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Market Intelligence

Aspen Aerogels, Inc. NYSE:ASPN

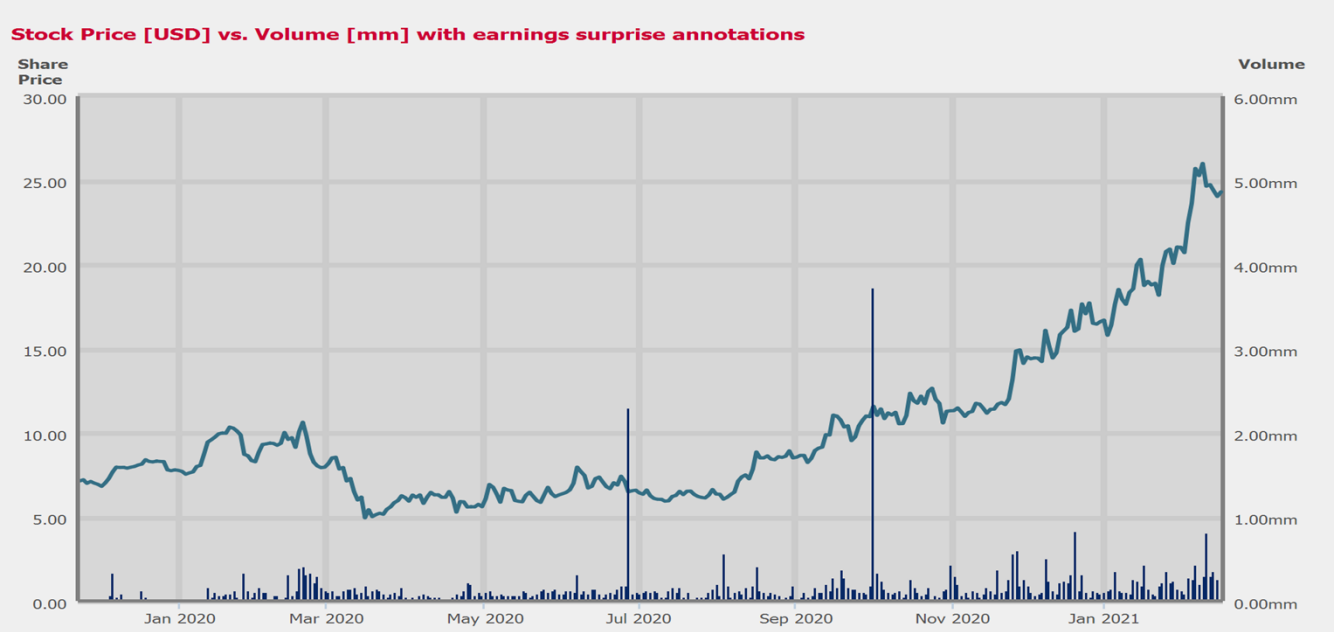
FQ4 2020 Earnings Call Transcripts

Thursday, February 18, 2021 10:00 PM GMT

S&P Global Market Intelligence Estimates

	-FQ3 2020-			-FQ4 2020-	-FY 2020-	-FY 2021-
	CONSENSUS	ACTUAL	SURPRISE	CONSENSUS	CONSENSUS	CONSENSUS
EPS Normalized	(0.16)	(0.25)	NM	(0.15)	(0.74)	(0.67)
Revenue (mm)	26.28	24.20	▼ (7.91 %)	26.76	104.02	108.59

Currency: USD
Consensus as of Jan-14-2021 12:19 PM GMT



- EPS NORMALIZED -

	CONSENSUS	ACTUAL	SURPRISE
FQ4 2019	(0.04)	(0.04)	NM
FQ1 2020	(0.22)	(0.13)	NM
FQ2 2020	(0.20)	(0.21)	NM
FQ3 2020	(0.16)	(0.25)	NM

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Call Participants

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Presentation

Operator

Ladies and gentlemen, thank you for standing by, and welcome to the Aspen Aerogels Q4 2020 Earnings Call. [Operator Instructions] Please be advised that today's conference is being recorded. [Operator Instructions]

I would now like to hand the conference over to your speaker today, Mr. John Fairbanks. Please go ahead, sir.

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Thank you. Good afternoon. Thank you for joining us for the Aspen Aerogels conference Call. I'm John Fairbanks, Aspen's Chief Financial Officer.

There are a few housekeeping items that I would like to address before turning the call over to Don Young, Aspen's President and CEO. The press release announcing Aspen's financial results and business developments as well as a reconciliation of management's use of non-GAAP financial measures compared to the most applicable GAAP measures is available on the Investors section of Aspen's website, www.aerogel.com. Included in the press release is a summary statement of operations, a summary balance sheet and a summary of key financial and operating statistics for the fourth quarter and year ended December 31, 2020. In addition, the Investors section of Aspen's website will contain an archived version of this webcast for approximately 1 year.

Please note that our discussion today will include forward-looking statements, including any statement regarding outlook, expectations, beliefs, projections, estimates, targets, prospects, business plans and any other statement that is not a historical fact. These forward-looking statements are subject to risks and uncertainties. Aspen Aerogel's actual results may differ materially from those expressed in these forward-looking statements. A list of factors that could affect the company's actual results can be found in Aspen's press release issued today, discussed in more detail in the reports Aspen files with the SEC, particularly in the company's most recent annual report on Form 10-K.

The company's press release issued today and filings with the SEC can also be found in the Investors section of Aspen's website. These forward-looking statements made today represent the company's views as of today, February 18, 2021. Aspen disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

During this call, we will refer to non-GAAP financial measures, including adjusted EBITDA. These financial measures are not prepared in accordance with U.S. Generally Accepted Accounting Principles or GAAP. These non-GAAP financial measures are not intended to be considered in isolation or as a substitute for results prepared in accordance with GAAP. The definitions and reconciliations of these non-GAAP financial measures to the most directly comparable GAAP financial measures and a discussion of why we present these non-GAAP financial measures are included in today's press release.

I would also like to note that over the next 2 weeks, in connection with the vesting of restricted stock units issued under our long-term equity incentive program, our Section 16 officers will file Form 4s to report the withholding of shares by the company to satisfy statutory tax obligation related to the vestings of this -- these RSUs. I want to emphasize that the shares that were held by Aspen will not be sold into the market and will remain unissued.

I'll now turn the call over to Don.

Donald R. Young
President, CEO & Director

Thank you, John. Good afternoon. Thank you for joining us for our Q4 2020 earnings call. Today, John and I are switching up the usual order of our comments. John will start with a recap of our 2020 full year performance and finish with our outlook for 2021. I will follow John by providing a strategic overview of the company and by outlining the significant opportunities we have before us.

This evening, we also uploaded a new company presentation to the Investors section of our website that expands upon my comments. We will conclude today's call with a Q&A session. John, over to you.

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Thanks, Don. I'll start by running through our reported financial results for 2020 at a summary level. Total revenue declined by $39 million or 28% during the year to $100.3 million. Net loss increased to $21.8 million or $0.83 per share in 2020 versus a net loss of $14.6 million or $0.60 per share last year. And adjusted EBITDA decreased to negative $6.4 million compared to negative $200,000 a year ago. We define adjusted EBITDA as net income or loss before interest, taxes, depreciation amortization, stock-based compensation expense and other items that we do not believe are indicative of our core operating performance.

First, I want to emphasize that in response to the impact of COVID-19 on our revenue levels, we decreased our cost and expenses by a total of $30.5 million from 2019 levels. In addition to a reduction in material costs associated with the revenue decline, we drove this decrease in our cost structure by means of our initiatives to reduce compensation and discretionary expense in response to COVID-19-related uncertainty and our multiyear initiatives to reduce bill of material costs. And importantly, we reduced our costs and expenses despite an increase in research and development spending in support of our electric vehicle programs.

As a result, we estimate that we reduced the annual revenue required for us to achieve EBITDA breakeven to between $110 million and $115 million in 2020 from $140 million in 2019. This progress indicates that we made the right decisions in response to the COVID-19-related market challenges, and that the fundamental economics of our business remained strong.

Moving into 2021, we estimate that our annual revenue required to achieve EBITDA breakeven will rise to approximately $125 million due principally to our decision to increase our expenses by $6 million in support of our electric vehicle initiatives and our new business development efforts. We'll use this investment to accelerate PyroThin business development to establish industry-leading thermal barrier fabrication capability to progress from the development phase towards the commercialization phase of our silicon-rich carbon aerogel battery materials and to identify additional high-value markets for our aerogel technology, among other items.

I'll now provide additional detail on the components of our 2020 results. First, I'll discuss revenue. Total revenue decreased by $39.1 million or 28% to $100.3 million from $139.4 million last year. This decrease in 2020 revenue was driven by a broad-based decrease in both project and maintenance work in the global energy infrastructure market and the impact of our decision to wind down our research services business, offset in small part by growth in the sustainable building materials market.

The decline in our energy infrastructure business was principally due to our energy customers, seeking to limit the number of third-party insulation installers in their facilities to reduce worker density, temporarily shuttering operations from time to time in response to COVID-19 outbreaks and delaying the start of projects due to the threat of COVID-related interruptions. Total shipments for the year decreased by 30% to 28.6 million square feet of aerogel blankets, while our average selling price increased by 4% to $3.49 per square foot.

Next, I'll discuss gross profit. Gross profit was $14.6 million or 15% during 2020 versus $26.3 million or 19% during 2019. This decrease in gross profit was driven principally by the 30% decrease in sales volume and a reduction in research services contribution, offset in part by the 4% increase in average selling price, a reduction in manufacturing expense and the reduction in material costs.

Next, I'll discuss operating expenses. Our 2020 operating expense decreased by $4.3 million or 11% versus last year to $36.2 million, despite an increase in research and development in support of our electric vehicle initiatives. Decrease in operating expense was principally the result of the cost controls we instituted in response to the COVID-19 pandemic.

Next, I'll discuss our balance sheet and cash flow for the year. Cash used in operations of $9.9 million reflected our adjusted EBITDA of negative $6.4 million and a $3.5 million increase in working capital investment during the year. This increase in working capital is principally the result of an increase in finished goods inventory of $4.6 million during the year.

Capital expenditures during 2020 totaled approximately $3.4 million, and we're focused on improving the efficiency and reliability of our East Providence manufacturing facility. We raised a total of $26.2 million during the year through our financing activities, including $14.8 million through our public offering in February, $3.7 million in a PPP loan in May, $9.5 million under our ATM in November and December and a net of $1.4 million from employee equity transactions during the year.

We used $3.1 million of the proceeds to repay our outstanding borrowings under our revolving credit facility with Silicon Valley Bank. As a result, we ended 2020 with $16.5 million of cash, net current assets of $33.2 million, no borrowings under our revolving credit facility and shareholders' equity of $67.9 million. We also had access to an additional $5.4 million available under our revolving credit facility at quarter-end.

Looking forward to 2021, we project that the COVID-19-related contractor access restrictions will continue to impact demand for our products in the energy infrastructure market. As a result, we are currently assuming that our 2021 revenue levels will remain in line with our 2020 full year results. We're also projecting that our initiatives to reduce raw material costs and to enhance manufacturing productivity will help to improve our gross margin to approximately 20% for the full year from 15% in 2020.

However, we intend to increase our investment in the electric vehicle market and our aerogel technology platform by $6 million in 2021. Again, we'll use this investment to accelerate PyroThin business development to establish an industry-leading thermal barrier fabrication capability to progress from the development phase towards the commercialization phase of our silicon rich carbon aerogel battery materials and to identify additional high-value markets for our aerogel technology.

In addition, we intend to continue our efforts to improve the underlying fundamentals of our business and to ensure our operational effectiveness remains strong. We believe these actions and initiatives will position Aspen to resume the strong operating performance that characterized 2019 when the impact of COVID-19 subsides, to take advantage of the significant growth opportunities available to us today in the electric vehicle market and to leverage our aerogel technology platform to develop new high growth businesses.

Our current 2021 full year outlook is as follows: we expect total revenue of between $100 million and $108 million; net loss of between $21 million and $25 million; adjusted EBITDA of between negative $8 million and negative $12 million; EPS of between a loss of $0.77 and a loss of $0.92 per share. This EPS outlook assumes a weighted average of 27.3 million shares outstanding for the year. In addition, this 2020 outlook assumes depreciation of $8.8 million, stock-based compensation expense of $4 million and interest expense of $200,000. This full year outlook also projects a gross margin of approximately 20%, an average selling price of between $3.45 and $3.50 per square foot.

Turning to cash, we expect that our capital expenditures will total approximately $7 million for the full year. We'll focus these capital expenditures to support the initial build-out of our thermal barrier fabrication operations and to maintain our East Providence plant. And we're targeting to have a minimum of $10 million of cash on hand throughout 2021. Looking beyond 2021, we expected strong growth in our EV thermal barrier business and a post-COVID rebound in our energy infrastructure markets will necessitate the expansion of our silica aerogel blanket capacity by the end of 2023.

We're engaged in the early stages of an effort to size the required expansion to select an optimal manufacturing site and to identify the appropriate financing structure to fund the project. In addition,

we're planning to establish an automated thermal barrier fabrication operation and to enhance our battery materials capability among other items. As a result, we may incur additional capital expenditures and financing needs during 2021 to support these electric vehicle-related investments. We'll announce additional details as we finalize these investment plans during the year.

I'll now turn the call back to Don.

Donald R. Young
President, CEO & Director

Great. Thank you, John. Aspen Aerogels is at a significant juncture in its development as we continue to realize the full potential and value of the company. Our vision is to make an important contribution to a better and more sustainable way of life. Our aerogel technology, whether deployed in electric vehicles, sustainable buildings or energy infrastructure is centered on safety, energy efficiency and asset resiliency. We envision that these priorities will hold true as our aerogel technology enables future solutions to pressing global challenges.

We are motivated by the conviction that our work is important and meaningful by our focus on big societal challenges and transformations that matter and by creating value broadly defined. We embrace the idea that the imperative for change often leads to creativity and innovation. The Aspen team believes that our time to contribute is now.

Our aerogel technology platform is at the core of our strategy to be a global technology leader in sustainability, with a focus on multibillion-dollar opportunities in high-growth, high-value markets and on creating a proprietary, diverse and very valuable business enterprise. Today, our aerogel technology is being leveraged with products in 4 substantial areas. PyroThin thermal barriers address thermal runaway in electric vehicles and have resulted to date in battery platform design wins from a single customer with the potential to generate over $1 billion of revenue this decade. Aspen battery materials seeks to deploy our carbon aerogel technology in the design of low-cost, high-performance anode and cathode materials for the lithium-ion batteries that will power the EV megatrend.

Spaceloft's sustainable building products target the construction market in applications for fire safety and energy efficiency are critical. And Pyrogel and Cryogel products address resource efficiency asset resiliency and fire safety in global energy infrastructure facilities, where we have an installed base of over $1 billion. It is important to remember that the aerogel technology platform remains rich with untapped potential beyond these 4 business areas. Our new business creation team continues to explore the intersection of ESG and sustainability themes, emerging megatrends and our own aerogel technology platform.

The opportunities for the thermal -- for the PyroThin thermal barrier, the Aspen battery materials and the energy infrastructure businesses are significant. Our PyroThin thermal barriers are designed to allow EV manufacturers to manage thermal runaway and based on our recent substantial contract win, will be used in the coming generation of electric vehicles. Thermal runaway is a phenomenon where a cell in a lithium-ion battery pack has a sudden release of energy that can result in a fire. PyroThin thermal barriers are designed to impede the propagation of thermal runaway, both at the cell and pack levels across multiple lithium-ion battery platforms.

Aspen's technology offers a unique combination of performance attributes that enable EV manufacturers to achieve critical safety goals without sacrificing drive range. In our last earnings call, we announced that a major U.S. automotive OEM awarded Aspen, a contract to supply PyroThin thermal barriers for use in its EV battery platform. We started to supply PyroThin thermal barriers to this customer in 2020. And based upon the OEMs projections for 2021 and 2022, and we expect to generate single-digit millions of dollars each year in commercial revenue, consistent with the initial launches of its EV models.

During 2023, and we expect to see from this customer alone a substantial ramp in revenue, with potential revenue in 2024 and throughout the decade of more than $150 million per year. Over the coming decade, our potential revenue, again, from this customer alone represents an opportunity of approximately $1 billion for Aspen. The ultimate value of this contract is dependent on our customers' success in

participating in the global transformation to electric vehicles. We believe this customer is well positioned to succeed.

It is important to acknowledge that thermal runaway is a universal challenge for all EV manufacturers. Battery electric vehicle companies are likely to engineer to maximum safety levels at this pivotal point for the market acceptance of e-mobility. We have already seen recalls and regulatory pressure resulting from EV fire safety issues in Asia, Europe and North America. We estimate our PyroThin thermal barriers are focused on a $30 billion commercial opportunity over the course of this decade. We are participating in a number of RFQs with other EV manufacturers, and the list has expanded to include companies producing energy storage systems for distributed generation at the grid and home scales.

Thermal runaway is a very challenging issue to manage. We believe that the attributes of our thermal barriers, combined in a single solution will make PyroThin a significant contributor to a safe and successful global transformation to e-mobility and to electrification more broadly and be a big winner for Aspen Aerogels.

Our second initiative in EV is our battery materials that utilize our carbon aerogel technology. Our effort centers on leveraging both the unique attributes of our carbon aerogels and our 2 decades of experience manufacturing aerogel nanomaterials at scale. Our goal is to improve the energy density of lithium-ion batteries used in EVs. Our focus is on cost, performance and safety. Our work on our silicon-rich anode materials has intensified as we have gained confidence in our ability to meet the cost and performance targets set by both current and potential partners.

As a result, we have expanded both our battery materials team and our related lab and test facilities. We are expanding our capabilities to provide larger sample quantities to our current and potential partners for their testing on production scale equipment. We believe our focus on low-cost, high-performance silicon-rich anode material is on target and that our work, supported by an active IP strategy will be attractive and valuable to our current partners and to other leaders in battery technology.

Switching gears to our energy infrastructure business that pandemic continues to inhibit our short-term revenue generation. In response to COVID-19, facility owners have limited the number of contractors on-site in order to lower worker density, which has reduced near-term demand for our products. Our underlying assumption for our 2021 outlook is that lower density work sites will continue to be the reality. Therefore, we assume revenue levels will remain in the vicinity of $25 million per quarter.

Looking forward, we expect both maintenance and project revenue to rebound when contractor access to facilities improves and as the distribution channel restocks. We believe that there is significant pent-up demand. Pyrogel and Cryogel have been specified for several petrochemical and LNG projects, and we believe that Aspen will see increased revenue opportunities as soon as these projects move forward. We believe that we have positioned the company to emerge from the COVID-19 period with a strong operating platform in energy infrastructure and significant strategic momentum for the company as a whole.

In our new company presentation, we described the breadth of the opportunity we have over the next decade and lay out targets and milestones for 2023. We are focused on multibillion-dollar opportunities, where our aerogel technology platform can be deployed in ESG and sustainability-based markets. In the 2 EV businesses alone, PyroThin thermal barriers represent a $30 billion opportunity this decade and the EV materials opportunity, while at an earlier stage of development, is potentially yet larger. We believe we have the opportunity to double revenue every 24 months through 2025, driven by our unique and protected technology, and by multiyear platform wins, the first of which we have in hand. We are confident that over the course of this decade, Aspen will grow significantly and establish its reputation as a technology leader in sustainability.

With respect to targets and milestones for 2023, we aim for revenue of $225 million, more than 2x our 2021 outlook. We believe this 2023 revenue target will drive a gross margin of 30% and help to fuel our continued growth. Our 2023 revenue target is comprised principally of 2 parts. First, PyroThin thermal barrier revenue derived predominantly from our contract with a major North American automotive OEM. And second, we believe that when the pandemic ends, we will not only regain our 2019 peak revenue level in energy infrastructure, but we'll also have the opportunity to continue to grow that part of our business.

This belief is grounded in the fact that we had a revenue CAGR of over 20% from 2008 through 2019 and grew revenue 34% in 2019 alone.

We have defined a 2023 milestone for Aspen battery materials as the first adoption of our silicon-rich anode material in a lithium-ion EV battery. We believe such an adoption would be a significant value driver for Aspen. Between now and 2023, we expect to expand our relationships with our existing evaluation partners and to advance relationships with other market leaders. The replacement of graphite and anodes with silicon is widely viewed as the best near-term approach to boost revenue in lithium-ion batteries. We know that other companies have a similar focus but different approaches. And we also know that these companies have attracted investment capital at very significant valuations. We believe that our proven ability to produce aerogel nanomaterials at significant scale with a dual focus on high-performance and low-cost for over 2 decades, puts us in a competitive position.

We believe that our technology, our experience and our expertise set us apart and position us for success. We are considering business models for Aspen battery materials that span from direct manufacturing to technology licensing. The goal will be to maximize long-term value of the company. Overall, we believe that we are well on our way to becoming a global technology leader in sustainability, as we focus on multibillion-dollar opportunities in high-growth, high-value markets and on creating a proprietary, diverse and very valuable business enterprise.
With that, I would like now to turn the call back to Elaine for the Q&A session.

Question and Answer

Operator

[Operator Instructions] And your first question comes from the line of Eric Stine from Craig-Hallum.

Eric Andrew Stine
Craig-Hallum Capital Group LLC, Research Division

So I know that this first win that you have in hand in the thermal barrier side of the business. One is competitive. But I'm just curious if you could give some thoughts on the competitive environment as you see it now, in this application. I guess what I'm getting at is, with this wind in hand and based on what you see out there, why -- I mean, do you think that this can become the industry standard for this application?

Donald R. Young
President, CEO & Director

Well, I would answer it, I think, in 2 ways. One, we went through a rigorous process with a very technology-forward company that chose our product to help them address this issue. I've said before, I think this is an issue that has caught the industry by surprise, the intensity of this issue. And they're playing catch up here. And our process took approximately a year to go through the development of the product and then a 3-part RFQ process. Again, that was quite rigorous. Clear to me that there were a number of products, potential products, to address this application on the table at the beginning of that RFQ process. And as we worked our way through the technology, the engineering, the quality and the procurement aspects of that RFQ process, we were determined to have the best solution.

We do believe that we will be the technology leader and the industry standard when it comes to thermal barriers. Again, this is not an issue that only impacts the one customer with whom we have won the contract, but all. And that is clear to me because when we look at our business development funnel. We have over 30 companies in that funnel. Those companies represent incumbent companies, new players in the automotive industry. And as I said in my notes, we're seeing opportunities as well in stationary systems as well around distributed generation, which is -- has many of the same thermal runaway issues also.

In those -- in that funnel, we have now provided material and engaged at a pretty intense level. We've responded to a small handful of RFQs that have come out. And so we're in that RFQ processing with, again, with a small handful of companies, and we're engaged with virtually everyone in the business in one form or another.

So again, we think we have a unique product. It's a very challenging issue to resolve. And again, we're right in the middle of it.

Eric Andrew Stine
Craig-Hallum Capital Group LLC, Research Division

Do you think that given you did a lot of the heavy lifting or the development work on the front end with the current OEM that you have in hand, I mean do you expect that these RFQ -- the RFQs that you're going through, the process that you're going through will be accelerated versus that, which I mean actually didn't take long. It was, what, 8 months? Just curious what you think that looks like this go around with new customers?

Donald R. Young
President, CEO & Director

Yes. We do think that the battery platforms that will be serving both the incumbent and the new players will need to resolve this in the next 2, 4 and 6 quarters. That's the way we're thinking about it. So the

time for us to win is now. And we've moved a lot of our resources into being sure that we are front and center when it comes to competing for that business.

Again, we think we have a very unique technology, a very unique solution to it, and we're engaged. So I do believe this is something that's going to play out over the course of that time frame, Eric, 2, 4 and 6 quarters.

Eric Andrew Stine
Craig-Hallum Capital Group LLC, Research Division

Got it. And then just last one for me. I know you're looking at options, and it's early for -- on the capacity side. You did mention the automated line for the PyroThin product. Just wondering what that does to capacity? Does it expand the capacity of the current East Providence facility? Or how should we think about that?

Donald R. Young
President, CEO & Director

Yes. So John referenced the advanced thermal battery center and which is focused on being not only the showcase for the technology for customers and others in the industry. But it also has our prototyping and a manufacturing capability as well. This relates to not just the aerogel production from East Providence, but the production -- the Tier 1 production of the part as well or the various parts that will go into these battery platforms.

So it does enhance our revenue for sure. You know we've talked for a long time about having a revenue capacity of approximately $200 million. With this capability additional parts manufacturing, if you will, it does enhance our revenue capability. I want to -- it depends a bit on mix, but let's just say out to the $250 million level.

Having said that, that's important to us. But we also know -- I made the statement that we have the opportunity to double revenue every 24 months through 2025. And if you play that out, it's clear that we need additional manufacturing capacity. And we are heavily focused on that today. We've talked about this in the past as to whether we would build a facility ourselves or whether we have a manufacturing partnership. We're exploring those items now.

Operator

And your next question comes from Jed Dorsheimer from Canaccord.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

Sorry. Days of Zoom, I guess I pulled the old on mute. Sorry about that, guys. So anyways, so thanks for the visibility and the layout of the strategy. I just want to clarify, so the first win that you have for the thermal runaway, that's not the Asian customer that you had originally talked about that this is a domestic player in the EV space? Or had you not had said -- okay. Got it.

Donald R. Young
President, CEO & Director

Yes. We have not named the company just contractually for now. We're hoping to be able to do that. And -- but we have identified the company simply as a major North American automotive OEM.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

Got it. That's helpful. And I guess just pivoting away from the thermal runaway, if we look at -- I didn't hear -- and maybe I just missed it, did you give an update on the development of the silicon particles on the -- for the anode side?

Donald R. Young

President, CEO & Director

Yes. We did, and you'll notice on the company presentation, which we've uploaded on to our Investors section of our website, we expand on this a bit, but let me just say a few words about it.

We have, in fact, made excellent progress in the development of the product. And when I say that, Jed, that is to say that we're hitting the cost and performance targets that have been laid out in front of us by both our partners and potential partners, our current partners and potential partners with whom we're engaged. So I would -- so we've made good progress. We've also expanded our team, bringing in more technical talent, and we've expanded our laboratories, our test facilities. And that's enabled us to provide -- is enabling us to provide, this is happening sort of real-time here, larger quantities, sample quantities to current and potential partners so that they can test the material at production level, production scale equipment.

And so we're very focused. I think that the next thing that will come from this -- and Jed, we did repeat again that we -- our goal and this is based on our work with a partner, is our goal is to have our first adoption for 2023 EV, lithium-ion battery. And so very definitive time line there. So we're excited about that. I think the other thing that will be -- come down the road here fairly soon is building not just an expanded laboratory capability for sampling material, but a larger scale -- let's just call it a pilot facility that will enable us to accelerate the work and again, provide greater quantities, iterate more rapidly with our partners, et cetera.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

That's great. I'd like to just -- if I could pivot back to sort of the core oil and gas business or the insulation for the oil and gas. I'm curious, if we look at -- so we've seen commodity prices rise. We're looking at a pretty healthy increase in terms of pricing. I'm just wondering where your customers are at in terms of reinvestment in midstream production to start to trigger that demand scenario there?

Donald R. Young
President, CEO & Director

Yes, it's a great question. So obviously, we've been consistent in saying that over the course of 2020 after really a terrific 2019 with over 30% revenue growth, the brakes were put on because of COVID. We also knew simultaneously the energy market was coming down in price. And so we were trying to sort out the impact, how much of it was related to COVID and how much of it was related to a decrease in energy prices. And our feeling was that it was predominantly COVID. And I think there's no question that we would rather have these current $40, $50 and $60 oil prices than $20, $30 and $40, which we were seeing. There's no question, that's a better environment for us.

We're seeing a lot of engagement on the LNG side as well. As you know, we focused on that over 5 years ago, and we have a revenue CAGR of 50% in the LNG side since 2015. So those -- that focus in investment has been good. I am -- I see real pent-up demand, both on the maintenance side and on the project side. And that when we get to the other side of COVID, we believe that we will recapture that 2019 level of activity and resume our growth in that part of our business.

And we're pretty confident that we're going to see that. And I think the question is when? And we, for our outlook purposes, have said that when is not until 2022. So here we are in 2021. We'll see how it plays out. But again, our assumption is we're going to be right around that $25 million per quarter kind of level. Some quarters' a little higher, some quarters' a little lower, but make our way into the guidance that John set out for 2021.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

Got it. One last -- yes. Just one last question, if I could, though. In terms of that business, in hitting that, is that going to be more -- so should I think of that is that -- I have historically thought of that as more production-related in terms of -- on the mid- to downstream.

So should we think of that in the same way? And has that business shifted to offshore versus domestic production in terms of building out the pipes and refiners, if you will?

Donald R. Young
President, CEO & Director

Yes. No, we're still -- our focus is really on the refinery, petrochemical side, the LNG side, both in terms of liquefaction and the receiving terminals. The only real upstream part that we have, and it's been a steady performer for our business for a long time, not a big growth area, but we have a very high market share. And these are these so called pipe-in-pipe subsea programs that we have. And -- but that is -- we typically say that's, in any given year, it's about a $10 million business, plus or minus $5 million. It's been kind of in that range for a long time. It's solid business for us. We're very good at it, and we like that business. But most of our work comes in the refiners, with the refiners, with the petrochemical guys and of course, with the LNG side of it.

Operator

And your next question comes from the line of Tom Curran from B. Riley Securities.

Thomas Patrick Curran
B. Riley Securities, Inc., Research Division

Don, based just on the PyroThin RFQs currently in hand, what's the earliest any of them could result in a second production volume contract? And at this point, just given where all the conversations and where you're at in each of the RFQ stages, does it seem as if that award is more likely to come from your -- from your partner in China who supports BYD? Or a new third OEM customer?

Donald R. Young
President, CEO & Director

I believe that these RFQs will come to fruition -- this current step that I referenced in my conversation over the course of the first half of the year, half of this year. I don't want to say a week or a month, but I feel very comfortable in saying the first half of this year. And I also believe that additional RFQs and additional design and development work will also take place over the course of the second part of the year and into -- even into 2022.

But I do believe, Tom, that much of this will be determined over the course of this calendar year and into the early part of 2022. And we are focused on being that technical leader, that technical expert, the go-to resource for solving this issue with the automotive OEMs, with the battery manufacturers, with Tier 1 suppliers, with the companies that are focused on stationary battery supplies, both the grid and really at the home scale as well. And so this will play out over the course of -- in stages over the course of that period of time, 2, 4 and 6 quarters.

Thomas Patrick Curran
B. Riley Securities, Inc., Research Division

And then shifting over to the carbon aerogel side. I've surmised that 2 of your goals for your relationship with SK Group this year were to convert your existing evaluation agreement into some type of joint development deal. And then for that new partnership structure to set a target of having carbon aerogel material designed into a 2023 battery at SK innovation. Could you provide an update on those objectives and speak to how they had been or might be impacted by last week's ITC rolling against SK innovation?

Donald R. Young
President, CEO & Director

Yes, sure. Our focus is with the team, the development team in Korea. And that's the group that we're working most closely with. Our development agreement with it is with a sister company called SKC and of course, SK innovation, SKI, is right in the middle of that because of their testing capability.

Look, they are a very large company. They are developing battery technology in Korea for the Asian market, for the European market. That ruling was focused on the United States, which is certainly an important market. I think, when I look at not just Aspen, but much larger companies like Ford and VW and other companies who have -- would like to see this resolved. And we certainly put ourselves in that place.

We haven't noticed any change at all. We're engaged with the SKC and SKI teams multiple times per week. And again, it's been a short period of time. But we haven't noticed a single difference between pre and post that announcement. Again, our hope is that they can resolve that, and I think there are a lot of people who are cheering that outcome on.

Thomas Patrick Curran
B. Riley Securities, Inc., Research Division

Yes. I would expect the same, and that's good to hear. It sounds reassuring. And then just turning to 2021 guidance, John, for this adjusted EBITDA range, negative $8 million to negative $12 million. Should we think of that as partly reflective of an incremental $6 million of EV-related spending. Is that what you're trying to tell us? And will that $6 million be entirely captured within R&D?

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Yes. Actually, yes. So the $6 million is included in the $8 million to $12 million guidance, negative guidance. It is not all in R&D. Some of it is actually captured in cost to sales associated with the build-out of the advanced thermal battery fabrication facility. And so we need to hire people, fabricators. We have equipment that we need to run and operating expenses associated with that fabrication operation associated with that principal contract we have with the North American EV manufacturer.

Operator

And your next question comes from Amit Dayal from H.C. Wainwright.

Amit Dayal
H.C. Wainwright & Co, LLC, Research Division

On the EV side of the story, can you talk about margins for the EV segment potentially that you are anticipating versus what you might be generating for your infrastructure implications?

Donald R. Young
President, CEO & Director

Sure. John, do you want to take that?

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Yes. I will. So we talked at the time we announced that contract back in our third quarter earnings call, that about 55% of the revenue associated with that contract will be for our PyroThin aerogel materials. Our margins on that component of the revenue are strong. They're in line with what we're seeing on the energy infrastructure side, and if anything, a bit at the high end of that range.

The other component, the other 45% is fabrication. And for the fabrication, it's much lower margin. And so in the aggregate, we would expect a lower margin on that business. But I think, as Don alluded to earlier, the capacity that we could generate out of our East Providence plant increases from $200 million to up at around $250 million.

The best way I think to think about it is, we'll still generate gross margins close to 30% at full capacity in East Providence plant and we would still expect to generate adjusted EBITDA at capacity in East Providence plant of about $35 million. All the changes is that we'll see slightly higher revenue out of that facility, but the profitability and the cash generation hasn't really been changed by that business.

Amit Dayal

H.C. Wainwright & Co, LLC, Research Division

Understood. I really appreciate it. And you're guiding to roughly single-digit million revenues from the EV opportunity in '21 and '22. Is there growth in that single-digit millions between '21 and '22? Or are you sort of just steady supply over the first 2 years? Can you just give us some color on how that plays out, please?

Donald R. Young
President, CEO & Director

Yes. Yes. It does -- it basically doubles from 1 year to another, but still single-digit millions. So I want to keep that in perspective. And look, it's entirely consistent with the rollout of electric vehicle models for this particular player. And really, when you look across the industry, we're starting to see some new 2022 models. But really, most of the OEMs have talked about 2023, 2024, 2025 models coming on to the market.

So from having 1 or 2 in sort of their launch year to 3, 4, 5 and 6. And then ultimately, 15, 20 and 25 vehicles, electric vehicles coming off of their lines. And so the exact ramp of that is consistent with our projections from the design win that we had with the North American entity. So as we say, single digits in 2021, doubling that, but still being in single digits in 2022. And as I said, in 2024 and through the rest of the decade, up in the $150 million range. And 2023 is that substantial ramp year as we move to those much higher numbers. Kind of just think of it as kind of maybe getting halfway there kind of thing for the ultimate ramp.

Operator

And your next question comes from Doug Becker from Northland Capital.

Douglas Lee Becker
Northland Capital Markets, Research Division

I was just hoping to get a little more context on the $225 million in revenue target in the 30% gross margin. Just is there clear visibility to that number? Or is it based more on a top-down assessment of the opportunity? And what type of fabrication revenues are included in that, as you were just alluding to, that's at a lower margin?

Donald R. Young
President, CEO & Director

Yes. Let me talk about it one level, and then John maybe can go to a little bit more detail. So really, it's comprised principally of 2 major components is the way we're thinking about it. One is from the single North American entity, automotive OEM. And again, these are their projections and that we're using in this case. And then the other assumptions that we make, Doug, is that we -- in 2023, we recapture our 2019 revenue level in our energy infrastructure business.

And so when you put those 2 things together, you get up very close to that $225 million level. We also have the sustainable building materials activity and a variety of other small sources of revenue. But those are the 2 principal components of that $225 million. John, when I was talking, did you figure out the portion of that, that would be fabrication?

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Yes. I think just -- we'll just do the math, Don. So -- and this is just indicative. So I don't want to be held for this. But here at the $225 million and $140 million, which was the peak energy infrastructure revenue we saw back in 2019. If you subtract that out of $225 million, you're down to $85 million worth of EV thermal barrier business. And I think we alluded earlier that, that would be 55% of that would be the sale of our aerogel blankets PyroThin product and the remainder of the fabrication. But it's in line. That gives us essentially somewhere in the order of $190 million worth of silicon -- silica aerogel blanket revenue in 2023, which would be right up against the capacity of our East Providence plant. And the economics,

as we've said all along, haven't changed. We'd expect to see a gross profit -- a gross margin above 30% at capacity in that plant and be able to generate $30 million to $35 million of EBITDA at capacity. And so that's essentially the breakdown.

So in 2023, at $225 million, we'd be very close to a full average plant at that time. We have a little room to grow, get a little closer to that $250 million that Don alluded to. But we'd have a very good full plant, generating quite a bit of cash at that time.

Donald R. Young
President, CEO & Director

And Doug, let me just -- let me add one thing to that. It's an interesting question. Let me tell you what's not in that number. Again, it just assumes a 2019 level of revenue from our energy infrastructure business. Again, we're assuming that 2022 and 2023 are post-COVID. And we believe that we will recapture that level over the course of that period. And we also believe that we'll continue to grow that business. And as I said in my comments earlier, we grew revenue CAGR over 20% from 2008 through 2019, 34% in 2019 alone. So we'll see how that plays out.

Another thing that's not in there. To any great extent is that additional RFQ wins from companies that are sort of on par with the one that we won already. And so we believe we're going to be the technical leader. We're going to be the industry standard in these thermal barriers. And so let me just say, we would be disappointed if we weren't playing in more battery platforms than the one that we have in hand today.

Douglas Lee Becker
Northland Capital Markets, Research Division

Understood. And that 30% gross margin seems to imply incremental margins -- incremental gross margins of around 45%. And I just want to make sure that's achievable even with some component of fabrication coming in a very minimal margin. Just because of the capacity utilization?

John F. Fairbanks
VP, CFO, Principal Accounting Officer & Treasurer

Yes. Yes, absolutely. We anticipate 2 things. We'll get the incremental 45% that we we've talked about for a long time as the incremental gross profit per dollar of aerogel blanket revenue. We also anticipate -- we have continued effort ongoing to improve our bill of material costs as a percentage of sales. So we'd expect a bit of a margin enhancement there from that. And it would offset that degradation in margin associated with the fabrication component of revenue. Easily achievable and in line with the basic economics we've discussed for the last 5 years.

Operator

And you have a follow-up question from Jed Dorsheimer from Canaccord.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

Just a real quick one here. So just on the biz dev side of things, can you convince me why your insulation that's being used for oil and gas and -- wouldn't be used in a hydrogen reformation application?

Donald R. Young
President, CEO & Director

We are exploring that issue, and we wanted to get our thoughts aligned before we put it into any presentation. And we are looking at that as a potential use for our materials. There are, obviously, some very great similarities between that hydrogen work and other work that we do in the industrial area.

So stand by on that. I know it's a very topical question, and we want to really make sure we're focused in on it in the right way and express carefully what we think our role could be in that space. We'll definitely do that.

Jonathan Edward Dorsheimer
Canaccord Genuity Corp., Research Division

Got it. Let me just rephrase the question slightly. From a thermodynamic perspective, your insulation is going to give properties that would either be beneficial in terms of high-temperature heat, but also low temperature, too. So if I'm operating at 260 degrees below Fahrenheit then having the thermodynamic benefits of your foam and the lack of air penetration, the hermeticity, if you will, would still have the same beneficial properties, correct?

Donald R. Young
President, CEO & Director

You're exactly right. The reason -- and we're -- perhaps we're most focused right now on the cold side and -- of that equation. And I think for the reasons that we are doing very well in the LNG space today might be the reasons why we do well in the hydrogen space coming down the road.

Operator

And there are no further questions in queue at this time. And I would like to turn the call back over to Don Young.

Donald R. Young
President, CEO & Director

Thank you, Elaine. Hey, we appreciate everyone's interest in Aspen aerogels. We look forward to reporting to you our Q1 2021 results in late April. Thanks for joining us tonight. And we look forward to seeing you then. Be well. Take care.

Operator
This does conclude today's conference call. Thank you for participating. You may now disconnect. Leaders, please hold.