Investor Relations Presentation

November 10, 2022

ASPEN AEROGELS

(NYSE:ASPN)



aspen aerogels®

Disclaimer on Forward Looking Statements

This presentation contains statements that constitute "forward-looking statements" under the Private Securities Litigation Reform Act of 1995. The words "anticipate," "believe," "could," "estimate," "expect," "guidance," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "will," "would," "outlook" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. All statements other than statements of historical facts contained in this presentation, including statements regarding our short-term and long-term growth strategies and expectations about the growth of our business; 2023, 2024, and 2025 revenue targets; future revenue opportunities through this decade; efforts to develop and commercialize our products; market opportunities in the electric vehicle market regarding thermal barriers as well as battery materials; market opportunities in the sustainable building materials and the energy infrastructure markets; our expectations regarding future operations, future financial position, future capacity, future revenue and projected costs; our expectations about global electric vehicle sales as well as the potential revenue from the sale of our products per electric vehicle; the revenue opportunity estimates from the major US automotive OEM ;Investment estimates for Plant II or in R&D; capital expenditure programs, annual revenue capacity with Phase I and Phase II of Plant 2, gross profit and EBITDA estimates with full manufacturing capacity; our expectations about revenue predictability; estimates of Awarded Programs in 2023 and 2025; estimates of product mixes in 2023 and 2025; our expectations about customers and automotive industry's approach towards addressing thermal runaway; our prospects and plans; objectives of management; and expected market growth are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. These forward-looking statements are only predictions, and we may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, so you should not rely on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our business, financial condition and operating results. The Company's future financial and operating results, as well as any forward-looking statements, are subject to inherent risks and uncertainties, such as those described in its Annual Report on Form 10-K for the year ended December 31, 2021, as well as its subsequent annual, quarterly and current reports filed with the U.S. Securities and Exchange Commission. Such risks and uncertainties include those related to: an inability to create new product, partnership and market opportunities; any sustained downturn in the energy industry or energy prices; any sustained downturn in the petrochemical, refinery, subsea, LNG, U.S., North American, Asian, European, South American, Middle Eastern, building materials, electric vehicle or other market due to the coronavirus pandemic, COVID-19 or any other factor; any failure to sustain project-based demand in the subsea, LNG, on-shore or other markets; the right of EV thermal barrier customers to cancel contracts with Aspen at any time and without penalty; any costs, expenses, or investments incurred by Aspen in excess of projections used to develop pricing under the contracts with EV thermal barrier customers; any failure of Aspen or PyroThin® to meet contractual specifications and requirements under contracts with EV thermal barrier customers; Aspen's inability to create new product, customer or market opportunities, including for PyroThin® or for new products developed from Aspen's aerogel technology; any disruption or inability to achieve expected capacity levels in any of our three production lines or at Plant II including due to the coronavirus pandemic, COVID-19 or any other factor, any inability to expand manufacturing capacity Plant II; Aspen's Pyrothin® product or another product's ability to solve the customer problem towards which it is targeted; the failure to receive all regulatory or other approvals required to operate, maintain or expand our facilities; any failure of demand for Aspen's products; any failure to achieve expected price increases or average selling prices for Aspen's products; any significant increase in the cost of raw materials, utilities or any other manufacturing consumable; the failure to mitigate the impact of any significant increase in the cost of raw materials, utilities or other manufacturing consumable; shortages of raw materials, utilities or any other manufacturing consumable due to the coronavirus pandemic, COVID-19 or any other factor; the failure to generate sufficient operating cash flow or to obtain significant additional capital to pursue Aspen's strategy; the failure of Aspen's products to become widely adopted; the competition Aspen faces in its business; any failure to enforce any of Aspen's patents; any failure to protect or expand Aspen's aerogel technology platform; any future finding of invalidity of any patent in any jurisdiction; any failure to generate sufficient operating cash flow or to obtain sufficient additional capital to continue to pursue Aspen's new business, technology, patent enforcement, or patent defense strategy; any failure of Aspen's products to meet applicable specifications and other performance, safety, technical and delivery requirements; the general economic conditions and cyclical demands in the markets that Aspen serves; the economic, operational and political risks associated with sales and expansion of operations in foreign countries; the loss of any direct customer, including distributors, contractors and OEMs; compliance with health and safety laws and regulations; and the maintenance and development of distribution channels.

Disclaimer on Forward Looking Statements

The presentation contains information regarding certain financial targets with respect to the Company. Such financial targets constitutes forward looking information and is for illustrative purposes only and should not be relied upon as necessarily being indicative of future results. The assumptions and estimates underlying such financial targets are inherently uncertain and are subject to a wide variety of significant business, economic, competitive and other risks and uncertainties, as described above. Actual results may differ materially from the results contemplated in the financial targets contained in this presentation, and the inclusion of such information in this presentation should not be regarded as a representation by any person that the results reflected in such targets will be achieved. "Awarded Programs" as used in this presentation is our estimates of the revenues that we believe are potentially derivable from customers based on our knowledge of our customer's selection of our products for use in a specific platform or vehicle lineup. Certain of our customers provide us with various projections of their forecasts for vehicles to be sold in various time frames. Our estimates of Awarded Programs are based on this information provided by customers and certain other assumptions, including expectations regarding future sales volumes and the continuation of our relationship with customers. Our customers generally do not guarantee or commit to sales volumes and many of our arrangements with our customers may be terminated by them at any time without penalty.

The information in this presentation is current as of October 27, 2022 and speaks only as of such date. We expressly disclaim any obligation to release any updates or revisions to any information presented herein, including any forward-looking statements, to reflect any change in our expectations or projections or any changes in events, conditions or circumstances on which any such information or statements are based for any reason, except as required by law, even as new information becomes available. All information and forward-looking statements in this presentation are qualified in their entirety by this cautionary statement.

This presentation includes certain non-generally accepted accounting principles (GAAP) financial measures that we use to describe our company's performance or estimated or targeted future performance. The non-GAAP information presented provides investors with additional useful information but should not be considered in isolation or as substitutes for the related GAAP measures. Moreover, other companies may define non-GAAP measures differently, which limits the usefulness of these measures for comparisons with such other companies. We encourage investors to review our financial statements and publicly filed reports in their entirety and not to rely on any single financial measure.

The industry and market data contained in this presentation is based either on our management's own estimates or on independent industry publications, reports by market research firms or other publicized independent sources. Although the Company believes these sources are reliable, it has not independently verified the information and cannot guarantee its accuracy and completeness, as industry and market data are subject to change and cannot always be verified with complete certainty due to limits on the availability and reliability of raw data, the voluntary nature of the data gathering process and other limitations and uncertainties inherent in any statistical survey or market shares. Accordingly, you should be aware that the industry and market data contained in this presentation, and estimates and beliefs based on such data, may not be reliable. Unless otherwise indicated, all information contained in this presentation concerning our industry in general or any segment thereof, including information regarding our general expectations and market opportunity, is based on management's estimates using internal data, data from industry related publications, consumer research and marketing studies and other externally obtained data. Certain financial or other targets are based on management estimates, currently available information and assumptions that may change. Accordingly, there can be no assurance that we will achieve our financial targets or other expectations. The expectations are inherently subject to significant economic, competitive and other uncertainties and contingencies, many of which are beyond the control of management. Actual results may vary materially based on a number of factors. For example, The Company's estimates in this presentation are based on assumptions about the following factors: (i) adoption rates of EV and our customers' market penetration, (ii) the aggregate pricing of our products, and (iii) the average amount of our products incorporated in each vehicle. Due to the rapid pace of technical development in lithium batteries, the Company's assumptions may evolve in the future due to various external factors resulting in different estimates than those arrived here. There are a wide range of estimates being published, including ones that would result in lower per vehicle figures. While the Company's management believes its estimates regarding possible pricing and market size are based on reasonable assumptions and methodology, there can be no assurance that the future pricing and market size will align with the Company's estimates. Such data may be outdated and involves a number of assumptions and limitations and contains projections and estimates of the future performance of the industries in which we operate that are subject to a high degree of uncertainty. We caution you not to give undue weight to such projections, assumptions and estimates.



A proprietary aerogel technology platform with processes, scale and a critical talent base that enables a safe transition to clean energy and energy independence

aspen aerogels

What is an Aerogel?



The lightest solid material on the planet.

Cages airflow and delays heat transfer.

Easy to make small batches in a lab. Hard to make at scale consistently to solve problems.

aspen aerogels

Aspen Aerogels Today

KEY FACTS

$121M 2021 Revenues

$1B+ Energy Industrial Product Install Base

EV Awards from GM TOYOTA

SUSTAINABILITY ENABLING PRODUCTS







Silica Based Aerogel – In Production for over 20 years

Carbon Aerogel – R&D

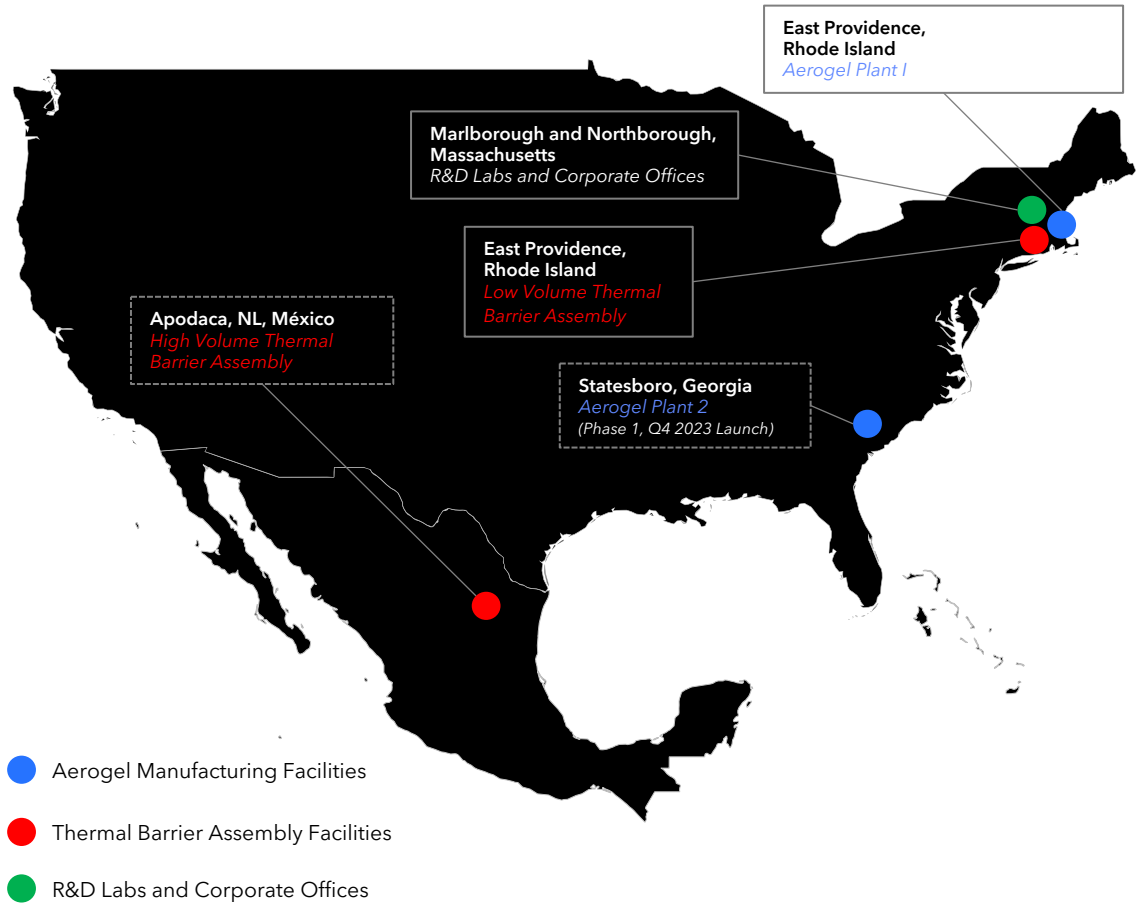
$18.4M
H1 2022 Revenues [1]
44%
Quarterly Growth

$65.7M
H1 2022 Revenues [1]
13%
Quarterly Growth

Pre-revenue

FOOTPRINT AND CAPABILITIES

Aspen Aerogels is a fast-growing material technology platform with more than 500 employees across 2 manufacturing sites, 2 major R&D centers, and sales presence in 17 countries and 8 states in the U.S.A.



1- Reflects unaudited financial results for H1 2022 Revenue and quarter over quarter growth

aspen aerogels

Our Strategy to Create Stakeholder Value

Leveraging our platform in markets with favorable dynamics while focusing on doing the right things well

WHO WE ARE

PROPRIETARY AEROGEL TECHNOLOGY PLATFORM™, PROCESSES, SCALE AND CRITICAL TALENT BASE

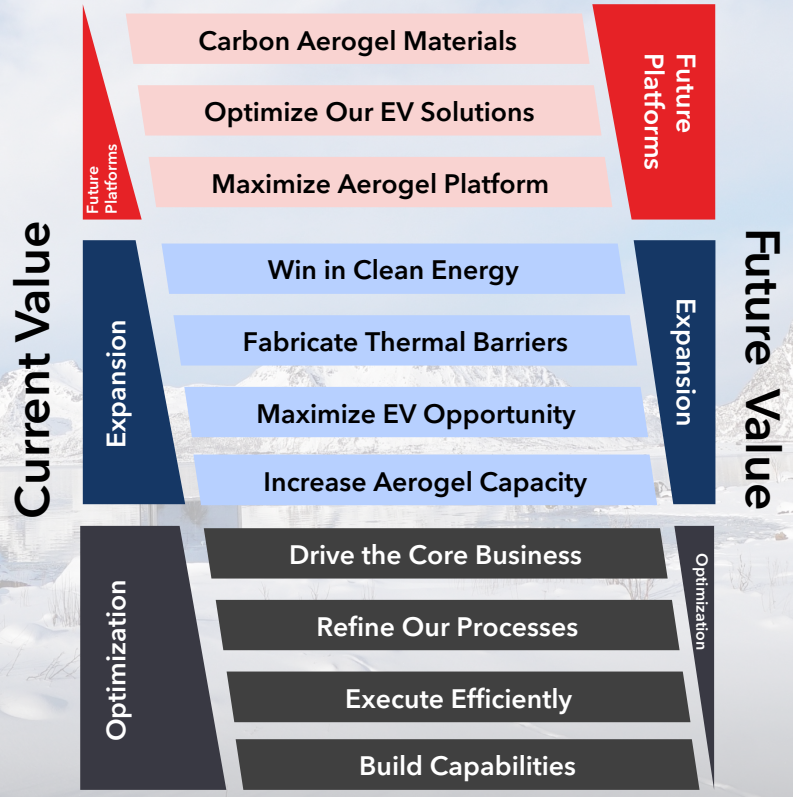
WHERE WE PLAY

AT THE CRUX OF 4 ACCELERATING TRENDS REQUIRING SOLUTIONS

- EV SAFETY, RELIABILITY, SERVICEABILITY
- ENERGY DENSITY, COST, RELIABILITY
- ASSET EFFICIENCY, RESILIENCY, SAFETY
- THERMAL EFFICIENCY AND FIRE SAFETY

WHAT WE DO

OPTIMIZE AND EXPAND OUR PLATFORM WHILE INVESTING TOWARDS THE FUTURE



CREATES VALUE

KEY INVESTMENT HIGHLIGHTS

- Growing Markets Driving Needed Expansion
- Mission Critical Products
- Operating Plan Geared for Profitability
- Clear Investment Strategy
- Experienced and Focused Talent
- Sustainability Enabling

aspen aerogels

Growing Presence in Large Expanding Markets

Aspen is at the core of electrification and energy transition markets that are rapidly growing, requiring capacity expansion

END MARKET GROWTH FROM DEPENDABLE CUSTOMERS…

EV Thermal Barriers



29%

2021 to 2030 Global EV Production Volume CAGR[1]

Energy Industrial Insulation



55%

Increase in Global Average Annual LNG Capacity Investments in 2021 to 2030 vs. pre-pandemic levels [2]

GM

TOYOTA

VENTURE GLOBAL LNG

LNG CANADA

ptt LNG

Golden Pass LNG

… IS DRIVING NEED FOR CAPACITY EXPANSION

3X

Planned Increase in Aerogel Production Capacity and Startup of Thermal Barrier Assembly Facilities



1. Source: Piper Sandler – Forecasting Global Vehicle Demand (and EV Sales) Through 2040, 2nd Edition
2. IEA Gas Market Report Q2-2022

aspen aerogels

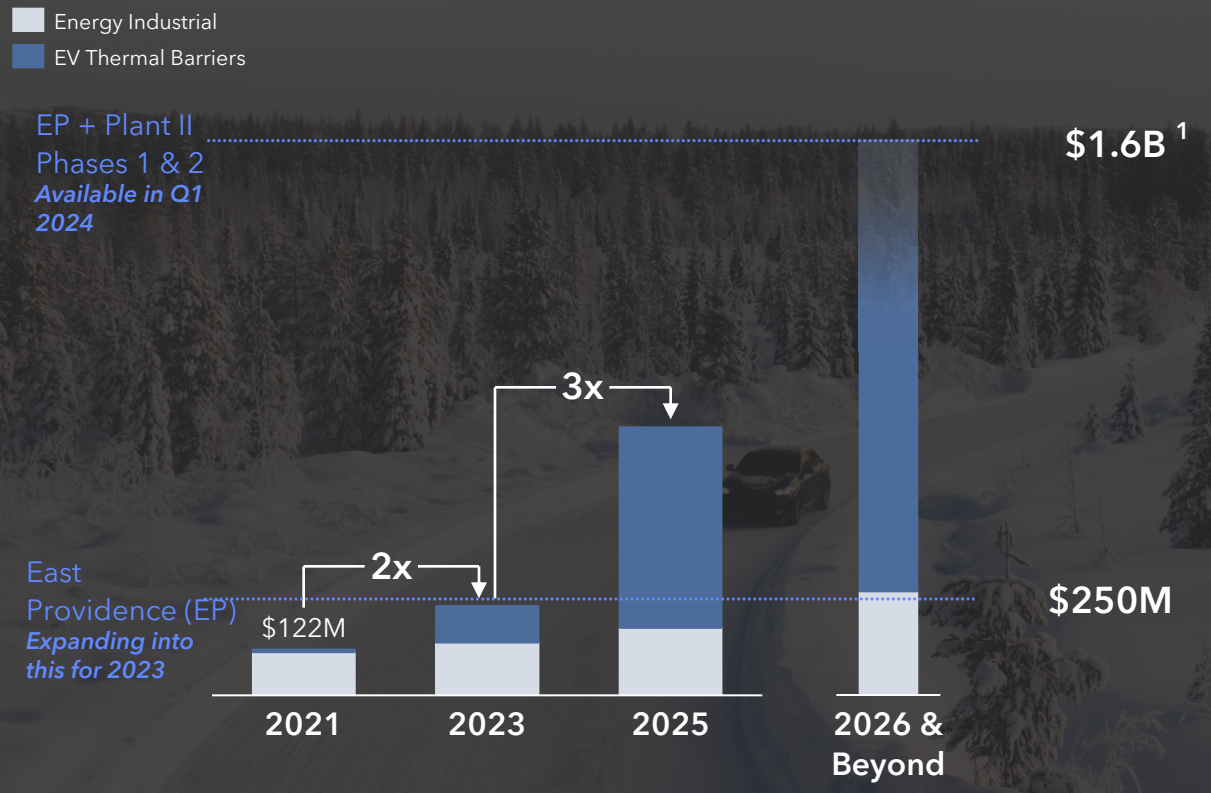
Investing in Capacity to Reach $1.6B of Revenues

Current OEM awards and additional quotes in progress drive near-term conviction to expand aerogel production capacity

INVESTING IN ADDITIONAL CAPACITY…

Upfront capacity investments will enable **$1.6B** in annual potential revenues…

Target Revenue Mix and Annual Revenue Capacity



…TO FULFILL GLOBAL DEMAND.

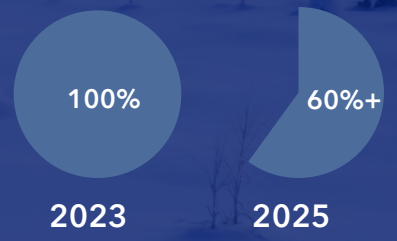
…with **25% EBITDA** margins at full capacity.

Estimated Awarded Program Sizing 2

Over $3B of
Program Awards through 2028

Plus, a higher value of quotes in progress

Target Thermal Barrier Revenue from Currently Awarded Programs



Priced to deliver:

- **35%** Gross Margins
- **25%** EBITDA Margins
- **$400M** of EBITDA at full capacity

1- Includes full capacity revenue of $250M from current East Providence plant
2- Awarded business excludes additional quotes in process; long-term plan includes 2022 through estimated full capacity in 2026 and beyond

Thermal Runaway and Propagation in EVs

A serious problem with all types of lithium-ion cells that need passive measures to prevent catastrophic fires

THERMAL RUNAWAY AND PROPAGATION

Caused by:

- Lithium dendrites
- (Separator) Manufacturing Flaws
- Overcharging
- Cell Crush (i.e., in an accident)
- External Fire

Big Current Surge

1

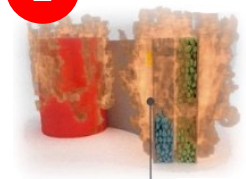


Mitigation Actions

- Cut current flow
- Cool the cell
- Prevent propagation

- **Temperature Increase**

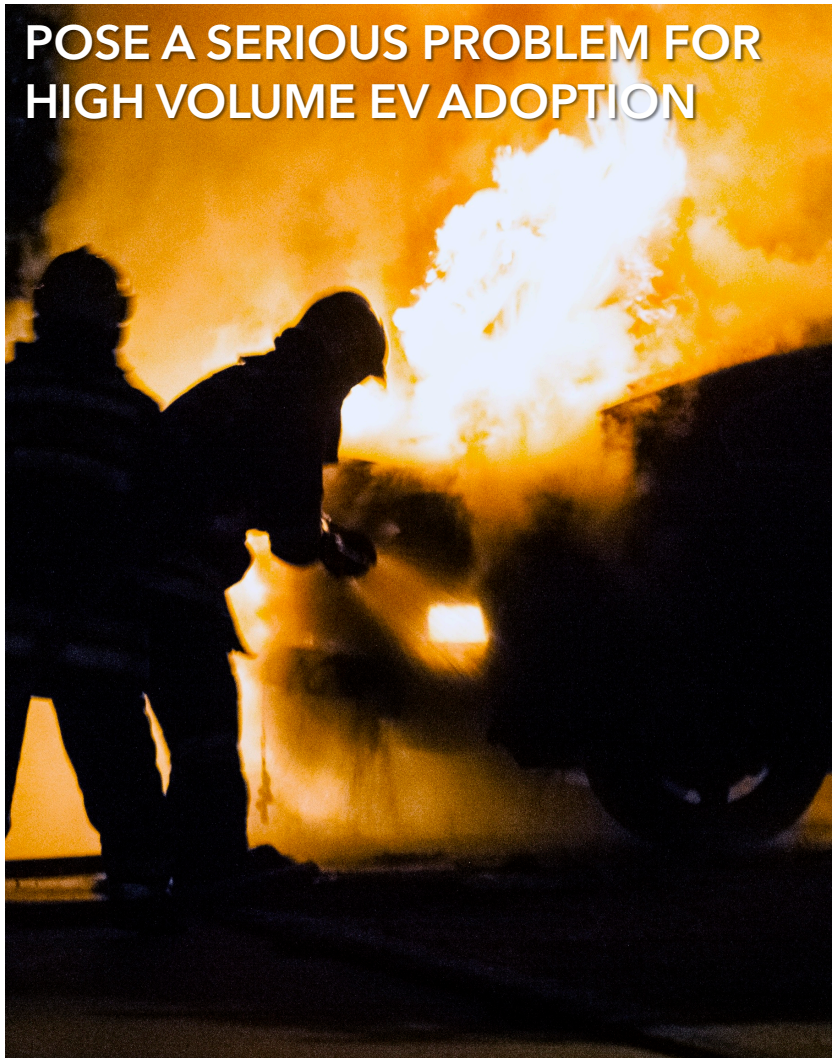
2



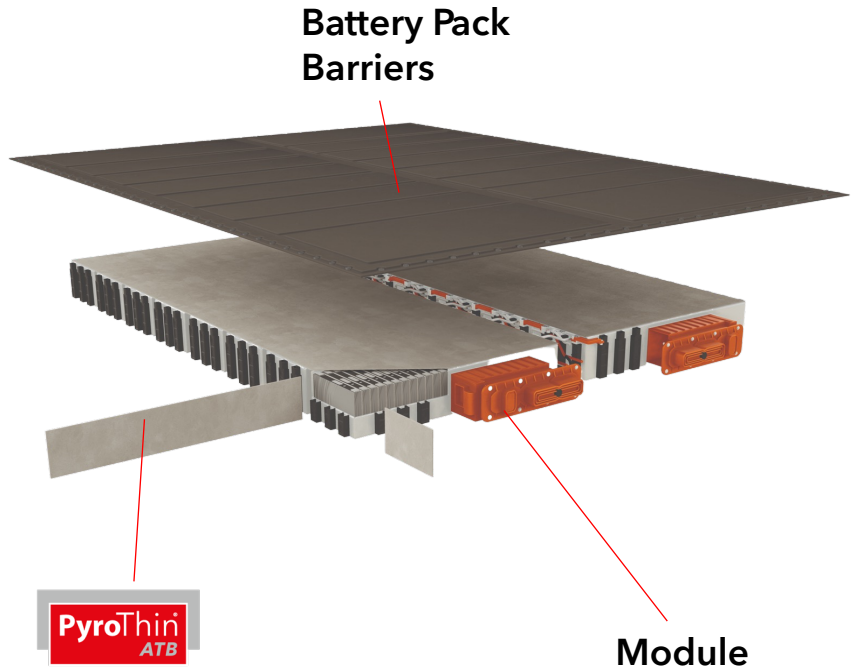
Mitigation Actions

- Prevent spread of fire
- Suffocate fire at the cell level

- **Fires, explosions**



OEMS CAN MITIGATE IT PASSIVELY AT THREE DIFFERENT LEVELS



Aspen Aerogels | Proprietary

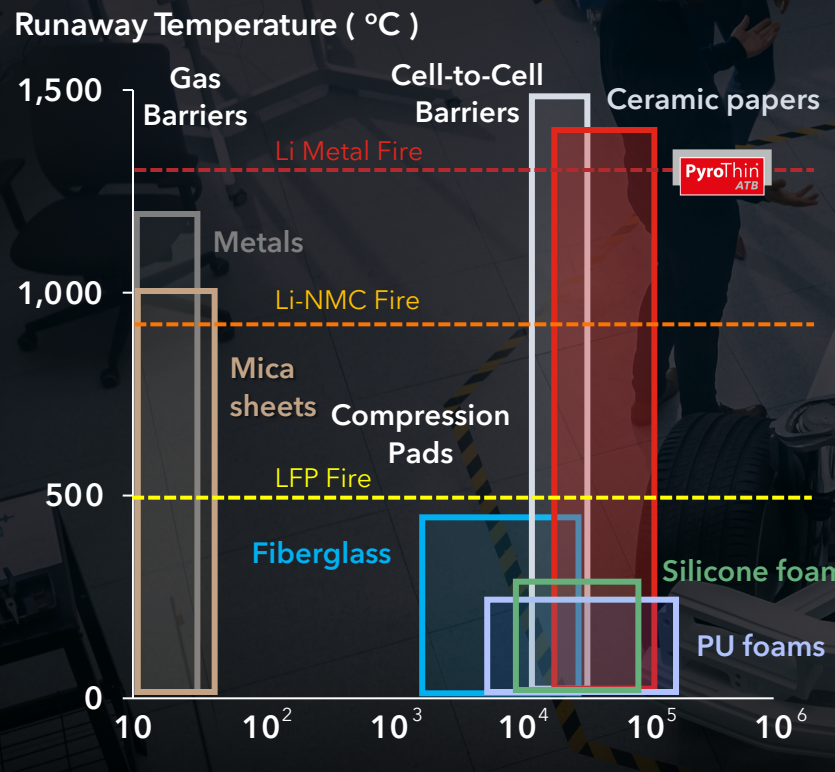
aspen aerogels

Aspen's EV Cell-to-Cell Thermal Barrier Product

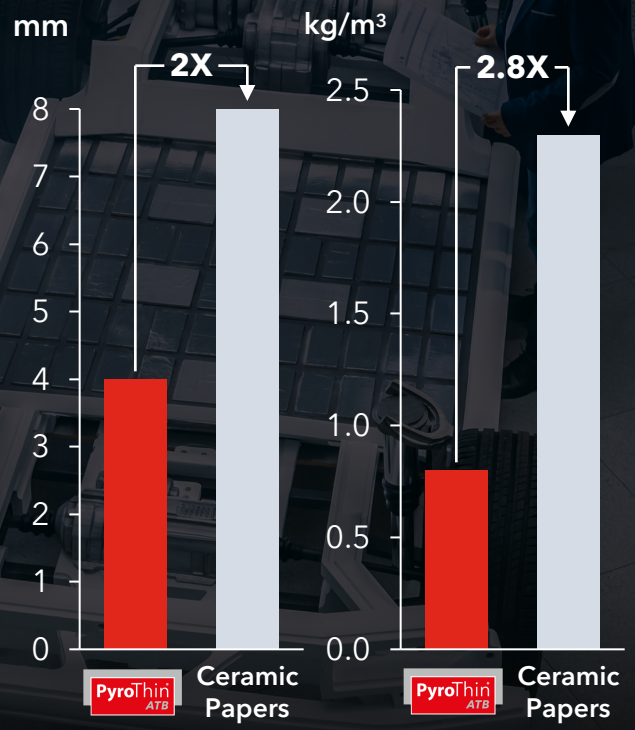
PyroThin® delivers high levels of thermal isolation, fire protection and compression properties for cell-to-cell barriers

PyroThin® can deliver the required fire protection and mechanical properties **with half the thickness and 35% of the weight** of the nearest competitive material in cell-to-cell barriers

Heat Resistance and Compressibility / Recovery range of Gas Barrier, Compression Pad and C2C barrier materials [1]



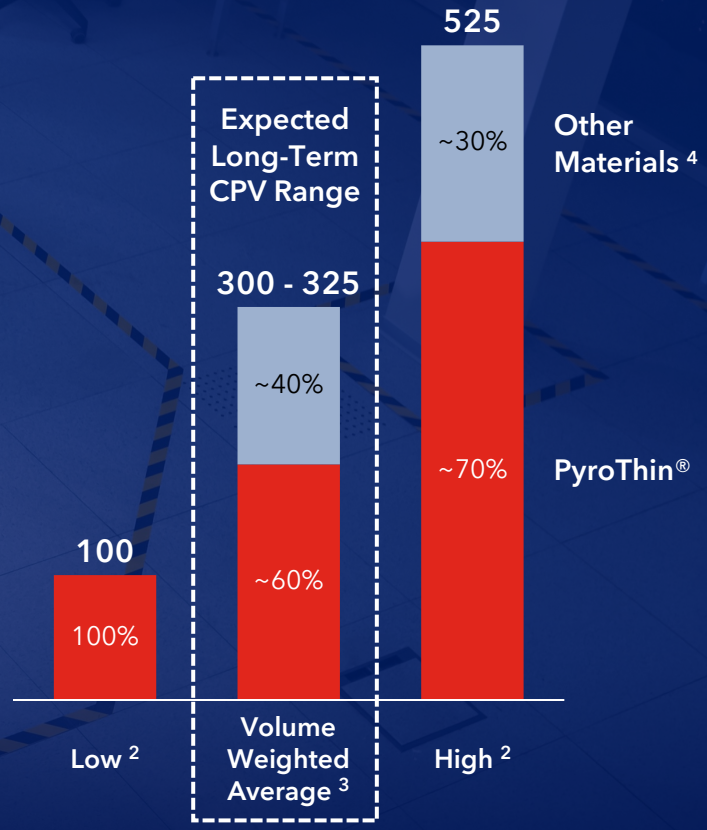
Comparison of thickness and weight of PyroThin® and Ceramic Papers needed to mitigate a 700°C thermal runaway



1- Internal assessment of the relevant material level properties required for a cell-to-cell thermal barrier and comparison of our products and generic competing materials on those properties

CONTENT PER VEHICLE SUMMARY

Thermal Barrier CPV summary ($) and estimated content breakdown



2- Based on current production programs
3- Based on submitted quotes as of June 24th, 2022, and expected long-term engineering changes
4- Other materials include encapsulation film, foam, tape, metal and other non-aerogel thermal barrier components

aspen aerogels®

OEMs' Increasing Cell-to-Cell Barrier Adoption

6 of the top 7 EV OEMs use compatible cell form factors and can add cell-to-cell barriers to enhance safety

	Market Position [1]		Battery Strategy [2]		Passive Thermal Runaway Solutions [3]				
					More Protection →				
OEM Group	2021 Global EV Share	2025 Global EV Share	Cell Chemistry	Cell Form Factor	Cooling System	Pack Barriers	Module Barriers	Cell-to-Cell Barriers	Approach Summary
TESLA	20%	20%	LFP / NCA	Cylindrical	✓	✓		Bonding Foams	Invested in current design that uses small cylindrical cells structurally
GM	10%	9%	NMC	Pouch	✓	✓	✓	PyroThin ATB	Leading and optimizing system with a scalable platform approach
STELLANTIS	4%	9%	NMC	Prismatic	✓	✓	✓	PyroThin® Compatible	Battery JV assessing designs to increase protection
VW	10%	8%	NMC	Prismatic	✓	✓			Increasing focus on cell-to-cell protection for next gen platforms
BYD	7%	6%	LFP	Prismatic	✓	✓	✓		Increased focus on large and long prismatic cells for temp dissipation
RENAULT NISSAN MITSUBISHI	5%	6%	NMC	Pouch	✓	✓	✓		Continuously assessing new safety measures for thermal runaway
Ford	1%	5%	NMC	Pouch	✓	✓	✓		Continuously assessing new safety measures for thermal runaway
TOYOTA	0.4%	2%	NMC	Prismatic	✓	✓	✓	PyroThin ATB	Incorporating cell to cell barriers in new EV nameplates in the future
All Others	42%	35%	Various	Various	Various	Various		Generally Compatible [4]	Increasingly aware of thermal runaway and thermal propagation

1- Source: Piper Sandler – Forecasting Global Vehicle Demand (and EV Sales) Through 2040, 2nd Edition
2 and 3 – Munro & Associates Battery Teardowns, A2MAC and Commercial Discussions
4- Tesla, Rivian and Lucid use cylindrical cells

aspen aerogels

Emerging Regulatory Landscape

Protection against thermal propagation is a key part of emerging global EV safety and testing standards.

EMERGING REGULATIONS AND TESTING STANDARDS AIMED AT EV SAFETY…

UNECE

UN GTR No. 20 – EV Safety (Adopted 2018)[1]

"The vehicle shall provide an advance warning indication to allow egress of 5 minutes prior to the presence of a hazardous situation inside the passenger compartment caused by ***thermal propagation*** *which is triggered by an internal short circuit leading to a* ***single cell thermal runaway such as fire, explosion or smoke****."*

ARE DRIVING COUNTRY LEVEL STANDARDS FOR THERMAL PROPAGATION

Country Level Implementation of GTR No. 20

Region	Key Action Dates	Recent or Expected Outcomes[3]
	2022 (notice & comment)	NHTSA to propose GTR 20 as amendment to Motor Vehicle Safety Standards ("MVSS") for public comment in Sept. 2022
	2021 (in force)	Harmonized with GTR20 and "adopted them in Safety Regulations for Road Vehicles"
	2022 (mandatory for all)	Indian Automotive Industry Standard revised "to be in line with GTR20"
	2021 (mandatory for new)	Adopted GB38031 to "establish relevant National Regulation harmonized with GTR20."
	2021 (mandatory for new)	Rechargeable Electrical Energy Storage Systems in Korea MVSS harmonized w/ GTR20
	2025 (harmonization)	Russia to follow the Eurasian Economic Union; expected to follow GTR20
	TBD	Follows US in adopting GTR20 ("[Canadian] MVSS references … [US] MVSS.)
	TBD	EU transposition proceeds with translation of the amendments in EU all languages

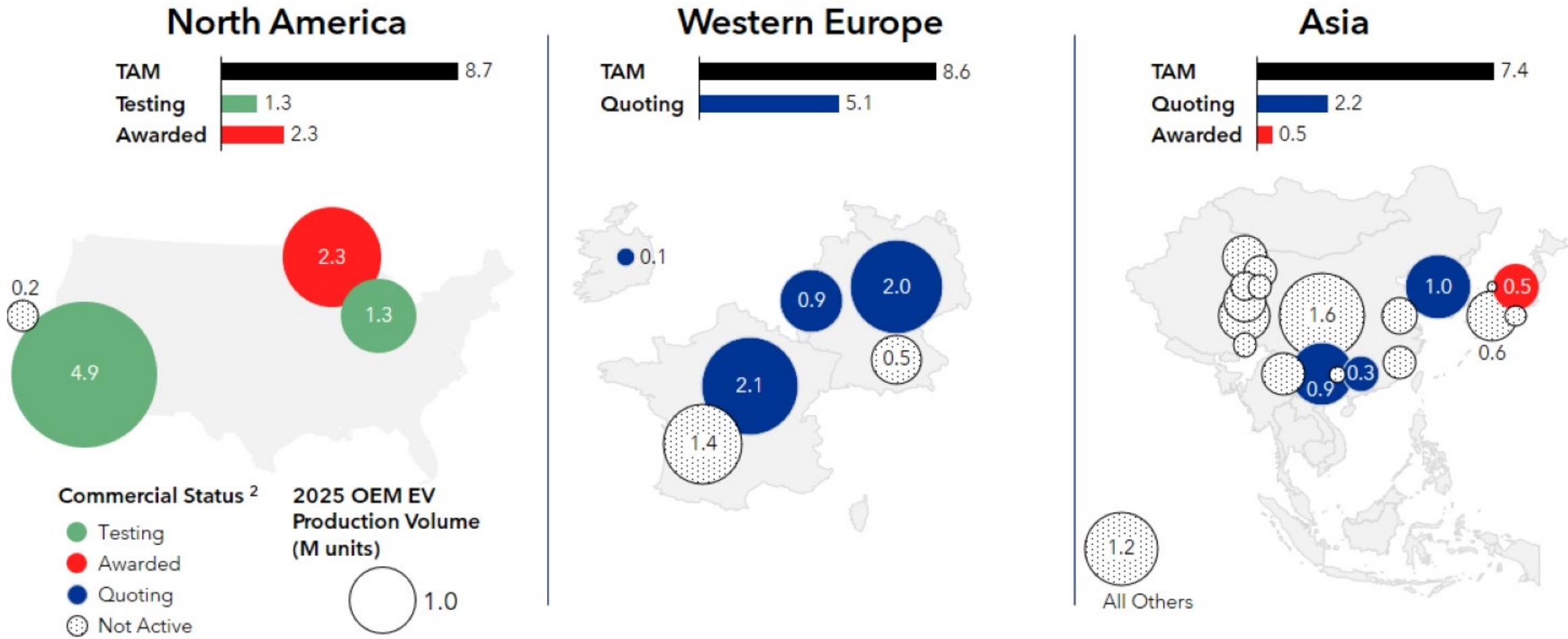
1. Source: Global Technical Regulation on the Electric Vehicle Safety (EVS), Addendum 20: Global Technical Regulation No. 20, May 3, 2018
2. Source: National Standards of the People's Republic of China – Electric Vehicles Traction Battery Safety Requirements, GB 38031-2020, May 12, 2020
3. Source: Transposition of GTR20 (Phase 1) to National Regulation - Progress Report - 23rd EVS-GTR IWG, Mar. 2022
Recent or expected outcomes from source documents; UNECE or member state projections, not Aspen's

aspen aerogels

EV Thermal Barrier Commercial Progress

Aspen has been awarded business, is quoting, or in discussions with several OEMs that it believes will drive EV production

2025 Forecasted EV Production Volume (M units) and Sourcing Status by OEM Group HQ Location [1]



1. Source: Piper Sandler - Forecasting Global Vehicle Demand (and EV Sales) Through 2040, TAM are for 2025, 2nd Edition
2. Aspen Aerogels' commercial discussion status assessment. There can be no assurance Aspen will be successful in generating new business from these discussions. In addition, there can be no assurance awarded business will result in sales

Energy / Industrial Insulation Products

Aspen's various energy industrial products deliver superior thermal isolation and fire protection per unit of thickness

OUR PRODUCTS DELIVER…

Various formulations, thickness profiles and finishes enabling the right properties to solve critical problems

Pyrogel®
Hot Process Applications
Passive Fire Protection
Corrosion Prevention

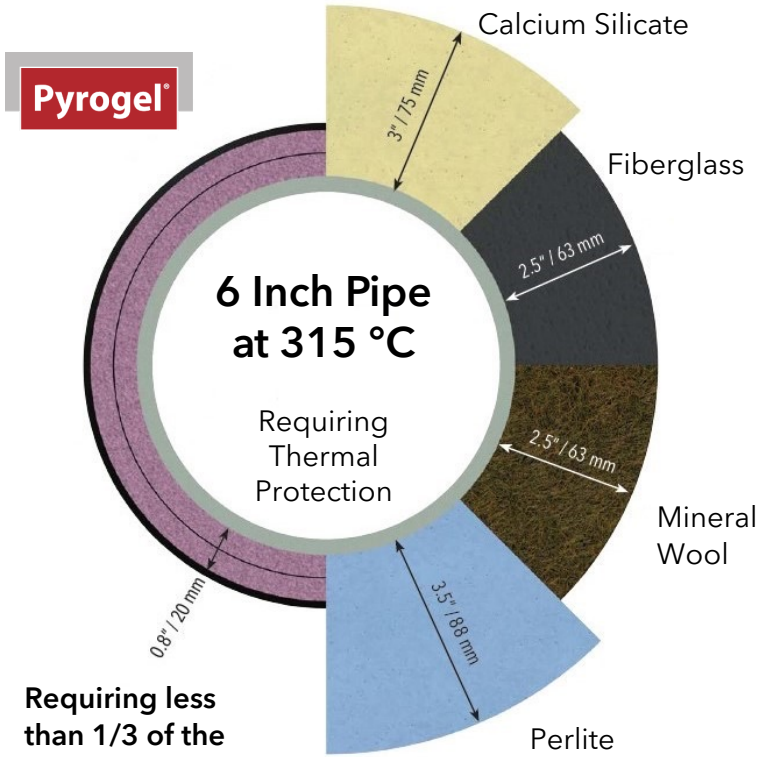
Cryogel®
Cold Process Applications
Passive Fire Protection
Acoustic Attenuation

Spaceloft®
Ambient & Low Temperature Applications



… AND THERMAL INSULATION WITH A THIN PROFILE

Reducing weight, space, logistics complexity, application time and total cost of ownership



Requiring less than 1/3 of the thickness profile

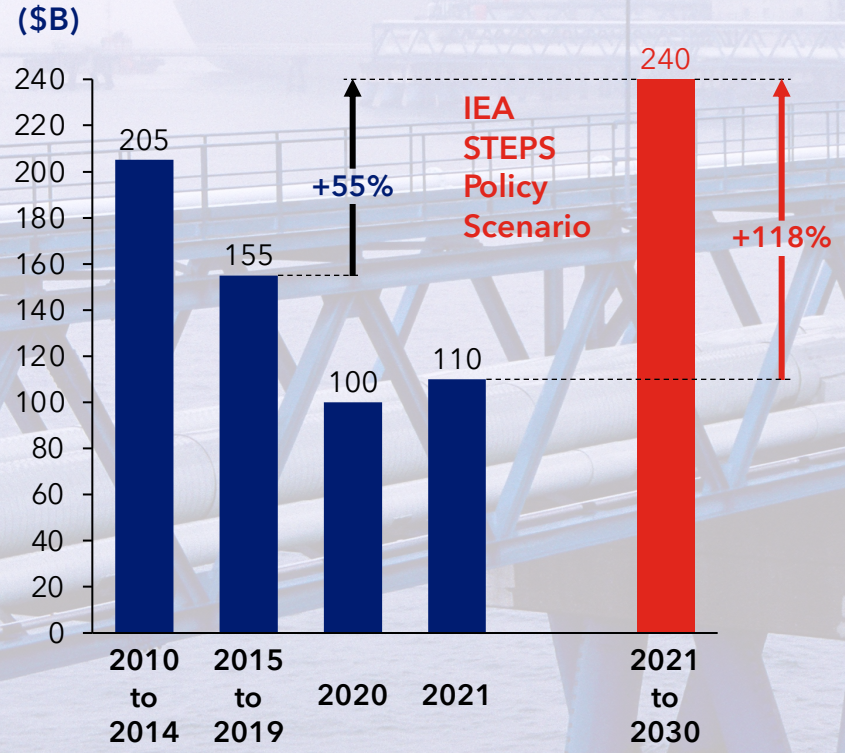
aspen aerogels

Energy / Industrial Products Enable LNG Supply

Post-pandemic LNG supply investments and expected timing of new capacity line up with planned capacity increases

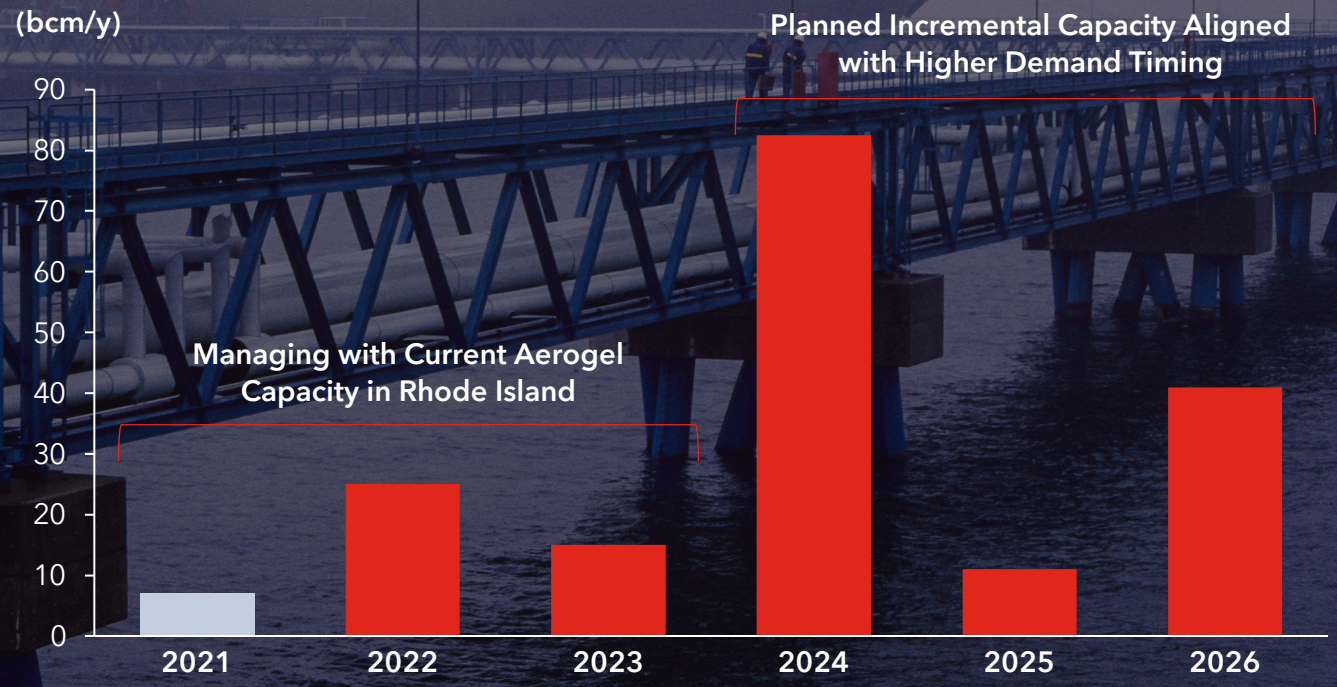
DELAYED LNG INVESTMENTS ARE DRIVING POST-PANDEMIC GROWTH

Annual Global Upstream Investment in Natural Gas Supply [1]



NEW LNG CAPACITY STARTUPS ALIGN WITH PLANNED AEROGEL CAPACITY INCREASES FOR PYROGEL

Expected Startup Year of New LNG Capacity [1]



1. IEA Gas Market Report Q2-2022

aspen aerogels

Aspen Battery Materials Product Development

For over two years we have been investing in a plug and play high silicon content anode material to replace graphite

Material Development

- Nanomorphology derived mechanical and electrical properties
- Aimed at enabling high Si content with tunability for various Si loadings

Process Development

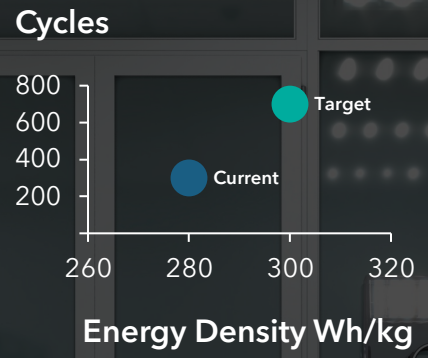
- Because a material that can't be made at scale and cost repeatably is not viable
- On path to have a controlled process that can deliver material at high volumes

Cell Level Validation

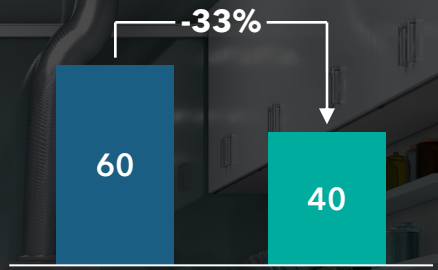
- Parallel validation of material performance and energy density preservation at cell level
- Multiple form factor processes
- 3rd parties and customers drive acceleration

Product Targets and Current Development Status…

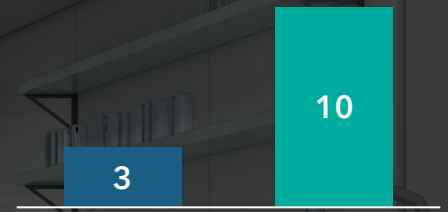
Energy Density and Preservation



Material Cost ($/kg) at Scale



Cell Variability (%)



…support commercial viability that …

… is being further validated at the cell level to demonstrate:

a) 3rd party confirmation of 300 Wh/kg supporting 80% energy density preservation at 500 cycles

b) Less than 10% variability for 30 x 1 Ah pouch cells using Aspen Si-CA anode material

aspen aerogels

Value Chain / Production Distribution

Our core aerogel and thermal barrier assembly assets work together to efficiently supply our expanding end-markets

RAW MATERIAL INPUTS…

Sourced from around the world, and held to high quality standards, the main inputs of our aerogel processes are:

CO2	For extraction
Energy	For processing
Additives	For tuning
Batting	Serves as the base of our insulation products
Silanes	A basic building block of our chemical process

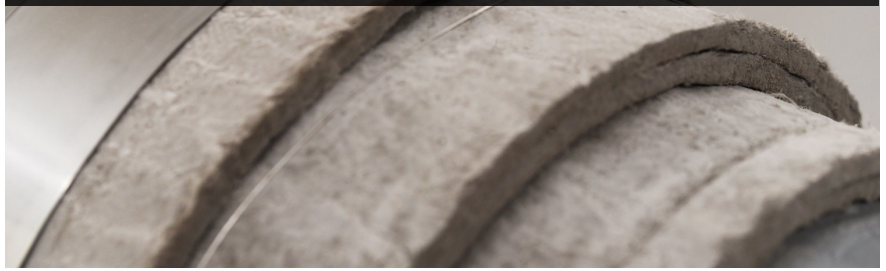
…FEED INTO OUR CORE AEROGEL PROCESSES

Where each product is made to the right thickness, formulation and process that would deliver consistent performance



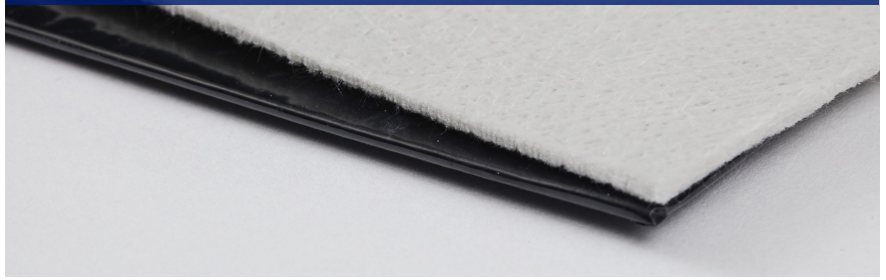
ENERGY / INDUSTRIAL INSULATION

Is sold as rolls of aerogel insulation through a range of distributors around the world and installed by contractors or facility operators



EV THERMAL BARRIERS

Start life as rolls of thin aerogel insulation, but are cut, encapsulated and assembled to the OEM's specifications and then get delivered to OEM battery assembly plants



Operating Plan is Geared to Drive Profitability

Managing capacity transitions and expansion across both segments enables the path to our target gross margins

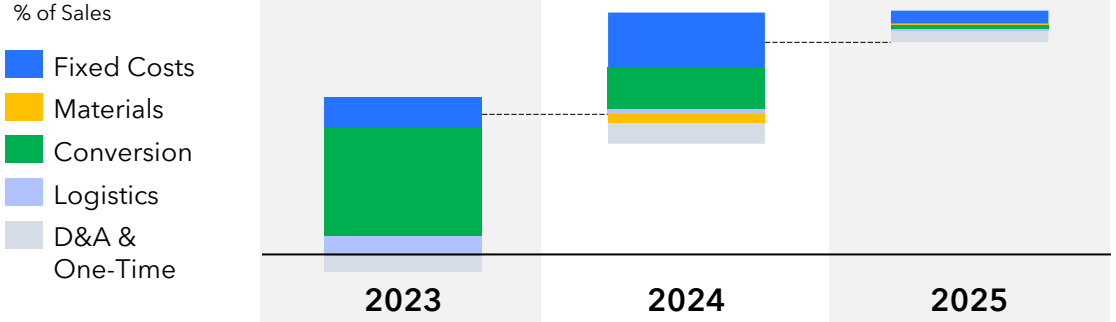
EV Thermal Barriers

Operating Plan Initiatives

- 2023: Move to Mexico with new high-volume process; Reduction in part complexity
- 2024: Automation transition to enable higher long-term volume; Plant II ramping up
- 2025: Enabling non-GM/Toyota OEM volumes at scale; Customer requirement convergence

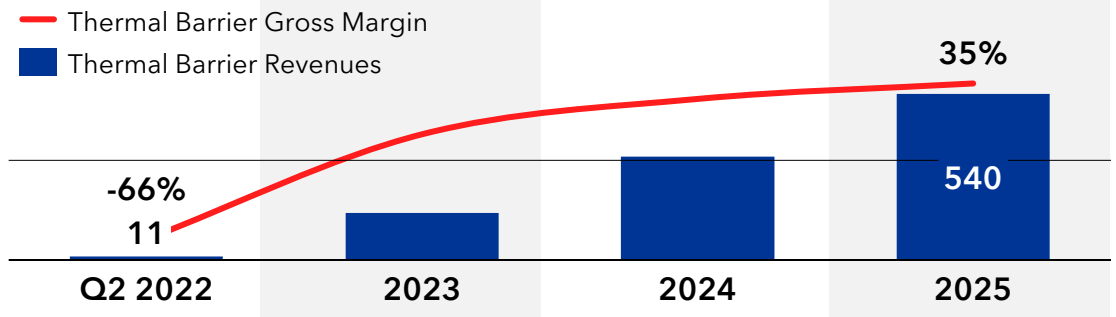
Annual Gross Margin Driver Targets

% of Sales



Illustrative Revenue Trajectory and Target Gross Margin

$ in millions and % of Sales



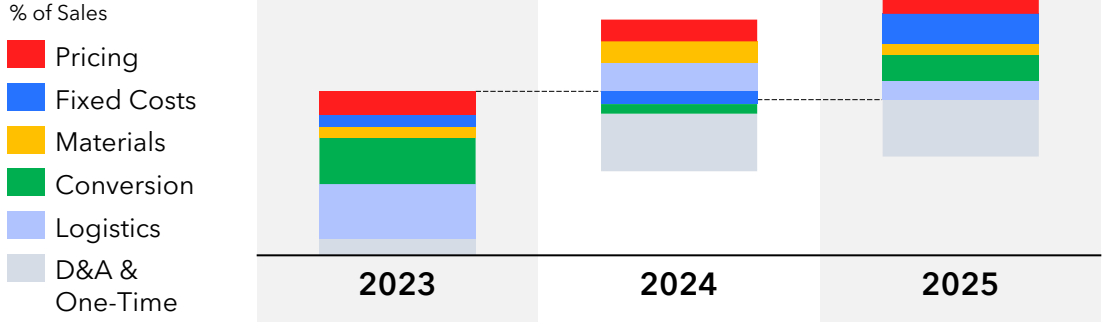
Energy Industrial

Operating Plan Initiatives

- 2023: Product portfolio management; Focusing on higher yields on most accretive products
- 2024: Plant II online; Optimize process development and productivity investments across both Plants
- 2025: Chemical formulation enhancements drive productivity

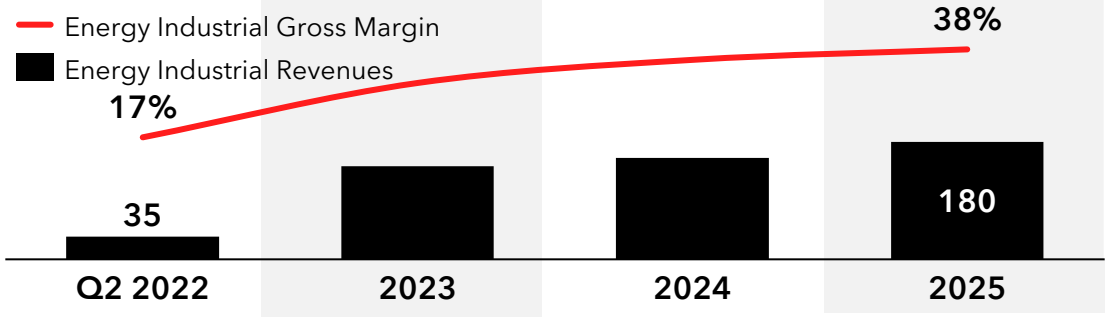
Annual Gross Margin Driver Targets

% of Sales



Illustrative Revenue Trajectory and Target Gross Margin

$ in millions and % of Sales



aspen aerogels

Playing to Win In All Our Business Segments

Aspen is seeking to build its competitive position by building scale, accruing valuable IP and defending it worldwide







Segment	EV Thermal Barriers	Energy / Industrial Insulation	Battery Materials
IP Summary	20+ Patents [1]	240+ Patents [1]	60+ Patents [1]
Strategy	Deliver aerogel-based thermal barrier systems at scale that outperform other materials inside of the battery pack at preventing thermal runaway and propagation	Continue supporting the install base and enable asset efficiency, safety and resiliency through the unique properties of aerogel-based insulation materials on new facilities	Deliver a commercially silicon rich carbon aerogel-based anode material that delivers higher energy density consistently in a plug and play fashion
Relevant Market Players	3M, Morgan Advanced Materials, DuPont, Rogers Corporation, Elmelin, Saint-Gobain, Isovolta, VonRoll	BASF, Armacell, Dow, Bridgestone, Owens Corning, JM Johns Manville, Fletcher Building	Group14, Enovix, Nexeon, NanoGraf, Amprius, SILA Nanotechnologies

1. Includes issued and pending patents worldwide

A Clear Strategy to Create Future Value

We create enterprise value by optimizing, expanding, and leveraging our aerogel platform into mission-critical solutions



1. Phase I of Plant 2 expected; Financing is required to complete the project

Investments Directly Support the Strategy

Deploying capital to expand our current platform and enable future platforms over the next 12 months



Aerogel Plant 2 – Planned Site Rendering

Up to $23M of State and local incentives for over 10 years, as part of an initial $575M investment for Phase 1



Aspen Aerogels | Proprietary

aspen aerogels

Experienced and Uniquely Focused Talent Base

The team is equipped with an experienced management team and all capabilities required to drive profitable growth



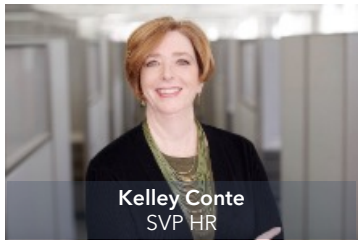














Relevant Industry Experience

CABOT · gm · APTIV · HESS · GE · Baker Hughes · Schlumberger · ExxonMobil · FCA FIAT CHRYSLER AUTOMOBILES · Schneider Electric · EMC² · MAGNA · amazon

Deploying a rich technology platform into ESG driven markets with critical capabilities

ENERGY INDUSTRIAL

- Chemical Engineering
- Process Engineering
- Manufacturing, Quality, Supply Chain

THERMAL BARRIERS

- Design and Testing
- Assembly Engineering, Manufacturing
- Systems Engineering

BATTERY MATERIALS

- Material Development
- Manufacturing Process Development
- Cell Level Validation

aspen aerogels

Sustainability Enabling Products and Operations

Our products enhance safety, asset efficiency and resiliency. Our ways actively prioritize a broad set of stakeholders

OUR PRODUCTS ENABLE SUSTAINABILITY…

Electric Vehicles



Battery Safety, Reliability, Serviceability

- Aspen thermal barriers enable solutions to thermal runaway challenges within EV market
- Carbon program seeks to increase performance of Li+ battery cells to extend driving range and reduce cost of EVs

Energy Industrial



Efficiency, Asset Preservation

- Aspen insulation solutions enable industrial processes to run more efficiently, reducing emissions, extending asset life, improving safety and enhancing process stability
- Valued by for cold & hot applications

Building Products



Industry-Leading Energy Efficiency & Fire Safety

- Aspen building products lead the industry in thermal performance and fire-rated safety, creating more thermally efficient, lower energy consuming structures for the construction market

…AS WE PRIORITIZE OUR STAKEHOLDERS

Environment
- Sustainable Products
- Materials Management
- Energy Consumption
- CO2 & Emission

People and Society
- Diversity Equity Inclusion
- Workplace Safety
- Employee Engagement
- Community Support

Governance
- Business Ethics
- Transparency & Disclosure
- Metrics Establishment
- Continuous Improvement

2022 - 2023 ESG ACTION PLAN

- Climate risk assessment to understand near-term opportunities
- Near- and long-term sustainability roadmap to direct ESG efforts
- Expand carbon footprint scope to prepare for science-based target setting
- Participate in ratings platforms to support customer ESG requirements

aspen aerogels

Our Strategy to Create Stakeholder Value

Leveraging our platform in markets with favorable dynamics while focusing on doing the right things well creates value

WHO WE ARE

PROPRIETARY AEROGEL TECHNOLOGY PLATFORM™, PROCESSES, SCALE AND CRITICAL TALENT BASE

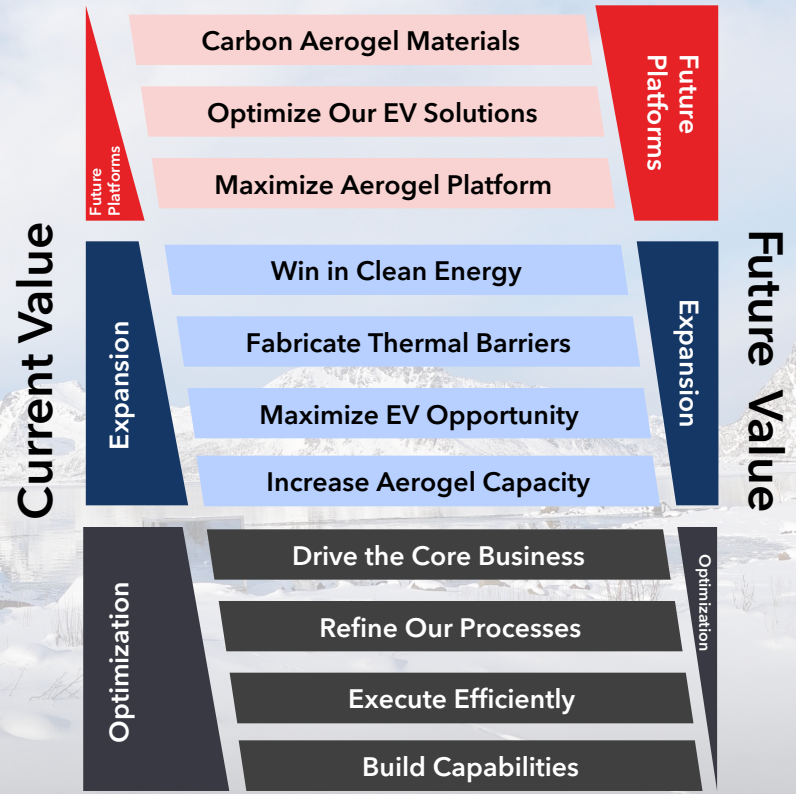
WHERE WE PLAY

AT THE CRUX OF 4 ACCELERATING TRENDS REQUIRING SOLUTIONS

- EV SAFETY, RELIABILITY, SERVICEABILITY
- ENERGY DENSITY, COST, RELIABILITY
- ASSET EFFICIENCY, RESILIENCY, SAFETY
- THERMAL EFFICIENCY AND FIRE SAFETY

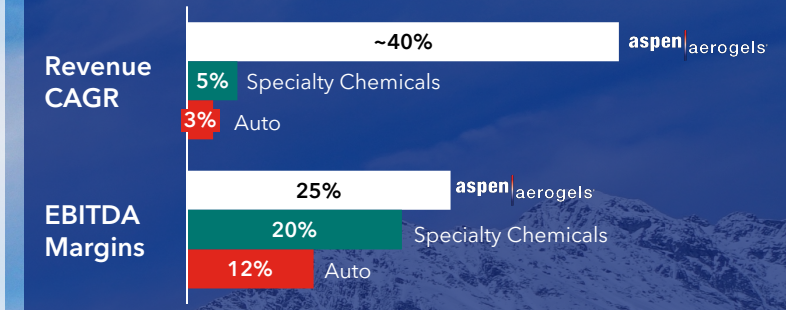
WHAT WE DO

OPTIMIZE AND EXPAND OUR PLATFORM WHILE INVESTING TOWARDS THE FUTURE



CREATES VALUE

Peers' [1] Revenue Growth / EBITDA Margins [2] side by side with Aspen's targeted performance at Full Capacity [3]



Peers' [1] TEV, Revenue Growth / EBITDA Margins [2] relative to Aspen's targeted performance at Full Capacity [3]



Data from S&P Capital IQ, accessed post market close on 7/25/2022
1- Auto Peers are the S&P Global 1200 Auto Parts & Equipment Index and Specialty Chemicals Peers are the S&P Global 1200 Specialty Chemicals Index. Peer TEV is TEV weighted
2- 7-year look-back of average performance
3- Excludes potential revenue and EBITDA contributions of Aspen Battery Materials

Investor Relations Contacts





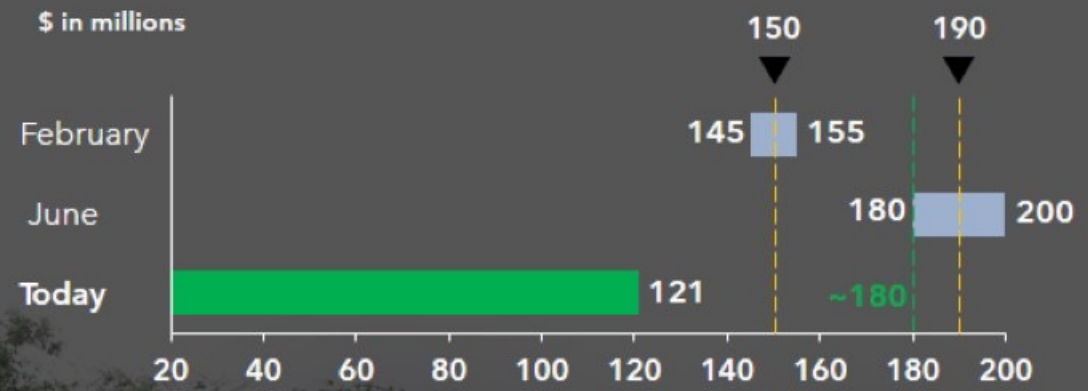


Laura J. Guerrant-Oiye
VP IR & Corporate Communications
Aspen Aerogels, Inc.
26 Forest Street, Suite 200
Marlborough, MA 01752
Phone: (508) 691-1111 x 8
Email: loiye@aerogel.com

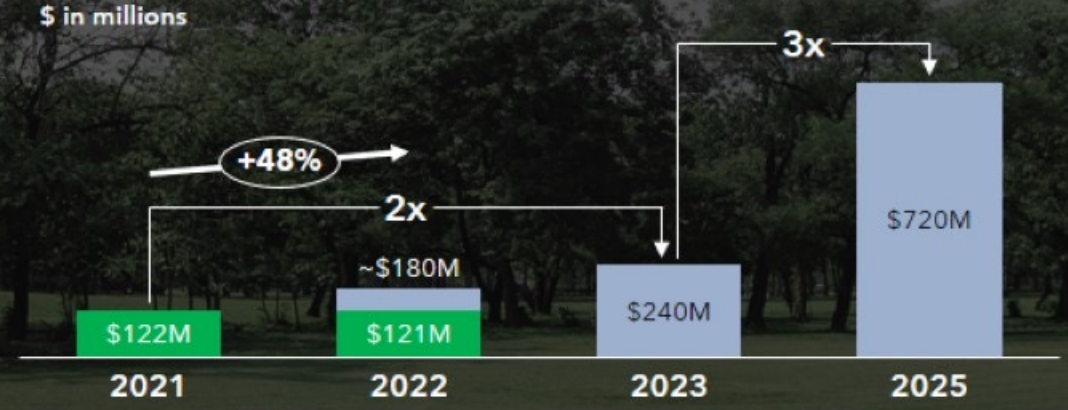
Appendix

Q3 Developments and Recent Highlights

2022 Revenue Guidance Recap



Long-term Revenue Targets



Q3 and Recent Highlights

- 21% YoY Quarterly Revenue Growth
- Annual scheduled plant shutdown and nationwide CO_2 shortage constrained Aerogel production
- Meaningful Pyrothin® sales and technical progress with German OEM for commercial vehicles and luxury platform
- Strong growth in LNG driving Energy Industrial orders for coming quarters
- 5 new Subsea projects added $12.7M of revenue to near-term backlog
- $129.4M invested on Plant II through Q3

Q3 2022 Financial Highlights

$ in millions except per share figures	Q3 2021	Q3 2022[1]	Q3 YTD 2021	Q3 YTD 2022[1]	2022 Outlook[1]	Commentary
REVENUES YoY Growth	$30.4 26%	$36.7 21%	$90.1 17%	$120.8 34%	$180.0 48%	Quarter affected by "slight shift" in EV volume acceleration, scheduled annual Aerogel plant shutdown and CO_2 shortage
Net (Loss)	$(7.8)	$(29.6)	$(20.7)	$(73.1)	$(82.3) - $(86.8)	Slowed the growth rate of investment in talent, systems, facilities and tooling to enable continuous EV market growth and productivity investments aimed at driving long-term profitable growth.
Adj. EBITDA[2]	$(7.8)	$(23.2)	$(13.8)	$(56.2)	$(57.5) - $(62.0)	
EPS	$(0.24)	$(0.75)	$(0.70)	$(2.03)	$(2.22) - $(2.35)	Investments aligned to deliver customer demand and enable supply chain resiliency.
Cap Ex	$2.3	$67.0	$6.1	$119.4	$200.0 - $225.0	Optimizing R&D facility upgrades, Plant II construction, PyroThin ® assembly tooling, automation equipment, IT systems.

1- Unaudited financials for 2022 (and Outlook)
2- See slide 8 herein for a reconciliation of net loss, the most directly comparable GAAP measure, to Adjusted EBITDA for the presented period

GAAP to Non-GAAP Reconciliation

($ in thousands)	Q3 2022	Q3 2021	Q3 YTD 2022	Q3 YTD 2021	FY 2022 Low	FY 2022 High
Net loss	(29,595)	(7,822)	(73,129)	(20,741)	(86,800)	(82,300)
Depreciation and Amortization	2,531	2,114	6,692	6,856	9,700	9,700
Stock-based Compensation	2,590	1,554	6,713	3,600	8,300	8,300
Gain on Extinguishment of Debt	-	(3,734)	-	(3,734)	-	-
Interest Expense, net	1,286	58	3,550	188	6,800	6,800
Adjusted EBITDA	**(23,188)**	**(7,830)**	**(56,174)**	**(13,831)**	**(62,000)**	**(57,500)**


aspen aerogels®