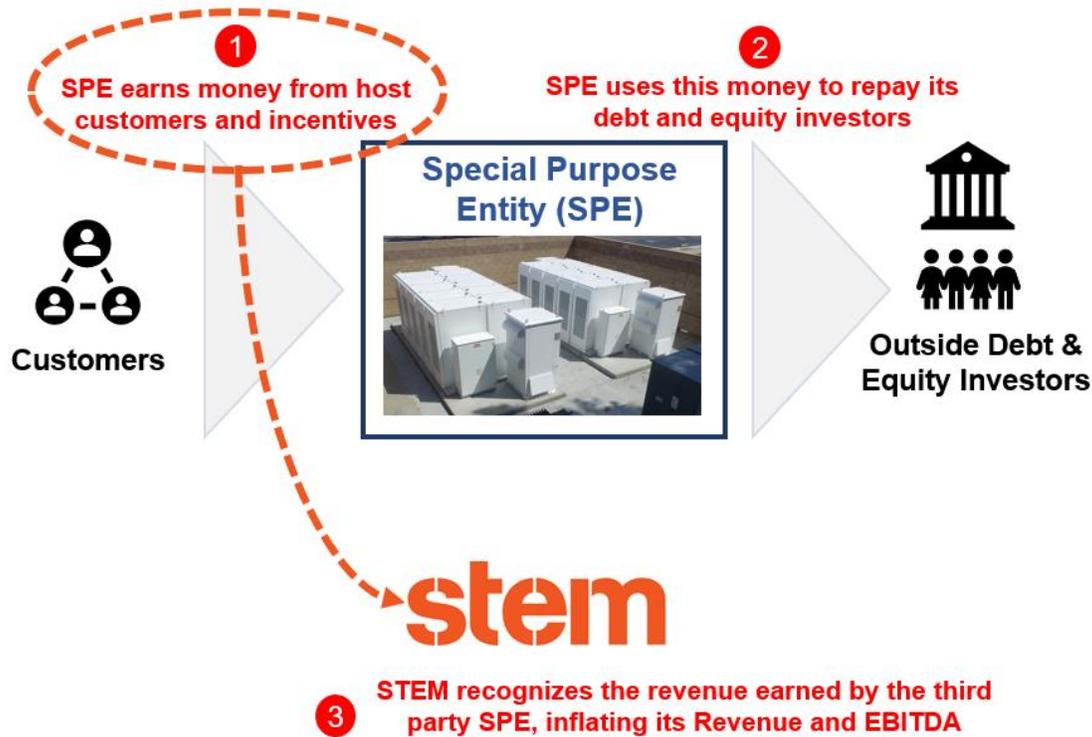
Source: [STEM 2021 10-K, p. 93](#)

In short, despite the fact that these entities are not consolidated and that the energy storage systems owned by these entities are not owned by STEM, STEM nevertheless continues to recognize revenues generated by these entities on its financial statements. In FY21, STEM recognized \$16.9 million of revenues from these unconsolidated SPEs, which made up the vast majority of the service revenue recognized in STEM's purported software segment.

In our view, STEM is essentially recognizing pass-through revenue earned by an unconsolidated SPE, money which does not accrue to STEM, but is paid out to fulfill the SPE's obligations to debt and equity investors.

¹⁰ STEM discloses three SPEs: SPV II, SPV III, and SPV IV, originally formed in 2015, 2016 and 2017 respectively. Of the \$106 million of energy storage systems (net) on STEM's balance sheet in FY21, 87% (\$92 million) are not owned by STEM, but by Special Purpose Entities.

STEM's Questionable SPE Accounting



Source: Company Filings, Blue Orca

We view STEM's categorization of such revenues as "software" as absurd considering that they are contract payments from customers to lease systems, most of which goes to paying for hardware, not software. But it's even more ridiculous considering that STEM does not even own the assets and, in our opinion, has little claim on these cash flows. We view it as an absurdity that STEM is recognizing this revenue at all - let alone misleading investors by claiming that payments to special purpose vehicles for hardware STEM does not own constitute software revenues.

The motivation to conceal the source of these revenues should be obvious. STEM trades at a high multiple because it tells investors that a substantial and growing portion of its revenues are derived from software, which prior to the acquisition of AlsoEnergy, was primarily the Athena software platform. In theory, such revenues are not only recurring but tend to grow as STEM sells more hardware. But in reality, STEM's software revenues are a tiny fraction of the purported software revenues reported by STEM to investors.

Without hardware-leasing revenues masquerading as software revenues, STEM would be viewed as a low margin battery storage integrator whose primary business is charging developers a small markup on batteries purchased from OEMs. We think that STEM misleads investors about the true nature of its software revenues to inflate its stock price.

- **This Explains STEM's Shifting and Disappearing Disclosures**

We think STEM knows that this is terminal to its valuation, which is why STEM has stopped disclosing both partnership services and host customer revenues in recent periods.

Up until and including its Q3 2021 filing, STEM specifically broke out the portion of its "partnership service" revenue derived from services. We think that this is the best proxy for the revenue reasonably attributed to the supposedly unique and coveted "Athena AI" platform which STEM pitches to investors as the cornerstone of its burgeoning and coveted software business.

Disaggregation of Revenue

The following table provides information on the disaggregation of revenue as recorded in the consolidated statements of operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Partnership hardware revenue	\$ 34,886	\$ 5,523	\$ 59,609	\$ 6,950
Partnership service revenue	33	—	112	—
Host customer service revenue	4,914	3,649	14,870	10,711
Total revenue	\$ 39,833	\$ 9,172	\$ 74,591	\$ 17,661

Source: [STEM 10-Q Q3-2021](#)

In 2021, this software component of its partnership revenues, which we believe represents software sales on energy systems sales, accounted for a paltry **\$227,000**.¹¹ Beginning in Q1 2022, STEM stopped disclosing the proportion of its revenues from partnership services and host customer arrangements altogether. In its place, STEM started talking about a non-GAAP metric called Contracted Annual Recurring Revenues (“**CARR**”), a nonsense metric which we will discuss below.

Then, in Q3 2022, STEM changed the labelling of its software segment from “service revenue” to “**services and other revenue**.”

Disaggregation of Revenue

The following table provides information on the disaggregation of revenue as recorded in the consolidated statements of operations (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Hardware revenue	\$ 85,809	\$ 34,886	\$ 171,358	\$ 59,609
Services and other revenue	13,692	4,947	36,178	14,982
Total revenue	\$ 99,501	\$ 39,833	\$ 207,536	\$ 74,591

Source: [STEM 10-Q Q3-2022](#)

What counts as “other” in this segment? STEM does not say. Yet the timing of the label change is notable. In Q3-2022, STEM’s purported organic “software” segment grew 24% QoQ to \$6.6 million, the first time this segment had shown meaningful growth in 18 months. We suspect that the growth was driven not by organic software sales, but by the inclusion of other non-software service revenue in the segment, hence the label change.

- **This Explains Why STEM’s Purported “Software” Revenue Doesn’t Grow with AUM**

Investors value software revenues at such a high multiple because they are sticky and tend to grow over time. STEM claims that contracted AUM has grown 110% from FYE 2020 through the end of Q2 2022. If AUM was rising, investors would expect to see “software” revenues rise commensurately. After all, STEM’s entire pitch to investors is that it sells low-margin hardware systems to customers in order to lock them into high-margin, sticky software revenues for its Athena platform.

Since 2018, nearly all (86%) of STEM’s top line growth has come from hardware sales. Yet excluding the AlsoEnergy acquisition, STEM’s “services” revenue stalled at ~\$5-6 million per quarter.

¹¹ As seen above, STEM reported \$112,000 in partnership service revenue through the nine months ended September 30, 2021. In the 2021 10-K, STEM changed disclosures by combining Partnership hardware and service revenues. In order to calculate the full year 2021 partnership service revenue, we are able to back into the Q4 2021 revenue by taking total service revenue and subtracting host customer service revenue, which is still disclosed separately in the 2021 10-K.

\$m	Q4'20	Q1'21	Q2'21	Q3'21	Q4'21	Q1'22	Q2'22	Q3'22	Q4'20-Q2'22
Contracted storage AUM (GWh)	1.0	1.1	1.2	1.4	1.6	1.8	2.1	2.4	
% QoQ		10%	9%	17%	14%	13%	17%	14%	110%
Services revenue	4.9	4.9	5.2	4.9	5.5	10.0	12.5	13.7	
(-) AlsoEnergy						(4.8)	(7.2)	(7.1)	
Organic services revenue	4.9	4.9	5.2	4.9	5.5	5.2	5.3	6.6	
% QoQ		-1%	6%	-4%	11%	-6%	3%	24%	8%

Source: Company Filings

An analyst even pointed this out at the recent investor day, asking why software revenues stalled at ~\$5-6 million over the past few quarters despite reported growth in AUM.

Unknown Analyst

Software and Services have been flattish for the -- at \$5 million for the past few quarters. When do you think we can expect to see an uptick in those?

William J. Bush
Chief Financial Officer

I think that you should see that in the coming quarters. I think that for really 2 reasons. One, I think there have been -- effectively if you go back and say like software and services, what drives those that's AUM. So AUM is increasing, not as quickly as we would like and for all the reasons that I've talked about interconnection, et cetera. But we're starting to see some projects come through that. So we'll see more services and software revenue coming into the business which is what's driving -- when you think about like how do we get to cash flow positive in '23, I mean, that's not because we're so more hardware, I can tell you that much. It's because we're deploying services and expectation around that.

Source: STEM Investor Day Q&A September 2022

Management obfuscated, reiterating the party line that high margin software revenues will grow with AUM. Yet despite the Company's claims, there appears little correlation between growth in AUM and growth in software revenues. AUM grew rapidly in recent quarters with low-margin hardware sales, whereas STEM's service revenue (excluding acquisition) remained stuck at ~\$5-6 million per quarter.

To us, the explanation is obvious. STEM's purported "software" revenues appear to be stagnant because they aren't really software revenues but instead mostly come from lease payments for hardware classified under host customer arrangements. Unlike true software revenues, these don't grow over time. Rather, STEM is winding them down. STEM has tried to obfuscate this via an acquisition and new operating metrics which use arbitrary forward-looking contracts to distract from its actual revenues.

Any investor who doubts our analysis should ask STEM for a simple disclosure: STEM could clear up the controversy by telling the market point blank what revenues were derived from Athena AI software for the last eight quarters. To date, we believe that they have misled investors on this critical point.

- **Software/Hardware Revenue Recognition: Auditor Warning and Ineffective Controls**

Notably, STEM's auditor flagged revenue recognition as a critical audit matter in STEM's latest annual report. Its auditor even noted that STEM's allocation of revenue between software and hardware involved a "high-degree" of judgment.

Revenue – Partnership Arrangements — Refer to Notes 2 and 3 to the financial statements

Critical Audit Matter Description

Given management's judgments to determine allocation of revenue between hardware and energy storage services performance obligations based on the standalone selling price of each performance obligation, auditing the judgments and estimates made in allocating revenue involved a high degree of auditor judgment and an increased extent of audit effort.

Source: [STEM 2021 10-K](#)

STEM's management team is heavily incentivized to allocate as much revenue as possible to its software segment, which supports not only the Company's valuation but the narrative that STEM is an up-and-coming software business. Yet STEM's auditor cautioned investors that the distinction between hardware and software revenues is highly subjective, meaning management has a significant amount of discretion to allocate revenues to its software segment.

STEM admitted not only an unresolved "material weakness in our internal control over financial reporting," but that the Company's "**disclosure controls and procedures were not effective.**" These problems related specifically to the energy storage systems, the very legacy systems which we believe STEM uses to mislead investors regarding its software revenues.

STEM admitted to material weaknesses relating to its "accounting for energy storage systems," including the admission that STEM did not "**sufficiently establish formal policies and procedures to design effective controls ... and hold individuals accountable for performance of these responsibilities, including [our] review over revenue recognition calculations.**"

In early 2021, we identified material weaknesses in our internal control over financial reporting, which we are in the process of remediating. If we do not remediate these weaknesses, it could affect the reliability of our consolidated financial statements and have other adverse consequences.

In connection with the Company's assessment of the effectiveness of internal control over financial reporting, the Company identified certain deficiencies in internal control over financial reporting that existed as of December 31, 2021, which management believes to be material weaknesses. These were previously identified and reported as of and for the year ended December 31, 2020 (our prior year end). Specifically, the material weaknesses identified related to (i) accounting for energy storage systems, deferred cost of goods sold and inventory, (ii) ineffective internal controls over review of the Company's consolidated financial statements and related disclosures, (iii) a lack of formality in our internal control activities, especially related to management review-type controls, and (iv) ineffective internal controls over the review of certain revenue recognition calculations.

We have concluded that our disclosure controls and procedures were not effective as December 31, 2021 due to material weaknesses in our internal control over financial reporting, all as described in Part II, Item 9A, "Controls and Procedures" of this Annual Report on Form 10-K.

With respect to energy storage systems, inventory and deferred cost of goods sold, we did not properly track inflows and outflows, including the valuation of energy storage systems, due in part to the systems that we used to track and value energy storage systems and inventory. With respect to a lack of formality in our control activities, we did not sufficiently establish formal policies and procedures to design effective controls, establish responsibilities to execute these policies and procedures

Source: [STEM 2021 10-K](#)

STEM's admissions of ineffective controls and material weaknesses are not only a significant red flag for investors but track perfectly our analysis that STEM disguises hosting revenues as "software" revenues to garner a higher valuation.

Ultimately, STEM is currently valued on its claim to provide AI enabled software with high margins, long-term contracts and recurring revenues. The Company claims that as new battery systems are sold, software revenues will continue to be meaningful, will grow, and will remain sticky. We think that this is false. Apart from its busted AlsoEnergy acquisition, 99% of STEM's purported software revenues are derived from STEM's misleading categorization of system leases as 'software' revenues. Despite its claims to the contrary, we think that STEM's purported software business is neither meaningful, differentiated, nor remotely sufficient to support STEM's current valuation.

III. AlsoEnergy: STEM Massively Overpaid for a Shrinking and Busted Business.

STEM went public via SPAC in April 2021. Like many other SPACs of that vintage, STEM's stock soared on the Company's claims to be a high growth software business with hockey stick projections of furious revenue growth and profitability. But like most other SPACs, STEM's projections unraveled almost immediately.

In its initial SPAC presentation, STEM guided that it would achieve 2021 revenues of \$147 million with a 16% gross margin. Incredibly, STEM's management continued to reaffirm this guidance even as late as November 2021, even though the Company was almost at year end and surely must have known that it would badly miss guidance.

Outlook

The Company reaffirms its guidance of full-year 2021 revenue of \$147 million and full-year 2021 Adjusted EBITDA of \$(25) million. Consistent with prior guidance, the Company reaffirms that it expects to recognize 50-60% of total 2021 revenue in Q4. The Company expects to provide 2022 guidance in its fourth quarter/full year 2021 earnings call in mid-to-late February 2022.

Source: [STEM Q3 2021 Press Release](#)

Despite reaffirming guidance as late as November 2021, when STEM finally reported its full year results in February 2022, STEM admitted it had missed revenues by \$20 million and catastrophically missed on gross profits. The stock duly tanked 22%. **Between the day STEM reaffirmed guidance in November 2021, and revealed that it wildly missed guidance in February 2022, STEM insiders sold \$12 million of stock.**

USD M	2021 Revenue	2021 Gross Profit	2021 Gross Margin
Guided	147	24	16%
Actual	127	1	1%
Difference	-20	-23	-15%
Difference %	-13%	-95%	

Source: [STEM Investor Presentation, FY2021 10-K](#)

To revive investor interest in STEM's shattered growth story, the Company turned to an acquisition. On February 1, 2022, STEM completed the [acquisition](#) of Also Energy Holdings, Inc. ("[AlsoEnergy](#)") for \$695 million, 75% paid in cash and 25% in shares.¹² STEM funded the acquisition with a \$460 million convertible green bond issuance, which flipped STEM from net cash to net debt. AlsoEnergy is a roll-up of solar platforms which, like STEM, bundles hardware with an allegedly valuable solar monitoring software. STEM was especially bullish about AlsoEnergy's growing software revenues and its 32.5 GW of solar assets under management.

Yet evidence suggests that STEM grossly overpaid for an acquisition of questionable value in order to revive flagging interest in its slumping stock and to pump investor belief in its broken growth story. The deal appears to be an immediate bust, with STEM recently admitting that AlsoEnergy's supposedly valuable solar AUM fell 22% in the third quarter alone, and that AlsoEnergy's revenue had already begun to decline.

First, the overpay. STEM bought AlsoEnergy from a group led by Clairvest Group Inc (TSE: CVG) ("[Clairvest](#)"), a private equity firm publicly listed on the Canadian stock exchange. Between 2017 and 2020, Clairvest invested a meager \$9 million in exchange for an 18% equity stake in AlsoEnergy.

Clairvest's public filings revealed that as of March 2021 - **just ten months prior to the acquisition** - the private equity firm valued its investment in AlsoEnergy at just \$24.2 million, implying a fair value valuation of \$134 million for AlsoEnergy's equity.

Excluding the carried interest and management participation from Clairvest Equity Partners V and VI and the net assets held by Clairvest's acquisition entities, the aggregate carrying value of Clairvest's investee companies increased by \$268.8 million during fiscal 2022, which primarily comprised the following:

- The realization of Also Energy which had a fair value of \$24.2 million as at March 31, 2021, net of a continuing valuation of \$8.4 million on the STEM shares;

Source: [Clairvest Annual Report](#)

¹² When STEM [completed](#) the transaction in Q1 2022, the final purchase price was reported at \$653 million. Even though the total amount was \$42 million lower, the cash portion increased by \$23 million.

AlsoEnergy Valuation over Time

\$m	Date	Value of investment	% Ownership	Implied Equity Value	Markup	Cumulative Markup
Clairvest's investment at cost	2017-2020	9	18%	50		
Fair value as reported by Clairvest	Mar-21	24	18%	134	2.7 x	
STEM Acquisition	Dec-21			695	5.2 x	13.9 x

Source: Clairvest Annual Reports

STEM top ticked the market. Just ten months prior to its acquisition by STEM, AlsoEnergy's cornerstone investor valued the target's equity at 81% below the acquisition price paid by STEM. In our view, this suggests that AlsoEnergy is not nearly as valuable as STEM claims and that STEM drastically overpaid for a business to revive waning investor interest.

A former STEM executive we spoke with even described the acquisition as a **"headscratcher"** with no obvious strategic rationale.

"It was a headscratcher when they made the acquisition. I couldn't understand why.... It wasn't necessarily complementary. AlsoEnergy didn't have any knowledge specifically that [STEM] wanted to get. It wasn't necessarily the people. The only reason to acquire them was access to the customers. But they also spent an incredible amount of money doing that acquisition... It just seemed really strange to me strategically to do that. Unless it was just to boost their numbers. I don't see why else they would do that or pay that much for it... I heard second or third hand that other people also were looking at that acquisition and didn't value AlsoEnergy at anywhere near that price."

- Former STEM Executive

STEM paid 12x LTM revenues for AlsoEnergy on the premise that it was a rapidly growing business with a substantial solar management AUM. At the time of the deal, STEM bragged that AlsoEnergy had supposedly achieved a historical revenue CAGR of 23%, and a 99% retention rate – implying extremely low customer churn.

- **Historical revenue CAGR of 23%¹**
\$57 MM LTM total revenue, \$23 MM² annual recurring revenue
- **99% gross revenue retention rate³**

Commercial Expansion

- 50+ countries
- **32.5 gigawatts of AUM¹**
- Significant cross-sell opportunity (~30% customer relationship overlap)

Source: [STEM Investor Presentation](#)

STEM initially provided only limited disclosures on AlsoEnergy, disclosing only one year of audited financials. Investors would be forgiven for thinking that they missed the details altogether in STEM's 10-K. AlsoEnergy's audited financials were disclosed in an [8-K/A](#) in April 2022. Rather than seeing a growing high margin profitable solar monitoring business, we see a money losing business with \$10 million of net loss, \$43 million of accumulated deficit, and negative \$13 million of shareholder equity.

Meanwhile, the deal already looks like a bust. In the months post acquisition, AlsoEnergy's revenue growth has stalled. In the most recent quarter, revenues even declined.

AlsoEnergy Financials

	Q1-21	Q2-21	Q3-21	Q4-21	Q1-22	Q2-22	Q3-22
Services Revenue						7.2	7.1
% QoQ							-1.4%
Hardware Revenue						6.9	9.5
Total Revenue	12.2	13.1	16.9	20.4	13.4	14.1	16.6
% YoY					10.6%	7.7%	-1.8%

Source: Company Filings

Worse still, STEM revealed that AlsoEnergy's supposedly prized solar AUM fell 22% just in the third quarter alone.

AlsoEnergy AUM

	Q2-22	Q3-22	% difference
Solar storage AUM (GWh)	32.1	25	-22%

Source: Company Filings

When it announced the deal, STEM [repeatedly](#) highlighted AlsoEnergy's solar AUM as a key reason why the acquisition was so attractive and accretive to STEM's business. For AUM to contract 22% in Q3, only months after the deal, is a shocking decline in AlsoEnergy's prospects.

Why does this matter? Because this is STEM's primary source of meaningful software revenues going forward. As we discuss above, STEM's core organic software business is tiny and a small fraction of the reported size. Yet any investor betting on a robust and recurring stream of software revenues from STEM's pricey acquisition is now confronted with shrinking revenues and a solar AUM in freefall.

IV. STEM Misleads Investors with Bogus Key Operating Metrics

STEM's financial performance has fallen apart following its SPAC. But to divert attention, management tells investors that STEM has outperformed on a number of self-created "key-operating metrics." These non-GAAP metrics include *Pipeline*, *Bookings*, *Contracted Backlog*, and *Contracted Annual Recurring Revenue ("CARR")*. Management pitches these metrics as being the key underlying drivers of STEM's growth prospects and future revenues. We find them grossly misleading and a diversion tactic to distract investor attention from the carnage of STEM's financials and underlying business. In our opinion, this is reminiscent of [Lordstown Motors](#), which disguised non-binding letters of interest as EV truck pre-sales to deceive investors about future revenues and demand for its product.

- **"Pipeline"**

STEM's management presents "pipeline" as a flashy gauge of "future revenue," with the figure even being reported in billions USD. In its FY 2021 earnings call, management was quick to pivot from STEM's mounting losses to STEM's "pipeline."

Moving from our financial results to our operating metrics, on Slide 12, our pipeline more than doubled year-over-year, from \$1.6 billion at the end of 2020 to \$4 billion at the end of 2021, and grew 67% just between the third and fourth quarters of 2021. Our business development teams continue to develop multiple new markets and customers and deepen relationships with existing.

Source: STEM Q4 FY2021 Earnings Call

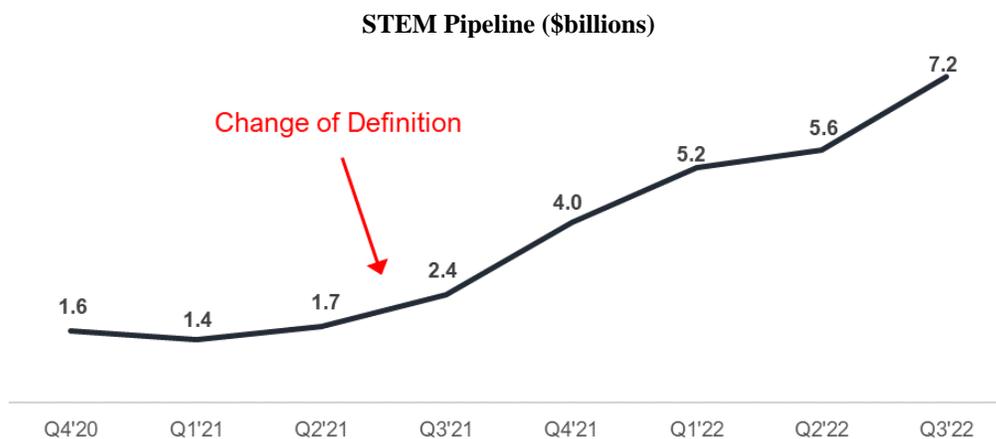
However, upon further inspection, this figure appears to be an arbitrary measure of every "potential" customer that STEM's sales team has ever called.

Pipeline

Pipeline represents the total value (excluding market participation revenue) of uncontracted, potential hardware and software contracts that are currently being pursued by Stem direct salesforce and channel partners with developers and independent power producers seeking energy optimization services and transfer of energy storage systems that have a reasonable likelihood of execution within 12 months of the end of the relevant period based on project timelines published by such developers and independent power producers. We cannot guarantee that our pipeline will result in meaningful revenue or profitability.

Source: STEM 2022 3Q 10-Q

Not only is STEM's pipeline metric an obvious sleight of hand, it appears completely arbitrary. STEM's estimate of pipeline grew from \$1.7 billion in Q2 2021, to \$7.2 billion at the end of Q3 2022. STEM's product offering did not change meaningfully, during this time, yet that didn't stop STEM from arbitrarily pumping its "pipeline" estimate to the stratosphere each quarter.



Source: Company Filings

This growth is nonsense, not just because the measure is arbitrary to begin with, but because STEM appears to have expanded the definition over time. In Q3 2021, STEM adjusted the fine print to include the “energy optimization services and transfer of energy storage systems,” which basically appears to have allowed STEM to include existing projects already built. In the quarter following the change of definition, STEM’s pipeline nearly doubled.

STEM even admits that it “cannot guarantee that our pipeline will result in meaningful revenue or profitability.”

The pipeline metric is less than useless. In our view, it’s nothing more than an arbitrary number used by management to distract investors from the carnage of STEM’s financials. Yet this pie-in-the-sky figure is just one of many meaningless metrics foisted on investors.

- **“Bookings”**

“Bookings” and “Contracted Backlog” are far more important to investors, as STEM claims that these metrics are tied directly to future revenues. STEM claims that “bookings” represent the “accumulated value at a point in time of **contracts that have been executed** under both our host customer and partnership sales models.”

Bookings

Due to the long-term nature of our contracts, bookings are a key operating metric that allow us to understand the growth of our Company and our estimated future revenue related to customer contracts for our energy optimization services and transfer of energy storage systems. Bookings represent the accumulated value at a point in time of contracts that have been executed under both our host customer and partnership sales models.

Source: [STEM S-1](#)

At first glance, these metrics appear useful because they track **executed contracts**. It would be reasonable for investors to presume that an executed contract is a meaningful gauge of future revenues.

However, in the fine print, STEM admits that it does not consider the booking to be a “contract in accordance with ASC 606 ... until the customer has placed a binding purchase order.” Rather, a booking is merely an indication that **“the customer has agreed to place a purchase order in the foreseeable future.... However, executed customer contracts, without binding purchase orders, are cancellable without penalty by either party.”**

For partnership sales, bookings are the sum of the expected consideration to be received from the transfer of hardware and energy optimization services (excluding any potential revenues from market participation).

For partnership sales, even though we have secured an executed contract with estimated timing of project delivery and installation from the customer, we do not consider it a contract in accordance with ASC 606 or a remaining performance obligation until the customer has placed a binding purchase order. A signed customer contract is considered a booking as this indicates the customer has agreed to place a purchase order in the foreseeable future, which typically occurs within three (3) months of contract execution. However, executed customer contracts, without binding purchase orders, are cancellable without penalty by either party.

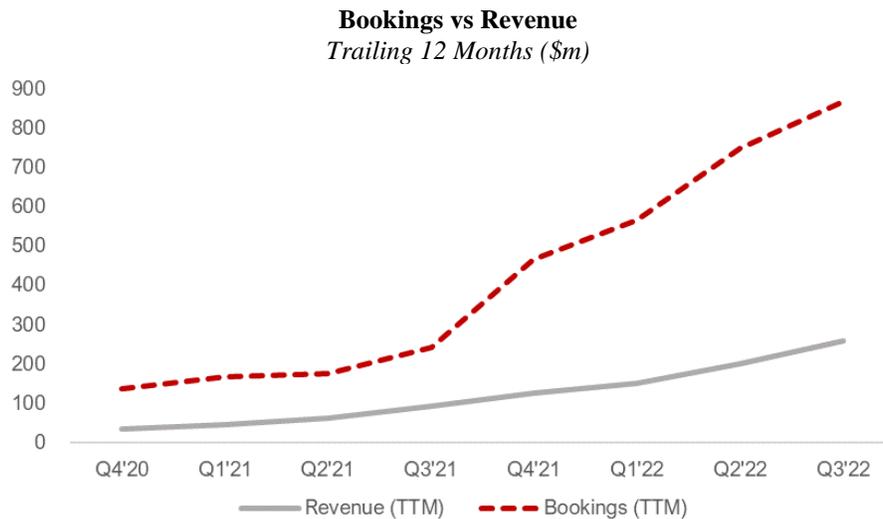
Source: [STEM S-1](#)

In other words, STEM’s booking metrics, by definition, includes contracts under which the customer is under no obligation to purchase systems or software from STEM. Rather than “bookings,” these arrangements appear more akin to non-binding indications of interest, a fully cancelable promise from a potential customer that it may purchase something from STEM in the future. Or may not.

What good is a metric of non-binding indications of interest? In our view, it allows STEM to mislead investors about future revenues which likely will not materialize, all while distracting investors from the tire fire that is STEM’s performance. This reminds us of [Lordstown Motors](#), which disguised non-binding letters of interest as EV truck pre-sales to deceive investors about future revenues and demand for its product.

STEM’s definition is also increasingly loose over time. On the Q2 2022 conference call, STEM’s CFO admitted that ‘bookings’ from 2024 were now being included in STEM’s ‘bookings’ metric. This means that the definition of

'bookings' is now being expanded to include indications of interest for two years in the future, which appears to explain why Bookings have become increasingly detached from actual revenues.



Source: Company Filings

The longer the time frame that STEM blows out its definition of 'bookings,' the more meaningless the metric becomes. Rather than a measure of future revenues, as management claims, we view this metric as a misleading attempt to mask present failures under the guise of illusory future customer interest.

- **“Contracted Backlog”**

STEM claims that a third measure of future revenue is “contracted backlog.” STEM only defines contracted backlog in a footnote noting that it increases with bookings and decreases with recognized revenue. The “contracted backlog” metric is a function of bookings, meaning this metric also includes signed indications of interest from an undefined point in the future under which customers are not obligated to purchase anything from STEM.

- **“CARR”**

In the first five quarters as a public Company, STEM’s organic service revenues barely grew at all. To distract from this, for Q1 2022, STEM introduced a new “key metric” called Contracted Annual Recurring Revenue . STEM trots out CARR as a purported proxy for the recurring, high margin “software” revenues valued so highly by investors.

Contracted Annual Recurring Revenue (“CARR”)

Enhances enterprise value with projected \$60-\$80M in recurring revenue



Beginning Q1'22, introducing CARR as a key metric

Source: [STEM Investor Presentation Q4 2021](#)

Since then, STEM has reported growing CARR each quarter, up from \$52 million in Q1 22 to \$61 million in Q3 22. This is despite organic service revenues flatlining during this period, begging the question of how STEM purports to be growing CARR when, excluding AlsoEnergy, its services revenue seemingly stagnated.

STEM does not provide any granular breakdown of CARR. But our interpretation is that – as with STEM’s service revenues - it is comprised mostly of the shrinking and busted AlsoEnergy acquisition and host customer arrangements - which as discussed above are from leasing hardware to customers. Including host customer revenues in CARR would be especially ridiculous considering that STEM is shutting this legacy business down, the majority of them are not recurring software revenues, and the gross margins from this segment are very negative.

CARR is supposed to represent a measure of future recurring, high-margin software revenues, not negative margin systems leases that STEM is winding down.

If we assume that STEM's CARR includes both the AlsoEnergy revenues and host customer arrangements, we estimate that STEM's remaining CARR was just \$13 million in the most recent quarter, which is almost 80% less than the headline number.

Yet this only tells half the story. The bulk of STEM's remaining CARR appear to be from future contracted revenues. In the footnotes, STEM reveals that CARR is defined as the annual run rate for all software services contracts including systems that are "**not yet commissioned or operating.**"

Contracted Annual Recurring
Revenue ("CARR")

Annual run rate for all executed software services contracts including contracts signed in the period for systems that are not yet commissioned or operating.

Source: [Company Presentation Q3-22](#)

As with STEM's "bookings" metric, we think that this includes contracts for orders that have not been placed, meaning customers can cancel these contracts without obligation at any time.

We think the metric is as worthless and misleading as the other non-GAAP operating metrics which STEM trots out to distract investors from STEM's deep and chronic unprofitability. These metrics are a way to distract from the financial carnage of STEM's actual business.

V. Deteriorating Cash Flow & Payables

Just prior to its April 2021 SPAC, STEM was on the verge of a liquidity crisis. Its balance sheet showed just \$9.9 million of cash and an accumulated deficit of \$490 million. It is not an exaggeration to suggest that STEM was saved by the SPAC. This may have only delayed the inevitable. Despite the injection of cash from the capital markets, STEM continues to pile up losses and bleeds cash.

A year later, STEM's TTM adjusted EBITDA was negative \$49 million. STEM's adjusted EBITDA margins remain stubbornly bad and have only improved slightly compared to last year.

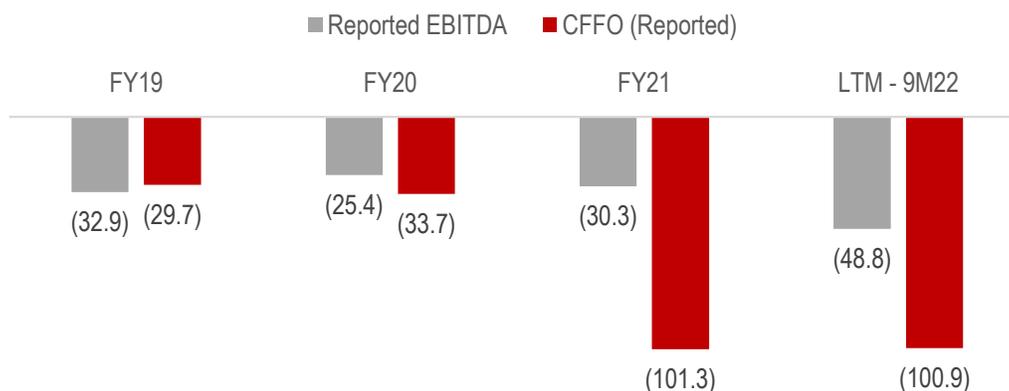
STEM EBITDA Margins

USD M	FY19	FY20	FY21	LTM-9M22
Reported Adjusted EBITDA	(32.9)	(25.4)	(30.3)	(48.8)
% Margin	-188%	-70%	-24%	-19%

Source: Company Filings

But we think even this slight improvement is illusory. In recent periods, STEM's operating cash flow has started to diverge significantly from the Company's reported EBITDA.

STEM EBITDA vs CFFO



Source: Company Filings

Furthermore, STEM's operating cash flows hide a major deterioration in its working capital. In the most recent quarters, the company's days receivable and days payable both increased significantly, despite substantial revenue growth. This should concern investors, because it undermines the narrative that STEM's working capital position will improve as it scales.

STEM Working Capital Analysis

	FY20	FY21	LTM-Q322
Receivables	13.6	61.7	144.3
Days Receivable		108	126
Inventories	20.8	22.7	29.2
Days Inventory		71	41
Payables (inc. accrued liabilities)	29.8	54.3	156.5
Days Payable		137	164

Source: Company Filings.

Uses period averages. Payables and Inventories per cash COGs.

STEM LTM number calculated using average payables across all four quarters.

Masking the negative impact of STEM's rising receivables has been a blowout in STEM's days payable, which increased from 137 to 164 days for the 12 months ending Q3 2022. This is remarkable considering that STEM's revenue grew substantially in this time.

STEM is now taking almost six months to pay its suppliers. In the most recent nine months alone, STEM's growing payables and accrued liabilities provided a \$101.5 million positive contribution to STEM's CFFO.

	Nine Months Ended September 30,	
	2022	2021
OPERATING ACTIVITIES		
Net loss	\$ (88,781)	\$ (67,157)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization expense	32,060	15,620
Non-cash interest expense, including interest expenses associated with debt issuance costs	1,479	8,098
Stock-based compensation	20,410	7,983
Change in fair value of warrant liability and embedded derivative	—	(3,424)
Noncash lease expense	1,722	280
Impairment of energy storage systems	1,293	2,200
Issuance of warrants for services	—	9,183
Net (accretion of discount) amortization of premium on investments	301	295
Income tax benefit from release of valuation allowance	(15,100)	—
Provision for accounts receivable allowance	1,874	—
Gain on sale of project assets	(592)	—
Other	144	174
Changes in operating assets and liabilities:		
Accounts receivable	(75,390)	(21,383)
Inventory	(2,237)	(3,357)
Deferred costs with suppliers	(47,836)	(4,159)
Other assets	(25,242)	(13,901)
Contract origination costs	(4,842)	(1,853)
Accounts payable	63,207	2,916
Accrued expense and other liabilities	38,329	3,334
Deferred revenue	31,620	(3,538)
Lease liabilities	(1,053)	(331)
Net cash used in operating activities	(68,634)	(69,020)

Source: [STEM Interim Report](#)

Note: STEM's accrued expenses and other liabilities include accrued payables

This is baffling. STEM's payables seemingly contradict reports of industry supply shortages which have allegedly led to buyers making significant advanced down payments in order to secure equipment. Since Q2 2022, STEM warned investors that "the Company will in some cases also elect to make cash advances to hardware suppliers to accelerate project construction timelines given long lead times to secure hardware."

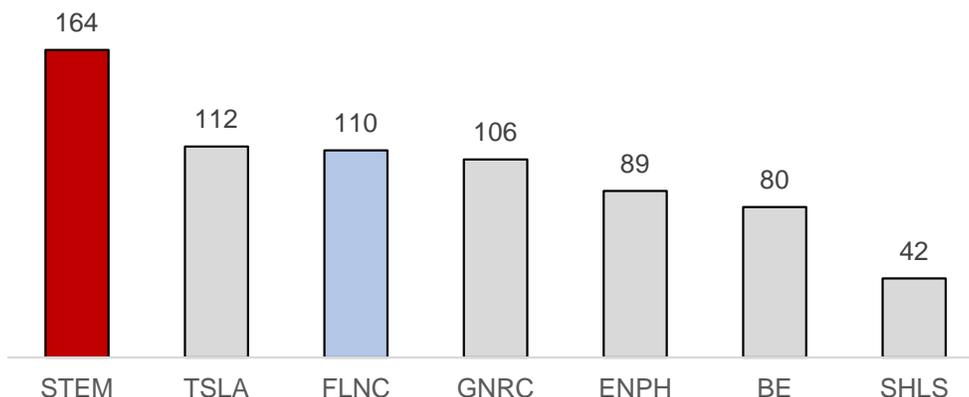
development capital contributions to fund project development. The Company will in some cases also elect to make cash advances to hardware suppliers to accelerate project construction timelines given long lead times to secure hardware. This business model is intended to allow the Company to opportunistically deploy its balance sheet by providing development capital to key partners in strategic

Source: [STEM Q2-22 Report](#)

If the supply of hardware is so tight that STEM warns investors that it needs to make cash advances to suppliers in order to facilitate new energy storage projects, **then why is STEM taking 164 days to pay its suppliers?**

STEM's payables are also an outlier when compared to even a broad universe of competitors. STEM's payables are so far above other companies throughout the value chain that we wonder why suppliers would continue to deal with STEM, especially when supply is tight.

Days Payable – STEM vs Peers
Trailing 12 Months



Source: Company Filings

Note: Calculated using average payables and accrued liabilities balances at the beginning and end of the Last 12 Months. STEM numbers calculated using quarterly averages.

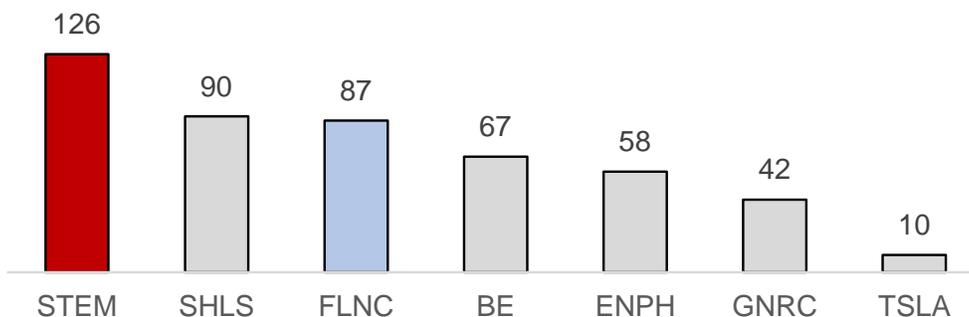
STEM’s receivables are equally puzzling. As of Q3 2022, STEM’s days receivables reached 126 days. This trend is mysterious, as STEM’s credit terms for the contract disclosed to investors suggest that customers are required to pay promptly. Copies of purchase agreements made by the Company show that customers are invoiced in advance of receiving the hardware and required to pay within 60 days.

4. **Payment Terms.** The following payment terms will be reflected on each Purchase Order.
 - a. 25% of the Total Purchase Price, as reflected above, will be invoiced upon Stem’s acceptance of Customer’s Purchase Order and will be due within 30 days of Customer’s receipt of such invoice (“Initial Payment”).
 - b. 45% of the Total Purchase Price will be invoiced upon the earlier of Stem’s acceptance of Customer’s Purchase Order or shipment of the Stem Systems by the Manufacturer and will be due within due within 60 days of Customer’s receipt of such invoice (“Intermediate Payment”).
 - c. 30% of the Total Purchase Price and the full amount of Shipping will be invoiced upon acceptance in accordance with Section 5.7 of the Purchase Agreement and will be due within upon 30 days from Customer’s receipt of such invoice (“Final Payment”).

Source: [STEM SPA May 2020](#) Page 39.

STEM’s receivables days are now double the peer group median.

Days Sales – STEM vs Peers
Last 12 Months



Source: Company Filings

Note: Calculated using average receivables balance at the beginning and end of the Last 12 Months. Bloom adjusted to include factoring facilities.

The point is that STEM's working capital issues are getting worse as the company scales. Not better. Despite the Company's revenues and COGs growing rapidly, its receivables and payables are outstripping this growth. Based on this trend, we believe the drag of STEM's working capital on its cash flows is only likely to deteriorate further as the Company continues to scale.

In the past 12 months, STEM's payables (measured at period end) stretched from 141 days to 252 days¹³ providing a \$69 million positive impact to STEM's cash flows. **Were it not for stretching payables, we calculate that STEM's cash flows from operations would have been negative \$170 million over the last twelve months.**

STEM's Cash Flows Adjusted for Payables

USD M	FY19	FY20	FY21	LTM Q3-22
Payables inc. accrued liabilities	20	30	54	157
Cash and liquid investments	13	7	921	294
Adjusted EBITDA (reported)	(33)	(25)	(30)	(49)
CFFO Reported	(30)	(34)	(101)	(101)
Adjustment for increased payables				(69)
Issuance of warrants for services			(9)	
Adj. CFFO (Blue Orca)	(30)	(34)	(110)	(170)

Source: Company Filings

Note: Adjustment for payables assumes STEM's DPOs stay constant at 141 days

Barring a further blowout to payables, STEM's cash burn going forward will likely be staggering. At the current rate of cash burn, STEM's seemingly large cash balance (\$294 million as of Q3-2022) will not last much more than 18 months.

Put simply, what appeared at first to be a margin of safety begins to look worrisome as interest rates remain high and STEM continues to incinerate cash.

STEM's working capital issues are severe, and in our view speak to STEM's aggressive accounting policies and opaque role in the transactions on which it recognizes revenue. We view STEM's rising payables as a major red flag, evidence of rot at the core of its business, and likely indicative of deteriorating fundamentals of its financials.

¹³ Calculated as End of Period payables / trailing 12 month cash COGs

VI. Insider Selling

We think STEM's accounting is rotten, and that it is a low-value hardware integrator masquerading as a software business. Yet STEM's valuation remains elevated, partly on the strength of its illusory 'pipeline,' accounting games and the narrative propagated by management that its mirage of a software business will cure its financial woes. But if STEM is a story stock, management does not appear to believe the story.

Insiders have been selling at a frenetic pace. This starts at the top, with STEM's CEO, CFO and the rest of the C-Suite consistently selling shares. STEM's other key executive – Mark Triplett –[resigned](#) from his Chief Operating Officer position in April 2022. Since its IPO, STEM's CEO has sold most of his shares.

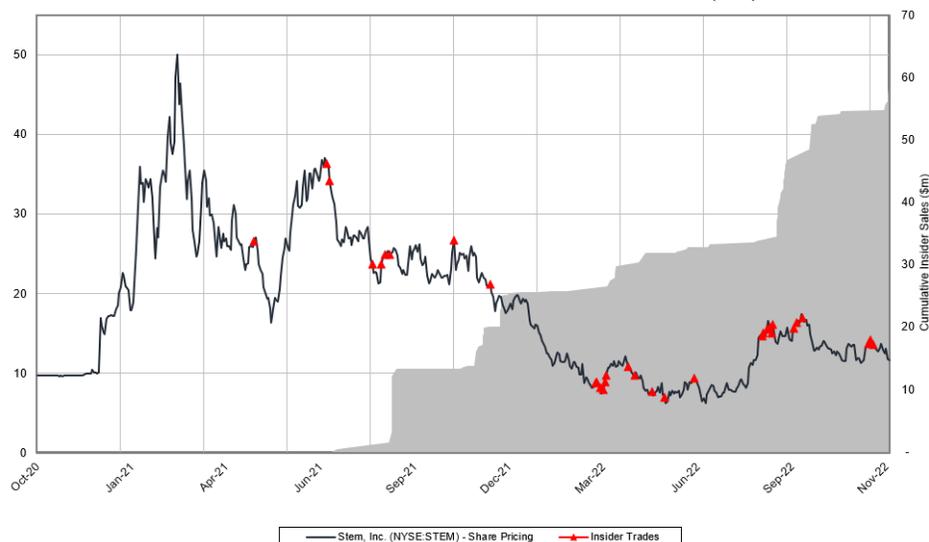
STEM Insider Sales

	Since IPO		Inflation Reduction Act Effect	
	Shares Sold (m)	Dollars Sold (\$m)	Shares Sold (m)	Dollars Sold (\$m)
Carrington, John E. (CEO & Director)	1.0	17.6	0.2	3.4
Angeleno Group, LLC (Tammineedi, Anil (Director))	0.8	10.0	0.5	7.9
Daley, Adam E. (Independent Director)	0.5	8.4	0.3	4.3
Bush CPA, William J. (Chief Financial Officer)	0.4	5.2	0.1	1.8
Triplett, Mark (Former Chief Operating Officer)	0.4	3.9	0.0	0.0
Buzby, David S. (Independent Chairman of the Board)	0.2	3.1	0.1	1.8
Patel, Prakesh (Chief Strategy Officer)	0.1	3.0	0.0	0.0
Johnson, Larsh M. (Chief Technical Officer)	0.2	2.9	0.1	1.3
Russo, Alan (Chief Revenue Officer)	0.2	2.2	0.2	2.0
Homenock, Kim (Chief People Officer)	0.0	0.5	0.0	0.5
Laureles, Saul R. (Chief Legal Officer & Corporate Secretary)	0.0	0.3	0.0	0.2
Total	3.7	57.0	1.6	23.2

Source: Capital IQ

Any investor who mistakenly believes the narrative that the Inflation Reduction Act will save STEM's business should note that the pace of insider sales has picked up in 2022. In particular, many executives dumped a significant number of shares and cashed out \$23 million since August 2022, when the Inflation Reduction Act briefly resuscitated the stock.¹⁴ Filings show that insiders also dumped aggressively near the lows, suggesting little, if any, long-term faith in the viability of the business.

STEM Share Price vs Insider Sales Cumulative (\$m)



Source: Capital IQ; Note: Grey Area Indicates Cumulative Insider Sales

¹⁴ Inflation Reduction Act [passed](#) on August 16, 2022.

Such heavy insider selling raises the question of why outside investors should have any faith in STEM's business if those who know best do not. We believe it also adds corroborating evidence to our thesis that STEM is an accounting quagmire. If STEM is a story stock, it seems insiders do not believe the story.

DISCLAIMER

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