May 4, 2023

ASPEN AEROGELS

Q1 2023 FINANCIAL RESULTS CALL

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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 2023 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 2023 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, EV thermal barrier awards and quotes, Aspen's expectations about capacity, revenue, backlog, costs, expenses, profitability, cash flow, gross profit, gross margin, operating margin, net loss, adjusted EBITDA, adjusted EBITDA margin and related decreases, improvements, timing, variability or trends; beliefs about higher than expected demand from OEM customers and how they may enable path to profitability, expectations about improvement in ability to absorb fixed costs and reduction of conversion costs as a percentage of sales and the same leading to target gross margins; beliefs about the general strength, weakness or health of Aspen's business; acceleration in demand; demand increase from OEM customers, level of penetration in the EV market, growth in energy industrial markets; beliefs about 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; beliefs about 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 EV market; beliefs about Aspen's ability to provide and deliver products and services to EV customers; beliefs about content per vehicle, revenue, costs, expenses, profitability, investments or cash flow associated with Aspen's EV customer opportunities, including the EV thermal barrier business; beliefs about revenue growth and profitability; beliefs about the performance of PyroThin® including its ability to mitigate the propagation of thermal runaway in electric vehicles; beliefs about Aspen's ability to expand the market for PyroThin, to achieve design wins, to commence shipments of production parts, and to become an industry standard solution for thermal runaway management; beliefs about Aspen's thermal barrier design, prototype, quoting and assembly activities; expectations about the cost of the capital projects, including Plant II in Statesboro, Georgia, beliefs about our Mexico assembly facility and its timely operations, its ability to meet the demand, the growth in thermal barrier demand to match the assembly operation and vice versa. 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 the growth plan through 2025, inability to manage supply chain disruptions to avoid undue delay or impact on operations or construction of Plant II and the Mexico assembly facility, inability to create new product, partnership and market opportunities; any sustained downturn in the industry or energy prices; any sustained downturn in the energy, energy infrastructure, chemical and refinery, LNG, sustainable building materials, EV thermal barrier, EV battery materials or other markets; 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 customer or market opportunities for, including PyroThin; any other battery performance and safety products, battery materials or for other new products developed from Aspen's aerogel technology; any disruption or inability to achieve expected capacity levels in any of our three existing production lines in East Providence, RI or the Mexico assembly facility; any inability to establish or timely establish thermal barrier assembly operations in Mexico or any other location; the failure to receive all regulatory or other approvals required to operate, maintain or expand any of Aspen's facilities; any failure to achieve 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; shortages of raw materials, utilities or any other manufacturing consumable; the failure to generate sufficient operating cash flow or to obtain significant additional capital to pursue Aspen's strategy; any failure to timely raise sufficient capital to fund various capital projects; 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 of Aspen's patents 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, including Mexico; the loss of any direct customer, including distributors, contractors and OEMs; compliance with health and safety laws and regulations; the maintenance and development of distribution channels; and the other risk factors discussed under the heading "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2022 and filed with the Securities and Exchange Commission ("SEC") on March 16, 2023, as well as any updates to those risk factors filed from time to time in our subsequent periodic and current reports filed with the SEC. All statements contained in this press release are made only as of the date of this press release. Aspen does not intend to update this information unless required by law.

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The presentation contains information regarding certain financial targets with respect to the Company. Such financial targets constitute 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.

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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. 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.

Q1 2023 Developments

Strong revenue growth, accelerating commercial traction and contract manufacturing capacity present a bright outlook

Q1 2023 Highlights

- Grew quarterly revenue by 19% YoY
- Delivered 11% gross profit margin, up 1600 bps YoY
- Executing contract manufacturing strategy for Energy Industrial supply in 2024
- Continued to defend our IP rights

Quarterly Revenue Growth Drivers

	Year Over Year	2 Year CAGR
THERMAL BARRIERS	53%	~10X
ENERGY INDUSTRIAL	10%	10%

2024 Revenue Capacity

$400M + $150M= $550M

East Providence Plant Contract Manufacturing

Commercial Highlights

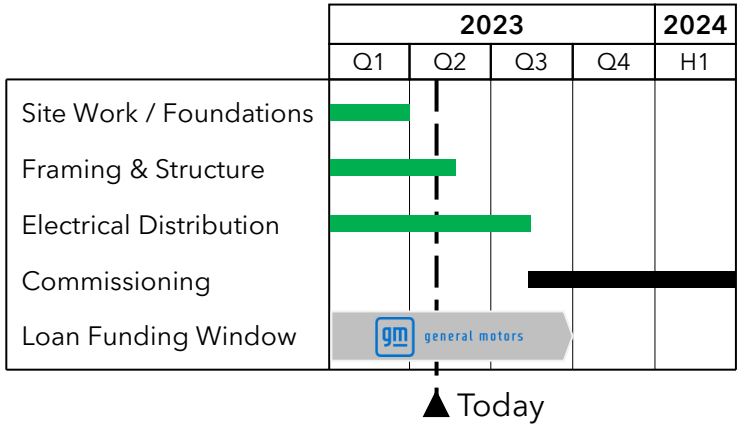
- Awarded PyroThin® contract for European EV commercial truck program with start of vehicle production in early 2024

Right-timing Plant II Capacity to Match Demand

Contract manufacturing supply for Energy Industrial enables total revenue capacity of $550M to meet near-term demand

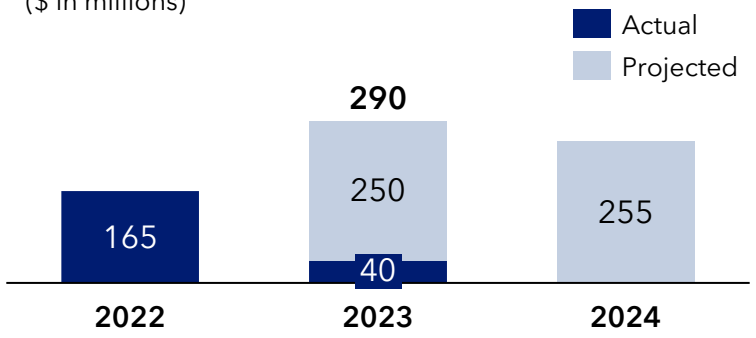
Plant II construction was on track for H1 2024 commissioning…

Plant II Progress Timeline



Plant II Previously Projected Spend

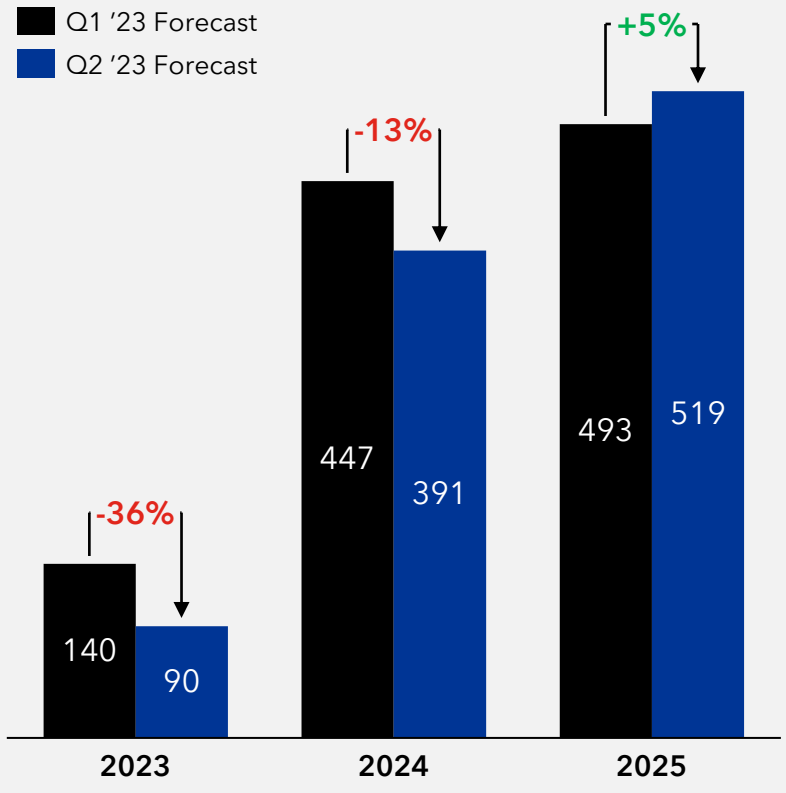
($ in millions)



… and as near-term customer volume demand will continue to fluctuate…

2023 GM Ultium EV Production Forecast[1]

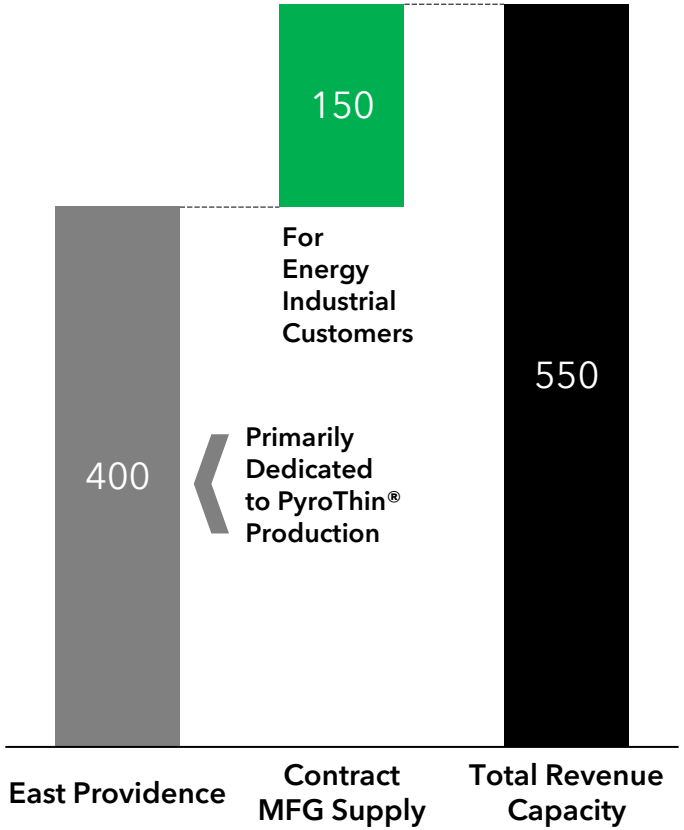
(Vehicles in thousands)



…2024 start-up is no longer needed thanks to contract manufacturing.

2024 Revenue Capacity

($ in millions)



1- IHS January 2023 and April 2023 vehicle production forecast

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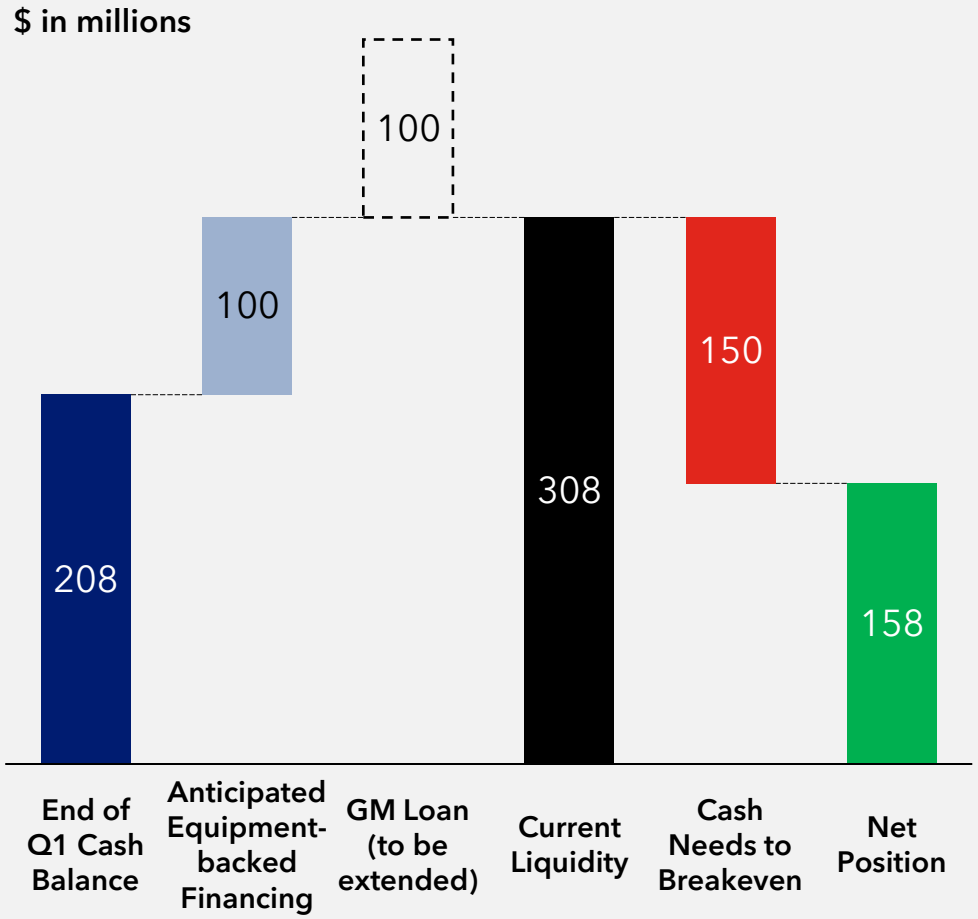
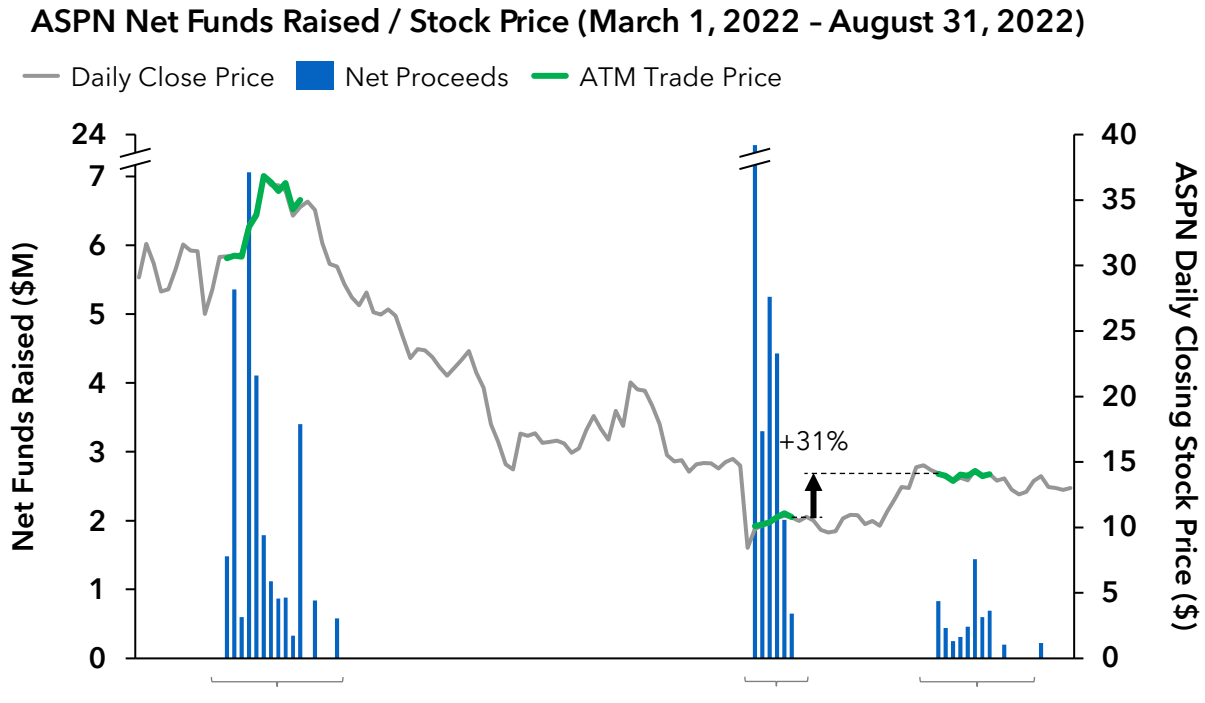
Liquidity Outlook and Financing Approach

With enough liquidity to manage the company into generating positive cash flow, we can remain restrained on ATM sales

Near-term Liquidity Outlook without Plant II



LTM At the market Offering Share Sale Proceeds Summary



	Mar – Apr	Jun - Jul	Aug	Total
Net Funds	$28.1M	$39.2M	$5.4M	$72.7M
Weighted Avg Share Price	$31.83	$9.91	$13.57	$13.88

Q1 2023 Financial Highlights

19% YoY revenue growth driven by strong demand across both EV Thermal Barriers and Energy Industrial products

$ in millions except EPS	Q1 2022	Q1 2023[1]	2023 Outlook[1]
REVENUES YoY Growth	$38.4 37%	$45.6 19%	$200.0 - $250.0 11% 39%
Net (Loss)	$(19.5)	$(16.8)	$(102) - $(92)
Adj. EBITDA[2]	$(14.6)	$(13.9)	$(60) - $(50)
EPS	$(0.59)	$(0.24)	$(1.46) - $(1.31)
Cap Ex	$14.5	$49.4	$100 - $150

Commentary

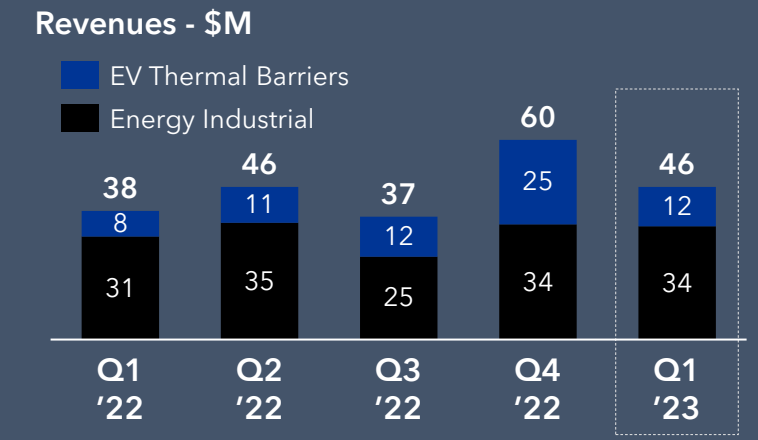
Strong demand drove 10% YoY growth in Energy Industrial with EV Thermal Barrier revenues up 1.5x YoY

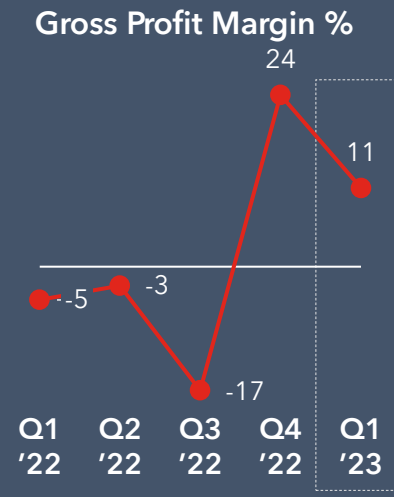
Operating efficiencies from prior investments and enhanced production capabilities drove positive gross margin while cost discipline in OPEX will contribute to near-term profitability

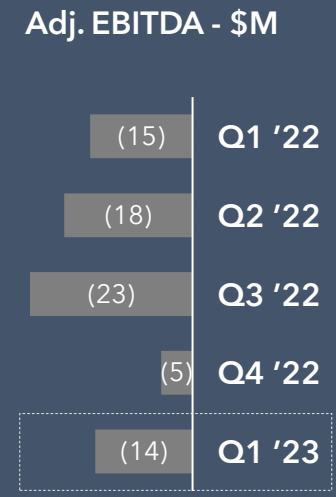
Continued investments to deliver on increasing customer demand

Plant II construction, PyroThin® assembly tooling, R&D facility upgrades

15 Month Quarterly Trajectory







1- Unaudited financials for Q1 2023 (and Outlook)
2- See slide 16 herein for a reconciliation of net loss, the most directly comparable GAAP measure to Adjusted EBITDA for the presented period

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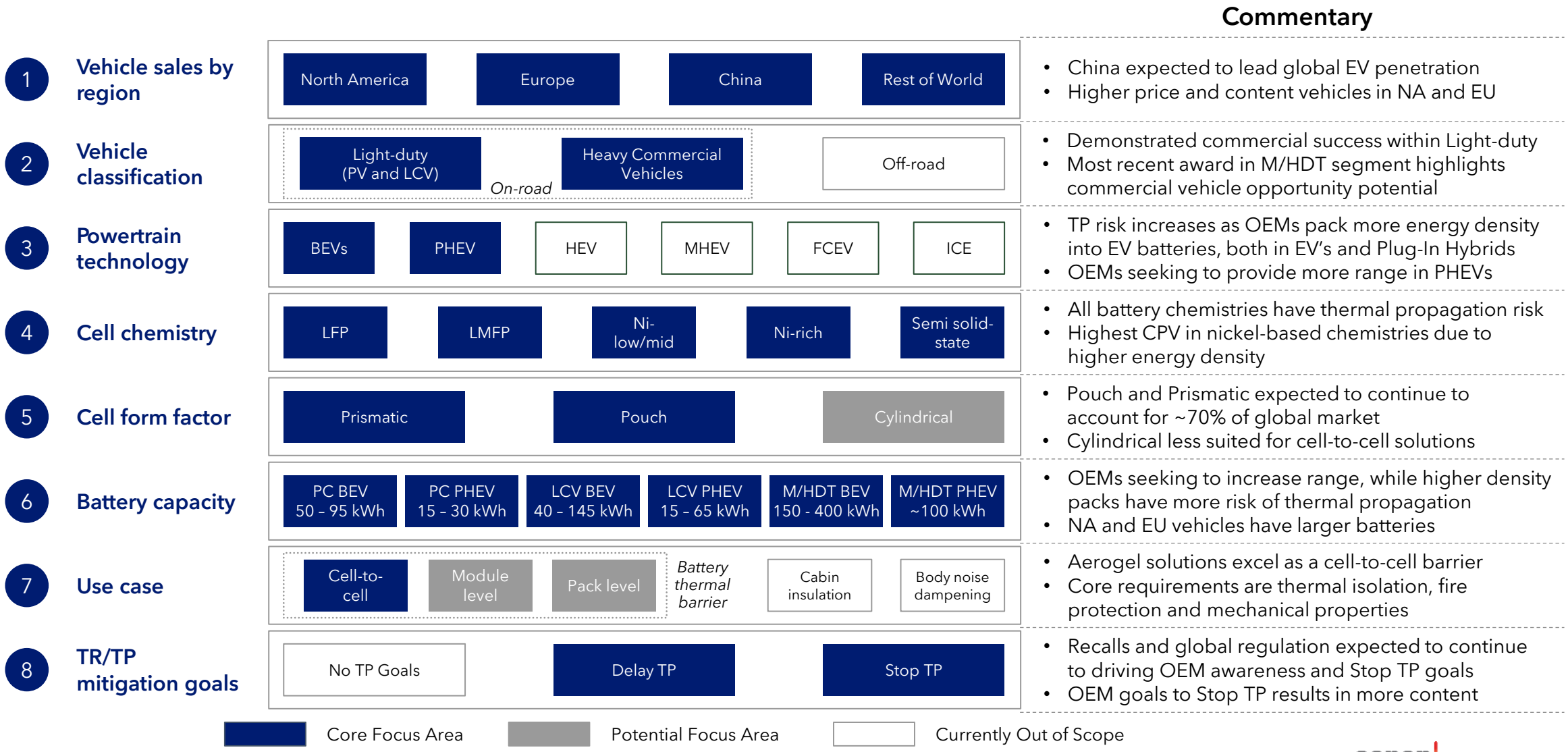
PyroThin® Thermal Barrier Opportunity Drivers

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

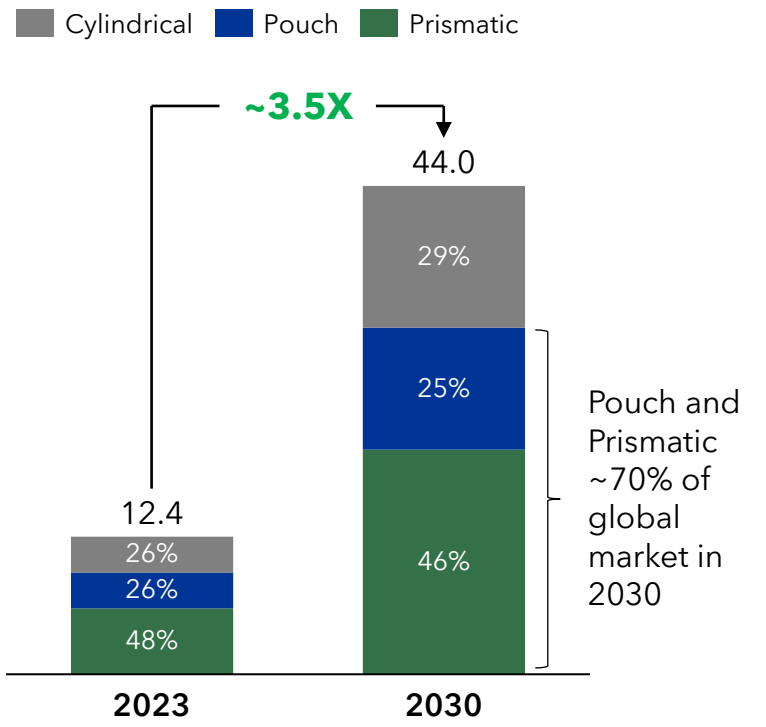


EV Battery Form Factor Outlook

PyroThin® is best suited for Prismatic and Pouch cells, which are projected to represent over 70% of the market

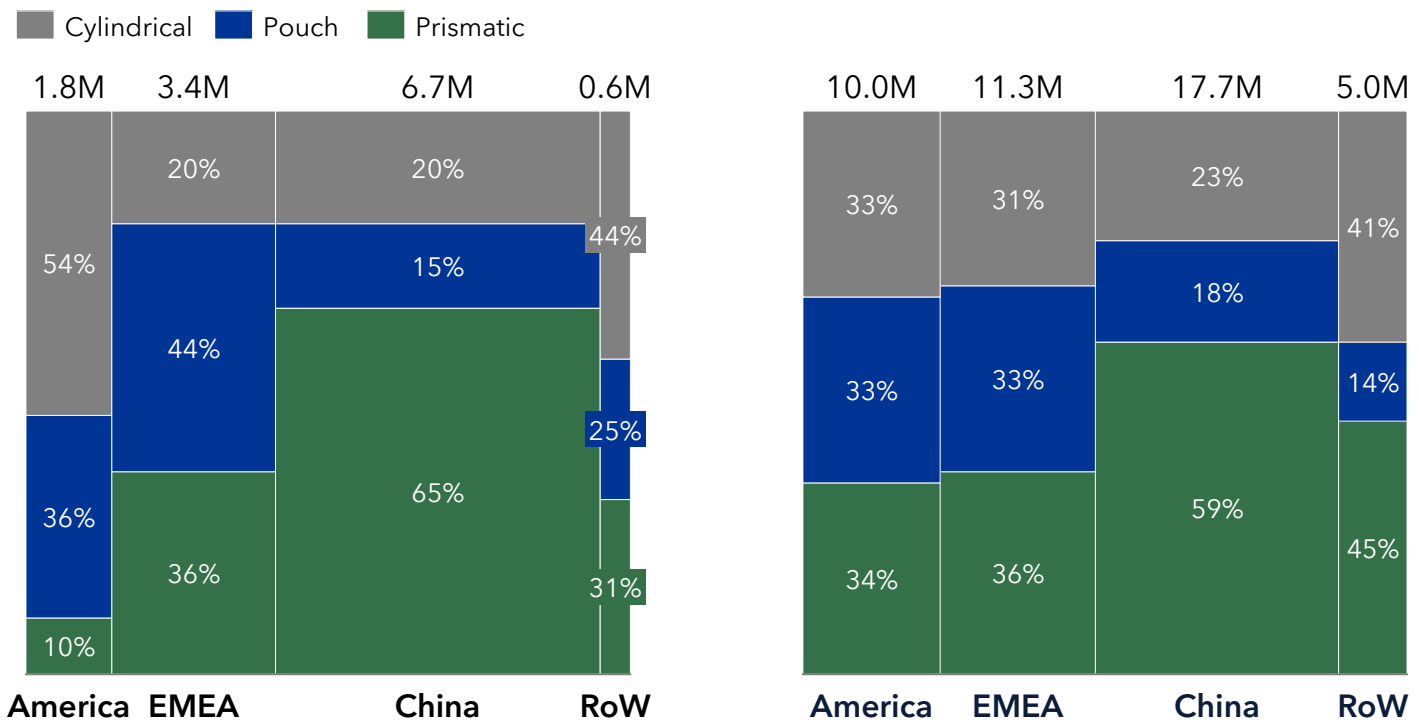
Global BEV + PHEV volumes are projected to increase ~3.5X by 2030

Global light vehicle [1] BEV+PHEV sales by form factor
(millions of vehicles)



2023 → 2030

Total light vehicle[1] BEV & PHEVs sold annually by cell form factor, by region
(# of vehicles)

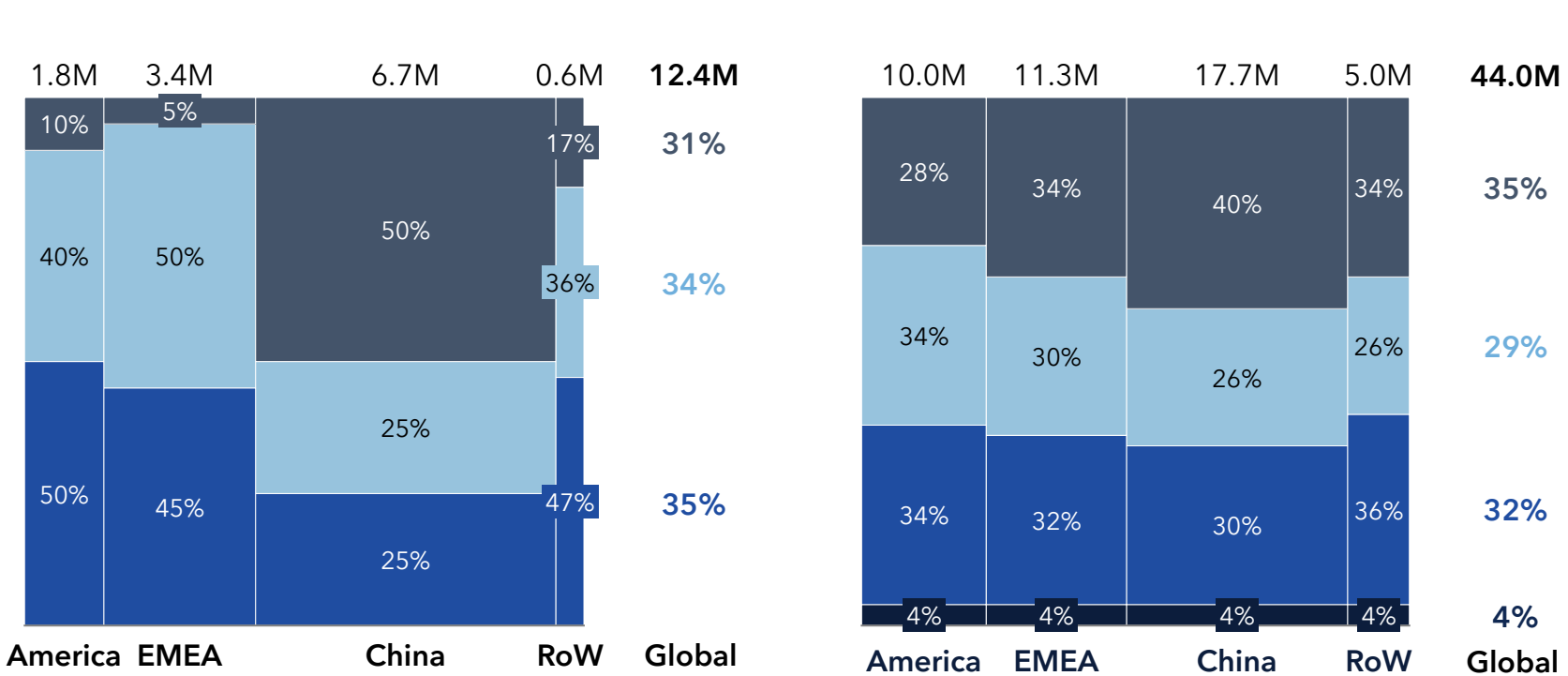


Note: Figures may not total due to rounding 1. Includes passenger and light commercial vehicles
Source: Aspen Aerogels analysis, E-source battery forecast (2022), Apollo Reports, Market participant interviews, Press releases

EV Battery Chemistry Outlook

Nickel-based batteries, which have higher energy densities and thermal propagation risk make up >60% of the market

Total light vehicle[1] BEV + PHEVs sold annually by cell chemistry, by region (# of vehicles)



OEM Expert Commentary on Aerogel Compatibility

> *Aerogel can still be used in LFP, not likely between every cell, maybe every 5-10 cells.*
>
> - Former Chief Engineer, Ford

> *Nickel is highly reactive, so with Ni-rich formulas, you'll need aerogel or a thick composite to prevent fires.*
>
> - Former Chief Engineer, GM

> *Semi-solid states are still NMCs, just rebranded, with the same risk of thermal propagation.*
>
> - Staff Battery Engineer, Rivian

Note: Figures may not total due to rounding 1. Includes passenger and light commercial vehicles 2. Lithium Iron Phosphate includes LFMP variant 3. Nickel content <=70% (NMC 622, 523) including certain cobalt-free and NMx chemistries 4. Nickel content >70% (NMC 811, NCA) 5. Semi-liquid/gel electrolyte (not fully solid)
Source: Aspen Aerogels analysis, E-source battery forecast (2022), IEA (2022), UBS (2022), Market participant interviews, Press releases

OEM Battery Changes Require Time and Investment

Battery pack, cell chemistry or form factor changes are complex decisions with large capital and timing implications

	Change Discretion / Description	Typical lead times (years to SOP)	Typical cost[1]	Significantly affected processes
Pack Assembly Changes	New pack assembly plant	2.5 – 5	$0.5B – $1.5B	• Loading • Preparing • Stacking • Isolation • Welding • EOL
	Modify existing pack assembly plant	1 – 2	< $1.0B	• Loading • Preparing • Welding
	Modify existing pack assembly plant	< 0.5	–	• Only minor changes
Cell MFG Changes	New cell manufacturing plant	3 – 4	$3.5B – $4.5B	• Slurry mixing • Coating and drying • Calendaring • Slitting • Vacuum drying • Cell assembly and handling • Electrolyte filling • Cell finishing
	Modify existing cell manufacturing plant	1.5 – 2	$1.0B – $2.0B	• Cell assembly and handling • Electrolyte filling • Cell finishing
	Modify existing cell manufacturing plant	1.5 – 2	$0.5B – $1.5B	• Slurry mixing • Coating and drying • Cell finishing

Cell form factor change Cell chemistry change

1. *Investment cost normalized for a 40 GWh plant*

Source: Press releases, Voltaiq, Argonne National Laboratory, Pia Automation, Market participant interviews

Recent Thermal Propagation Recalls

Over the past couple of years, higher EV volumes have revealed the risks of thermal runaway and propagation in EVs

Timeline of recent thermal propagation recalls

2020
- Kona (90K vehicles) Fires-folded anode tab
- All PHEVs (26.9K vehicles) Thermal events battery debris

2021
- EX360, EU400 (32K vehicles) Fire risk-fast charging
- **Chevy Bolt Highlighted example**

2022
- Zoe (733 vehicles) Fire risk-short circuit
- Pacifica PHEV (19.8K vehicles) Fires-while charging

2023
- **F150 Lightning Highlighted example**

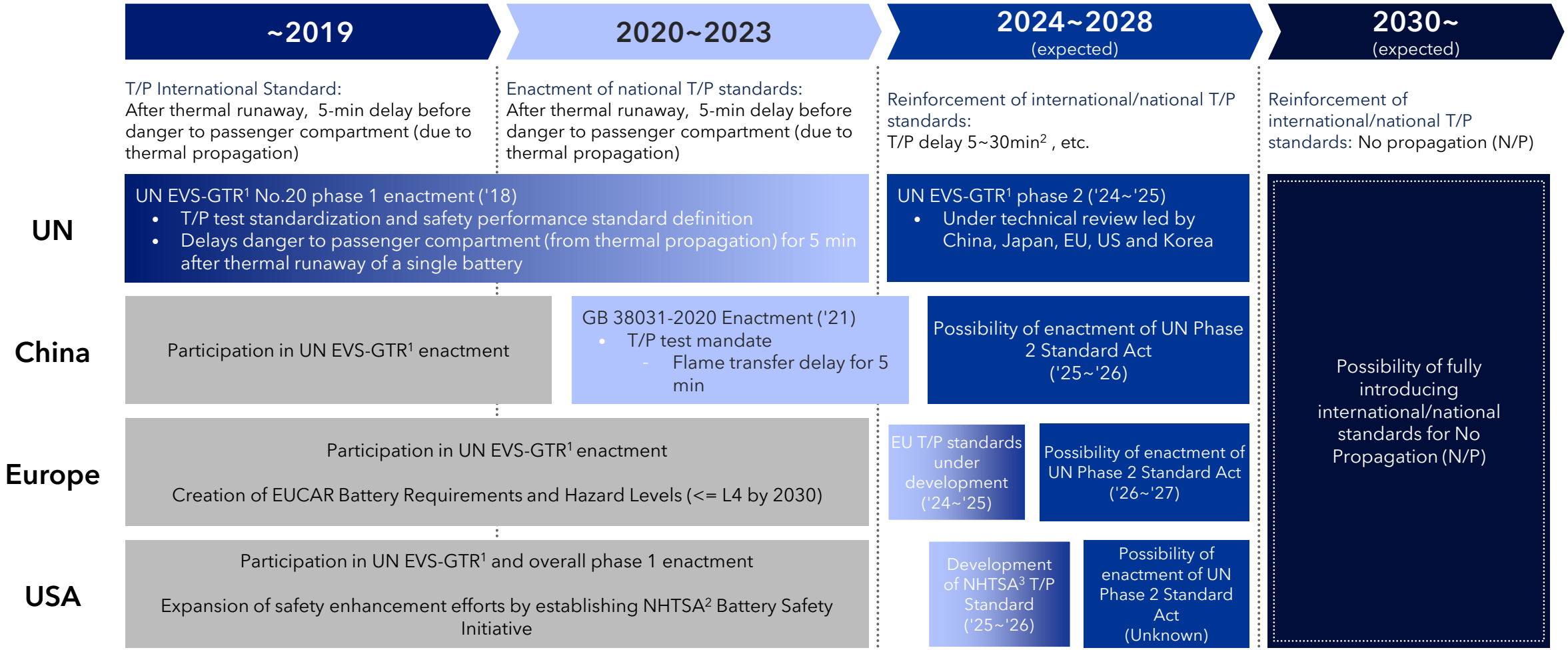
Two recent examples

	Chevy Bolt-2021 recall	F150 Lightning-2023 recall
Recall	• Battery fires in Chevy Bolts led to recall of all previously sold Bolts (~142K)	• Battery fire in product testing prompted recall of 18 vehicles
Shutdown	• 31 weeks of downtime • Production loss of ~27K vehicles[1]	• 5 weeks of downtime • Production loss of ~7.5K vehicles[1]
Costs	• **~$0.9B** in estimated **revenue loss** from shutdowns[2] and **$1.8B** in **recall costs**	• **~$0.5B** in **estimated revenue loss** from shutdowns[2]
Sample Headlines	• *"Chevy Offers Bolt Owners $6,000 to Waive Right to Sue Over Battery Fires"* JALOPNIK	• *"...F-150 Lightning fire in Dearborn reveals melted trucks..."* Detroit Free Press

*1. Production loss calculated as weeks of shutdown * annual production targets (45,000 Bolts, 75,000 F-150 Lightnings) 2. Shutdown costs estimated using vehicle production loss * average MSRP ($33.5K for Bolt, $63.5K for F-150 Lightning) 3. Revenue estimated using sales volume * average MSRP*
Source: Aspen analysis, Jalopnik, Press releases, Volta Foundation

Thermal Propagation Regulatory Landscape

Further regulations are expected globally through 2030, led by UN and China



1. UN EV Safety Global Technical Regulations 2. Lack of consensus from UN T/P task force report and expert opinions 3. National Highway Traffic Safety Administration
Source: UNECE, Public announcements, Market participant interviews

EV Thermal Barrier Award and Quote Pipeline

2023 will be an important commercial year, as we expect ~$3B+ in program decisions over the next 3 quarters

Region	Estimated Potential Award and Quote Value[1]	Customer	Sourcing Approach	Form Factors	First SOP	Commercial Status
	$10B	ULTIUM / gm general motors	Battery Platform	Pouch	In Production (2021)	Awarded
		 Auto OEM	Vehicle Nameplate	Pouch & Prismatic	2H 2025	Quoting
	$3B	 Battery Tier 1	Battery Platform	Prismatic	2024	Quoting
		 Auto OEM	Vehicle Nameplate	Prismatic	2025	Quoting
		 Auto OEM	Vehicle Nameplate	Pouch	2025	Quoting
		 **Auto OEM**	Vehicle Platform	Prismatic	2024	Vehicle Platform LOI
		 **CV OEM**	Commercial Vehicle Platform	Prismatic	2024	New Award
	$2B	 TOYOTA	Vehicle Nameplate	Prismatic	In Production (2021)	Awarded
		 Battery Tier 1	Battery Platform	Prismatic	2025	Quoting
		 Auto OEM	Vehicle Platform	Pouch	2024	Quoting
Total	**$15B**					

1. Estimates based on current visibility and certain market and customer-based assumptions

Summary

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

DEMONSTRATED OPERATING EXECUTION

Strong Q1 revenue and gross profit showcase improving operating efficiencies, including maintaining OPEX flat quarter-over-quarter

ADVANCED PYROTHIN® COMMERCIAL PROGRESS

New multi-year Commercial Vehicle award demonstrates continued commercial traction, as OEMs design PyroThin® into their respective battery platforms

INCREASING FLEXIBILITY TO MEET DEMAND

Proposed contract manufacturing agreement provides additional capacity for Energy Industrial customers, enabling the right-timing of Plant II commissioning

ACCELERATING NEAR TERM PROFITABILITY

Reduction in CAPEX accelerates path to positive cash flow, while providing $550M in revenue capacity and supporting long-term gross margin targets

Appendix

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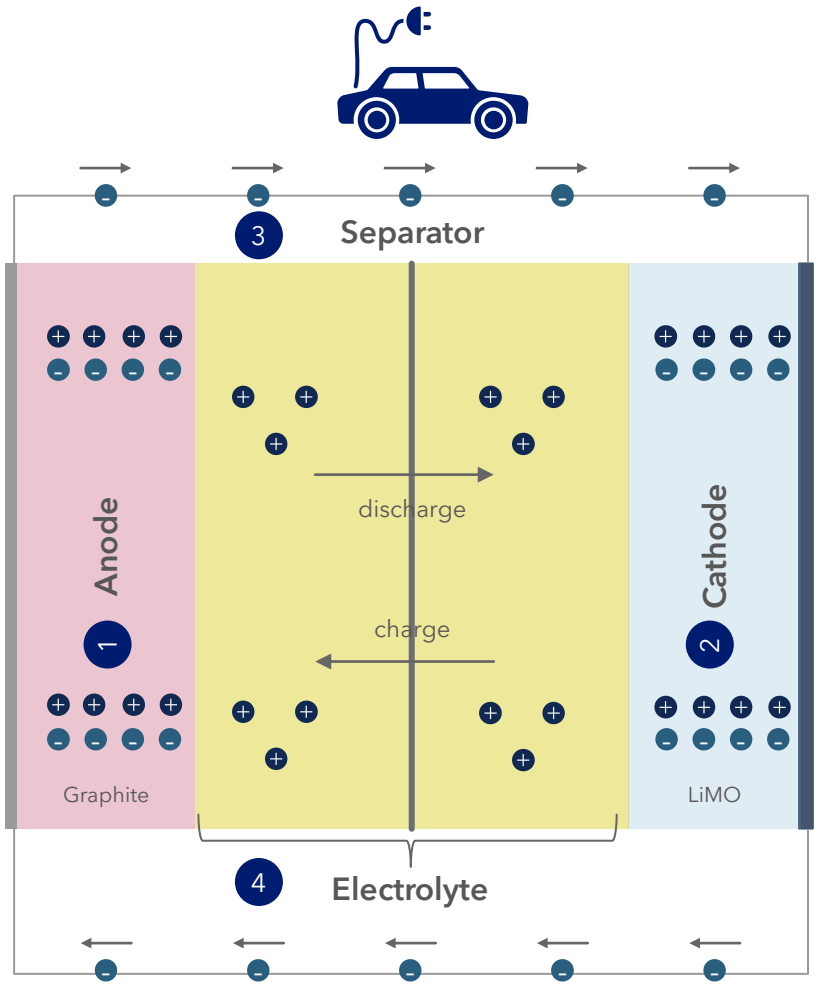
GAAP to Non-GAAP Reconciliation

($ in thousands)	Q1 2023	Q1 2022	FY 2023 Outlook Low	FY 2023 Outlook High
Net loss	(16,796)	(19,484)	(101,900)	(91,900)
Depreciation and Amortization	2,704	2,129	22,300	22,300
Stock-based Compensation	2,267	1,828	11,000	11,000
Interest Expense, net	(2,112)	860	8,600	8,600
Adjusted EBITDA	**(13,937)**	**(14,667)**	**(60,000)**	**(50,000)**

Batteries 101: EV Battery Cell Overview

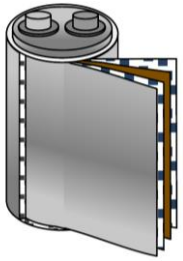
Four key elements of a battery cells: the cathode, the anode, the separator and the electrolyte.



	Description	Chemistry Examples
1 **Cathode**	The positive or oxidizing electrode acquires electrons from the external circuit and is reduced during the electrochemical reaction	• LFP • NMC • NCA
2 **Anode**	The negative or reducing electrode releases electrons to the external circuit and oxidizes during the electrochemical reaction	• Gr • Gr + Si
3 **Separator**	A porous membrane to prevent physical contact between the anode and cathode, while facilitating ion transport in the cell	• Polyolefin
4 **Electrolyte**	A liquid that acts as the medium providing the ion transport mechanism between the cathode and anode of a cell	• LiPF6 • LiBF4 • LiClO4

Batteries 101: Cell Form Factor Overview

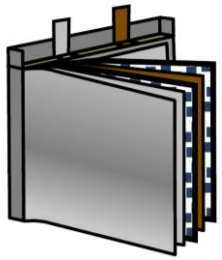
Current cell format options include cylindrical, pouch, and prismatic.



Cylindrical

~26%
EV 2023 market share[1]

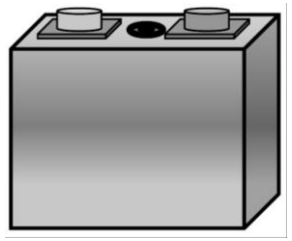
- Oldest and most standardized form factor
- Easiest to manufacture, but provides poorest space utilization at module level
- Primarily used by Tesla
- Primary suppliers: Panasonic, LG Chem, Samsung SDI



Pouch

~26%
EV 2023 market share[1]

- Most flexible and customizable form factor
- Highly efficient use of space, but requires structural support
- Used by GM, Stellantis, Ford
- Primary suppliers: LG Chem, SK



Prismatic

~48%
EV 2023 market share[1]

- Less standardized vs. other form factors
- Relatively efficient use of space at module level
- Easiest to pack & assemble
- Most widely used for EVs
- Used by BYD, BMW, Geely
- Primary suppliers: CATL, BYD, Samsung SDI

1. For light vehicles (passenger + light commercial)
Source: Aspen Aerogels analysis

Batteries 101: Cell Chemistry Overview

Major EV battery chemistries are high-nickel, low/medium-nickel, and LFP/LMFP; solid-state batteries under development

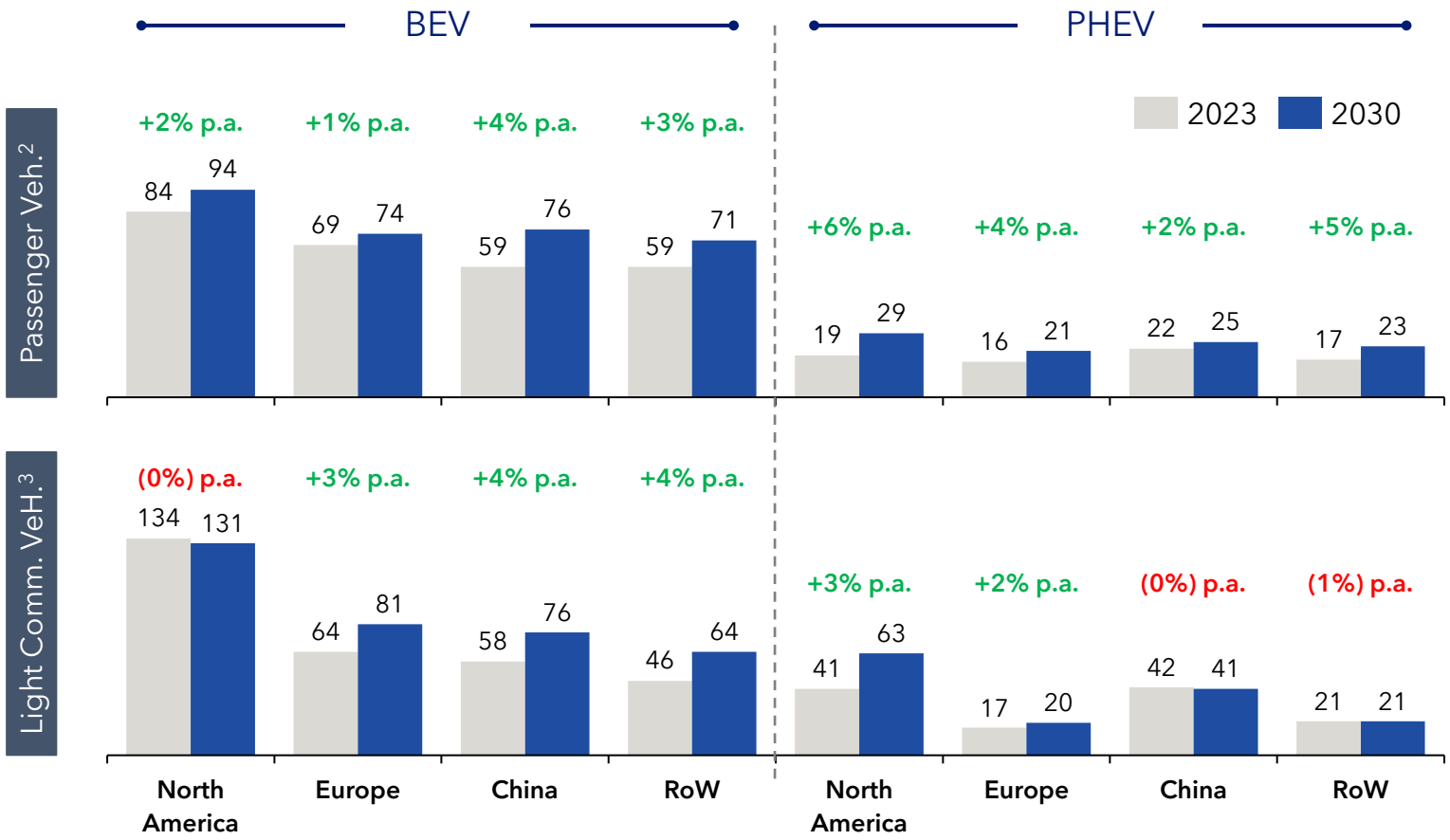
Chemistry	Composition	2023 Est. Market Share[1]	Overview
High-nickel (NMC / NCA)	**Cathode:** • Nickel (>70%), cobalt • Manganese (NMC only) • Aluminum oxide (NCA only) Anode: Graphite Electrolyte: Liquid lithium electrolyte Separator: Poly-ethylene, polypropylene	~35%	• Highest energy densities • High risk of thermal propagation due to low trigger temperatures (~183°C) and high maximum thermal runaway temperature (~933°C)
Low/medium-nickel (NMC)	Cathode: Nickel (<=70%), cobalt, manganese Anode: Graphite Electrolyte: Liquid lithium electrolyte Separator: Poly-ethylene, polypropylene	~34%	• Lower energy densities than high-nickel but still better than LFP / LMFP • Medium-high risk of thermal propagation due to trigger temperatures (~220°C) and maximum thermal runaway temperature (~844°C)
LFP / LMFP	Cathode: • Lithium, iron, phosphate • Manganese (LMFP only) Anode: Graphite Electrolyte: Liquid lithium electrolyte Separator: Poly-ethylene, polypropylene	~31%	• Cheapest common chemistry, but low energy density • High durability & safety performance • Medium risk of thermal propagation due to higher trigger temperatures (~287°C) and lower maximum thermal runaway temperature (~600°C)
Semi-solid state	Cathode / Anode: Same as NMC / NCA/ LFP / LMFP Electrolyte: Solid + liquid lithium (potentially as a gel) Separator: Ceramic, solid polymer	Late 2020s entry	• Transitory stage between traditional lithium-ion batteries and all-solid-state batteries • Higher energy densities than High-nickel chemistries • Thermal propagation risk similar to current existing lithium-ion batteries
All solid state (ASSB)	Cathode: Variety of options (e.g., sulfur) Anode: Lithium metal Electrolyte: Ceramic, solid polymer Separator: Ceramic, solid polymer	Later than 2030 or entry	• Highest energy densities and potential cycle life • Thermal propagation risks still under evaluation but potentially lower probability than in existing lithium-ion batteries due to elimination of volatile liquid electrolyte • However, higher temperature

1. For light electric vehicles (passenger and commercial)
Source: Market participant interviews

Global Vehicle Battery Size Outlook

Battery sizes projected to grow modestly by 10-20 kWh for BEVs, 5-15 kWh for PHEVs; North America with largest packs

Battery pack size[1] for light vehicle BEV & PHEVs, by region (kWh)



Key takeaways

General increase in battery pack sizes from 2023-2030 as battery technology and TCO improves

Instances of battery sizes decreasing due to introduction of broader fleet of EVs that may have shorter range, lower models

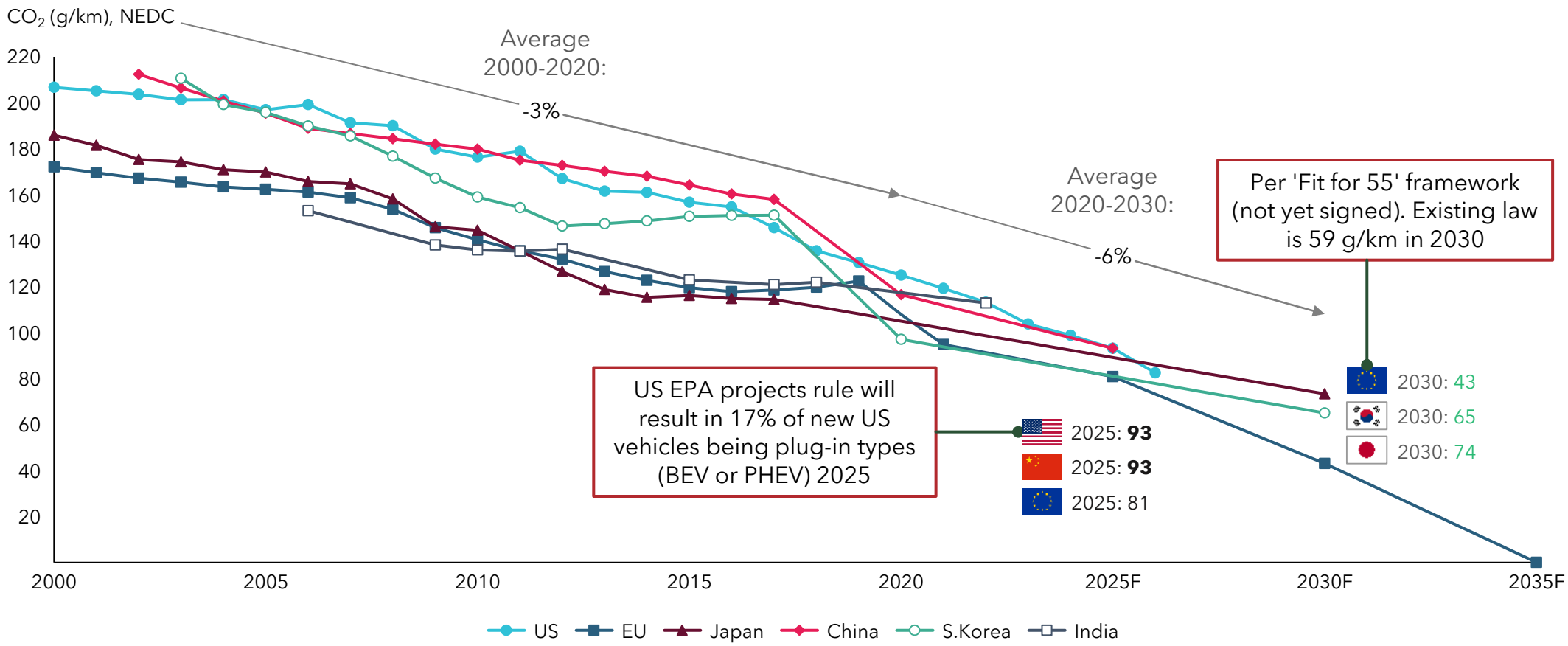
North America with largest battery sizes globally given driving distances and driving behavior

CLV ranges larger vs. PV for EVs in North America and Europe, whereas China and RoW are similar or lower vs. PV

1. Calculated as regional weighted average of projected battery pack size by BEV (or PHEV) model and annual volume 2. Passenger vehicle 3. Light commercial vehicle
Source: IHS Markit powertrain production forecast (2023)

Tightening Global Light Vehicle Emissions Standards

Regulatory pressure accelerates with Europe targeting 100% ZEV1 in 2035

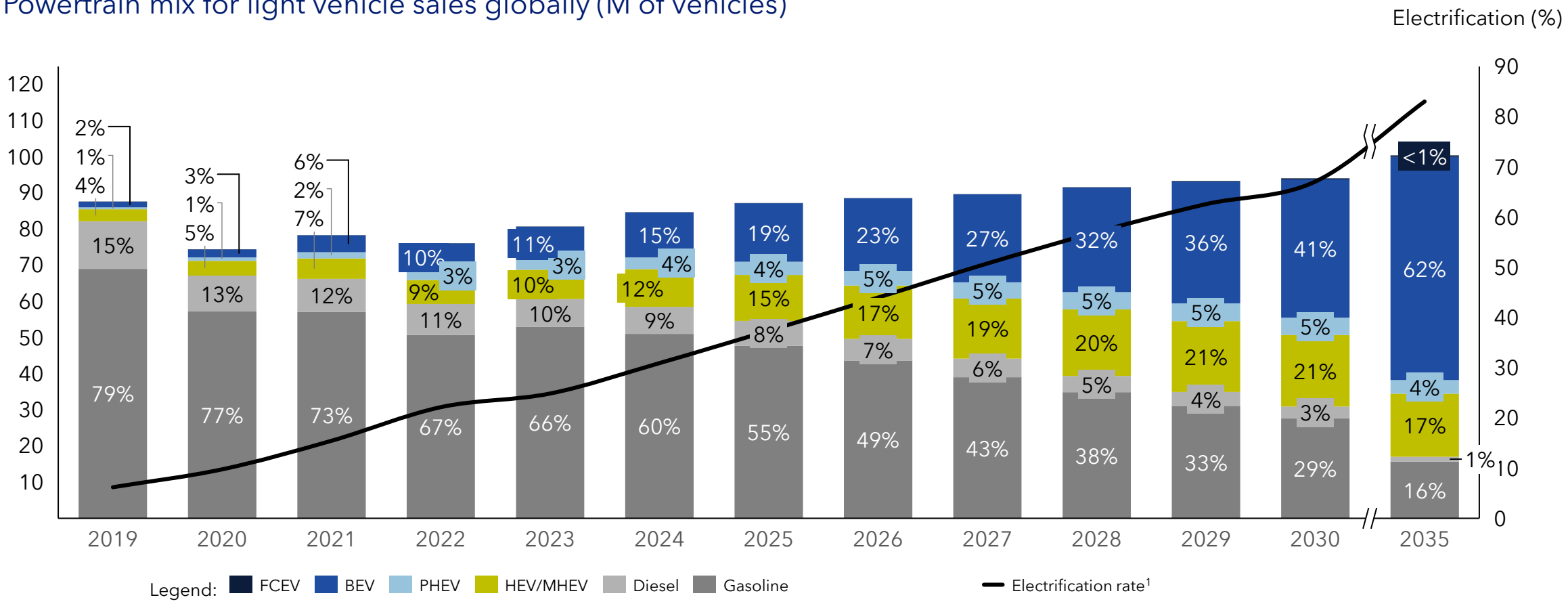


1. Zero emission vehicles
Note: Regulations for passenger vehicles only; China's target shown here reflects gasoline vehicles only and will be more stringent after new energy vehicles are considered; US values reflect fuel economy standards set by NHTSA and exclude the credits for low-GWP refrigerants established under the GHG standards set by EPA
Source: ACEA; EU Fit for 55; ICCT (July 2021 & September 2021); NHTSA; US EPA

Global Light Vehicle EV Market Adoption Forecast

BEV+PHEV share surpasses 45% in 2030

Powertrain mix for light vehicle sales globally (M of vehicles)

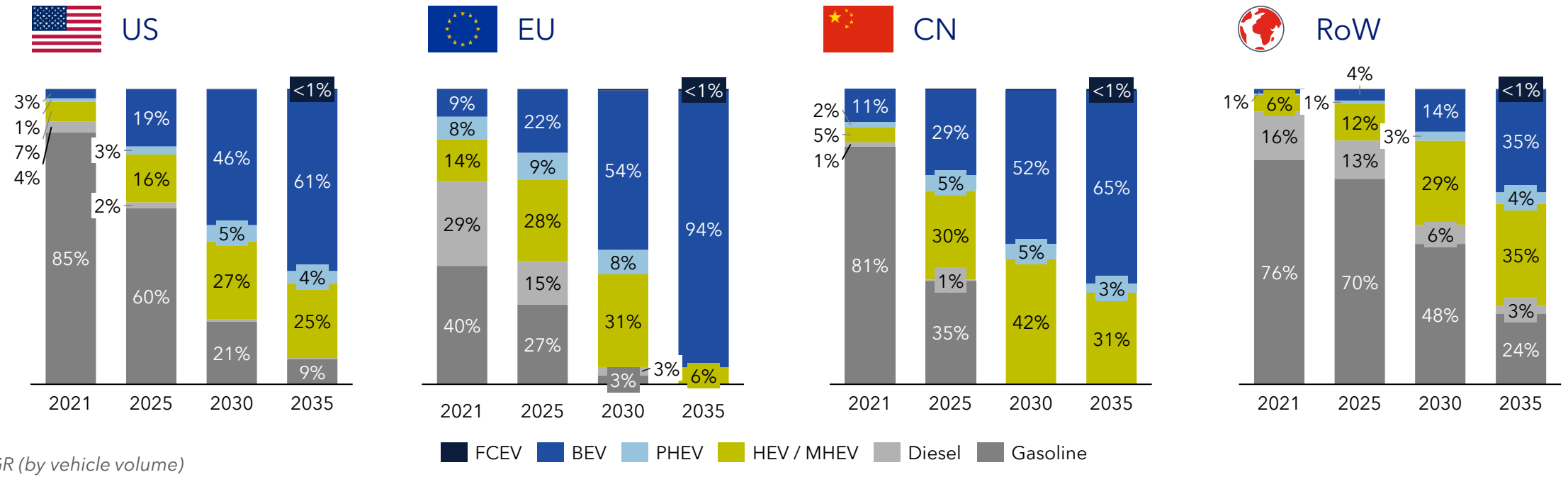


1. Incentives scenario considers government support for the acquisition of a BEV such as BuildBack Better Act (BBBA) or an equivalent
Note: Forecast includes all light vehicles, except heavy vans; FCEV = fuel cell electric; BEV = battery electric; PHEV = plug-in hybrid electric; HEV = full hybrid electric; MHEV = mild hybrid electric; Including such changes in consumer mobility behavior as car and ride sharing
Source: Aspen Aerogels analysis; IHS Markit sales forecast (2023)

EV Adoption by Key Markets

Europe leads EV adoption ahead of China and US, driven by strict regulation

Powertrain mix for light vehicle sales by region (M of vehicles)



CAGR (by vehicle volume)

FCEV	--	34%	9%	--	65%	9%	--	49%	9%	--	49%	9%
BEV / PHEV	50%	18%	5%	19%	15%	8%	32%	13%	5%	33%	31%	20%
HEV / MHEV	25%	10%	(1%)	21%	2%	(29%)	62%	9%	(5%)	25%	21%	7%
Diesel / Gas	(9%)	(19%)	(16%)	(9%)	(32%)	--	(16%)	--	--	(1%)	(6%)	(11%)

Note: Forecast includes all light vehicles, except heavy vans; TCO calculation includes incentives
Source: Aspen Aerogels analysis; IHS Markit sales forecast (2023)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