

Cummins: Which Zero-Emissions Path Should Accelera Prioritize?

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A strategy case for MBA students and working professionals

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Case status: Constructed decision exercise. No Cummins executive discussion or internal allocation decision is represented.

A portfolio without a settled winner

This case places a hypothetical Cummins team at a strategic crossroads using information available when the company's Q3 earnings-release 8-K was accepted by the SEC on November 2, 2023, at 7:47:13 a.m. Eastern Time. The case stops before Cummins' 10:00 a.m. earnings call and later Q3 Form 10-Q filing. Cummins had recently introduced Accelera as its brand for zero-emissions technologies, an expanding portfolio that included battery systems, electric powertrains, hydrogen fuel cells and electrolyzers. The earnings release showed rapidly growing Accelera segment sales alongside a segment EBITDA loss. Several technologies and commercial partnerships were progressing at once, each dependent on customers, vehicle makers, energy supply and infrastructure.

Assume a cross-functional team has been asked to recommend how Cummins should sequence its next phase of Accelera investment and commercialization. Should it concentrate resources on battery-electric systems and the newly announced battery-cell joint venture? Should it emphasize fuel cells and hydrogen production, building toward integrated hydrogen applications? Or should it keep a wider portfolio and use explicit application-level gates to decide where to scale, pause or exit? The team must make a recommendation without a technology-specific capital budget, customer-level economics or a disclosed internal hurdle rate.

A mature power business alongside an early-stage segment

Cummins sells engines, components, power-generation systems and service through a global business. Its established products continue to serve truck, bus, industrial, marine, mining, oil and gas, and power-generation customers. The company also has distribution and support capabilities across a large installed base. Improvements to combustion-engine fuel economy and emissions technology remain part of its engineering agenda alongside zero-emission work.

In March 2023, Cummins gave its New Power business the Accelera name. The company described Accelera as both a components supplier and an integrator, with batteries, fuel cells, e-axes, traction systems and electrolyzers. It said it had invested more than \$1.5 billion "over the past several years" in research, technology, capital and acquisitions to build Accelera's capabilities. That cumulative company claim did not break out the amount spent by product,

nor did it state a return on those investments.

The Q3 2023 release reported Cummins revenue of \$8.4 billion, up 15%, net income of \$656 million and EBITDA equal to 14.6% of sales. Operating cash flow was a record \$1.5 billion for the quarter. The release attributed higher revenue to Meritor's addition and strong demand across most markets. Cummins raised its full-year revenue-growth outlook to 18%-21% and its EBITDA-margin outlook to 15.2%-15.4%. These company-wide results show the scale of the established business, but do not establish how much discretionary cash was available for Accelera or what return each technology could earn.

Accelera's Q3 results were more difficult to interpret. The earnings release reported segment sales of \$103 million, up 106%, and an EBITDA loss of \$114 million. It attributed the sales increase to higher demand for battery-electric systems, more electrolyzer installations and the addition of Siemens Commercial Vehicles Propulsion and Meritor electric-powertrain operations. The release did not provide a separate external-sales total. Its reported segment-sales figure does not establish organic growth, product margins or customer economics for any individual technology.

Exhibit 1. Selected Q3 2023 results

USD unless noted; comparisons are year over year.

Measure	Q3 2023	Prior-year comparison	Interpretation limit
Cummins revenue	\$8.4bn	+15%	Meritor and strong demand were among the cited drivers.
Cummins net income	\$656m	\$400m	The prior-year comparison includes acquisition/integration items and different discrete tax effects.
Cummins EBITDA margin	14.6%	12.1%	Company-wide, non-GAAP measure; not an Accelera return.
Operating cash flow	\$1.5bn	\$382m	Record quarter per management; not a disclosed Accelera funding authorization.
Accelera segment sales in Q3 release	\$103m	+106%	Release-reported segment sales; includes demand and acquisition additions.
Accelera segment EBITDA	\$(114)m	\$(95)m	Segment-level loss, not product-level cash burn or project economics.

Source: Cummins November 2, 2023 earnings release (P1), accepted at 7:47:13 a.m. ET. The 2022 comparison includes only two consolidated months of Meritor following the acquisition. The company attributed Accelera sales growth partly to acquired businesses. Figures do not establish the performance of a particular Accelera technology.

Three pathways, different complements

Battery-electric powertrains depend on battery cost, charging capacity, duty cycle and vehicle integration. On September 6, Accelera, Daimler Truck and PACCAR announced a planned U.S. battery-cell joint venture. The partners expected to invest a total of \$2 billion to \$3 billion in a 21-gigawatt-hour factory, with each of the three vehicle and technology companies expecting to own 30% and EVE Energy 10%. The partners said the cells would initially use lithium iron phosphate chemistry for commercial trucks and industrial applications. The release described a plan subject to approvals and customary conditions. It did not disclose a final financing schedule, Cummins' actual cash contribution, utilization, cell cost or customer order commitments.

Hydrogen fuel-cell vehicles have a different set of dependencies. Their economics rely on fuel-cell and storage costs, vehicle utilization, delivered hydrogen price, station density and the hydrogen's production pathway. Electrolyzers add an upstream product line: they can produce hydrogen from electricity, but the economics depend on electricity cost and utilization as well as customer demand. At the cutoff, Cummins' releases described activity across electrolyzers, fuel cells, batteries and electrified power systems, but did not provide product-level profitability or adoption data.

Cummins had made other moves across these paths. Its Q2 release described an announced agreement with Tata Motors for a joint entity in India to develop and manufacture hydrogen internal-combustion engines and fuel systems, battery-electric powertrains and fuel-cell electric systems. That release also reported a Q2 Accelera EBITDA loss and described ongoing development costs in electric powertrains, fuel cells, electrolyzers and battery-supporting products. These announcements and expenses show activity and commitment, but they do not disclose product-level returns.

Regulation also affected the choices. EPA's 2022 final heavy-duty engine and vehicle rule tightened smog- and soot-forming pollutant standards beginning with model year 2027, across a broader range of engine operating conditions and useful life. It raised the importance of emissions compliance for the engine portfolio, but it did not require a zero-emission sales mix. The case cutoff excludes later greenhouse-gas rules and policy changes.

What the outside research can-and cannot-resolve

Heavy-truck customers do not all operate the same missions. A peer-reviewed probabilistic study of European heavy goods vehicles compared battery-electric, hydrogen fuel-cell and electricity-derived fuel pathways under different ranges, power prices, infrastructure and technology cost assumptions. It found that the most attractive options shifted by duty cycle and scenario; it did not establish a universal winner. A separate qualitative study of Scania and Volvo Trucks found that firms helped shape emerging truck markets through customer trials, supplier and infrastructure partnerships, changes to products and service, and engagement with other market actors. Its European OEM cases do not estimate Cummins' returns.

The literature suggests that building a product and building the system around that product are related strategic tasks. It does not tell Cummins whether battery or hydrogen investments should receive the next dollar, how many years Accelera can sustain losses or which customers will buy. At the cutoff, public data did not provide product-level gross margin, deployment conversion, uptime, customer total cost of ownership or delivered clean-energy prices by application.

Constructed paths for the decision team

The following are alternatives for analysis. They are not reported Cummins proposals or options known to have been considered internally.

1. **Concentrate on battery-electric components and scale partnerships.** Focus near-term development and commercialization on batteries, e-axes and integrated electric powertrains. Use the planned cell venture and OEM relationships to build production scale, while limiting new hydrogen commitments to existing obligations and customer-backed projects. This could concentrate engineering and manufacturing learning in markets with identifiable vehicle partners. It could also leave Cummins exposed if depot charging, range or duty-cycle economics limit addressable use cases, or if the company has insufficient share of the venture's value.
2. **Build the hydrogen system position.** Give greater priority to fuel cells and electrolyzers, using industrial demand, long-haul applications and partnerships to develop an integrated offering. This could position Cummins in applications where batteries face range, payload or charging constraints. It also depends on delivered hydrogen cost, infrastructure, electricity availability and customers willing to coordinate across the system. The public record does not show whether announced projects can become repeatable commercial demand.
3. **Maintain a broad portfolio with application-level gates.** Continue selected battery, fuel-cell, electrolyzer and adjacent engine work, but allocate additional resources in stages based on duty-cycle fit, customer commitments, partner delivery and product economics. This preserves options across an uncertain transition and can focus each technology on more promising segments. The trade-off is parallel cost and complexity; without clear milestones, a staged portfolio can become an open-ended commitment to every path.

Each path has dependencies outside Cummins. OEM partners can provide vehicle access and scale but also have their own technology strategies. Fleets and logistics customers must adapt routes and operations. Energy and charging infrastructure must be available where vehicles run. Cummins must decide where its existing engineering, manufacturing and service strengths add enough value to justify the investment.

The assignment

Prepare a recommendation to a simulated Cummins leadership team at the Q3 release timestamp. Select one path or define a specific combination. Specify the applications and customers that should receive priority, which technologies or projects should proceed to the next gate, and what evidence would trigger scale, redesign or pause. Identify the assumptions on energy price, duty cycle, partner commitments, customer adoption and policy that most affect the decision.

Your analysis must distinguish the joint venture's total planned investment from Cummins' contribution, keep the Q3 release's Accelera segment-sales measure in its reported scope, and distinguish announced projects from completed operations. The pre-call information set does not give a separate external-sales figure. Do not treat the Accelera segment loss as product-level cash burn or use call content or later information to decide which technology eventually won.

Discussion questions

1. What decision remains open for the hypothetical team? Which commitments or capabilities already shape its feasible choices?
2. What do Cummins' Q3 results establish about its position and Accelera's commercialization stage? What do they not reveal?
3. Compare the battery-focused, hydrogen-focused and gated-portfolio approaches. What customer applications and external complements matter most under each?
4. What evidence should be required before Accelera expands manufacturing or product investment? Define measures, denominators and decision gates.
5. Recommend a path. What would make you change your recommendation?

Sources and information boundary

The information cutoff is November 2, 2023, 7:47:13 a.m. Eastern Time. Company and regulatory sources are listed in the source register. The literature review describes the academic designs, findings and transfer limits; evidence extraction identifies financial scopes, locators and evidence gaps.

The leadership team and alternatives are constructed for teaching. No internal Cummins deliberation or post-cutoff result is represented.