



Q4 FISCAL 2021
LETTER TO SHAREHOLDERS



FEBRUARY 16, 2022

Dear shareholders,

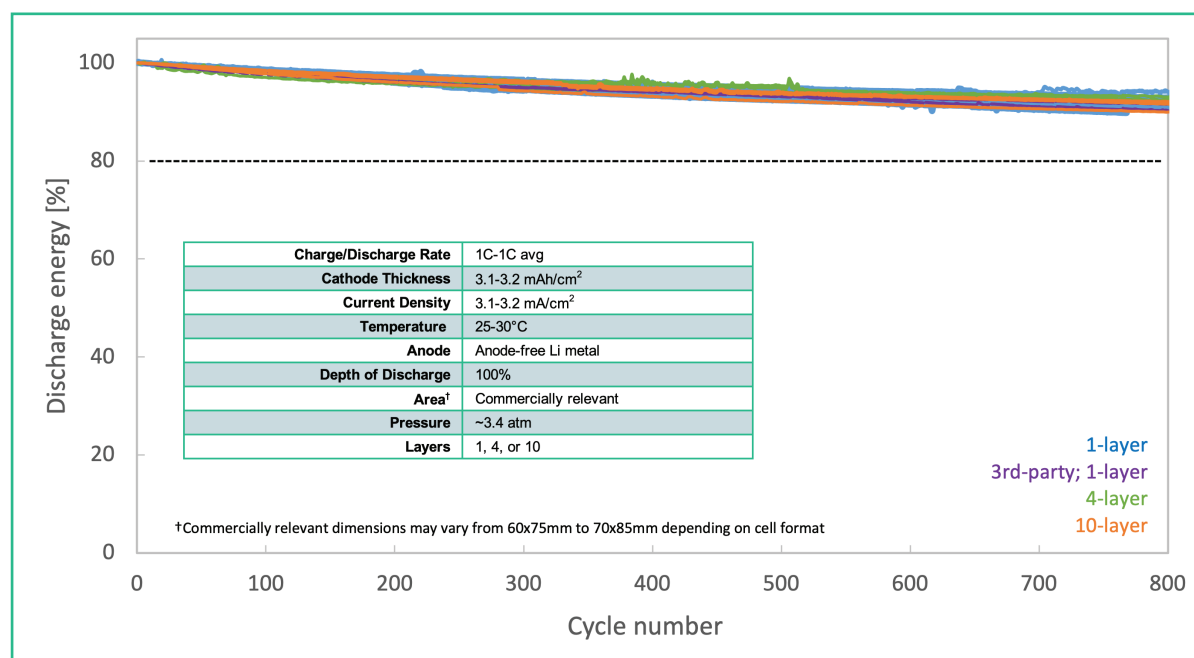
The past quarter marked the close of our first full year as a public company. At the beginning of 2021, we announced our essential goals for the year: complete a technical milestone for cells delivered to Volkswagen; demonstrate multilayer cells with both 4- and 10-layer cells capable of delivering over 800 cycles under what we refer to as our *gold-standard* test conditions;¹ and secure space and begin the buildout for QS-0, our pre-pilot production line.

We are proud that we completed all 2021 milestones on schedule:

Meeting the technical milestone jointly set with Volkswagen demonstrated important progress toward our final commercial design and in addition, successfully completing the milestone unlocked a \$100 million investment from Volkswagen.

Having shown the capabilities of the core single-layer chemistry, our next key goal was to **demonstrate the ability to make multilayer cells with similar cycling performance**. We showed 4-layer cells meeting our gold-standard test conditions in August 2021, and our first 10-layer cell hit the mark in November. We've replicated this excellent performance with additional 10-layer cells, as illustrated on the following chart.

Energy Retention vs Cycle Count



Importantly, this data demonstrates that cycling performance remains fundamentally similar when single-layer cells are stacked together in a multilayer cell, reinforcing our confidence that with good design, single-layer performance can be successfully scaled up to a multilayer format. This chart also includes newer 10-layer cells with a commercially relevant separator area of 66x81 mm; we expect these dimensions will continue to evolve based on customer preferences and packaging considerations.

¹ By "gold-standard" test conditions we mean: average charge/discharge rates of 1C or faster, temperatures of 25 °C, 100% depth of discharge, and externally applied pressure of no more than 3.4 atmospheres, simultaneously. For a more detailed discussion of why these parameters are important, please read CTO Tim Holme's [blog](#) on the subject.

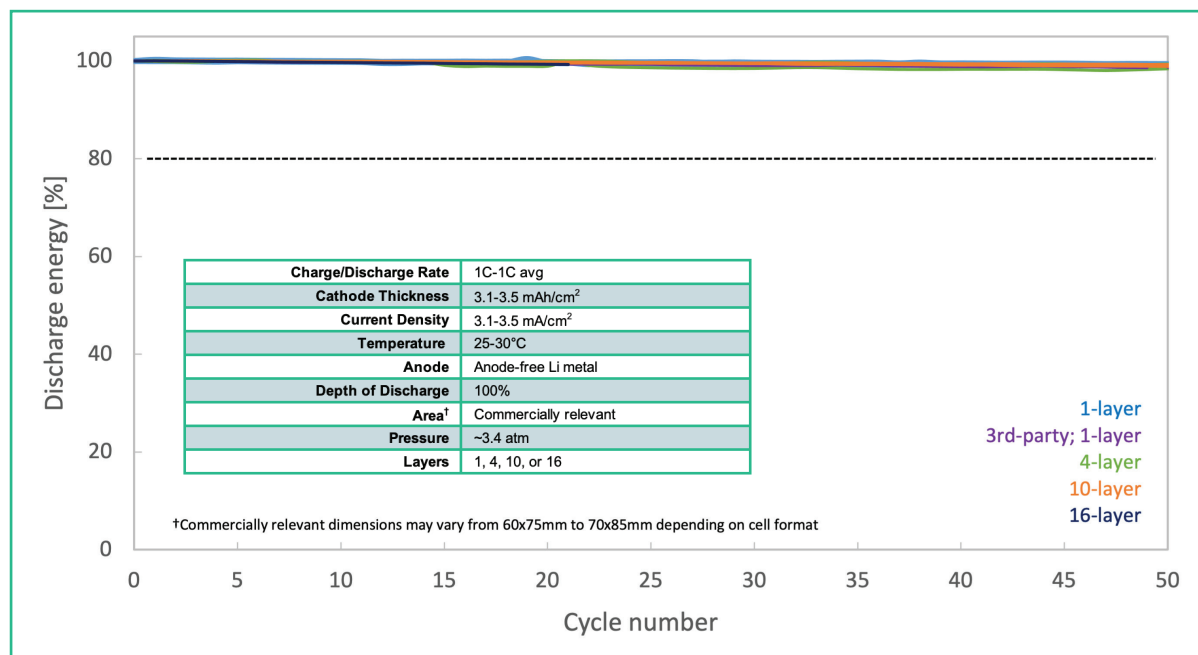
Securing space and beginning construction on QS-0, our pre-pilot facility, was a key step in our manufacturing progress. We secured a building for the QS-0 line itself and surrounding structures to establish QS Campus. **Tool delivery and QS Campus buildout will ramp up substantially this year,** with the start of pre-pilot production at QS-0 targeted for 2023.

Technical Progress Update

We are excited to announce that we have built our first 16-layer cells, at the amp-hour scale.

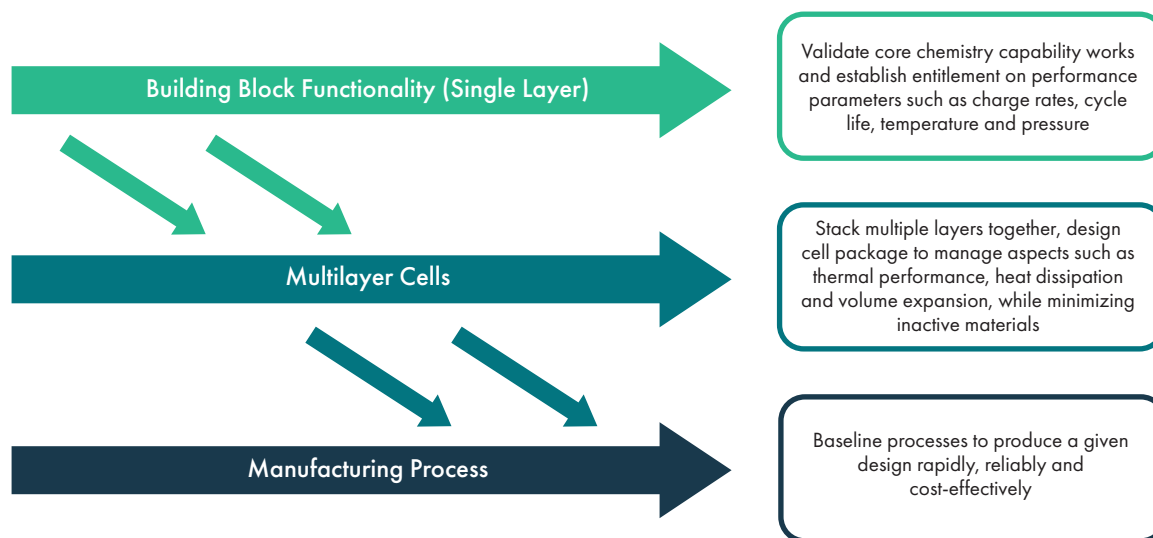
While we generally do not expect first prototypes to demonstrate cycling results that match more mature designs, we were pleased that the very first cell we put on our cycle life test showed early energy retention and cycling behavior substantially similar to that of our single-, 4-, and 10-layer cells and achieved over 20 cycles, providing a solid basis upon which we expect to rapidly iterate and improve in the coming weeks and months.

Early Cycle Energy Retention vs Cycle Count



Our technical progress is driven by our development approach, which occurs concurrently on three distinct levels: the single-layer building block, multilayer cells and manufacturing.

QS Development Approach



Using our single-layer platform, we pursue material and process innovations and prove the fundamental entitlements of our chemistry. The single-layer cell consists of one cathode and one separator as manufactured, with an anode layer of pure lithium metal formed in-situ during the first charge from the lithium in the cathode. Improvements to energy density, fast charging, and longevity flow directly from the capabilities of this single-layer system.

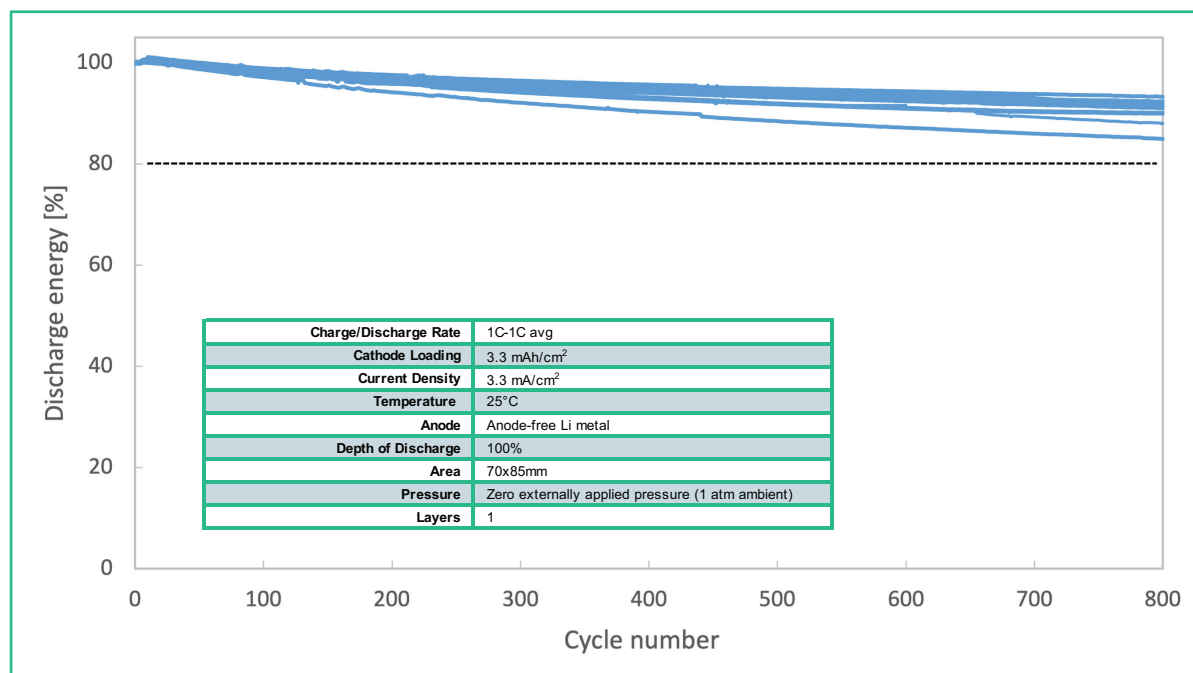
Once new features are proven on the single-layer platform, they are passed along to the multilayer development workstream. Technical development of multilayer cells involves increasing the number of layers and optimizing the cells' electrical performance, mechanical behavior and packaging design. When complete, cell developments are integrated into our production process engineering flow.

Multilayer cell performance is ultimately dependent on what is achievable at the single-layer level.

We recently made several important single-layer announcements. At the December 2021 Advanced Automotive Battery Conference, CTO Tim Holme presented preliminary data on our full-area single-layer cells achieving 400 cycles with no externally applied pressure. **We are pleased to report new data on our zero external pressure efforts:** 70x85 mm single-layer cells have reached 800 cycles with energy retention above 80%, under our gold-standard test conditions – 100% depth of discharge, 25 °C and 1C average charge/discharge rates.

To our knowledge, **demonstrating long cycle life with zero externally applied pressure represents a world-first for lithium-metal battery technology.** Many groups over the decades have published papers suggesting pressure is intrinsically required to make lithium-metal anodes work, whether using liquid or solid electrolytes, so we see this as a scientific breakthrough. Although we believe that our standard applied pressure, 3.4 atmospheres, is practical for automotive applications, lower levels of pressure offer compelling benefits. For automotive applications, it allows for simpler and lower-cost pack-level designs, and applications such as consumer electronics require zero externally applied pressure since there is no space for a pressure-applying apparatus.

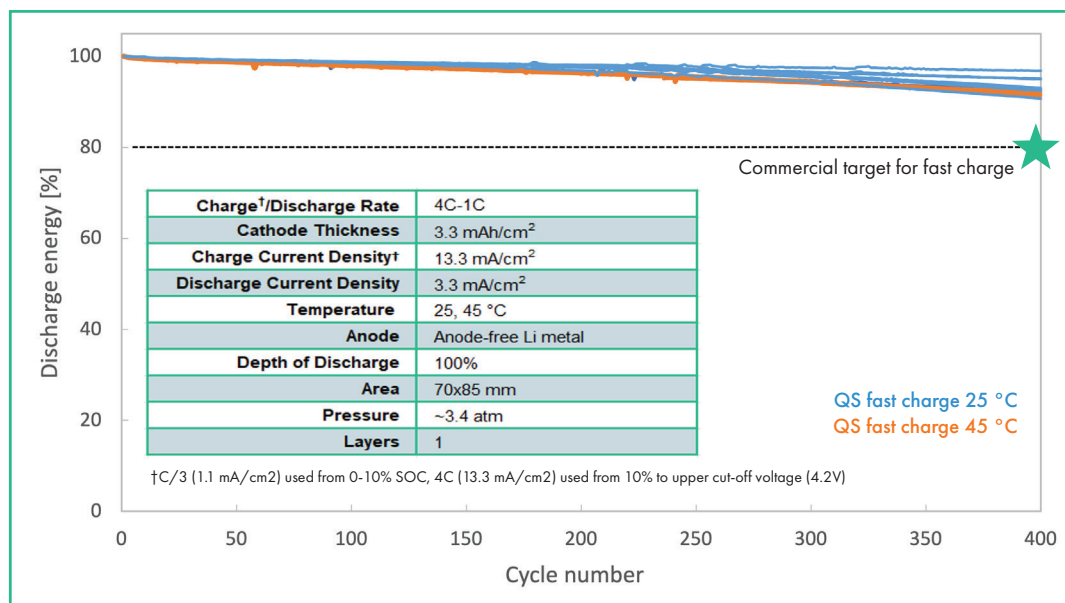
Cycling with Zero Externally Applied Pressure



We revealed another promising single-layer result in a January 27 webinar, demonstrating cells capable of fast charging from 10% to 80% in under 15 minutes over 400 consecutive cycles.

We are unaware of any other high-energy capable EV battery architecture demonstrating this extreme fast charging over hundreds of cycles without prohibitive battery capacity losses. Having demonstrated the ability of the core chemistry to perform at this level in single-layer cells, we plan to integrate it into our future multilayer cells. Please watch our fast-charge [webinar](#) and read our [white paper](#) for a more in-depth discussion of these results.

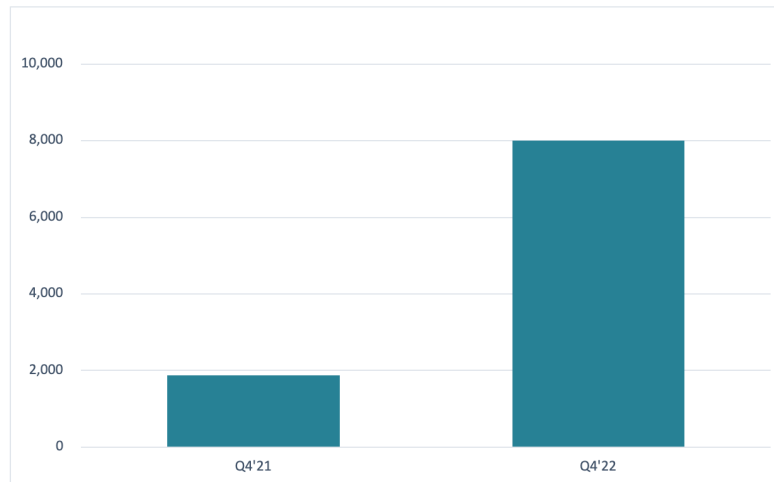
15-Minute Fast Charge Cycling Data



Scale Up Progress

The technical achievements recorded in 2021 were supported by increases in our production scale. A key metric of the scale of our manufacturing capability is film starts, which measures the capacity of our separator production. In 2022, our more extensive Phase 2 engineering line should allow us to further increase our start rate, as shown in the chart below.

Weekly Film Starts - Q4'21 vs Q4'22 Target



Q4'21 reflects a historical average; Q4'22 reflects peak starts during the quarter

Tooling has represented one of the constraints on our manufacturing scale, although we expect this to ease over the next year. This increase in scale will support expanded customer sampling and continue to accelerate our R&D cycle. This year, we will also take delivery of equipment for QS-0 that should enable a step-change increase in 2023.

Scale is about machines, processes, and people, and in 2021 we welcomed an outstanding cohort of new colleagues. We began 2021 with around 270 team members and closed the year with over 550. To support our manufacturing scale up, we have attracted professionals and leaders who have worked on the floors of some of the largest battery factories in the world. We believe we're able to attract great talent because of the opportunity we offer to work on disruptive technology with the potential for global impact in an environment and culture that is intensely mission-driven.

We recently announced new members to our Board of Directors: Jeneanne Hanley, former president of E-systems at Lear Corporation; Gena Lovett, former vice president of operations for defense, space and security at Boeing; and Susan Huppertz, chief manufacturing and supply chain officer at Hubbell Inc. They bring decades of experience from a broad cross-section of relevant industries, including automotive, aviation and manufacturing. We believe their backgrounds and experience will be invaluable additions to our world-class board.

This quarter, we also bid farewell to our longtime director, John Doerr, who retired from our board after serving since our founding in 2010. Although he's most widely known for his many visionary and industry-changing investments, he is also an uncommonly kind and generous human being. He's provided invaluable guidance as a director and has inspired many on our team. We will miss John and we wish him the best as he continues to serve as a leading voice for action on climate change.

Customer Engagement

In 2021, **we announced collaborations with two additional automotive OEMs** – a top-10 global manufacturer and an international luxury automotive company – both with well-known brands. The agreements anticipate testing collaboration and validating QuantumScape cells with the ultimate goal of including them in series production vehicles. We have now signed customer sampling agreements with three automakers, which collectively represent more than 15% of global automotive sales revenue in 2020.

Although our core focus remains on electric vehicles, **on January 13, we announced a new strategic relationship with Fluence**, a global leader in stationary energy storage products and services. The deal reserves capacity from QS-0, our pre-pilot production line, for Fluence's testing and validation, with the goal to eventually supply cells for its proprietary energy storage solutions. The stationary storage market is growing rapidly, with some projections forecasting a 41% CAGR this decade, a multi-hundred-billion-dollar opportunity.

We believe our announcements of **three new customer sampling agreements in just the last six months** demonstrate a level of interest across different applications and indicate a broader market understanding of our battery technology's disruptive potential.

2022 Financial Outlook

For full-year 2021, we spent \$279M in cash opex and capex, in line with guidance of \$265M to \$325M, supporting investment in our Phase 1 and 2 engineering lines as well as our larger QS Campus with the QS-0 line and its long-lead equipment. Cash opex of \$152M was within guidance of \$130M to \$160M. Capex spend of \$127M was below the guidance of \$135M to \$165M due to payment timing unrelated to scale up schedule; QS-0 remains on track for 2023 start of pre-pilot production.

In 2021, we strengthened our balance sheet through a variety of sources. In March, in response to strong inbound customer interest in samples from QS-0, we completed a follow-on offering. In April, successful completion of our cell testing milestone unlocked an investment from Volkswagen. We also received proceeds from the exercise and redemption of warrants related to our business combination with Kensington. As a result of these inflows, we ended 2021 with \$450M more in liquidity than we started, and we entered 2022 with well over \$1.4B of liquidity.

Our 2022 plan makes significant investments into cell development and scalable production: continuous-flow processes featuring increasing levels of automation, high throughput metrology systems, and scalable digital architecture. This investment will allow us to create the manufacturing blueprint for our QS-1 joint venture with Volkswagen and separator production facilities. Our \$325M to \$375M capital investment plan can be broken down by line and objective:

- Approximately \$52M or 15% will flow into our Phase 1 engineering line to support R&D, process development, pre-A sample customer sampling, and additional projects including our R&D center in Japan
- Approximately \$85M or 25% will go toward our Phase 2 engineering line that supports process development, A sample production, and manufacturing of our solid-state separators in medium-size continuous kilns with automated handling. This investment is intended to enable an order-of-magnitude increase in film starts compared with current capacity.
- Approximately \$215M or 60% for QS-0 and our larger QS Campus will support process development, film production in large continuous kilns with automated handling, and automated cell assembly. The primary QS-0 building is in an advanced stage of construction; we've already taken occupancy, and early tool installation is underway.



Continuous-flow processing tool installed into the Phase 1 engineering line

Looking at target weekly film starts as a function of total line facility and equipment capex, we expect to see a greater than 4X improvement in efficiency between our Phase 1 and Phase 2 lines, with a similar improvement between our targeted capacities for Phase 2 and QS-0 lines. Achieving the planned cell starts at these investment levels will be an important first step in demonstrating the cost improvement necessary to reach our QS-1 production targets. We continue to believe that, at scale, our anode-free design can deliver competitive economics relative to conventional lithium-ion batteries, and our QS-0 line allows us to develop and de-risk scalable manufacturing processes while serving our customer objectives.



Robotic automated loading station for the continuous processing tool

In line with previous guidance, 2021 and 2022 represent the substantial majority of investment related to our engineering and QS-0 lines. In 2023, we expect capital spending related to our engineering and QS-0 lines to decline significantly. We expect that by the end of 2022, our engineering lines will have achieved their goals of producing A samples, and we will have received the majority of equipment for QS-0, tracking to our 2023 start of QS-0 pre-pilot production goal.

We expect our 2022 cash operating expenses will be between \$225M and \$275M to support growth in hiring and production volumes associated with our 2022 product development, customer sampling, and scalable manufacturing process development objectives. While cash opex will grow steadily throughout the year, we expect capex to peak mid-year and then decline thereafter. We anticipate Q1'22 capex to be in the range of \$30M to \$60M, with higher spend in Q2'22 and Q3'22 as the bulk of spend takes place. The timing of spend is based on several factors, including lead times and payment schedules, which vary by supplier. We will continue to update our capex guidance throughout the year.

Based on these estimates, we expect to enter 2023 with over \$800M in liquidity—which we believe will be sufficient to fund cash opex, final residual investment in QS-0, and the initial setup of the QS-1 production facilities: the joint venture for cell manufacturing as well as the facility to supply separators, which we will retain full ownership of.

Goals for 2022

As we look at the year ahead, we have outlined four main milestones for 2022:

1. Demonstrate proprietary cell format

Our architecture uniquely enables the use of a lithium-metal anode in a cell that is manufactured anode-free. As we have extensively discussed, this architecture – enabled by our proprietary ceramic solid-state separator – unlocks a host of potential benefits, such as improvements to energy density, charging speed, cycle life, safety and cost. However, any lithium-metal cell design must deliver these benefits while also accounting for the unique challenges of lithium metal, such as increased volume expansion compared to conventional lithium-ion batteries. The design must also be capable of being manufactured rapidly, cost-effectively, and at scale using automated processes. A major development milestone for 2022 is to demonstrate our proprietary cell format in preparation for large-scale customer sampling and, eventually, commercial production.

2. Deliver A sample prototype cells

A significant milestone in our progress toward commercialization is delivering A samples using our proprietary cell format to at least one prospective customer. The A sample represents a significant step toward finalizing the physical and performance specifications of our commercial product. Since every customer has somewhat different requirements, the precise specifications of an A sample are likely to vary between customers and across various applications.

We expect to produce these A samples on our Phase 2 engineering line and deliver to customers for validation and testing. Subsequently, in 2023 we plan to produce the next stage of prototypes on our QS-0 line – the candidate B sample – taking advantage of the developments and insights from the A-sample process.

3. Scale up film starts to 8,000 per week

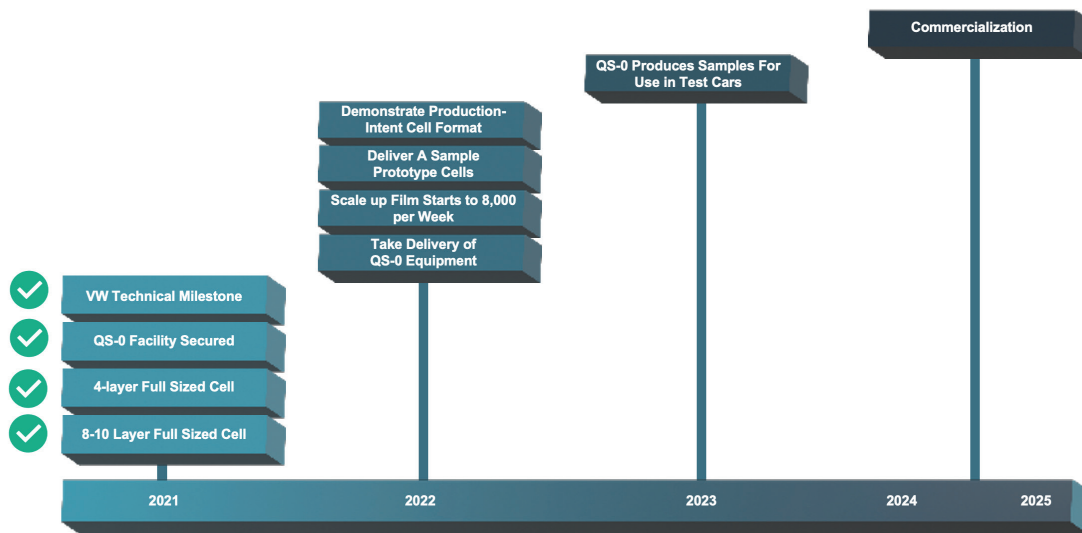
Demonstrating the feasibility of our scale up schedule requires increasing our start rate substantially this year. By the end of 2022, we plan to achieve a peak of 8,000 film starts per week – up from an average of approximately 1,800 films per week in Q4'21. While our separator is designed to use scalable continuous-flow processes, thus far, one of the bottlenecks to production scale has been equipment availability due to long lead times for much of the necessary tooling. As the tools on our Phase 2 engineering line arrive and are commissioned, we believe increasing start rates will translate to more layers, more cells, and an accelerated pace of technological development.

4. Take delivery of QS-0 equipment and maintain deadlines for start of QS-0 pre-pilot production in 2023

Our customer sampling roadmap calls for substantial growth in the number and qualitative technical maturity of samples delivered in 2023. In 2022, we plan to take delivery of most equipment for QS-0, the initial pre-pilot line, to keep next year's roadmap on track.

We also plan to receive and calibrate high-throughput metrology equipment, allowing us to generate feedback to develop our mass-manufacturing processes rapidly. To maximize the value of these sophisticated metrology systems, we also expect to deploy a highly scalable digital architecture throughout our pre-pilot line. This manufacturing execution system will allow us to record and track individual parts with high precision. A well-developed data pipeline is a prerequisite for using artificial intelligence and machine learning techniques for quality control. The QS-0 line has been planned from the ground up to enable this.

Key Milestones



Strategic Outlook

Our company's success is premised on four fundamental propositions:

1. Battery electric powertrains will replace combustion engines
2. The anode-free lithium-metal platform we have demonstrated enables compelling improvements over current lithium-ion batteries
3. We can scale up our cells to many layers without compromising performance
4. We can mass-manufacture our cells while achieving competitive economics

The first proposition now seems relatively uncontroversial. The transition to battery electric vehicles (BEVs) is happening and, at this point, appears unstoppable. Last year, some major automakers saw triple-digit growth in year-over-year BEV sales, and automakers across the industry have announced investments in BEV manufacturing totaling hundreds of billions of dollars. BEV penetration in key global markets has reached double-digit percentages, and there are few reasons to believe this trend will reverse. The transition now seems inevitable.

When it comes to the second point, we believe that the single-layer data we've released should leave no doubt that QuantumScape's technology enables a compelling value proposition for EV drivers when compared to both current lithium-ion technology as well as other next-generation lithium-metal efforts. We've demonstrated long cycle life under our gold-standard test conditions, impressive fast-charging capability, and shown an anode-free lithium-metal solid-state architecture with the potential to improve energy density and safety while also offering the potential for cost reduction.

In 2021, we made significant strides toward demonstrating the third premise, including showing 4- and 10-layer cells successfully tested under our gold-standard conditions. We start 2022 with further evidence validating this premise, with early cycling data from our first 16-layer cells also showing consistent energy retention performance with previously published data. We believe delivery of our A sample will check the box on this premise.

We intend to show that the last premise is also true as we execute on our scale up milestones. Our 2022 goals aim to show manufacturing progress by demonstrating our production-intent cell format, delivering A samples, dramatically ramping film starts, and keeping QS-0 on track for first production in 2023. Longer-term, we plan to produce candidate B samples in 2023, targeting commercialization in the 2024/2025 timeframe. These milestones are designed to increase confidence in our ability to scale up. We look forward to sharing more details on our continuous-flow mass-manufacturing model over the year.

As we continue to validate these premises, we believe QuantumScape's opportunity becomes increasingly compelling. The company has a rare opportunity to significantly impact greenhouse gas emissions while simultaneously creating substantial value for our investors. We look forward to reporting our progress on these goals in the coming quarters.



Jagdeep Singh
Founder, CEO & Chairman



Kevin Hettrich
CFO

QuantumScape Corporation
Consolidated Balance Sheets
(In Thousands, Except per Share Amounts)

	December 31,	
	2021	2020
Assets		
Current assets		
Cash and cash equivalents (\$3,382 and \$3,406 as of December 31, 2021 and 2020, respectively, for joint venture)	\$ 320,700	\$ 113,216
Marketable securities	1,126,975	884,336
Prepaid expenses and other current assets	15,757	11,616
Total current assets	1,463,432	1,009,168
Property and equipment, net	166,183	43,696
Right-of-use assets - finance lease	30,886	—
Right-of-use assets - operating lease	36,913	11,712
Other assets	18,234	2,193
Total assets	\$ 1,715,648	\$ 1,066,769
Liabilities, redeemable non-controlling interest and stockholders' equity		
Current liabilities		
Accounts payable	\$ 14,182	\$ 5,383
Accrued liabilities	6,078	3,356
Accrued compensation and benefits	9,119	2,391
Operating lease liability, short-term	1,209	1,220
Finance lease liability, short-term	19	—
Total current liabilities	30,607	12,350
Operating lease liability, long-term	36,760	11,244
Finance lease liability, long-term	39,378	—
Other liabilities	315	—
Assumed common stock warrant liabilities	—	689,699
Total liabilities	107,060	713,293
Redeemable non-controlling interest	1,693	1,704
Stockholders' equity		
Preferred stock- \$0.0001 par value; 100,000 shares authorized, none issued and outstanding at December 31, 2021 and 2020	—	—
Common stock - \$0.0001 par value; 1,250,000 shares authorized (1,000,000 Class A and 250,000 Class B); 332,870 Class A and 95,450 Class B shares issued and outstanding at December 31, 2021, 207,769 Class A and 156,225 Class B shares issued and outstanding at December 31, 2020	43	36
Additional paid-in-capital	3,634,665	2,329,406
Accumulated other comprehensive loss	(4,208)	(31)
Accumulated deficit	(2,023,605)	(1,977,639)
Total stockholders' equity	1,606,895	351,772
Total liabilities, redeemable non-controlling interest and stockholders' equity	\$ 1,715,648	\$ 1,066,769

QuantumScape Corporation
Consolidated Statements of Operations and Comprehensive Loss
(In Thousands, Except per Share Amounts)

	Three Months Ended December 31,			Twelve Months Ended December 31,		
	2021	2020	2019	2021	2020	2019
Operating expenses:						
Research and development	\$ 46,788	\$ 22,730	\$ 12,860	\$ 151,496	\$ 65,103	\$ 45,944
General and administrative	20,349	7,458	2,237	63,770	15,918	9,874
Total operating expenses	67,137	30,188	15,097	215,266	81,021	55,818
Loss from operations	(67,137)	(30,188)	(15,097)	(215,266)	(81,021)	(55,818)
Other (expense) income, net:						
Interest expense	(822)	(11,818)	(93)	(1,419)	(20,765)	(94)
Interest income	682	131	683	1,883	1,093	3,608
Change in fair value of assumed common stock warrant liabilities	—	(581,863)	—	168,674	(581,863)	—
Change in fair value of Series F convertible preferred stock tranche liabilities	—	(652,867)	—	—	(999,987)	—
Other income	50	—	224	151	760	1,041
Total other (expense) income, net	(90)	(1,246,417)	814	169,289	(1,600,762)	4,555
Net loss	(67,227)	(1,276,605)	(14,283)	(45,977)	(1,681,783)	(51,263)
Less: Net loss attributable to non-controlling interest, net of tax of \$0	(1)	—	5	(11)	(6)	20
Net loss attributable to common stockholders	\$ (67,226)	\$ (1,276,605)	\$ (14,288)	\$ (45,966)	\$ (1,681,777)	\$ (51,283)
Net income (loss)	\$ (67,227)	\$ (1,276,605)	\$ (14,283)	\$ (45,977)	\$ (1,681,783)	\$ (51,263)
Other comprehensive income (loss):						
Unrealized gain (loss) on marketable securities	(3,579)	(71)	(4)	(4,177)	(121)	121
Total comprehensive loss	(70,806)	(1,276,676)	(14,287)	(50,154)	(1,681,904)	(51,142)
Less: Comprehensive loss attributable to non-controlling	(1)	—	5	(11)	(6)	20
Comprehensive loss attributable to common stockholders	\$ (70,805)	\$ (1,276,676)	\$ (14,292)	\$ (50,143)	\$ (1,681,890)	\$ (51,162)
Net loss per share of common stock attributable to common stockholders						
Basic	\$ (0.16)	\$ (4.42)	\$ (0.06)	\$ (0.11)	\$ (6.67)	\$ (0.21)
Diluted	\$ (0.16)	\$ (4.42)	\$ (0.06)	\$ (0.52)	\$ (6.67)	\$ (0.21)
Weighted-average shares used in computing net loss per share of common stock						
Basic	424,704	288,793	239,733	404,259	252,144	239,636
Diluted	424,704	288,793	239,733	409,509	252,144	239,636

QuantumScape Corporation
Consolidated Statements of Cash Flows
(In Thousands)

	Three Months Ended December 31,			Twelve Months Ended December 31,		
	2021	2020	2019	2021	2020	2019
Operating activities						
Net loss	\$ (67,227)	\$ (1,276,605)	\$ (14,283)	\$ (45,977)	\$ (1,681,783)	\$ (51,263)
Adjustments to reconcile net loss to net cash used in operating activities:						
Depreciation and amortization	3,575	2,135	1,541	11,207	6,851	4,704
Amortization of right-of-use assets	902	314	296	3,492	1,229	1,159
Amortization of premiums and accretion of discounts on marketable securities	2,790	989	(149)	11,845	1,201	(1,964)
Stock-based compensation expense	16,165	7,771	1,994	52,175	17,024	6,811
Change in fair value of convertible preferred stock warrant liabilities	—	11,818	94	—	20,765	94
Change in fair value of convertible preferred stock tranche liabilities	—	652,745	—	—	999,865	—
Change in fair value of assumed common stock warrant liabilities	—	581,863	—	(168,674)	581,863	—
Other	675	3	(90)	899	3	(90)
Changes in operating assets and liabilities:						
Prepaid expenses and other current assets	(7,271)	(9,157)	208	(4,852)	(9,648)	(550)
Accounts payable, accrued liabilities and accrued compensation	5,817	1,253	(510)	13,178	2,447	319
Operating lease liability	(34)	(279)	(245)	(1,202)	(1,080)	(951)
Net cash used in operating activities	(44,608)	(27,150)	(11,144)	(127,909)	(61,263)	(41,731)
Investing activities						
Purchases of property and equipment, net	(44,782)	(10,181)	(4,180)	(127,178)	(24,093)	(9,846)
Proceeds from maturities of marketable securities	283,220	11,000	42,500	894,225	99,000	239,500
Proceeds from sales of marketable securities	51,765	14,006	—	224,058	14,006	—
Purchases of marketable securities	(270,772)	(840,928)	(31,142)	(1,376,939)	(891,561)	(196,353)
Net cash (used in) provided by investing activities	19,431	(826,103)	7,178	(385,834)	(802,648)	33,301
Financing activities						
Proceeds from exercise of stock options and employee stock purchase plan	6,447	279	128	17,779	599	394
Proceeds from exercise of warrants	—	—	—	151,431	—	—
Proceeds from issuance of common stock, net of issuance costs paid	—	—	—	462,926	—	—
Proceeds from issuance of Series F preferred stock, net of issuance costs	—	176,670	—	—	176,462	—
Proceeds from issuance of Class A Common Stock pursuant to Legacy QuantumScape Series F Preferred Stock Purchase Agreement, net of issuance costs	—	99,800	—	99,930	99,800	—
Business Combination, net of issuance costs paid	—	679,147	—	(1,016)	676,863	—
Proceeds from finance lease, net of principal payment	297	—	—	5,507	—	—
Net cash provided by financing activities	6,744	955,896	128	736,557	953,724	394
Net increase (decrease) in cash, cash equivalents and restricted cash	(18,433)	102,643	(3,838)	222,814	89,813	(8,036)
Cash, cash equivalents and restricted cash at beginning of period	356,656	12,766	29,434	115,409	25,596	33,632
Cash, cash equivalents and restricted cash at end of period	\$ 338,223	\$ 115,409	\$ 25,596	\$ 338,223	\$ 115,409	\$ 25,596
Supplemental disclosure of cash flow information						
Cash paid for interest	\$ 92	\$ —	\$ —	\$ 330	\$ —	\$ —
Fair value of assumed common stock warrants exercised	\$ —	\$ —	\$ —	\$ 521,025	\$ —	\$ —
Purchases of property and equipment, not yet paid	\$ 11,073	\$ 4,170	\$ 2,547	\$ 11,073	\$ 4,170	\$ 2,547
Business Combination transaction costs, accrued but not paid	\$ —	\$ 1,016	\$ —	\$ —	\$ 1,016	\$ —
Net assets assumed from Business Combination	\$ —	\$ 592	\$ —	\$ —	\$ 592	\$ —

Net Loss to Adjusted EBITDA

Adjusted EBITDA is a non-GAAP supplemental measure of operating performance that does not represent and should not be considered an alternative to operating loss or cash flow from operations, as determined by GAAP. Adjusted EBITDA is defined as net loss before interest expense, non-controlling interest, revaluations, stock-based compensation and depreciation and amortization expense. We use Adjusted EBITDA to measure the operating performance of our business, excluding specifically identified items that we do not believe directly reflect our core operations and may not be indicative of our recurring operations. Adjusted EBITDA may not be comparable to similarly titled measures provided by other companies due to potential differences in methods of calculations. A reconciliation of Adjusted EBITDA to net loss is as follows:

	Three Months Ended December 31,			Twelve Months Ended December 31,		
	2021	2020	2019	2021	2020	2019
GAAP net loss attributable to Common Stockholders	\$ (67,226)	\$ (1,276,605)	\$ (14,288)	\$ (45,966)	\$ (1,681,777)	\$ (51,283)
Interest expense (income), net (1)	140	11,687	(590)	(464)	19,672	(3,514)
Other expense, net	(50)	—	(224)	(151)	(760)	(1,041)
Change in fair value of assumed common stock warrant liabilities	—	581,863	—	(168,674)	581,863	—
Change in fair value of Series F convertible preferred stock tranche liabilities	—	652,867	—	—	999,987	—
Net gain (loss) attributable to non-controlling interests	(1)	—	5	(11)	(6)	20
Stock-based compensation	16,165	7,771	1,994	52,175	17,024	6,811
Non-GAAP operating loss	\$ (50,972)	\$ (22,417)	\$ (13,103)	\$ (163,091)	\$ (63,997)	\$ (49,007)
Depreciation and amortization expense	3,575	2,135	1,541	11,207	6,851	4,704
Adjusted EBITDA	\$ (47,397)	\$ (20,282)	\$ (11,562)	\$ (151,884)	\$ (57,146)	\$ (44,303)

(1) Includes non-cash fair value adjustment related to the convertible preferred stock warrant liability of \$11.8 million and \$20.8 million, for the three months and twelve months ended December 31, 2020, respectively and \$0.1 million for the three months and twelve months ended December 31, 2019. There were no such adjustments for the three months and twelve months ended December 31, 2021.

Management's Use of Non-GAAP Financial Measures

This letter includes certain non-GAAP financial measures as defined by SEC rules. These non-GAAP financial measures are in addition to, and not a substitute for or superior to, measures of financial performance prepared in accordance with U.S. GAAP. There are a number of limitations related to the use of these non-GAAP financial measures versus their nearest GAAP equivalents. For example, other companies may calculate non-GAAP financial measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison. We urge you to review the reconciliations of our non-GAAP financial measures to the most directly comparable U.S. GAAP financial measures set forth in this letter, and not to rely on any single financial measure to evaluate our business.

Forward-Looking Statements

This current report contains forward-looking statements within the meaning of the federal securities laws and information based on management's current expectations as of the date of this current report. All statements other than statements of historical fact contained in this current report, including statements regarding the future development of the Company's battery technology, the anticipated benefits of the Company's technologies and the performance of its batteries, plans and objectives for future operations, forecasted cash usage, including spending and investment, are forward-looking statements. When used in this current report, the words "may," "will," "estimate," "pro forma," "expect," "plan," "believe," "potential," "predict," "target," "should," "would," "could," "continue," "believe," "project," "intend," "anticipates," "seek," "working toward," "embarking" the negative of such terms and other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management's current expectations, assumptions, hopes, beliefs, intentions, and strategies regarding future events and are based on currently available information as to the outcome and timing of future events.

These forward-looking statements involve significant risks and uncertainties that could cause the actual results to differ materially from the expected results. Many of these factors are outside the Company's control and are difficult to predict. Factors that may cause such differences include, but are not limited to ones listed here. The Company faces significant barriers in its attempts to produce a solid-state battery cell and may not be able to successfully develop its solid-state battery cell. Building high volumes of multilayer cells in commercially relevant area and with higher layer count requires substantial development effort. The Company could encounter significant delays and/or technical challenges in replicating the performance seen in its single-layer and early multilayer cells and in achieving the high quality, consistency and throughput required for commercial production and sale. The Company may encounter delays and other obstacles in acquiring, installing and operating new manufacturing equipment for automated and/or continuous-flow processes, including vendor delays (which we have already experienced) and challenges optimizing complex manufacturing processes. The Company may encounter delays in hiring the engineers it needs to expand its development and production efforts, delays in building out QS-0, and delays caused by the COVID-19 pandemic. Delays in increasing production of engineering samples would slow the Company's development efforts. The Company may be unable to adequately control the costs associated with its operations and the components necessary to build its solid-state battery cells at competitive prices. The Company's spending may be higher than currently anticipated. The Company may not be successful in competing in the battery market industry or establishing and maintaining confidence in its long-term business prospectus among current and future partners and customers. The Company cautions that the foregoing list of factors is not exclusive. The Company cautions readers not to place undue reliance upon any forward-looking statements, which speak only as of the date made.

Except as otherwise required by applicable law, the Company disclaims any duty to update any forward-looking statements. Should underlying assumptions prove incorrect, actual results and projections could differ materially from those expressed in any forward-looking statements. Additional information concerning these and other factors that could materially affect the Company's actual results can be found in the Company's periodic filings with the SEC. The Company's SEC filings are available publicly on the SEC's website at www.sec.gov.