ASPEN AEROGELS

Q2 2024 FINANCIAL RESULTS CALL



aspen aerogels

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. 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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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Q2 2024 Developments

Strong performance as both segments scale up to meet rising demand, CAPEX right-timing supports strong balance sheet

Energy Industrial



- Delivered \$28.3M from external manufacturing facility
- Awarded two carbon capture projects, expanding El TAM

Thermal Barriers



- New PyroThin® award during Q2 with Porsche
- Anticipating award from major EU OEM in Q3

Operational Excellence

- \$117.8 million in Q2 revenue, with 44% gross margins
- 25% Adjusted EBITDA² and 14% Net Income margins

Near-Term Focus Areas

- Yield improvements in manufacturing process
- Continued strong OPEX management

Balance Sheet / Cost of Capital

- Generated \$6.8M of cash flow from operations
- Progressing in due diligence and term sheet negotiation phase for DOE loan for Plant II
- Ended Q2 with \$91.4 million in cash

Performance Highlights¹

(\$ in millions except per share amounts)	Q2 2023	Q2 2024	YoY Improvement				
Revenue	\$48.2	\$117.8	\$69.6 or 2.4 X				
Gross Profit	\$8.4	\$51.6	\$43.2 or 6.1 X				
Net Income (Loss)	\$(15.4)	\$16.8	\$32.2 Improvement				
EPS Diluted (Loss)	\$(0.22)	\$0.21	\$0.43 Improvement				
Adjusted EBITDA ²	\$(10.8)	\$28.9	\$39.7 Improvement				
CAPEX	\$66.0	\$24.8	\$41.2 Reduction				



Q2 2024 Financial Highlights

Significant operating leverage as we utilize a higher percentage of our current capacity and effectively execute our strategy

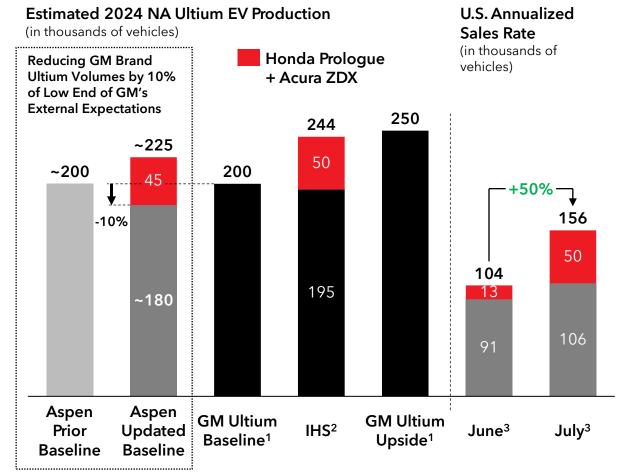
\$ in millions except per share figures	Q2 2023	Q2 2024 ¹	LTM Q2 2023	LTM Q2 2024 ¹	Commentary
Revenues YoY Growth	\$48.2 6%	\$117.8 145%	\$190.1 30%	\$357.3 88%	 \$81M of EV Thermal Barrier revenues in Q2 led to 6.4x revenue growth year-over-year, headlined by GM's continued Ultium production ramp \$37M of Energy Industrial revenues in Q2 demonstrated a higher runrate that enables over \$150M of revenues for 2024
Net (Loss) Margin	\$(15.4) (32)%	\$16.8 14%	\$(71.4) (38)%	\$1.4 0.4%	 3rd Consecutive quarter with >35% gross margin, with Q2 gross profit increasing 6.1x YoY Over 5% improvement in material costs as a % of sales
Adj. EBITDA ² Margin	\$(10.8) (22)%	\$28.9 25%	\$(52.4)	\$43.6 12%	 Gross profit improvement and careful OPEX management led to 57% of the \$69.6M in YoY revenue growth falling through to EBITDA Demonstrated profit potential through fixed cost absorption and manufacturing efficiencies on record company revenues
EPS Diluted (Loss)	\$(0.22)	\$0.21	\$(1.41)	\$(0.01)	 Continued investments to deliver on increasing customer demand Delivered positive EPS in Q2 2024
Cap Ex YoY Improvement	\$66.0 (74)%	\$24.8 62%	\$241.0 (286)%	\$110.8 54%	 \$24.8M invested in EV Thermal Barrier assembly equipment, Plant II, and our plant in Rhode Island Slowed down Plant II spend to safely secure the site until re-acceleration

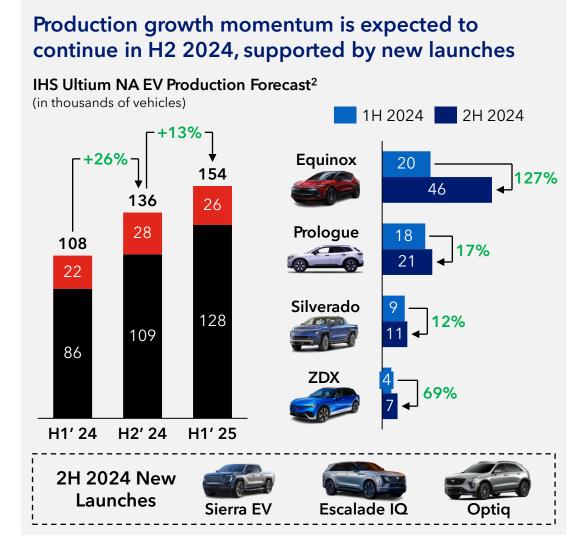


Updated 2024 EV Thermal Barrier Revenue Drivers

Successful launch of Honda Prologue merits adding to GM volumes as a driver of earlier than anticipated demand

Aspen outlook increased to ~225K Ultium Vehicles, GM brands revised down to ~180K units





¹⁻ Per General Motors Q2 2024 earnings call on 7/23/24

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

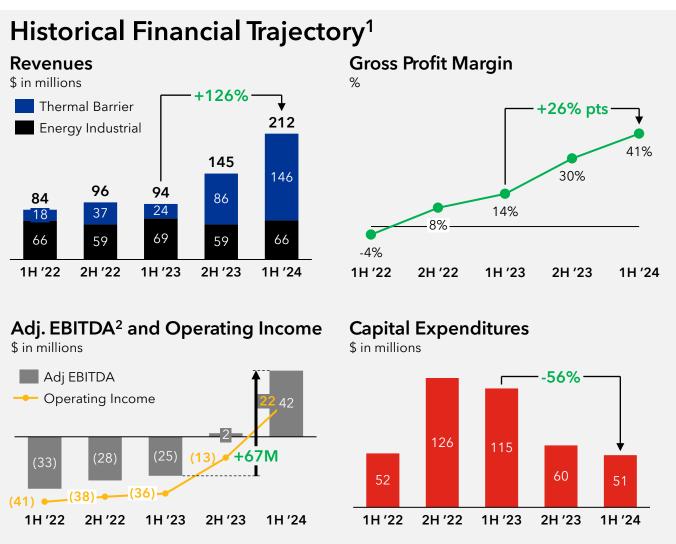
^{3 -} Wards Intelligence July 2024 Sales Data Note: Figures may not total due to rounding

Updated 2024 Outlook and Historical Trends

2024 Baseline reflects a \$14.5M CAPEX reduction and a slight uptick in demand, with 50% of revenue turning into EBITDA



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



^{*} Assuming continued construction right-timing up to conditional approval of DOE loan

US EV Market Update - New Entrants Gaining Share

PyroThin® is in 60% of new nameplates and in 100% of vehicles produced by three of the six top winning OEMs of 2024 YTD

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

US EV Sales Top Gainers/Losers¹ (US July YTD 2023 vs July 2024 YTD change in EV sales in thousands) Nameplates C2C Thermal 2024 July YTD % '24 EV Mkt '23 EV Mkt Mkt Share 24' YTD Nameplates³ Added in '24 YTD Sales (k) Change Share % Share % Change Barrier?4 825% 5.3% 35 38.8 6.0% 0.7% **Pyro**Thin 23 47% 3.5% HYUNDAI KI 71.6 11.1% 9 None 7.6% Ford 20 52.4 64% 8.1% 3.1% 3 5.0% None **TOYOTA** 11 17.4 192% 2.7% 0.9% 1.8% 2 **Pyro**Thin 46% 1.4% RIVIAN 28.3 4.4% 3.0% 3 None N/A 0.9% 6.0 0.9% 2 2 **HONDA Pyro**Thin (1.4%)5.3 -62% 0.8% 2.2% 4 None $\mathbf{0} \mathbf{L} \mathbf{V} \mathbf{0}$ -11 12.1 -49% 1.9% 3.7% (1.8%)5 None **90** Bolt EV / EUV -78% (4.7%)-30 8.5 1.3% 6.0% 2* None Discontinued 329.4 -12% 51.1% 58.8% (7.7%)5 None 丁三5LF -46 -3% Others² 74.8 12.0% (0.4%)19 11.6% Total 644.8 1% 100% 100% 61 10

¹⁻ Wards Intelligence July 2024 Sales Data

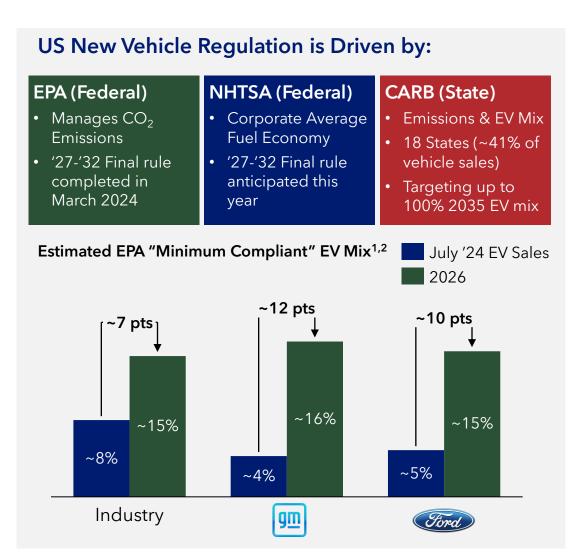
²⁻ Others include Nissan, Subaru, JLR, Stellantis, Lucid, Audi, Mazda, Porsche, Mercedes-Benz, and VW

³⁻ Nameplates with at least 100 units of sales YTD

⁴⁻ Munro & Associates Battery Teardowns, A2MAC and Commercial Discussions

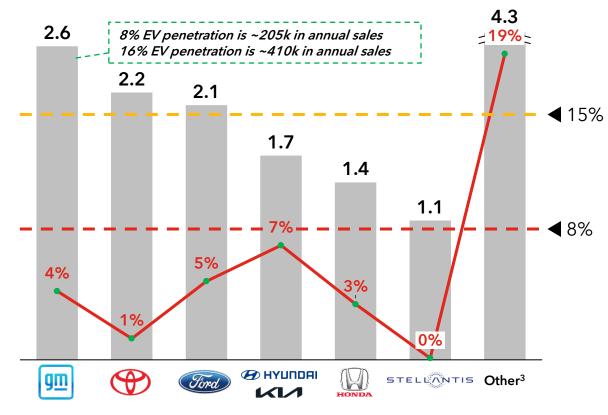
Today's Auto Market and Where It Has to Go

Emissions and fuel economy standards will require a higher EV share of volumes regardless of other powertrain options



July 2024's Car Market is Far from Complying with 2026 **Emissions and Fuel Economy Standards**

OEM US Vehicle Sales and corresponding EV penetration %² (US Annualized July 2024 vehicle sales in millions)



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¹⁻ BNP Paribas estimates, Company Reports, EPA, IHS forecast

²⁻ Wards Intelligence July 2024 Sales Data

³⁻ Other includes; Nissan, Subaru, Tesla, Mazda, Mercedes-Benz, VW, BMW, Audi, JLR, Volvo, Porshe, Mitsubishi, Rivian, Lucid

Summary

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

DEMONSTRATED OPERATING EXECUTION

Record profitability and strong demand driving increased financial outlook for the second consecutive quarter

INCREASING FLEXIBILITY TO MEET DEMAND

Delivered \$28.3M from external manufacturing facility in Q2, up 94% QoQ; progressing with DOE for Plant II loan

SECURING MORE PYROTHIN® CONTRACTS

Awards with 6 large OEMs; expecting additional award from major European OEM in Q3

ACCELERATING NEAR-TERM PROFITABILITY

41% Company gross margins in the 1H of 2024; reduced yearly CAPEX outlook by ~\$14.5 million¹



Appendix



GAAP to Non-GAAP Reconciliation

								LI	M	FY 2024	Outlook
(\$ in millions)	Q2-24	Q2-23	1H-24	2H-23	1H-23	2H-22	1H-22	Q2 2024	Q2 2023	Prior	Updated
Net Loss	16.8	(15.4)	15.0	(13.6)	(32.2)	(39.2)	(43.5)	1.4	(71.4)	2.0	7.0
Depreciation and Amortization	6.0	3.5	11.8	9.1	6.2	5.1	4.2	20.9	11.3	30.0	30.0
Stock-based Compensation	3.0	2.7	7.7	6.0	5.0	5.3	4.1	13.7	10.2	14.0	14.0
Other (Income) Expense & Income Tax Expense	3.2	(1.6)	7.4	0.3	(3.7)	1.2	2.3	7.8	(2.5)	9.0	9.0
Adjusted EBITDA	28.9	(10.8)	41.9	1.8	(24.8)	(27.7)	(33.0)	43.7	(52.4)	55.0	60.0

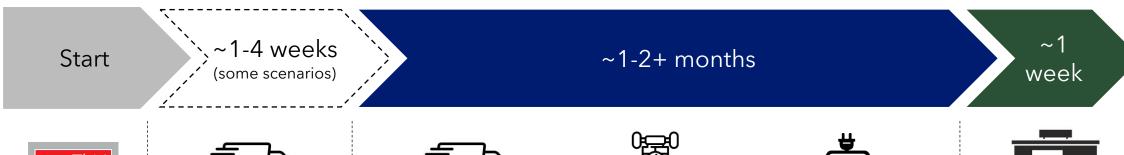
Note: Figures may not total due to rounding



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





Aspen creates finished good



In some instances, part is shipped to supplier

(supplier may also build inventory)



Part shipped to or picked up by OEM



Part assembled into module / battery pack



Battery pack assembled into finished vehicle (ex. IHS production numbers)



Production to dealer transit (OEM recognizes wholesale sale)



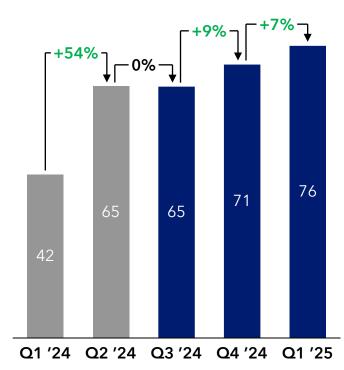
Demand Overview - GM Ultium IHS Forecast

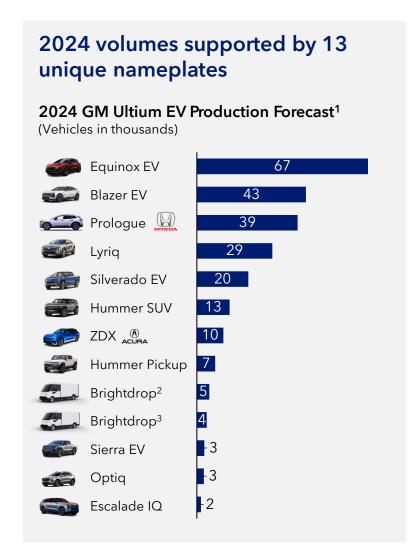
GM Ultium production is expected to increase in the 2H of 2024; continued growth expected in 2025/2026

Ultium platform volumes are expected to grow into Q1 2025

GM Ultium Production Actuals & Forecast¹ (Vehicles in thousands)

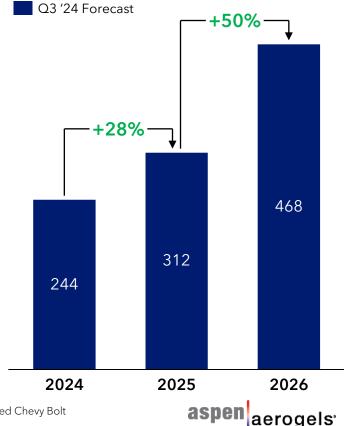
Q3 '24 Forecast (2024 Total - 244k)





The long-term outlook remains strong

GM Ultium Production Actuals & Forecast¹ (Vehicles in thousands)



¹⁻ IHS July 2024 vehicle production forecast; 2025 includes reintroduced Chevy Bolt

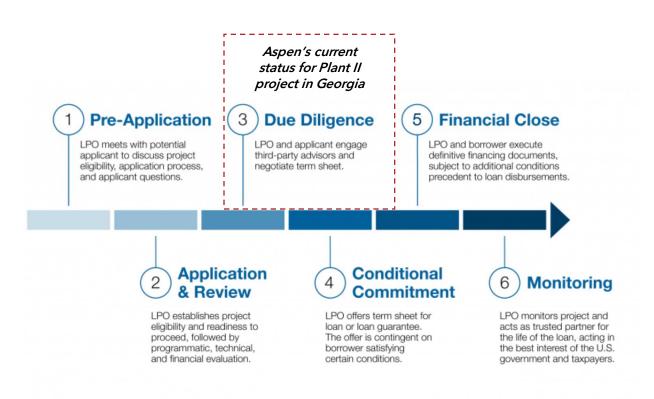
^{2.} Brightdrop Zevo 600

^{3.} Brightdrop Zevo 400

DOE LPO ATVM Loan Program Overview

Overview

OFFICE:	NEW PROGRAM:						
Loan Programs Office	No, but includes substantive modifications to existing program						
FUNDING AMOUNT:	FUNDING MECHANISM:						
\$3,000,000,000 of credit subsidy appropriations under IRA (resulting in an estimated \$40,000,000,000 of direct loans)	Direct loans						
RECIPIENTS:	PERIOD OF AVAILABILITY:						
A manufacturer of eligible advanced technology vehicles or of qualifying components	To remain available for commitment through 9/30/2028						
ASSISTANCE LISTING:	FORMULA FUNDING:						
TBD	No						
TRIBAL ELIGIBILITY:	COST SHARE REQUIREMENT:						
Yes	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)



DOE LPO ATVM Loan Program Stage Description

We find ourselves progressing through the Advanced DD & Term Sheet Negotiation phase of the process.

Advanced Due Diligence & Term Sheet Negotiation Phase Overview

- LPO performs financial, credit, legal, environmental, and market due diligence.
- LPO typically engages external advisors (e.g., legal, technical, financial, market, insurance) to assist in due diligence and structuring. External advisory costs are borne by the applicant.
- LPO reviews project compliance with federal environmental laws.
- LPO structures the transaction, underwrites and negotiates term sheet with the applicant.
- LPO presents the project for credit approval to internal Project Review Committee
- External Interagency Review and internal Credit Review Board
- LPO issues Conditional Commitment

For further information, please visit the official Department of Energy website Source: Official DOE & LPO website (https://www.energy.gov/lpo/advanced-transportation-financing)

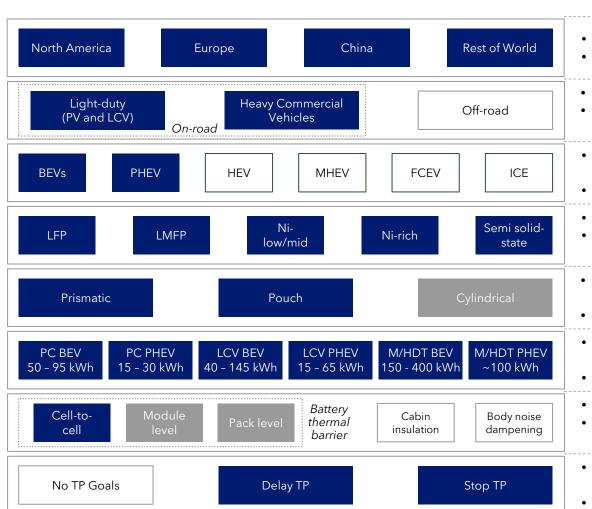


PyroThin® Thermal Barrier Opportunity Drivers

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

Commentary

- Vehicle sales by region
- 2 Vehicle classification
- Powertrain technology
- 4 Cell chemistry
- 5 Cell form factor
- 6 Battery capacity
- 7 Use case
- 8 TR/TP mitigation goals



Potential Focus Area

- China expected to lead global EV penetration
- Higher price and content vehicles in NA and EU
- Demonstrated commercial success within Light-duty
- Most recent award in M/HDT segment highlights commercial vehicle opportunity potential
- TP risk increases as OEMs pack more energy density into EV batteries, both in EV's and Plug-In Hybrids
- OEMs seeking to provide more range in PHEVs
- All battery chemistries have thermal propagation risk
- Highest CPV in nickel-based chemistries due to higher energy density
- Pouch and Prismatic expected to continue to account for ~70% of global market
- Cylindrical less suited for cell-to-cell solutions
- OEMs seeking to increase range, while higher density packs have more risk of thermal propagation
- NA and EU vehicles have larger batteries
- Aerogel solutions excel as a cell-to-cell barrier
- Core requirements are thermal isolation, fire protection and mechanical properties
- Recalls and global regulation expected to continue to driving OEM awareness and Stop TP goals
- OEM goals to Stop TP results in more content

Currently Out of Scope



