

November 7, 2024



# ASPEN AEROGELS

Q3 2024 FINANCIAL RESULTS CALL



# Disclaimer on Forward Looking Statements

This presentation and any related discussion contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 that involve risks and uncertainties that could cause actual results to be materially different from historical results or from any future results expressed or implied by such forward-looking statements, including statements relating to Aspen’s 2024 financial outlook. These statements are not historical facts but rather are based on Aspen’s current expectations, estimates and projections regarding Aspen’s business, operations and other factors relating thereto, including with respect to Aspen’s 2024 financial outlook. Words such as “may,” “will,” “could,” “would,” “should,” “anticipate,” “predict,” “potential,” “continue,” “expects,” “intends,” “plans,” “projects,” “believes,” “estimates,” “outlook,” “assumes,” “targets,” “opportunity,” and similar expressions are used to identify these forward-looking statements. Such forward-looking statements include statements regarding, among other things, Aspen’s beliefs and expectations about capacity, revenue, revenue capacity, backlog, costs, expenses, profitability, cash flow, gross profit, gross margin, operating margin, net income (loss), Adjusted EBITDA and related increases, decreases, trends or timing, including with respect to Aspen’s beliefs and expectations about the EV market and how it may enable a path to profitability; Aspen’s target revenue capacity and gross margins; Aspen’s efforts to manage the construction of the planned second manufacturing plant in Statesboro, Georgia to align with our expectations of demand from EV customers, and the use of our external manufacturing facility to meet demand from Energy Industrial customers; current or future trends in the energy, energy infrastructure, chemical and refinery, LNG, sustainable building materials, EV thermal barrier, EV battery materials or other markets and the impact of these trends on Aspen’s business; the strength, effectiveness, productivity, costs, profitability or other fundamentals of Aspen’s business; beliefs about the role of Aspen’s technology and opportunities in the electric vehicle market; beliefs about Aspen’s ability to provide and deliver products and services to electric vehicle customers; beliefs about content per vehicle, revenue, costs, expenses, profitability, investments or cash flow associated with Aspen’s electric vehicle opportunities, including the EV thermal barrier business; the performance and market acceptance of Aspen’s products; and Aspen’s conditional commitment from the DOE for a proposed loan pursuant to the DOE LPO’s ATVM and Aspen’s expectations and beliefs with respect to the potential receipt of the loan. All such forward-looking statements are based on management’s present expectations and are subject to certain factors, risks and uncertainties that may cause actual results, outcome of events, timing and performance to differ materially from those expressed or implied by such statements. These risks and uncertainties include, but are not limited to, the following: inability to execute Aspen’s growth plan, inability to continue construction of the planned second manufacturing plant and to do so at a cost consistent with Aspen’s estimates and aligned with Aspen’s expectations of demand from our EV customers; 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; Aspen’s inability to create customer or market opportunities for its products; any disruption or inability to achieve expected capacity levels in any of its manufacturing or assembly facilities; any failure to enforce any of Aspen’s patents; the general economic conditions and cyclical demands in the markets that Aspen serves; and the other risk factors discussed under the heading “Risk Factors” in Aspen’s Annual Report on Form 10-K for the year ended December 31, 2023 and filed with the Securities and Exchange Commission (“SEC”) on March 7, 2024, as well as any updates to those risk factors filed from time to time in Aspen’s subsequent periodic and current reports filed with the SEC. All statements contained in this presentation are made only as of the date of this presentation. Aspen does not intend to update this information unless required by law.

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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.

# Q3 2024 Developments

Strong quarterly performance; company fully capitalized to execute current strategy and continue profitable growth

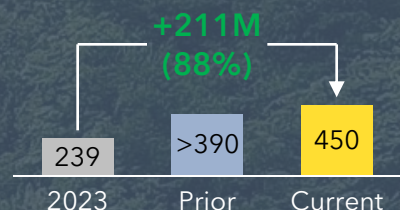
## Q3 2024 Highlights<sup>1</sup>

- Company revenue of \$117.3 million, up 93% YoY
- 42% Gross margins and 22% Adj. EBITDA margins
- Continued EV OEM commercial traction

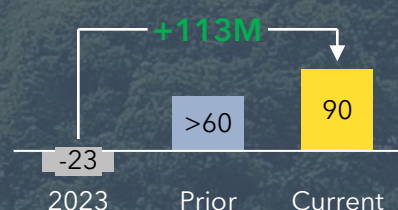
## Updated 2024 Financial Outlook

(\$ in millions, except per share figures)

### Revenue



### Adj. EBITDA<sup>2</sup>



### Net Income (Loss)<sup>3</sup>

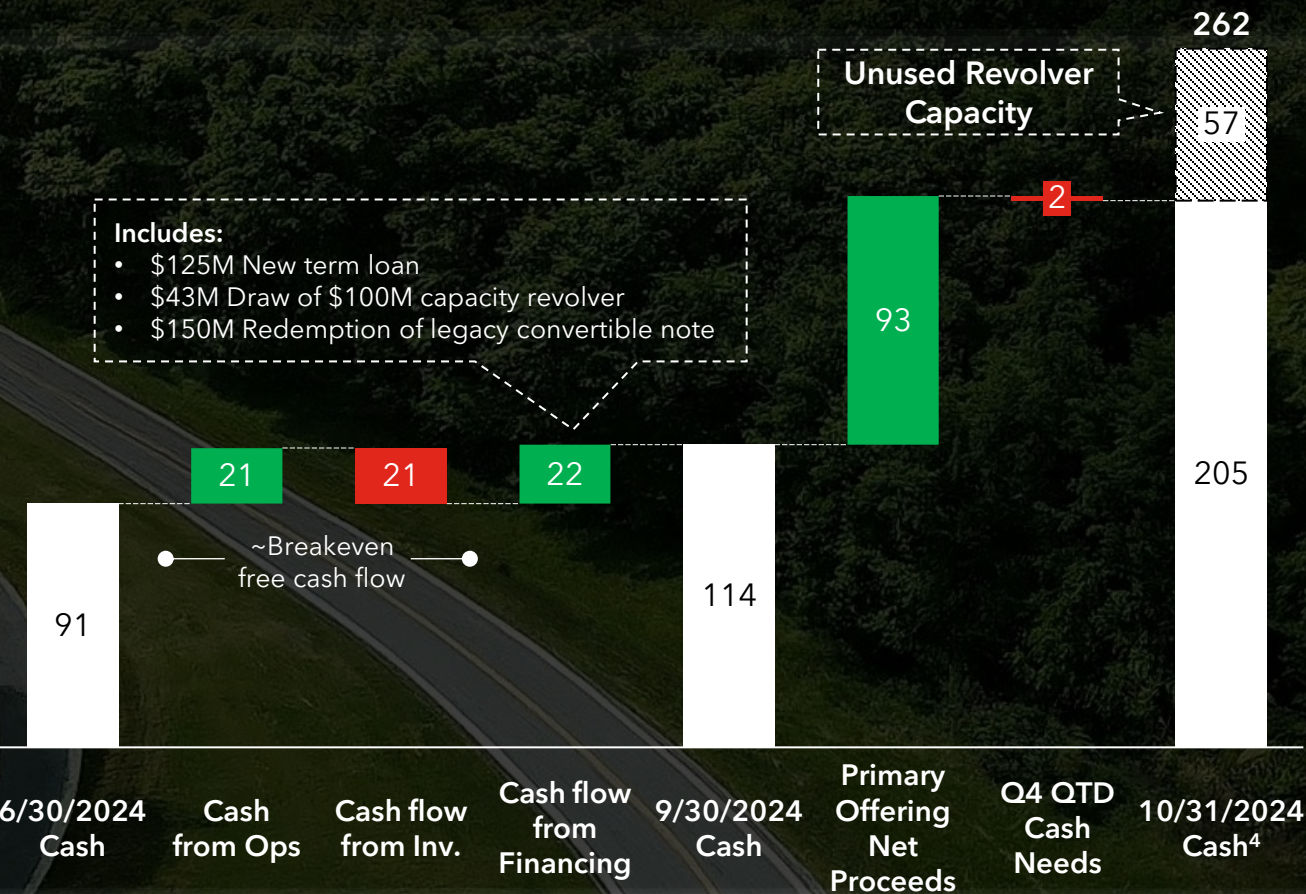


### EPS (Loss) Diluted



## October 31<sup>st</sup> 2024, Liquidity Summary

(\$ in millions)



1- Unaudited interim financials for 2024

2- See slide 11 herein for a reconciliation of net income (loss), the most directly comparable GAAP measure, to Adj EBITDA

3- Current outlook includes \$27.5 million one-time charge from the redemption of the Company's convertible note

4- Cash balance as of 10/31 - Unaudited interim financials

# Q3 2024 Financial Highlights

Effective strategy execution, cost management, and record Thermal Barrier revenues are driving accretive margins

\$ in millions except per share figures	Q3 2023	Q3 2024 <sup>1</sup>	LTM Q3 2023	LTM Q3 2024 <sup>1</sup>	Commentary
<b>Revenues</b> <i>YoY Growth</i>	\$60.8 66%	\$117.3 93%	\$214.1 41%	\$413.9 93%	<ul style="list-style-type: none"> <li>\$91M of Thermal Barrier revenues in Q3 led to 2.8x revenue growth YoY, headlined by GM's continued Ultium production ramp</li> <li>\$27M of Energy Industrial revenues were flat YoY with turnaround completed during Q3 to increase future capacity</li> </ul>
<b>Net Inc. (Loss)</b> <i>Margin</i>	\$(13.1) (22)%	\$(13.0) (11)%	\$(54.9) (26)%	\$1.5 0%	<ul style="list-style-type: none"> <li>4<sup>th</sup> Consecutive quarter with &gt;35% gross margin, with Q3 gross profit increasing 3.6x YoY</li> <li>Over 5% improvement in material costs YoY as a % of sales</li> </ul>
<b>Adj. EBITDA<sup>2</sup></b> <i>Margin</i>	\$(7.3) (12)%	\$25.4 22%	\$(36.5) (17)%	\$76.4 18%	<ul style="list-style-type: none"> <li>Demonstrated profit potential through fixed cost absorption as total Cost of Goods Sold as a percent of sales improved by 19% YoY</li> <li>Gross profit improvement and careful OPEX management led to 58% of the \$57M in YoY revenue growth falling through to EBITDA</li> </ul>
<b>EPS (Loss) Diluted</b>	\$(0.19)	\$(0.17)	\$(0.85)	\$0.01	<ul style="list-style-type: none"> <li>Continued investments to deliver on increasing customer demand</li> <li>Would have delivered positive EPS for the 2<sup>nd</sup> consecutive quarter in Q3 when excluding one-time charges<sup>3</sup></li> </ul>
<b>Cap Ex</b>	\$32.3	\$20.8	\$206.3	\$99.3	<ul style="list-style-type: none"> <li>\$20.8M invested in EV Thermal Barrier assembly equipment, Statesboro Plant, and our existing East Providence Plant</li> <li>Slowed down Statesboro Plant construction spend to safely secure the site until re-acceleration</li> </ul>

1- Unaudited interim financials for 2024

2- See slide 11 herein for a reconciliation of net income (loss), the most directly comparable GAAP measure, to Adjusted EBITDA

3- One-time charge of \$27.5M related to the redemption of the Company's convertible note on August 19, 2024

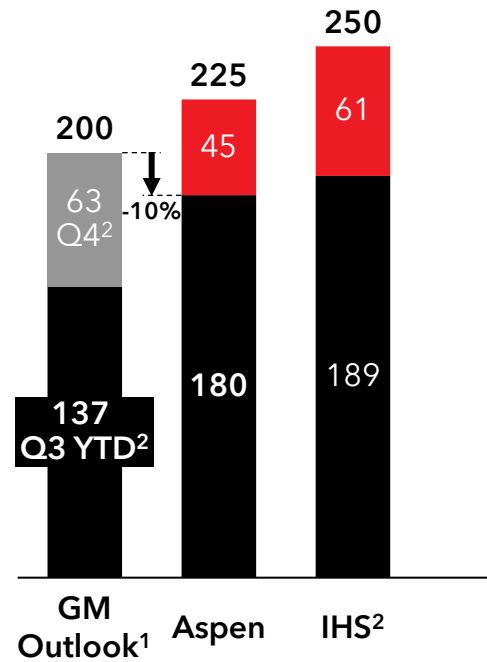
# 2024 Revenue Drivers

Updated 2024 outlook includes \$315M of Thermal Barrier revenue and \$135M of Energy Industrial revenue

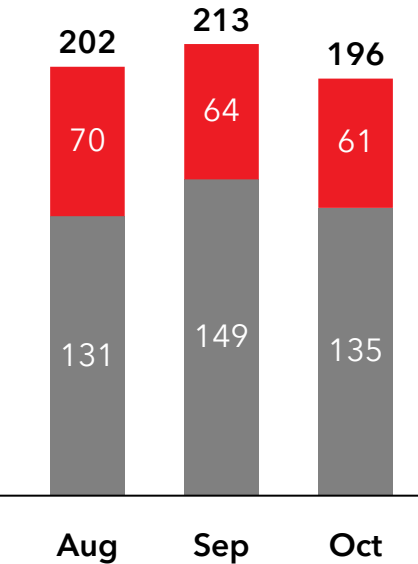
Assumes ~225K total production with scaling and introduction of new nameplates; seeing continued strong sales results

Est. 2024 GM NA EV Production  
(in thousands of vehicles)

■ Honda Prologue + Acura ZDX



U.S. Annualized Sales Rate<sup>3</sup>  
(in thousands of vehicles)



Q4 '24 & Q1 '25  
Launches



Optiq



Vistiq



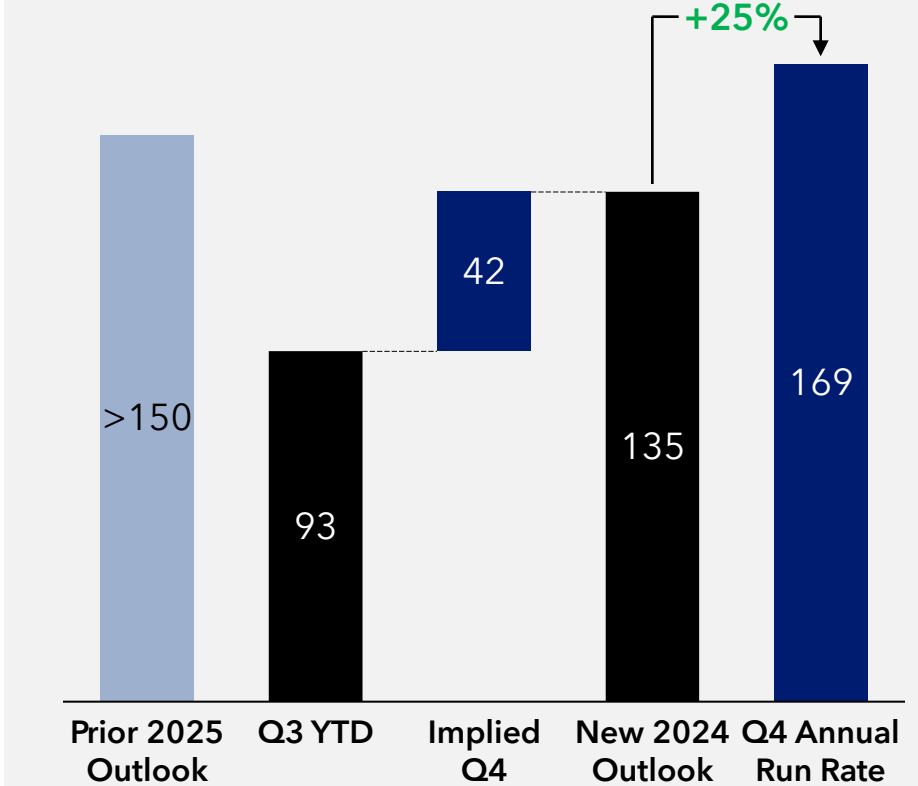
Brightdrop



Celestiq

Energy remains supply constrained; on pace to deliver ~\$170M annual run rate in Q4

Energy Industrial Revenue  
(\$ in millions)



1- Per General Motors Investor Day on 10/8/2024 - "We remain on track to produce and wholesale approximately 200,000 GM branded EVs in the region this year."

2- IHS November 2024 vehicle production forecast. Please see slide 13 for a further breakdown of volumes

3- Wards Intelligence October 2024 Sales Data

Note: Figures may not total due to rounding

# Updated 2024 Outlook and Historical Trends

Continued cost discipline driving \$30M of Adj. EBITDA improvement on \$60M of incremental revenue in raised '24 outlook

## 2024 Outlook<sup>2</sup>

\$ in millions, except per share figures

	Prior	Updated
<b>Revenues</b> <i>YoY Growth</i>	<b>&gt;\$390</b> >63%	<b>\$450</b> 88%
<b>Net Income</b>	<b>&gt;\$7</b>	<b>\$9*</b>
<b>Adj. EBITDA<sup>2</sup></b> <i>Margin %</i>	<b>&gt;\$60</b> 15%	<b>\$90</b> 20%
<b>EPS Diluted<sup>3</sup></b>	<b>&gt;\$0.09</b>	<b>\$0.11</b>
<b>Cap Ex (excl. Plant II)</b>	<b>\$45</b>	<b>\$40</b>

1- Unaudited interim financials for 2024

2- See slide 11 herein for a reconciliation of net income (loss), the most directly comparable GAAP measure, to Adjusted EBITDA for the presented period

3- Current outlook assumes diluted weighted average shares outstanding of 84.0 million for the full year

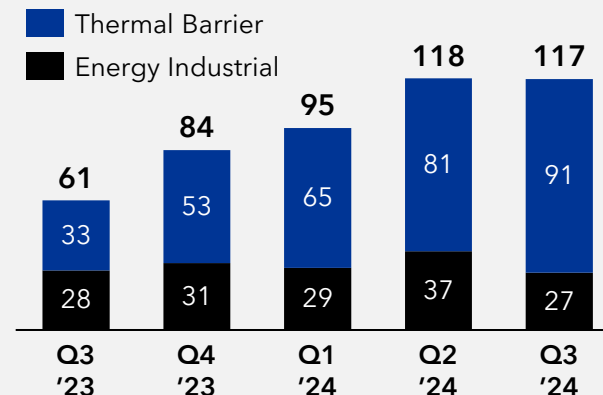
\*Updated outlook includes \$27.5M one-time charge from the redemption of the Company's convertible note on 8/19/2024

Aspen Aerogels | Q3 2024 Financial Results Call | November 7, 2024

## Historical Financial Trajectory<sup>1</sup>

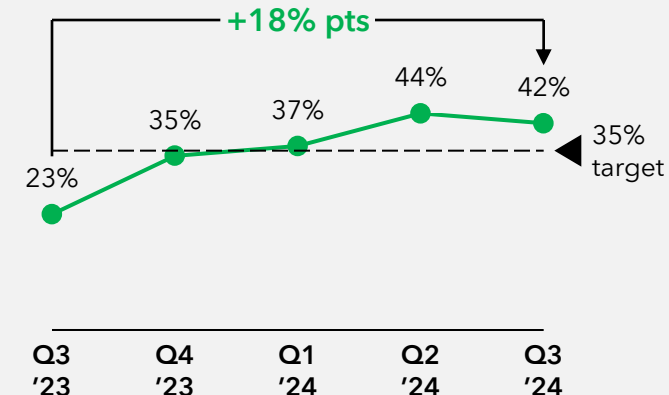
### Revenues

\$ in millions



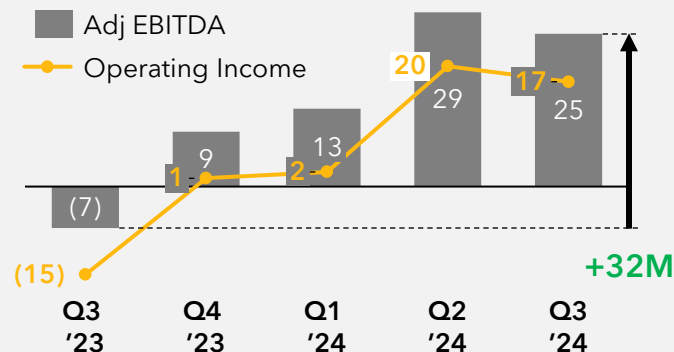
### Gross Profit Margin

%



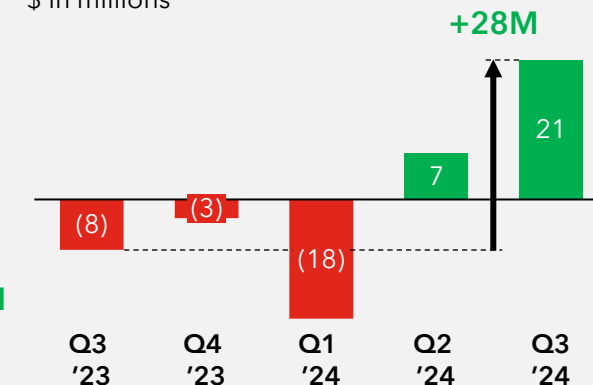
### Adj. EBITDA<sup>2</sup> and Operating Income

\$ in millions



### Cash from Operations

\$ in millions



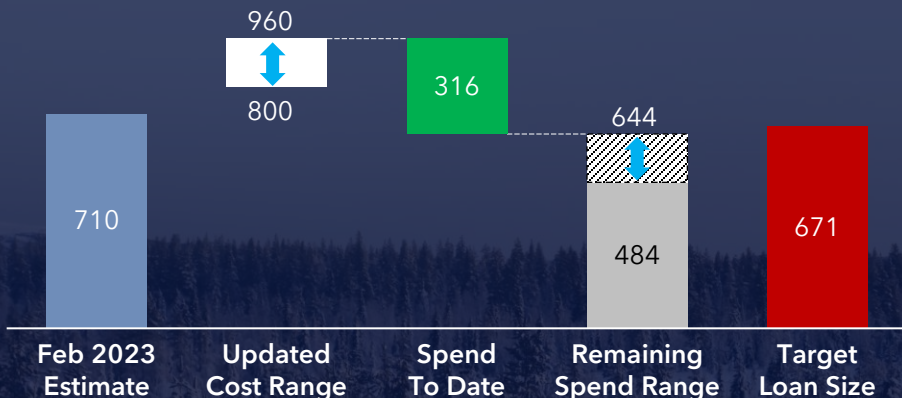
Note: Figures may not total due to rounding

# Statesboro Plant (Plant II) Project Update

Targeted DoE loan designed to fund remaining project investment. Running costs enable accretion at low demand load.

## Cost and Funding Update

\$ in millions



- Potential DoE loan sized to cover remaining CAPEX
- Treasury rates
- Repayment starts after commissioning
- Georgia entity as the borrower of project financing
- 20-year depreciation / amortization schedule
- Most of the OPEX required to support it is already on the company's cost structure
- 18 month start of production from re-acceleration

## Key Design / Cost Structure Considerations

### Capabilities / Process

- State of the art linear process
- Combined 2 key processes and equipment into one
- **25%** fixed cost structure savings over current aerogel plants
- Circular Ethanol reuse and chemical waste reduction

### Running Cost Structure

**25%** fixed cost savings  
from current aerogel plants

Translating into only **\$200M** of additional segment level revenues required to preserve current segment level margins

### Capacity / Flexibility

**\$1.2B to \$1.6B**

Over current \$500M segment level capacity of Plant I in Rhode Island

Future proofing for thinner materials to cover broader range of customer needs

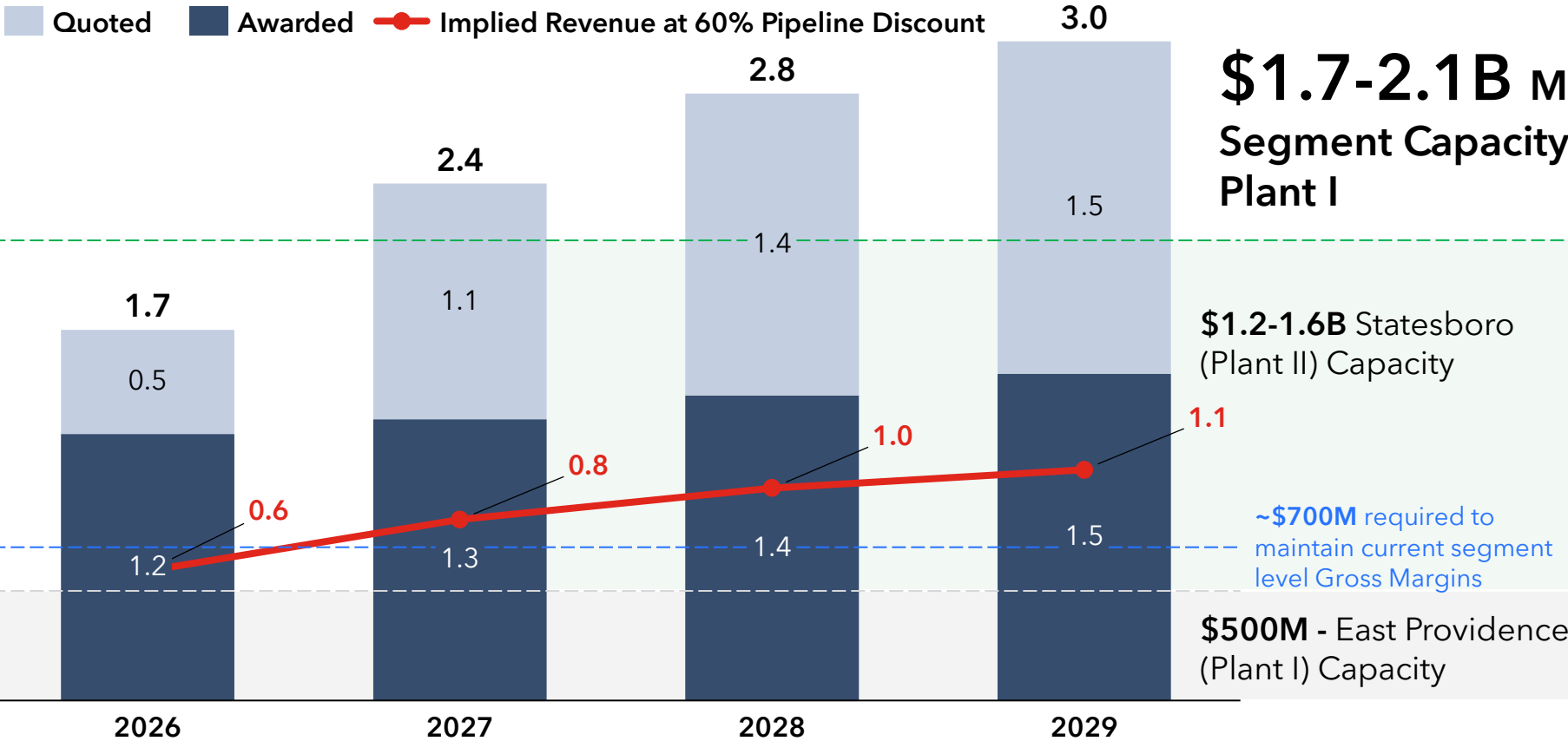
Potential to operate in modular clusters of \$600M to \$800M of capacity each

# EV Thermal Barrier Segment - Revenue Pipeline

Only \$700M of total demand is needed to maintain current segment gross margins. Pipeline provides clear demand path.

## EV Thermal Barrier Estimated Awarded and Quoted Pipeline Value<sup>1,2</sup>

\$ in billions



1. Estimates based on current visibility and certain market and customer-based assumptions as of 11/6/2024. There can be no assurance that awards or quotes will convert into orders for our products or revenue. Value based on customer provided part volumes and quoted / contracted pricing.  
 Note: Figures may not total due to rounding



# Recapping: EV Thermal Barrier Segment Drivers

PyroThin is compatible with the form factors and chemistries of today's vehicles and those of the next 10+ years.

## Aspen has potential solutions for all form factors and chemistries

### Lithium-ion Cathode Chemistries

#### Nickel Based

Ex. NMC, NMCA, NCA

PyroThin

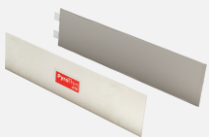
#### Iron Based

Ex. LFP, LMFP

PyroThin

### Lithium-Ion Form Factors

#### Pouch



#### Prismatic



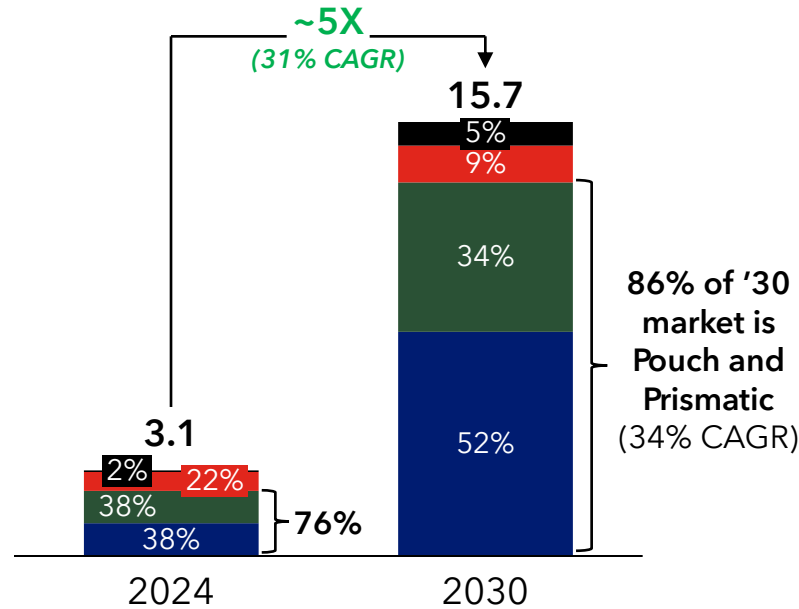
#### Cylindrical



Prototype Aspen Solution

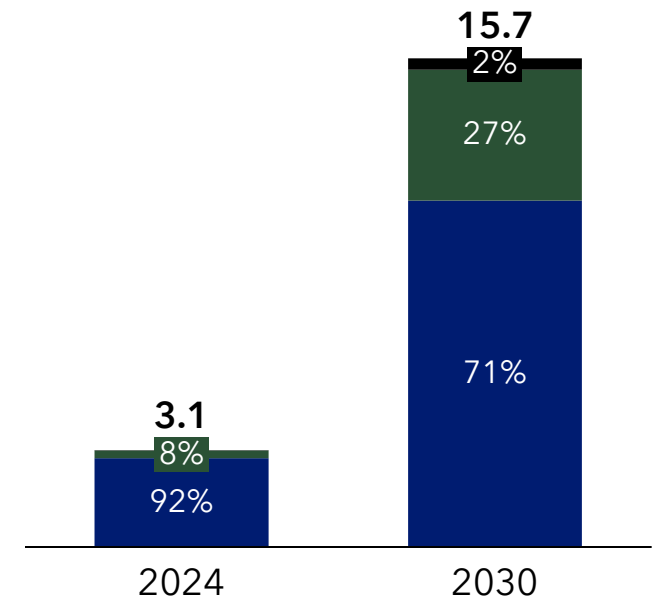
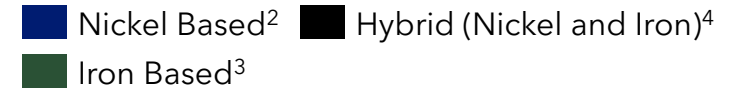
## Pouch and Prismatic projected to be ~86% of 2030 NA & EU EV volumes

North America + Europe EV Production Forecast<sup>1</sup>  
(Vehicles in millions)



## Nickel based chemistries are ~71% of 2030 NA & EU EV volumes

North America + Europe EV Production Forecast<sup>1</sup>  
(Vehicles in millions)



1 - IHS November 2024 vehicle production forecast  
 2 - Includes all NCM, NCA, NCMA, and all nickel-based chemistries  
 3 - Includes LFP and LMFP chemistries  
 4 - LMFP+NCM chemistry

# Summary

Earning our right to win by leveraging the Aerogel Technology Platform<sup>®</sup>, executing, and investing to grow profitably

## The Road to Creating Near Term Value

### DEMONSTRATED OPERATING EXECUTION

Second consecutive quarter with >40% gross margins; held OPEX flat quarter-over-quarter

### INCREASING FLEXIBILITY TO MEET DEMAND

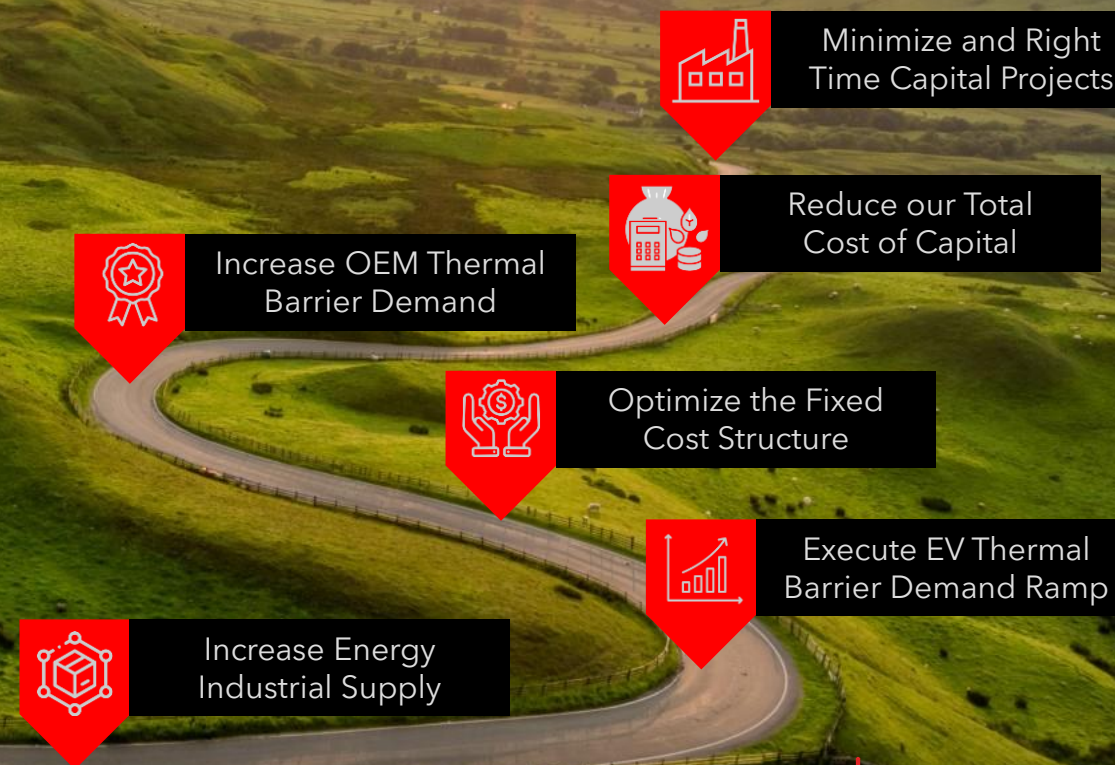
Projecting ~\$42 million of Energy Industrial revenue in Q4; conditional commitment for proposed DOE loan for Statesboro Plant

### SECURING MORE PYROTHIN<sup>®</sup> CONTRACTS

Continued progress with additional OEMS for demand in 2025 and beyond; ~\$9.9B in potential pipeline value from 2026-2029

### ACCELERATING NEAR-TERM PROFITABILITY

Increased 2024 financial outlook; \$60M of revenue additional resulting in \$30M of additional Adj. EBITDA



# Appendix

# GAAP to Non-GAAP Reconciliation

(\$ in millions)	2024			2023		LTM		FY 2024 Outlook	
	Q1	Q2	Q3	Q3	Q4	Q3 2024	Q3 2023	Prior	Updated
Net Loss	(1.8)	16.8	(13.0)	(13.1)	(0.5)	1.5	(54.9)	7.0	9.0
Depreciation and Amortization	5.8	6.0	5.3	4.6	4.6	21.7	13.3	30.0	25.0
Stock-based Compensation	4.7	3.0	2.6	2.8	3.2	13.5	10.4	14.0	14.0
Loss on Extinguishment of Debt	-	-	27.5	-	-	27.5	-	-	27.5
Other (Income) Expense & Income Tax Expense	4.3	3.2	2.9	(1.6)	1.9	12.2	(5.4)	9.0	14.5
<b>Adjusted EBITDA</b>	<b>12.9</b>	<b>28.9</b>	<b>25.4</b>	<b>(7.3)</b>	<b>9.1</b>	<b>76.4</b>	<b>(36.5)</b>	<b>60.0</b>	<b>90.0</b>

Note: Figures may not total due to rounding











# US EV Market Update - New Entrants Gaining Share

17% of all electric vehicles sold in the United States in October were equipped with PyroThin®

**GM Ultium, Ford, and Honda are starting to win their fair share in a competitive market with new models**

## US EV Sales Top Gainers/Losers<sup>1</sup>

(US Oct YTD 2023 vs Oct 2024 YTD change in EV sales in thousands)

		2024 Oct YTD Sales (k)	YTD % Change	'24 YTD EV Mkt Share %	'23 YTD EV Mkt Share %	YTD Mkt Share Change	Oct '24 Market Share	Oct '24 vs YTD Share	C2C Thermal Barrier? <sup>3</sup>
	65	73.7	734%	7.3%	0.9%	6.3%	10.6%	3.3%	PyroThin
	24	101.9	31%	10.0%	8.3%	1.8%	9.3%	(0.7%)	None
	23	22.5	N/A	2.2%	0.0%	2.2%	4.8%	2.5%	PyroThin
	20	74.0	38%	7.3%	5.7%	1.6%	5.6%	(1.7%)	None
	13	23.8	115%	2.3%	1.2%	1.2%	1.6%	(0.7%)	PyroThin
	11	42.9	35%	4.2%	3.4%	0.8%	4.4%	0.2%	None
	-8	10.4	-43%	1.0%	1.9%	(0.9%)	2.3%	1.3%	None
	-14	16.4	-46%	1.6%	3.3%	(1.6%)	0.0%	(1.6%)	None
	-24	502.9	-5%	49.5%	56.0%	(6.5%)	48.9%	(0.6%)	None
	-46	8.6	-84%	0.8%	5.8%	(4.9%)	0.0%	(0.8%)	None
Others <sup>2</sup>	11	138.4	9%	13.6%	13.6%	-	12.4%	(1.2%)	
<b>Total</b>	<b>75</b>	<b>1,015.4</b>	<b>8%</b>	<b>100%</b>	<b>100%</b>	<b>-</b>	<b>100%</b>	<b>-</b>	

1- Wards Intelligence October 2024 Sales Data

2- Others include Nissan, BMW, Subaru, JLR, Stellantis, Lucid, Mazda, Porsche, Audi, Mercedes-Benz

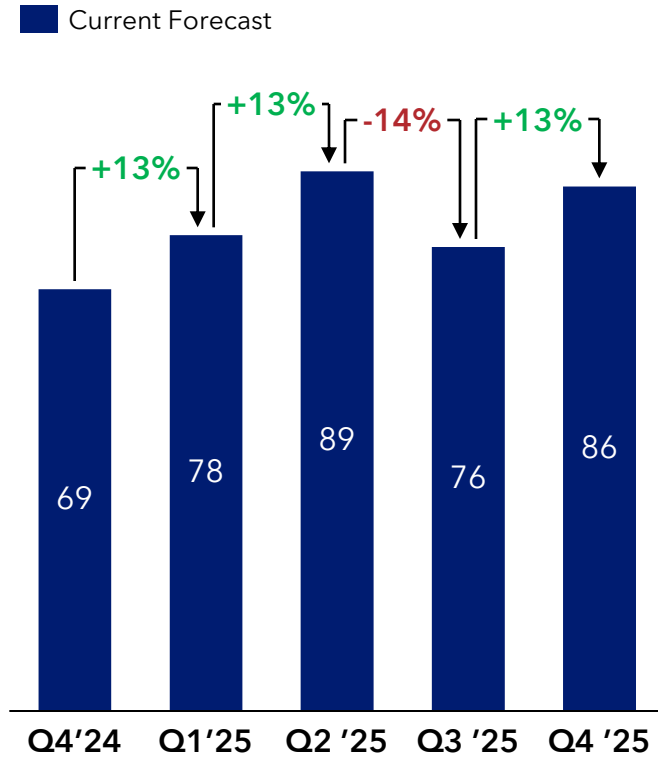
3- Munro & Associates Battery Teardowns, A2MAC and Commercial Discussions

# Demand Overview - GM IHS EV Forecast

GM NA EV production is expected to increase in the 1H of 2025; continued growth expected in 2026/2027

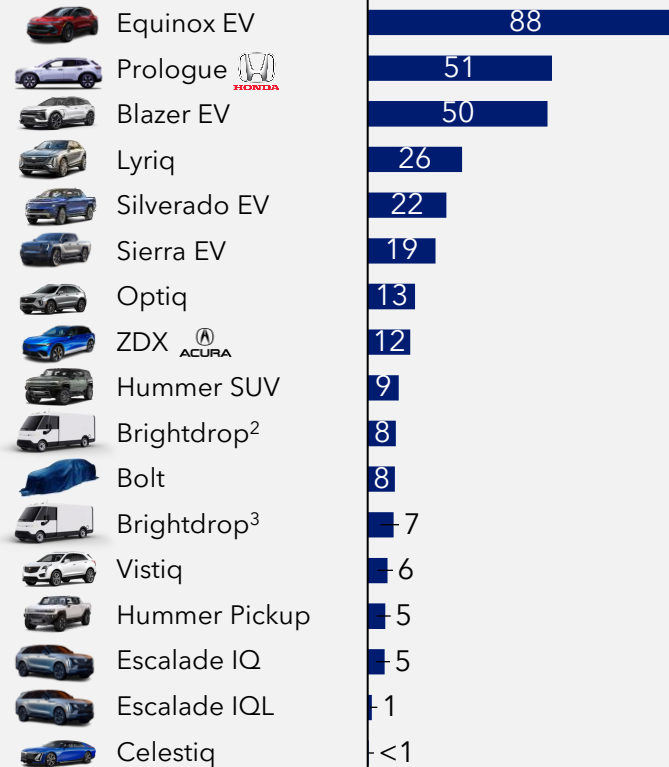
## GM EV volumes are expected to accelerate in 1H 2025

**GM NA EV Production Forecast<sup>1</sup>**  
(Vehicles in thousands)



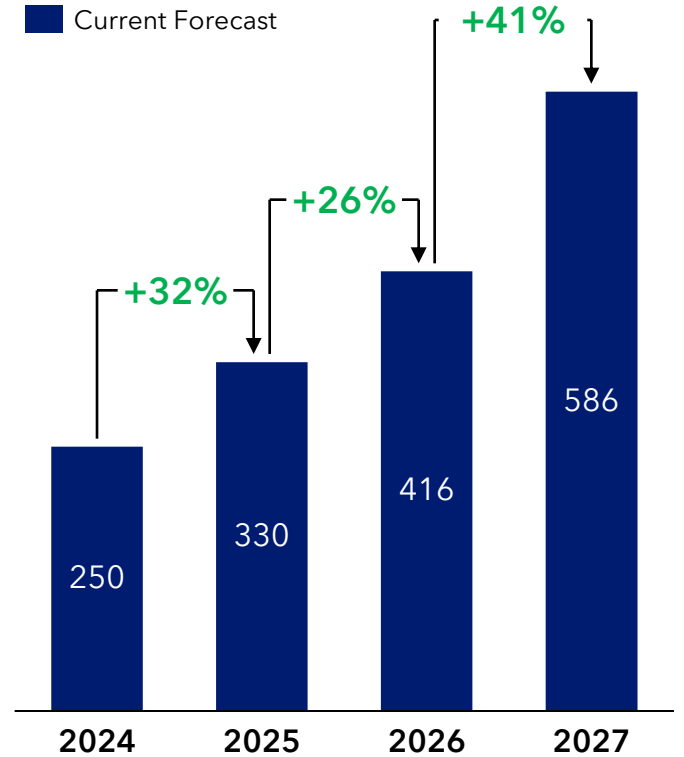
## 2025 volumes supported by 17 unique nameplates

**2025 GM NA EV Production Forecast<sup>1</sup>**  
(Vehicles in thousands)



## The long-term outlook remains strong

**GM NA EV Production Forecast<sup>1</sup>**  
(Vehicles in thousands)



1- IHS November 2024 vehicle production forecast; 2025/2026 includes reintroduced Chevy Bolt  
 2. Brightdrop Zevo 600  
 3. Brightdrop Zevo 400

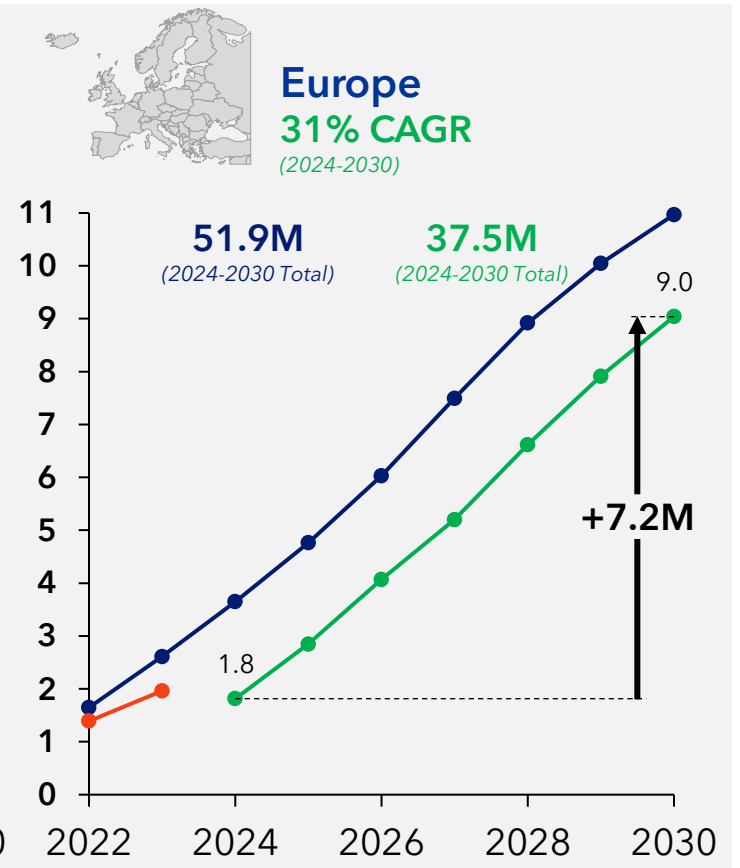
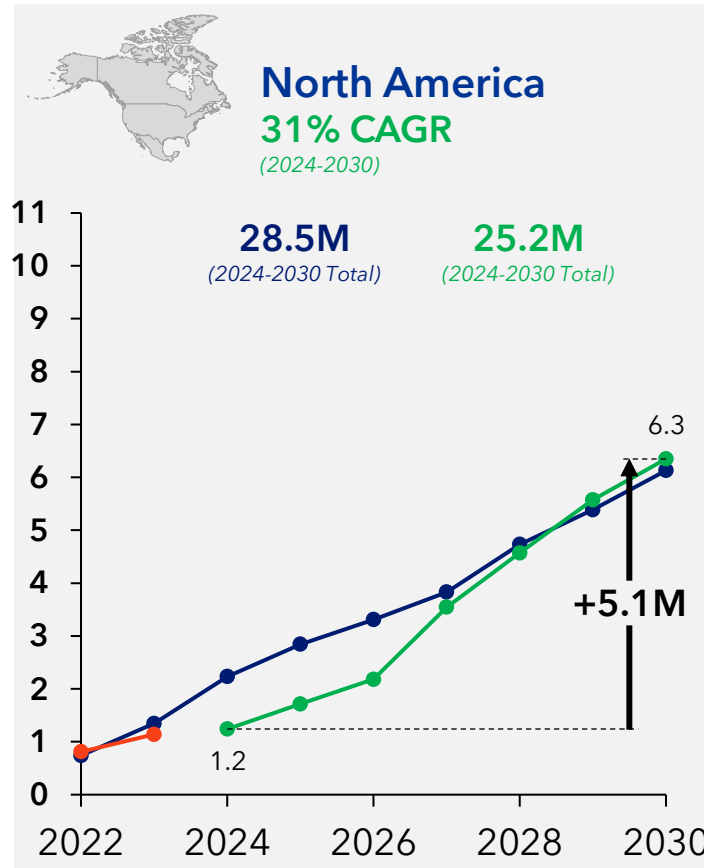
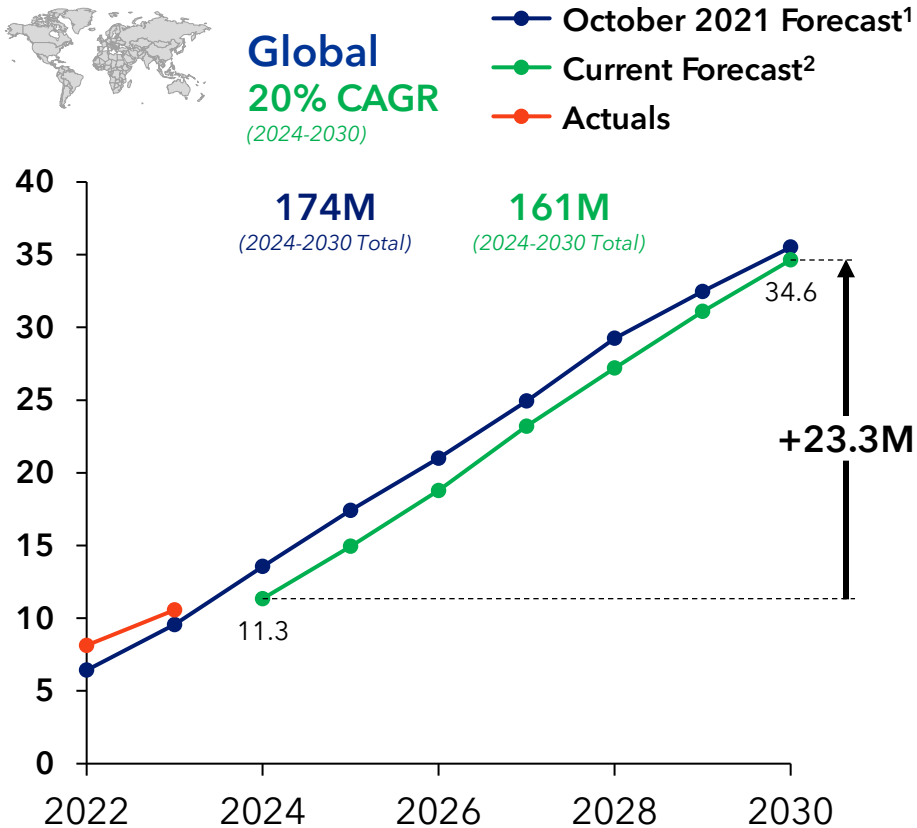
# Long-term EV Production Trends Remain Strong

Global EV production is expected to increase at a 20% CAGR through 2030; 31% CAGR in North America & Europe

Global EV production outlook remains strong, driven by increasing emissions regulations

...Europe is expected to see higher EV volumes than North America, but both markets are expected to see >30% CAGR through 2030.

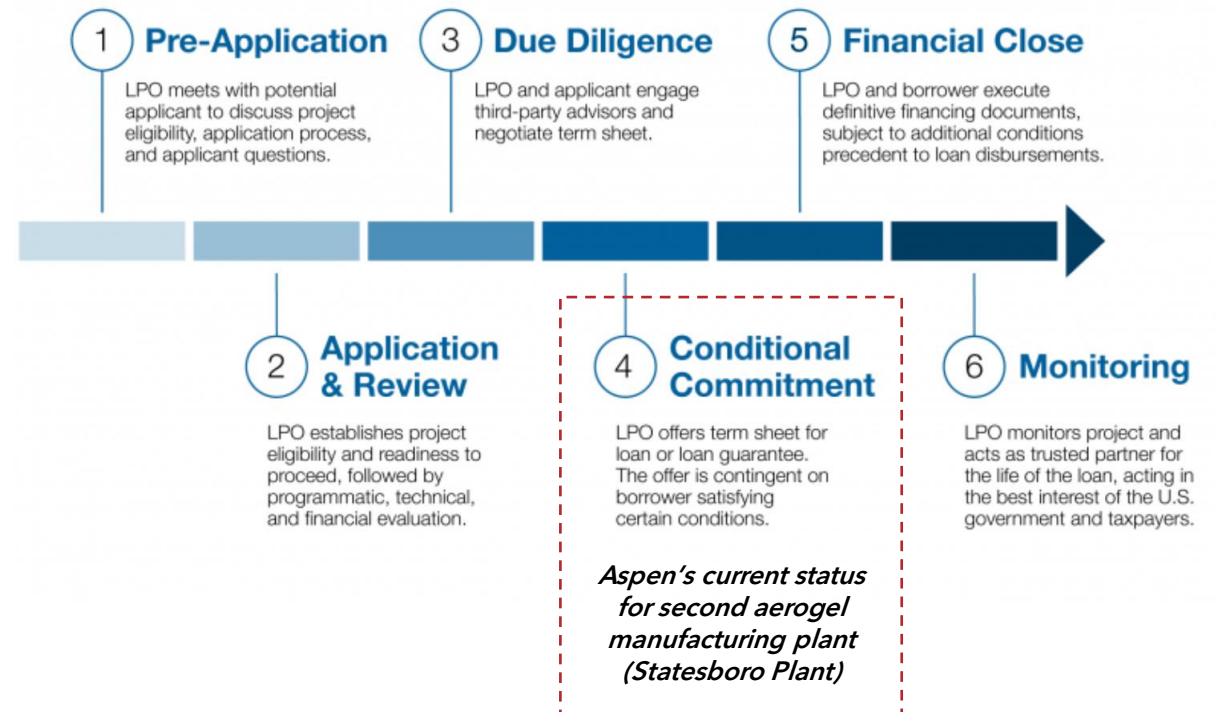
Electric Vehicle (EV) light vehicle production forecast  
Vehicles in Millions



# DOE LPO ATVM Loan Program Overview

## Overview

<b>OFFICE:</b> Loan Programs Office	<b>NEW PROGRAM:</b> No, but includes substantive modifications to existing program
<b>FUNDING AMOUNT:</b> \$3,000,000,000 of credit subsidy appropriations under IRA (resulting in an estimated \$40,000,000,000 of direct loans)	<b>FUNDING MECHANISM:</b> Direct loans
<b>RECIPIENTS:</b> A manufacturer of eligible advanced technology vehicles or of qualifying components	<b>PERIOD OF AVAILABILITY:</b> To remain available for commitment through 9/30/2028
<b>ASSISTANCE LISTING:</b> TBD	<b>FORMULA FUNDING:</b> No
<b>TRIBAL ELIGIBILITY:</b> Yes	<b>COST SHARE REQUIREMENT:</b> N/A. Loan amount cannot exceed 80% of eligible project costs.



For further information, please visit the official Department of Energy website  
 Source: Official DOE & LPO website (<https://www.energy.gov/lpo/application-process>) (<https://www.energy.gov/lpo/advanced-technology-vehicles-manufacturing-loan-program-0>)



# PyroThin® Thermal Barrier Opportunity Drivers

Eight different macro parameters drive our content per vehicle (CPV) opportunity, and long-term revenue potential

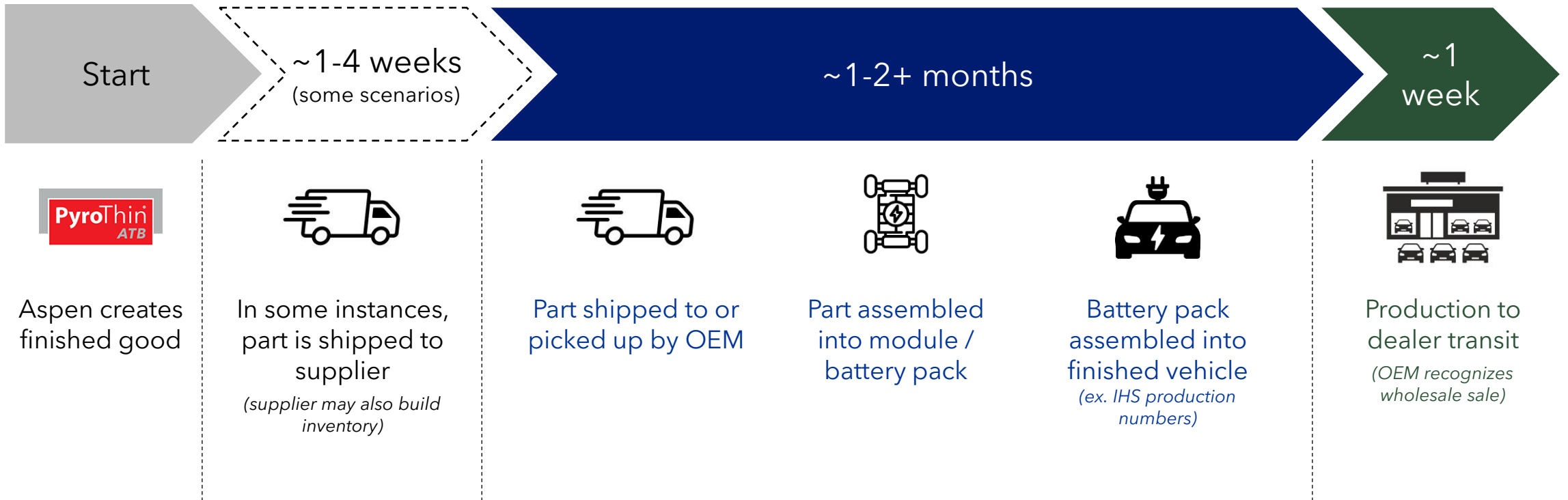
		Commentary
1	<b>Vehicle sales by region</b> 	<ul style="list-style-type: none"> <li>China expected to lead global EV penetration</li> <li>Higher price and content vehicles in NA and EU</li> </ul>
2	<b>Vehicle classification</b> 	<ul style="list-style-type: none"> <li>Demonstrated commercial success within Light-duty</li> <li>Most recent award in M/HDT segment highlights commercial vehicle opportunity potential</li> </ul>
3	<b>Powertrain technology</b> 	<ul style="list-style-type: none"> <li>TP risk increases as OEMs pack more energy density into EV batteries, both in EV's and Plug-In Hybrids</li> <li>OEMs seeking to provide more range in PHEVs</li> </ul>
4	<b>Cell chemistry</b> 	<ul style="list-style-type: none"> <li>All battery chemistries have thermal propagation risk</li> <li>Highest CPV in nickel-based chemistries due to higher energy density</li> </ul>
5	<b>Cell form factor</b> 	<ul style="list-style-type: none"> <li>Pouch and Prismatic expected to continue to account for ~70% of global market</li> <li>Cylindrical less suited for cell-to-cell solutions</li> </ul>
6	<b>Battery capacity</b> 	<ul style="list-style-type: none"> <li>OEMs seeking to increase range, while higher density packs have more risk of thermal propagation</li> <li>NA and EU vehicles have larger batteries</li> </ul>
7	<b>Use case</b> 	<ul style="list-style-type: none"> <li>Aerogel solutions excel as a cell-to-cell barrier</li> <li>Core requirements are thermal isolation, fire protection and mechanical properties</li> </ul>
8	<b>TR/TP mitigation goals</b> 	<ul style="list-style-type: none"> <li>Recalls and global regulation expected to continue to driving OEM awareness and Stop TP goals</li> <li>OEM goals to Stop TP results in more content</li> </ul>

Core Focus Area
  Potential Focus Area
  Currently Out of Scope

# EV Thermal Barrier to Produced Vehicle Timeline

Aspen's finished PyroThin parts can take anywhere from ~1-3+ months to be installed into a produced vehicle

## Estimated timeline for average North American PyroThin finished part



# Aerogel Plant II - Statesboro



An aerial photograph of a dense evergreen forest covered in snow. A dark, winding road or path cuts through the trees, curving from the bottom left towards the top right. The overall scene is monochromatic, with shades of white, grey, and dark green.

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