



Adventure Grid Network

Battery circularity and community resilience

Meeting with
Grant Garrison

Senior Director, Corporate Social Responsibility

August 5, 2026



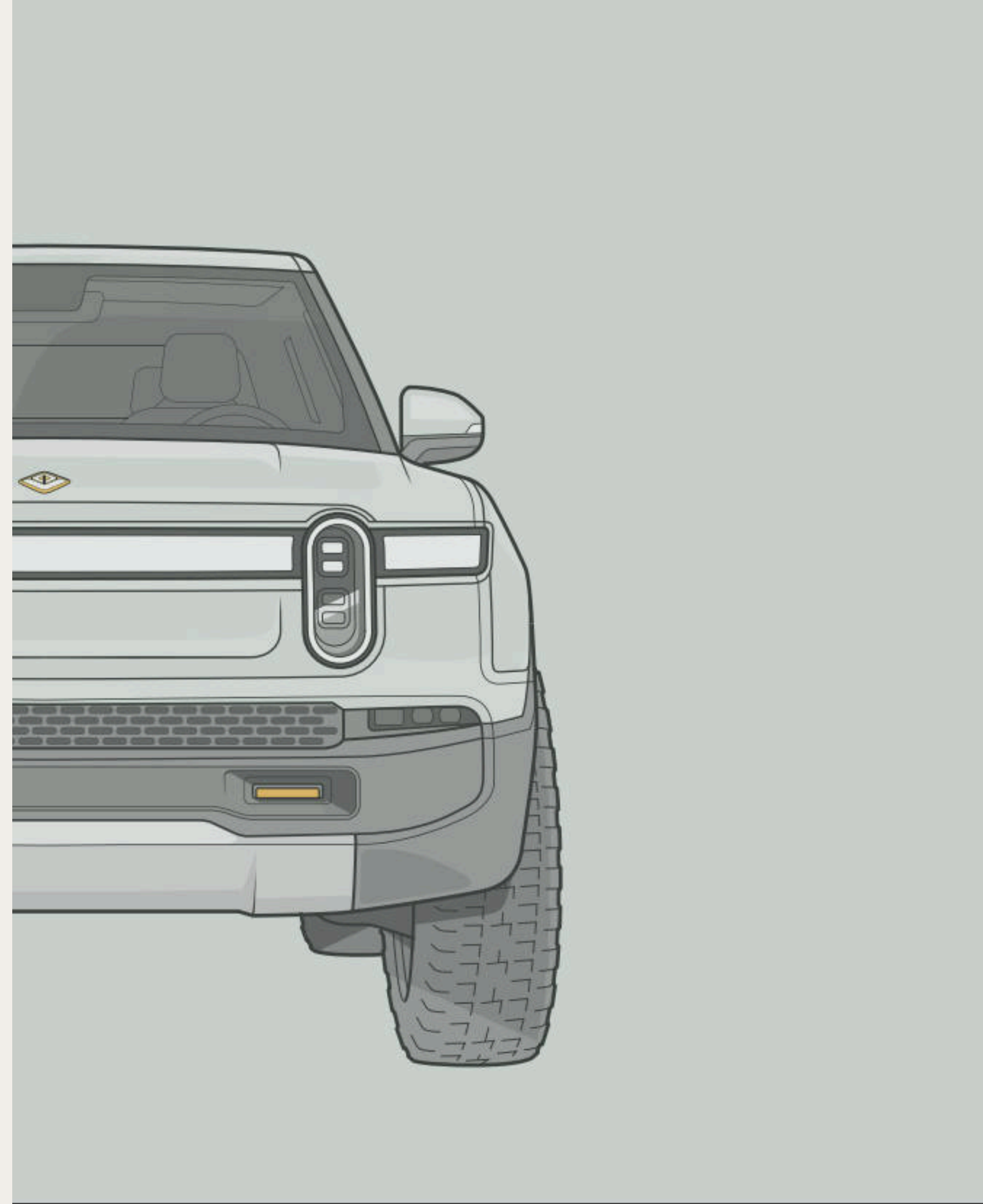
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Introduction

01



Introduction

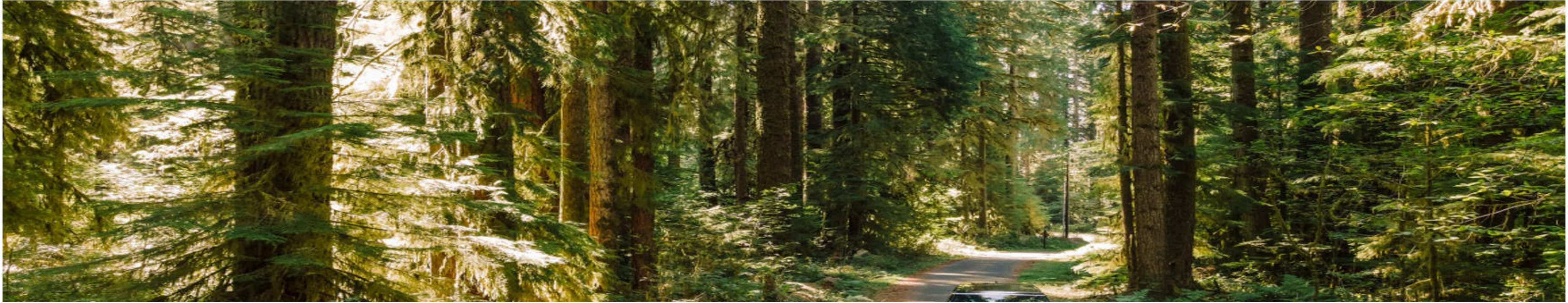
Adventure Grid Network began where Project Adventure ended. That earlier research explored how Rivian could make sustainable travel more accessible through its Adventure Network, charging infrastructure, route-planning tools, strategic partnerships, and community engagement.

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- 06** Project Adventure: research background
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R I V I A N

Where this began



Adventure Grid is a concept for deploying qualifying second-life Rivian battery packs as backup power for community facilities, before those packs complete their final recycling journey. It began as a question rather than a proposal, and it is being brought to Rivian in that form.

The question came out of a year of research into how Rivian approaches responsibility. What became clear is that the company already treats a battery as something with a life beyond the vehicle it was built for.

Rivian already operates second-life battery storage at its Normal facility and already recovers batteries from production processes and test vehicles for recycling. The infrastructure, the partnerships, and the stated commitment are all in place. This proposal does not ask Rivian to begin reusing batteries.

It asks a narrower question. Between the moment a qualifying pack leaves vehicle service and the moment it is broken down for materials, there is a window measured in years. Today that window is being used to serve industrial hosts.

We believe the same window could serve a school, a rural clinic, or an emergency shelter first, and that the case for doing so is strongest for one specific chemistry rather than for retired packs in general. That distinction is the substance of this document, and it is what separates the concept from a well-meaning request to donate hardware.

The argument is not that community resilience is more deserving than a factory. It is that the packs best suited to a community setting are also the packs with the weakest case for immediate recycling.



Project Adventure: research background

The Adventure

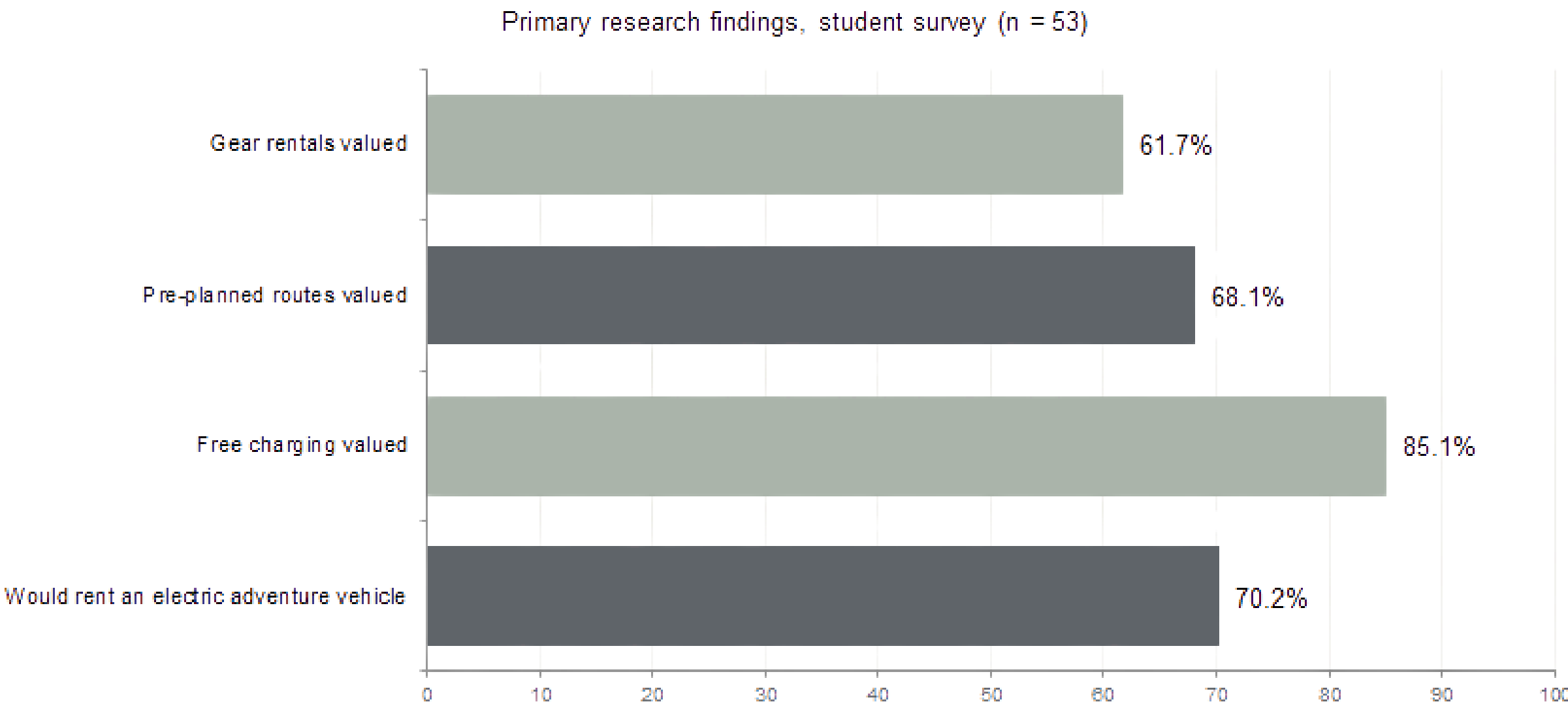
Project Adventure proposed a rental and membership program built on first-generation R1T and R1S vehicles, designed to make sustainable adventure travel accessible while funding conservation.

The Research

We researched the concept over ten months using four primary and four secondary methods, and organized it under a five-part framework: Technology, Responsibility, Accessibility, Infrastructure and Loyalty.

The Finding

The central finding was that Rivian’s position as a challenger brand rests on bridging electric mobility and the outdoors through credible and measurable corporate responsibility.



From adventure to resilience

Project Adventure gave first-generation Rivian vehicles a second life on the trail. It left us with a question it could not answer: when even a second-life Rivian finally reaches the end of the road, what happens to the most valuable thing left in it?

The answer is the battery, and it retires with an estimated 70 to 80 percent of its original capacity remaining.

Adventure Grid applies the same instinct one layer deeper into the lifecycle. Extend the useful life, serve the mission, and do so for the component that outlives the vehicle itself.



Strategic Oppportunity

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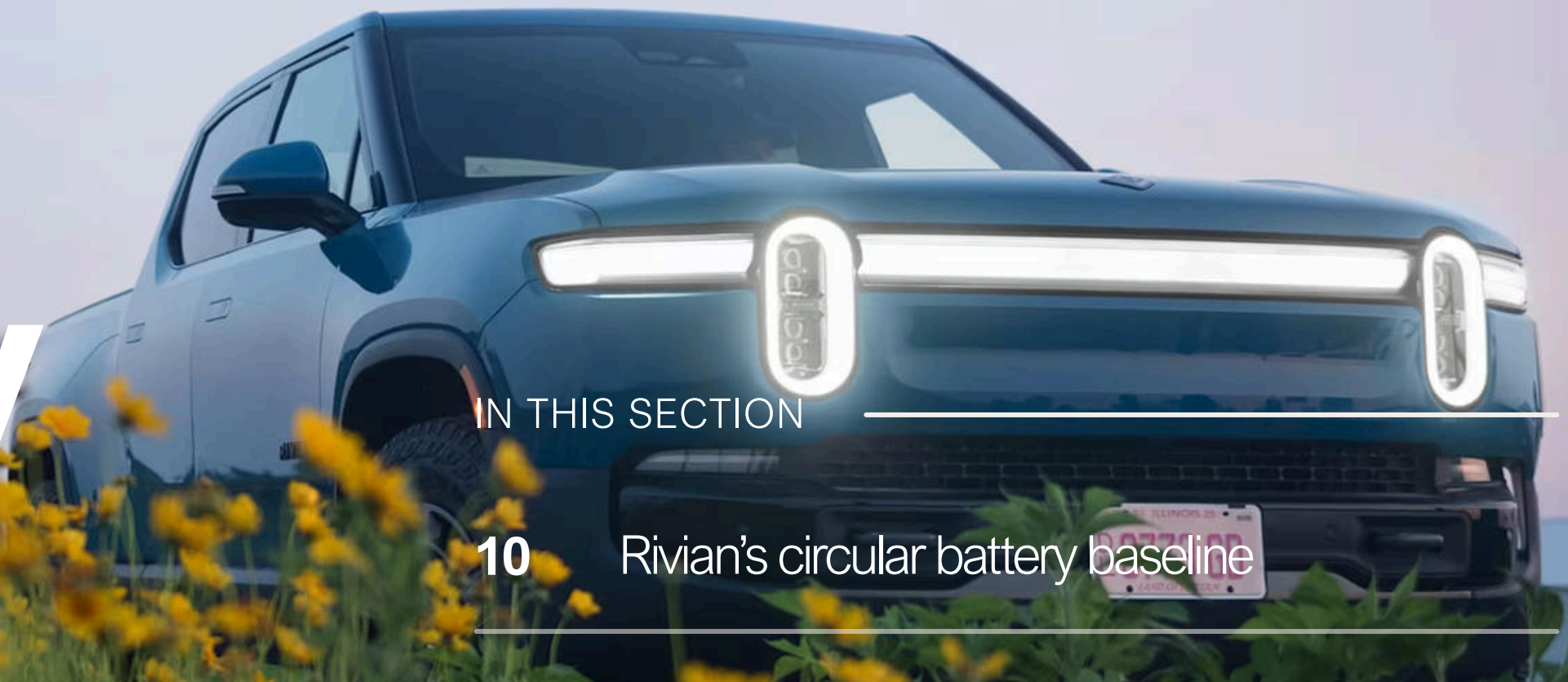


Strategic Opportunity

This section describes the baseline in Rivian's own terms, then identifies the one place the current model does not reach. The gap is not a failure of intent. It is a consequence of economics, and it is the reason a philanthropic structure is required rather than a commercial one.

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- 11** The opportunity by the numbers
- 12** Access to second-life storage



Rivian's circular battery baseline



Rivian has already demonstrated that retired battery packs can continue to deliver value as stationary energy storage. In April 2026, Rivian and Redwood Materials commissioned a second-life battery energy storage system at the Normal, Illinois plant, drawing on more than 100 retired Rivian packs to provide approximately 10 megawatt-hours of dispatchable energy.

The system is designed to reduce peak demand charges and to add resilience during periods of grid stress. It is not a demonstration project. It is operating infrastructure supporting an active manufacturing facility.

The recycling pathway is equally established. Rivian recovers batteries and components from its production processes at Normal, together with those recovered from test vehicles and other vehicles not in the marketplace, and sends them to a domestic battery recycler. The company is also growing the capability of its remanufacturing centre in Shepherdsville, Kentucky, which covers critical components including battery systems.

It asks a narrower question. Between the moment a qualifying pack leaves vehicle service and the moment it is broken down for materials, there is a window measured in years. Today that window is being used to serve industrial hosts.

The current model directs second-life value toward industrial hosts, and that is a reasonable commercial priority. Factories and data centres have the capital, the technical staff and a measurable return on stored energy, which makes them the natural first customers for a category still establishing its economics.

The argument is not that community resilience is more deserving than a factory. It is that the packs best suited to a community setting are also the packs with the weakest case for immediate recycling.

We are not proposing to redirect packs away from Rivian's commercial arrangements. We are asking whether a defined qualifying stream could serve a community mission first.

The opportunity by the numbers

Every figure on this page is drawn from Rivian's own reporting, from announced industry deployments, or from published research. None of them are projections of our own.

2030

by which year Rivian aims to implement a 360-degree model to design, keep in use, recover, and reuse vehicles and key materials



0

announced second-life deployments dedicated to community resilience facilities anywhere in North America

100+

Retired Rivian packs are already redeployed as stationary storage at the Normal, Illinois plant

10 MWh

of dispatchable second-life capacity in that deployment, used for peak shaving and grid resilience

70–80%

of original capacity remains in an electric vehicle battery at the point it retires from vehicle duty

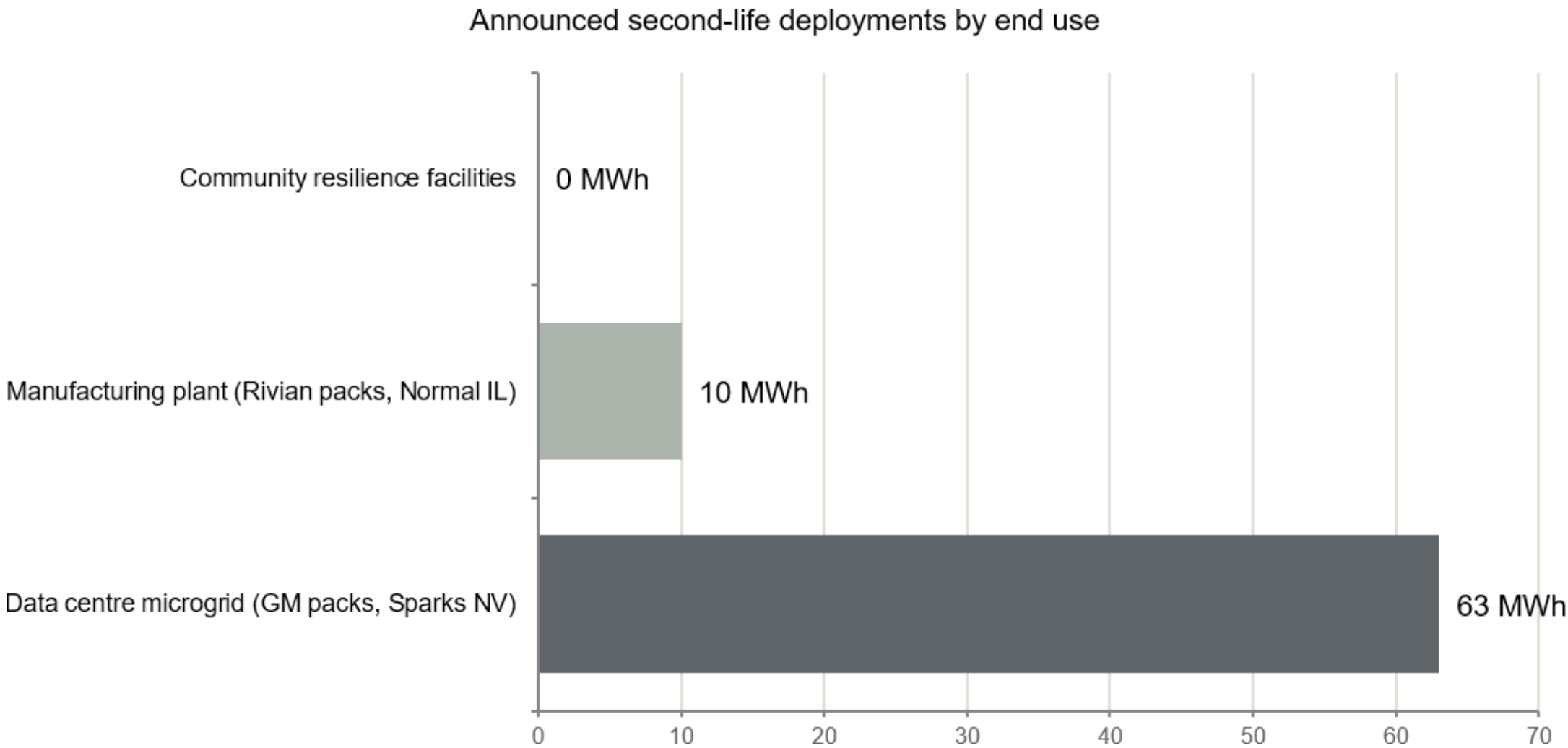
63 MWh

The largest second-life microgrid in North America, built from retired packs to serve a data center

20+ GWh

of batteries received each year by Redwood Materials, Rivian's recycling and second-life partner

Access to second-life storage



Schools, rural health clinics, tribal facilities and emergency shelters experience an outage as a safety event rather than a cost line. A clinic that loses refrigeration loses medication. A shelter that loses power during a multi-day disruption stops functioning as a shelter at the moment it is most needed.

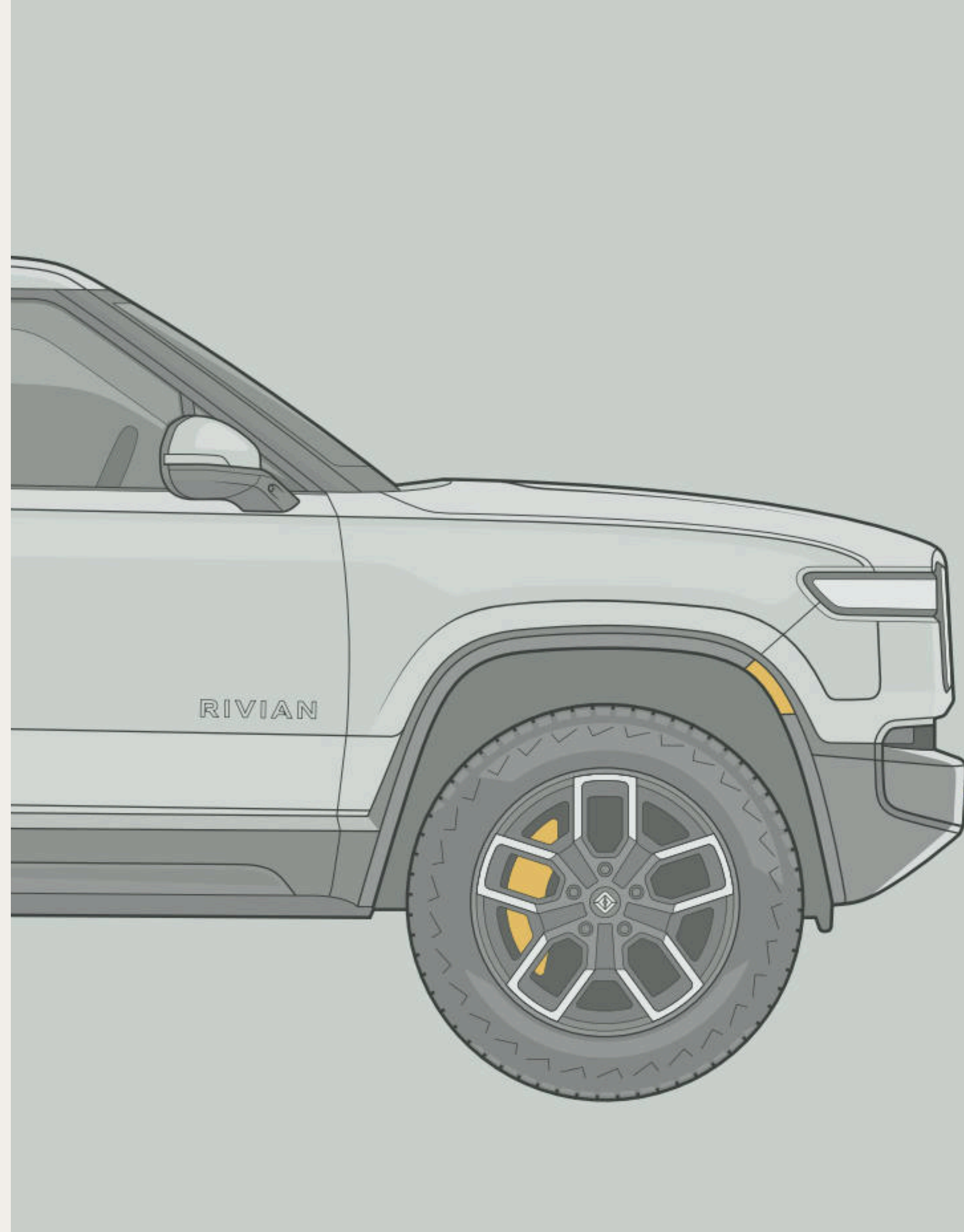
These same facilities lack the balance sheet to purchase storage at commercial rates. There is no peak demand charge to arbitrage against, no operational saving large enough to finance the asset, and rarely any technical staff to manage it. The market now forming around second-life batteries will not reach them on its own, because the return that makes a data centre an attractive customer simply does not exist here.

We believe this is not a market Rivian would be entering in competition with its existing partners. Commercial second-life demand is growing faster than supply, which means a community programme would not be bidding against Redwood's pipeline for the same packs. It would be drawing on a defined qualifying stream to serve hosts that the pipeline was never designed to reach.



Battery qualification

03





RATED LOAD 2000 LBS.

Battery Qualification

This is the core of the proposal, where outside perspectives may miss issues. Not all retired packs suit community reuse; choice should be based on chemistry, not sentiment. Lithium iron phosphate packs have low recoverable mineral value and a wider safety margin, making them suitable for reuse. Nickel-rich packs, however, should be sent directly for material recovery.

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Zooming in: Battery streams



Pipeline 1

Pre-market packs

Packs recovered from production processes, from validation and test vehicles, and packs that did not meet vehicle specification. Rivian's own reporting confirms this stream exists and is already routed to a recycler.

The distinction that matters is why a pack left the line. A pack withdrawn for a genuine safety defect is not a candidate. A validation pack, or one rejected for being marginally out of specification, may never have been stressed in service and can retain close to full capacity. Screening on cause rather than on origin is what makes this stream credible. **These packs are available today and at volume, independent of the age of the customer fleet.**

Pipeline 2

Retired vehicle packs

Packs recovered at genuine end of vehicle life, retiring with an estimated 70 to 80 percent of original capacity remaining after years of real-world duty.

This is the stream most people picture, and over time it becomes the larger of the two. In the near term, it is the thinner one, because the customer fleet is young and the standard-range trim using the relevant chemistry has since been discontinued. That timing is why the pre-market stream matters first. **These packs grow steadily as the fleet ages and become the dominant stream over time.**



“In 2022, we recovered and sent batteries and components from our production processes in **Normal**, as well as those recovered from test vehicles and other vehicles not in the marketplace, to a domestic battery recycler.”

Rivian 2022 Impact Report, page 23



Zooming in: Battery chemistry

Rivian’s own materials disclosure already draws the distinction this concept depends on. The 2022 Impact Report states that the company uses nickel-cobalt-aluminium oxide batteries to deliver energy density and range, and lithium iron phosphate batteries for their life cycle

That sentence contains the argument. LFP packs hold little nickel or cobalt, which means recovering their materials returns comparatively little value, and industry analysis consistently finds them better suited to repurposing than to immediate recycling.

The same chemistry is the safer one to use in a school or shelter, with a higher thermal-runaway threshold and no oxygen release during decomposition. Safety and recycling economics point in the same direction, which is unusual and worth acting on.

Topic	Lithium iron phosphate (LFP)	Nickel cobalt aluminium oxide (NCA)
Used by Rivian in	Standard packs and commercial delivery vans	Large and Max packs
Thermal runaway onset	Approximately 270 °C, with no oxygen release under decomposition	Approximately 150 to 210 °C, a narrower margin
Cycle life	Approximately 3,000 to 6,000 cycles to 80% retention	Approximately 1,500 to 3,000 cycles
Critical mineral value	Low, with little nickel or cobalt available to recover	High, as nickel and cobalt drive recovery economics
Indicated path	Community second life, followed by material recovery	Direct to material recovery

Adventure Grid does not divert high-value material away from recovery. It targets the stream where the case for immediate recycling is weakest and the safety case for siting a system at a school or a shelter is strongest.



The battery value cascade

One battery, three missions. Adventure Grid adds the missing middle and removes nothing from the end. The concept is built around maximising the total value drawn from a pack across its whole life rather than at any single point in it.

The sequence matters. Community second life is not an alternative to recycling; it is a stage that precedes it. Every pack still reaches a recycling partner, and the critical minerals inside it are still recovered to produce future battery materials.

What changes is that the years between vehicle retirement and material recovery are put to work. For LFP packs those years cost almost nothing in deferred recovery value, because the materials held back are the least valuable to reclaim.

01

Mission One

Vehicle

The pack powers a Rivian, the application it was engineered for.

02

Mission Two

Community resilience

Following safety validation and qualification, packs suited to lower-demand applications are used to support community resilience projects.

03

Mission Three

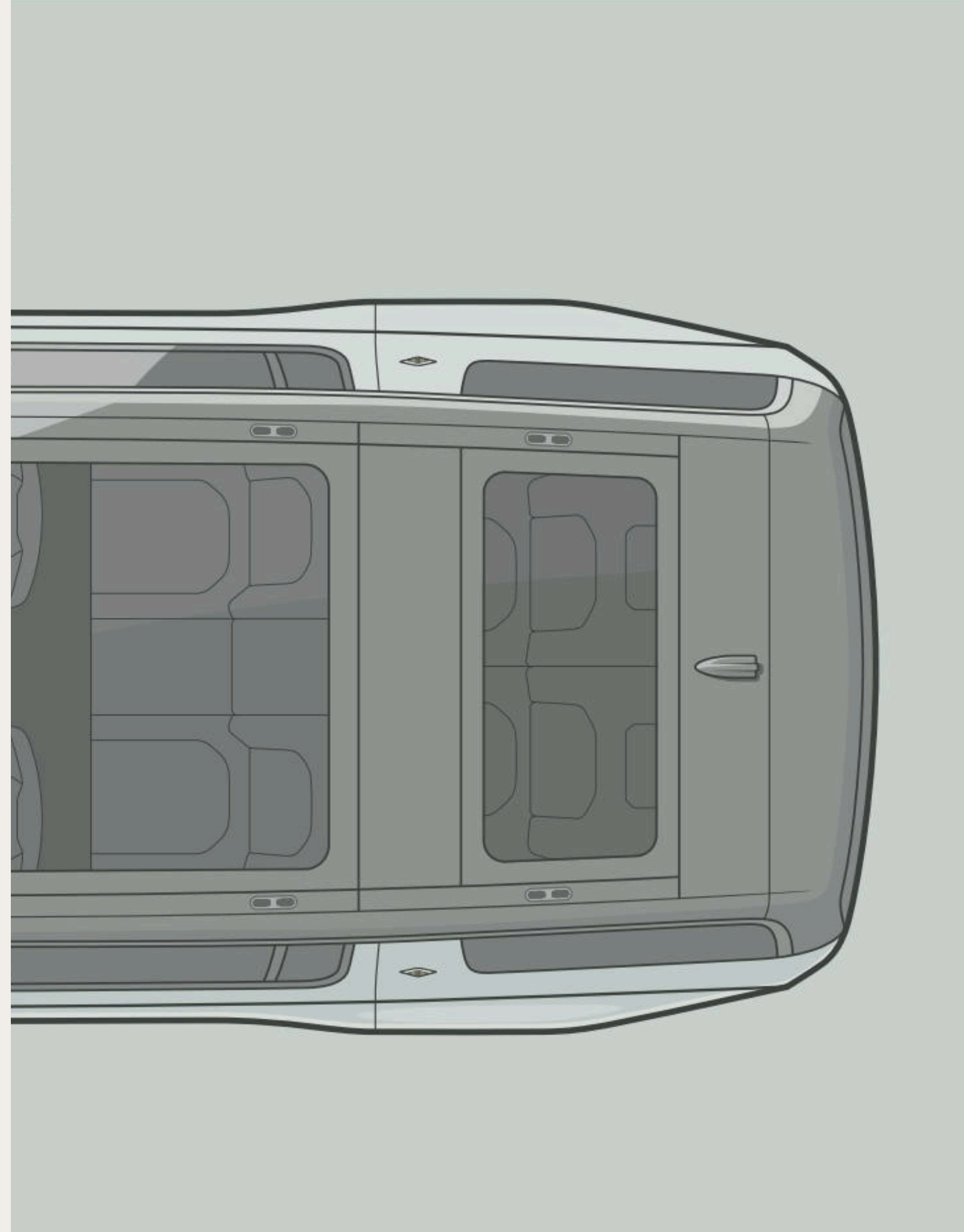
Material recovery

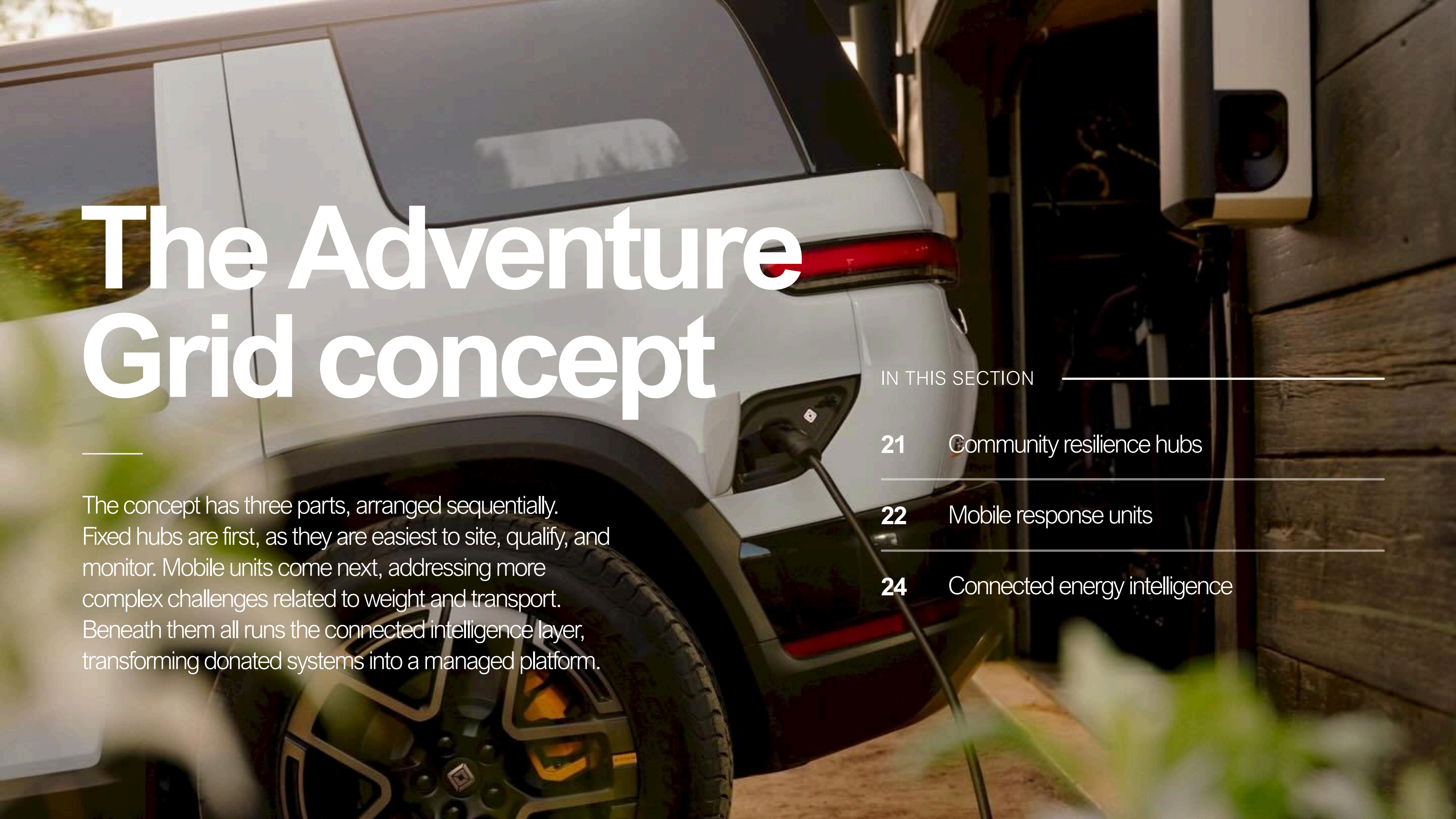
Critical minerals are recovered through recycling partners to produce future battery materials.



The Adventure Grid concept.

04





The Adventure Grid concept

The concept has three parts, arranged sequentially. Fixed hubs are first, as they are easiest to site, qualify, and monitor. Mobile units come next, addressing more complex challenges related to weight and transport. Beneath them all runs the connected intelligence layer, transforming donated systems into a managed platform.

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Community resilience hubs

Permanent second-life installations at the facilities a community cannot afford to lose.

Each hub provides backup power for essential services during an outage, and load-shifting savings across the rest of the year. The second function matters more than it first appears. A system that only earns its keep during emergencies is a system nobody maintains between them; one that quietly reduces a monthly bill has a reason to be checked, serviced and kept ready.

Sizing would be modest by commercial standards. The aim is not to run a building at full load indefinitely, but to hold the critical circuits—refrigeration, lighting, communications and device charging—through a disruption measured in days rather than hours.

Candidate hosts share a profile: they serve people who have nowhere else to go during a disruption; they operate on constrained budgets; and they sit outside the commercial storage market.

Schools and community centres act as congregation points. Rural clinics depend on refrigeration and lighting that cannot lapse. Tribal facilities align with priorities the Rivian Foundation already supports. Shelters require sustained operation at the point the grid is least reliable.

Site selection would begin with existing partnerships rather than an open application.\





Mobile response units

Modular second-life systems sized for transport by Rivian vehicles to disaster-affected regions.

This is the component that no pure-play energy company can replicate. It requires adventure-capable vehicles, battery lifecycle expertise and a mobile service network inside a single organisation—an unusual combination, and one Rivian already holds.

Where a fixed hub protects a known building, a mobile unit answers a different problem: the location of the next disruption is not known in advance. Hurricanes, wildfires and floods remove power in patterns no permanent installation can anticipate, and the facilities that end up mattering most are often improvised.

Potential applications include medical refrigeration, water pumping, emergency communications, lighting and device charging, temporary command posts, and shelter operations.

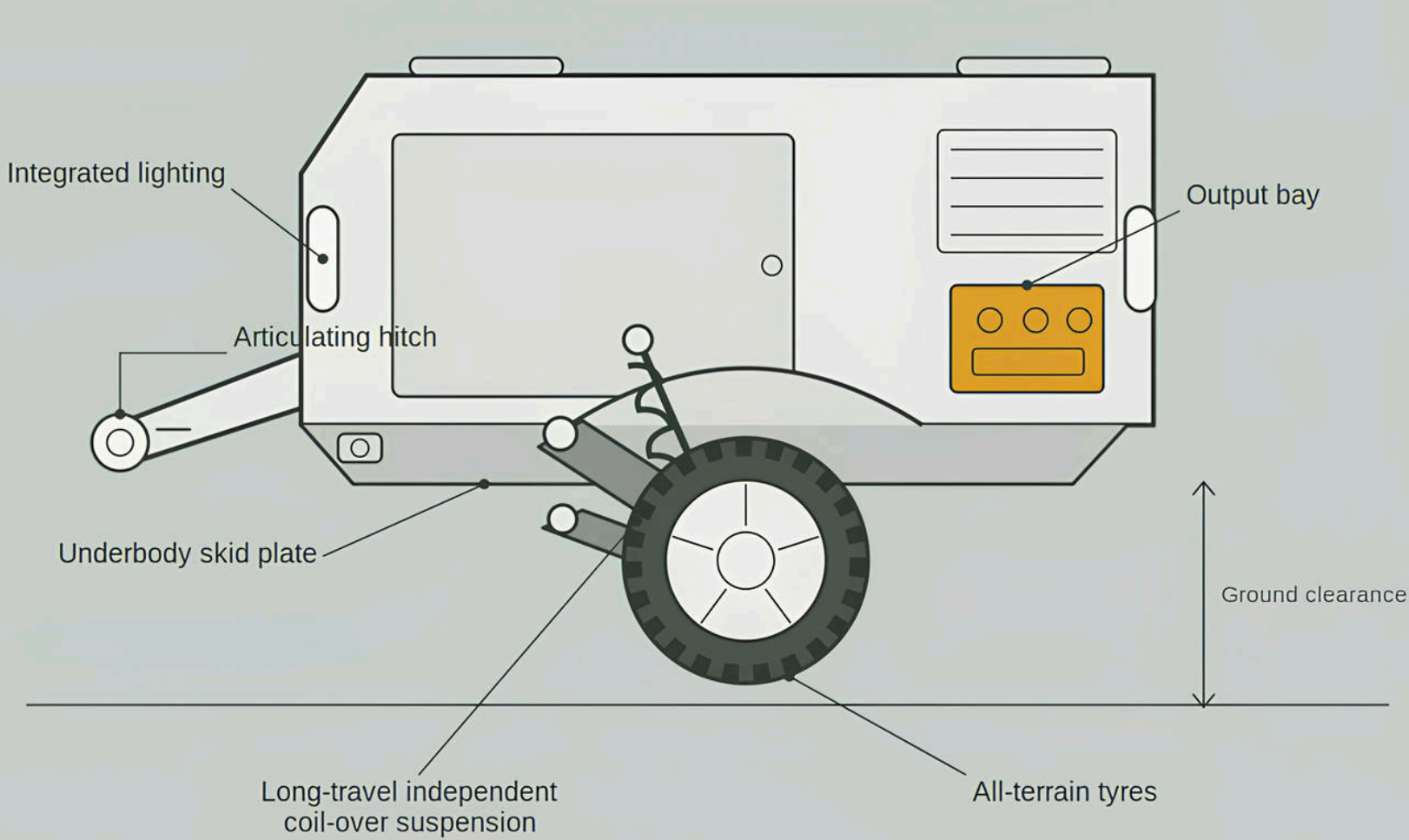
An open engineering question sits underneath all of it. Resilience-grade packs are heavy, and a unit large enough to matter may not be a unit a vehicle can reasonably carry. Unit sizing, mounting, securement and transport limits require validation before any capability is claimed, and we would rather state that than present a specification we cannot support.

This component would be tested last, after a fixed hub has proven the approach.



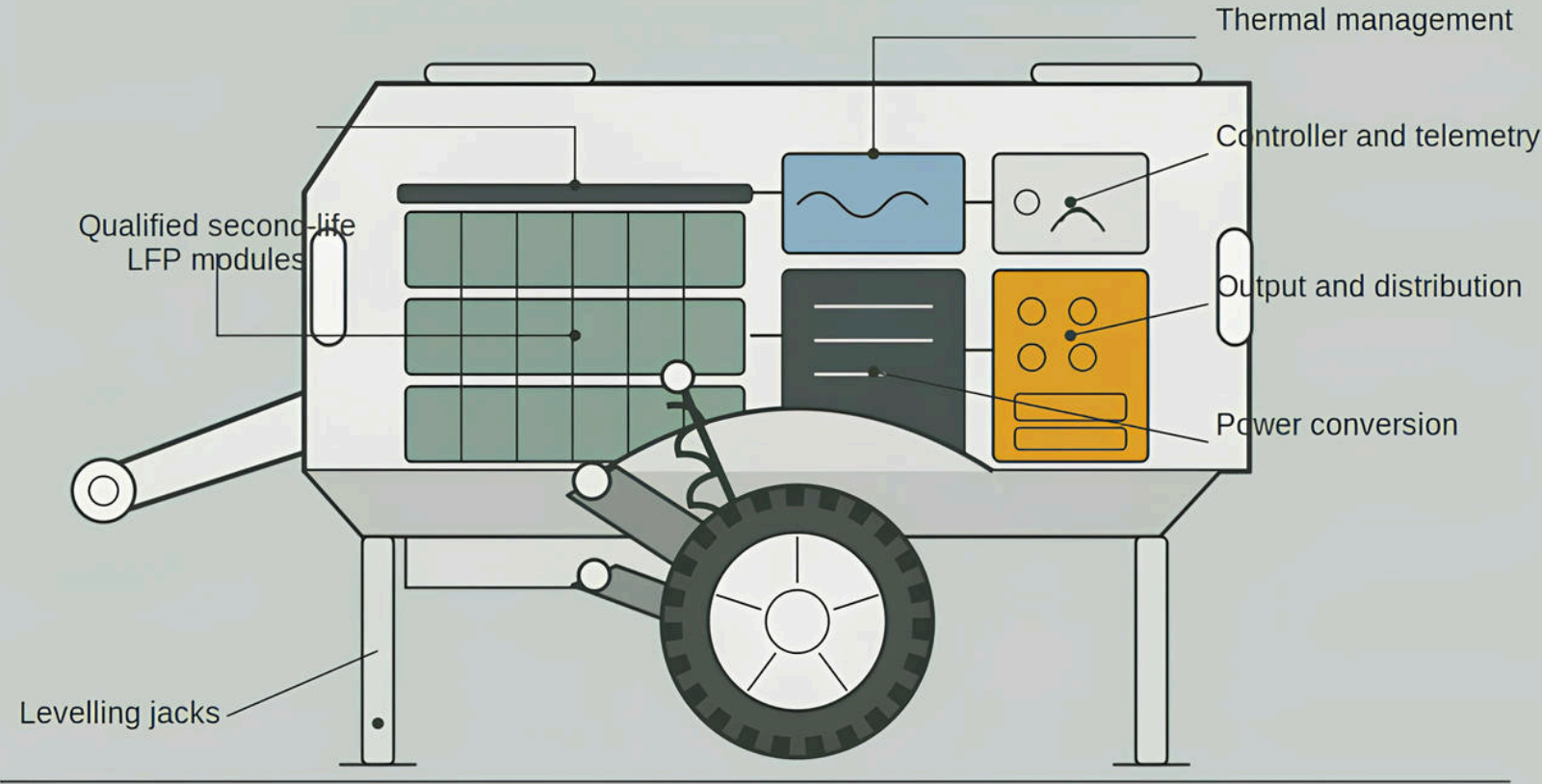
Anatomy of a mobile response unit

Adventure Grid — concept configuration. Sized to reach sites where the road is part of the problem.



Transport configuration

Sealed and hitched, towed behind an R1T or R1S over unimproved terrain.



Deployed configuration

Levelled on site, access panel open, output live.

Connected energy intelligence



Every deployment joins a connected network rather than standing alone as isolated hardware. This is what separates a managed platform from a donation of equipment, and it is the capability Rivian is uniquely positioned to contribute, because the software layer already exists across the vehicle fleet.

Remote monitoring provides live state of health and charge across every deployment. Predictive maintenance allows intervention before a community facility loses its backup. Deployment coordination directs mobile units toward areas of greatest need. Lifecycle tracking maintains chain of custody from vehicle through second life to material recovery.

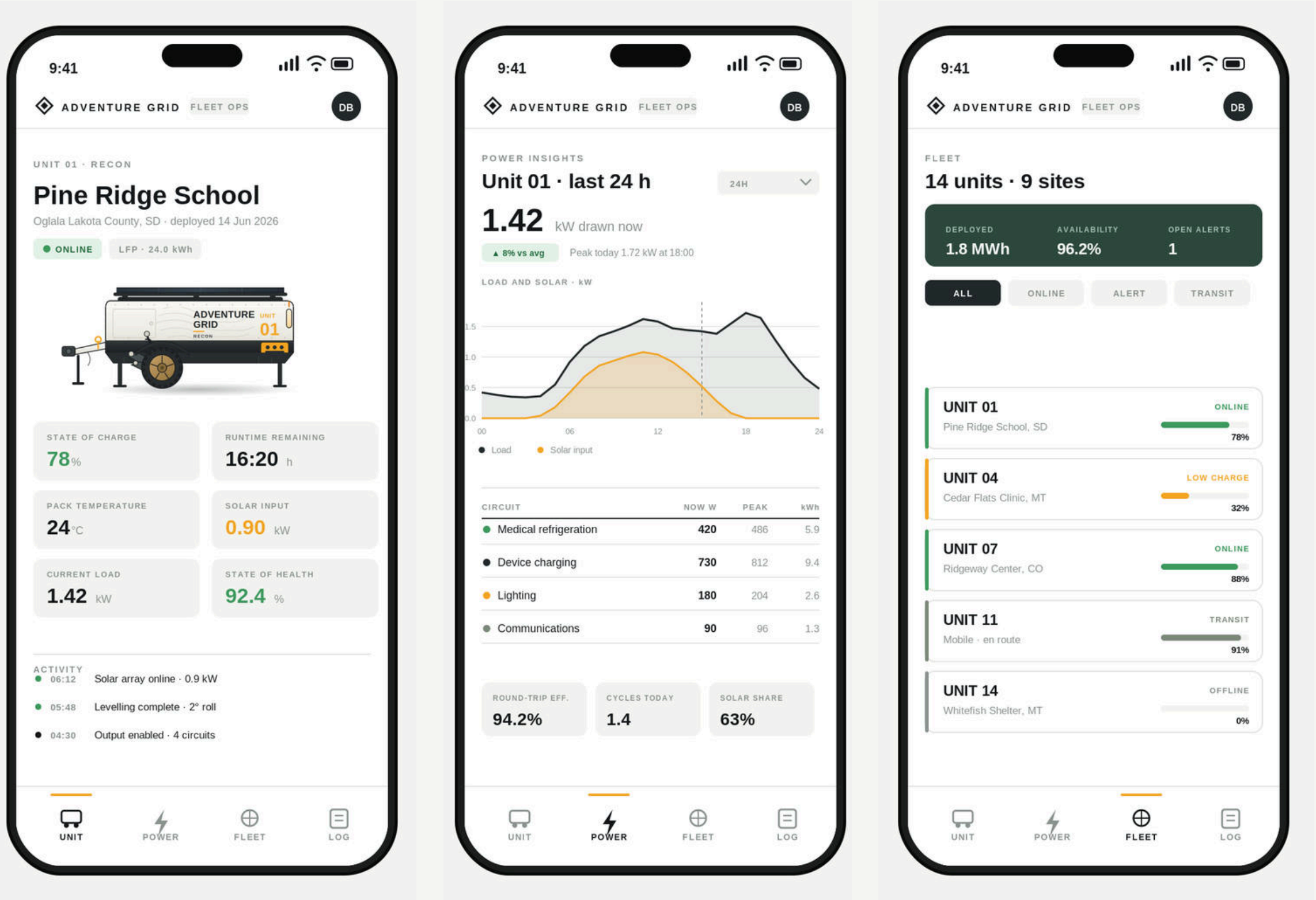
The value extends beyond operations. The binding constraint on the entire second-life sector is the absence of real-world valuation data and standardized health-assessment procedures for repurposed packs. Buyers cannot price what they cannot assess, and that uncertainty is what keeps the category small.

Rivian's connected fleet data is that missing asset. A pilot would generate multi-year performance records for qualified packs under real cycling conditions, in varied climates, at known sites—a dataset with value to Rivian independent of the community mission, and the strongest practical argument for running the pilot at all.



Adventure Grid, in operation

Concept operator interface built on Rivian’s connected-vehicle platform. Illustrative views show how unit monitoring, energy insights, and fleet visibility could work in practice.*



Unit

Single-deployment telemetry, including state of charge, runtime, pack temperature, solar input, load, and state of health, with a live activity log.

Power insights

Load and solar performance over time, with circuit-level demand, daily energy use, peak usage, and round-trip efficiency.

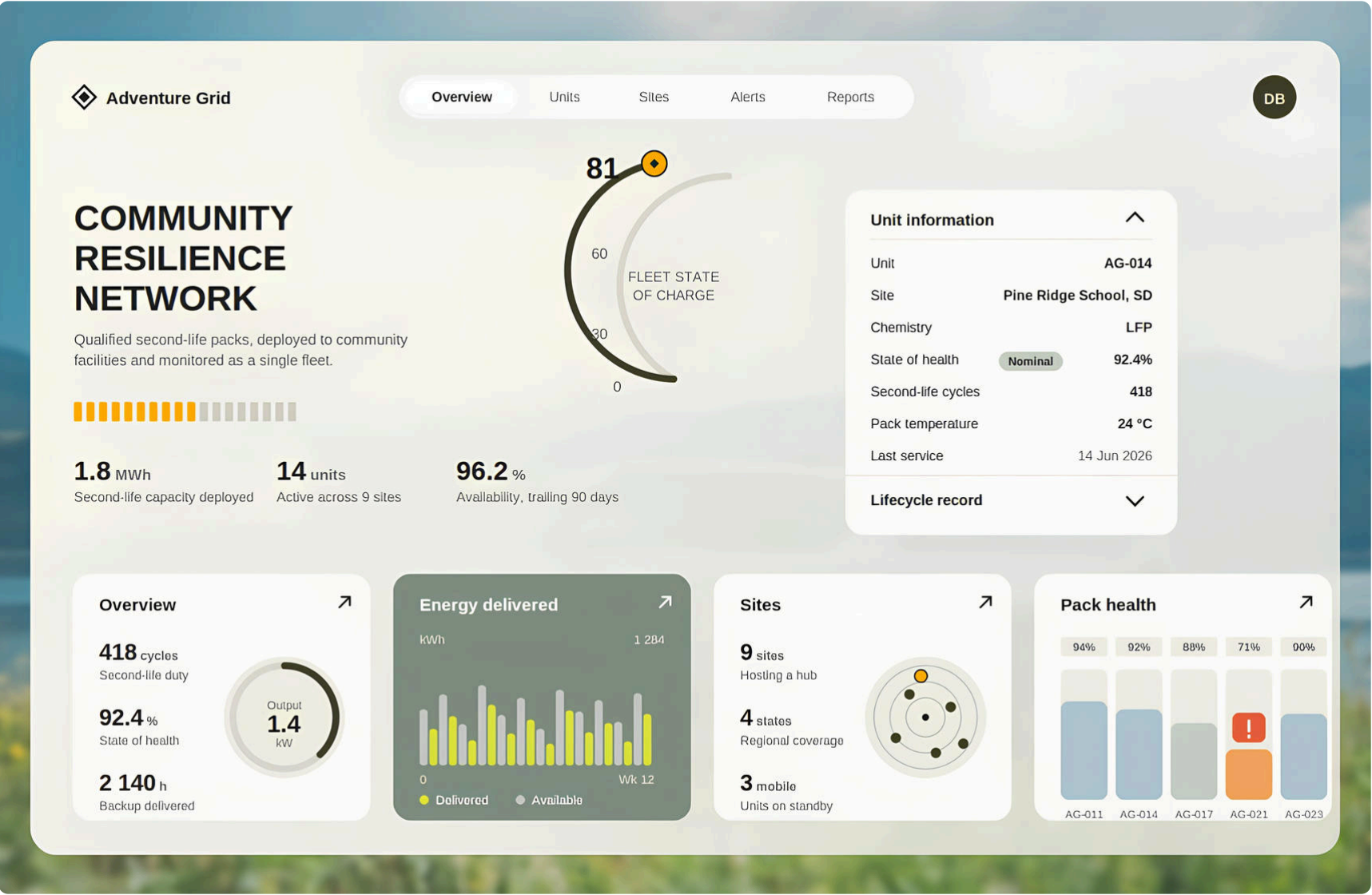
Fleet

Network-wide visibility across deployments, showing unit status, availability, state of charge, and open alerts by site.



One network, one record

Concept operations view. The same monitoring layer, read as a fleet rather than as a single site. Values shown are illustrative and do not represent a deployed system.



Fleet state

Capacity deployed, units active and availability across every site, reported continuously rather than surveyed periodically.

Pack record

State of health, second-life cycles and temperature for each pack — the valuation dataset the sector currently lacks.

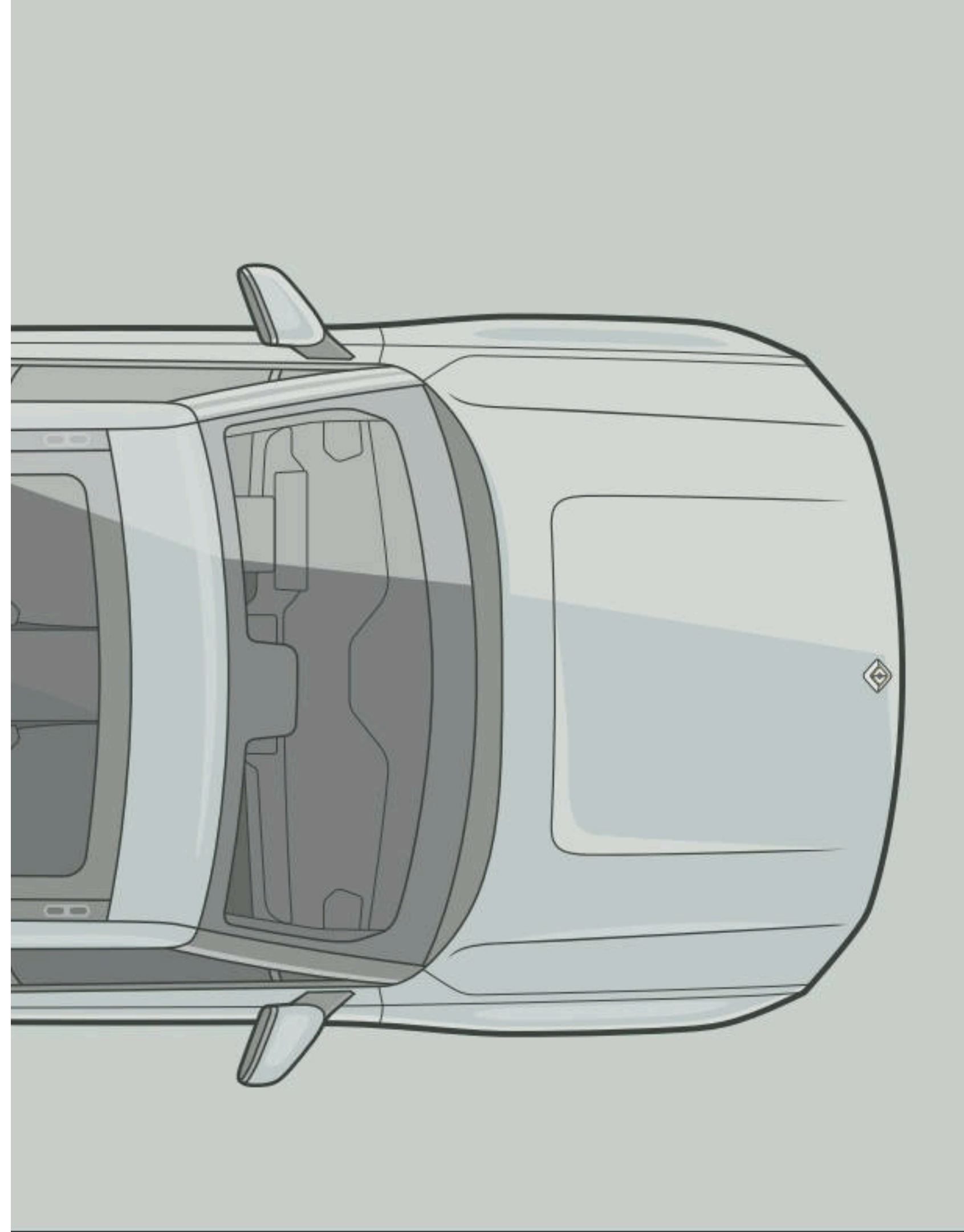
Exception handling

A pack falling outside nominal range surfaces before a community facility loses its backup.



Validation and next steps

05



Validation and next steps

Second-life storage is currently operational at a commercial scale, including at Rivian's facility, so the focus of this proposal is not on proving the technology. What remains to be tested is the application for community hosts and the funding model to support it. This section will outline similar projects, a small-scale three-phase pilot, success measures, lingering questions, and our specific request.

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Comparable deployments

The technology and the business model are established. Second-life storage is operating today at commercial scale, under commercial scrutiny, with partners whose reputations depend on it performing.

That matters for how this proposal should be read. Adventure Grid is not asking Rivian to prove that repurposed packs work; that question has been answered by the projects below.

What remains untested is the application to community hosts and the funding structure that would support it. The unserved segment, not the underlying technology, is where the genuine uncertainty sits.

Rivian and Redwood

More than 100 retired Rivian packs provide approximately 10 MWh of dispatchable storage for peak shaving at an operating manufacturing plant. Establishes that Rivian packs qualify technically and that the partnership to handle them already exists.

GM and Redwood

A 63 MWh second-life microgrid, the largest of its kind in North America, supporting a data center. Demonstrates that the category now operates at utility-relevant scale and attracts buyers who can pay commercial rates.

Smartville, UC San Diego and EPRI

Second-life packs paired with solar, validated for building resilience and load shifting at sites with critical continuous power needs. The closest existing analogue to a community resilience hub, and evidence that the building-scale application works.

B2U Storage and Waymo

Repurposes packs without requiring full teardown, materially lowering the cost and complexity of reuse. Relevant because teardown labour is the single largest obstacle to second-life economics at community scale.



A phased pilot approach



Phase 1

Establish

A single resilience hub with one school, tribal or community partner, ideally an existing Rivian Foundation grantee so that the relationship is already in place. Qualified LFP packs, a monitoring connection, a maintenance agreement, and one defined success metric.

Phase 2

Evaluate

Technical performance, battery health under real cycling conditions, maintenance burden, and community outcomes should be assessed across a defined window rather than reported anecdotally. The evaluation should be capable of returning a negative result.

Phase 3

Extend

Success of the fixed application has led to mobile deployment testing in more regions with our emergency-response partner, enhancing emergency resilience and response. Feedback will inform further improvements.



Measuring our impact

Circularity performance will be measured through the number of battery packs successfully repurposed, the additional years of useful battery life created, and the total megawatt-hours of second-life energy capacity deployed across the network.

Community impact will be evaluated by the number of critical facilities supported, the residents served by each deployment, and the total hours of reliable backup power delivered during outages and emergencies.

These measures will demonstrate how Adventure Grid strengthens local resilience by improving energy continuity for essential services, expanding access to dependable backup power, and supporting communities during outages, emergencies, and other periods of grid disruption.



Environmental

- Materials recovered after second life;
- Renewable generation paired; and
- Diesel generator hours displaced

Engagement

- Employee volunteer participation;
- Community partnerships formed; and
- Customer engagement opportunities.



Proposed next steps

A working session

- 01 Time with the battery lifecycle team to test the feedstock and chemistry thesis against how packs are qualified in practice.
-

A view on a scoping study

- 02 Whether a short study, covering stream selection, one candidate host site and a preliminary lifecycle assessment, is worth running.
-

A direction

- 03 If this belongs with another team at Rivian, an introduction to the right people.





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From powering adventure to powering resilience.