THE HIDDEN FINANCING BEHIND HARDWARE STARTUPS

Who finances the assets, who owns them, and who absorbs the loss?

Principal cases	Waymo | Anduril | Serve Robotics | CoreWeave | Northvolt
Report type	Comparative financial investigation with capital-stack, asset-ownership, cost, utilization, residual-value and downside models
Evidence basis	Supplied evidence package as primary record; limited current verification where material
Evidence cut-off	22 July 2026
Companion files	Calculation workbook and five legal-entity / capital-stack diagrams
Main narrative	Approximately 9,700 words, excluding tables and appendices

Prepared as an evidence-grounded analysis. Amounts remain committed, funded, drawn, received, conditional, or modeled only as labeled.

Contents

Companion workbook tabs provide the full source ledger, assumptions, formulas, legal-entity scope, downside scenarios, loss waterfalls and findings classifications.

Executive findings

A hardware startup does not have one capital stack. It has at least three. The corporate stack pays for engineers, software, losses, and working capital. The asset stack pays for vehicles, robots, GPUs, production tools, buildings, charging equipment, and inventory. A third stack can sit around the first two: customer deposits, public incentives, supplier terms, strategic warrants, guarantees, and parent-company services. Fundraising announcements usually describe only the first stack. The economic outcome is often determined by the other two.

The five principal cases in this investigation use similar words - scale, capacity, deployment, manufacturing - but finance physical growth in different ways. Waymo is a parent-funded platform. Alphabet can absorb years of development expense and fleet deployment without forcing each city or vehicle pool to meet an external lender's borrowing base. Serve Robotics is a venture-equity-funded operator that has also used secured equipment financing and equity-linked supplier support. CoreWeave is an asset-financed operator whose GPUs, customer contracts, leased campuses, borrower subsidiaries, and guarantees form an infrastructure-finance system. Anduril's Ohio factory is an equity-funded industrial project with material public support, but the public record does not yet reveal whether equipment leases, progress payments, or construction finance sit below the corporate level. Northvolt was the project-financed manufacturer: customer offtakes and public guarantees made a $5 billion facility possible, but operating failure turned legal ring-fencing into a creditor-allocation exercise rather than a protection against economic loss. [EP-01; WY-01; AN-01; SR-01; CW-01; NV-01]

The strongest numerical contrast is between visible equity and economically supporting assets. Waymo announced $21.6 billion of equity in its 2024 and 2026 rounds, with Alphabet funding the significant majority of the later round. That capital is not a fleet ABS and does not automatically expand with each new vehicle; it is parent and investor risk capital. CoreWeave reported $21.6 billion of debt principal at 31 December 2025, $8.2 billion of operating lease liabilities, $254 million of finance lease liabilities, and $8.2 billion of deferred revenue. Its FY2025 capital expenditure was about 2.01 times revenue. Serve's FY2024 capital expenditure was about 5.66 times revenue, yet the robot fleet generated too little disclosed fleet-linked revenue to cover the modeled annual burden of its original Farnam financing. Anduril's $310 million JobsOhio grant equals 34.0% of its $910.5 million minimum ten-year capital-investment commitment before counting the tax credit or requested site support. Northvolt entered Chapter 11 with roughly $30 million of cash against $5.8 billion of debt after announcing a $5 billion non-recourse project facility less than a year earlier. [WY-01; CW-01; SR-01; AN-01; NV-02; MOD-01]

The report reaches five findings.

First, financing can reduce the equity check without reducing the economic asset base. CoreWeave's leases and asset debt shift the timing and priority of capital, but the GPUs and data-center infrastructure still have to earn a return. An economically adjusted return measure therefore needs to include leased and SPV-held assets, not just assets legally titled to the parent.

Second, customer capital is real funding, but it is not free cash. CoreWeave's prepayments and deferred revenue help fund deployment; the offset is a service obligation, concentration risk, potential refund exposure, and less freedom to redirect capacity. Northvolt's offtakes supported lender confidence but did not prevent a large customer from cancelling when the ramp failed. A contract can make an asset financeable without making the asset commercially successful.

Third, legal non-recourse and economic non-recourse are different. A borrower subsidiary can pledge its own GPUs, yet a parent guarantee, cash sweep, service agreement, completion obligation, or reputation-dependent rescue can return loss to the corporate level. Northvolt's SPV architecture and CoreWeave's borrower entities show opposite points in the cycle: one in bankruptcy, one still raising capital rapidly. The governing question is not whether an SPV exists. It is which promises cross its boundary.

Fourth, public support changes factory economics only to the extent that it is funded, collectible, and retained. A grant can reduce construction equity. A payroll tax credit is earned over time and depends on hiring. A government guarantee supports a lender rather than delivering the same amount of cash to the company. A requested site-preparation award is not a receipt. The model therefore discounts conditional support and shows the matching private investment and clawback exposure.

Fifth, "asset-light" is usually a statement about legal location, not economic burden. Waymo can outsource depots and fleet operations while Alphabet absorbs technology and deployment losses. CoreWeave can lease buildings and borrow through subsidiaries while carrying fixed payments, guarantees, and customer delivery obligations. Serve can use a manufacturing partner while paying part of the ramp cost through dilution. A company is economically asset-light only when another party both funds the asset and bears a meaningful share of utilization and residual-value loss.

Quantified financing signals

Company	Financing architecture	Key quantified signal	Principal downside holder
Waymo	Parent-funded platform	$21.6bn visible 2024 + 2026 equity; 2026 majority funded by Alphabet	Waymo investors and Alphabet
Serve Robotics	Equity + secured fleet finance + supplier warrant	FY2024 capex / revenue 5.66x; base utilization 48.2%	Serve equity; financier on pledged robots
CoreWeave	Asset debt + leases + customer prepayments	$21.6bn debt principal; $8.2bn operating leases; $8.2bn deferred revenue at FY2025	Borrower/SPV equity, CoreWeave equity, lenders and guarantors by claim
Anduril	Equity + public support	$310m grant / $910.5m pledged capex = 34.0%	Anduril equity; public counterparties through clawback/conditions
Northvolt	Project finance + public guarantees + offtakes	$100m DIP / $5.8bn filing debt = 1.7%	Equity, project creditors, guarantors, suppliers and customers

Amounts are committed, funded, accounting, or modeled only as labeled. See the workbook Source Inputs and Assumption Book.

The calculations in this report are paired with an auditable workbook. Public disclosure is incomplete, so the models do not force sources and uses to balance. Each gap remains visible. Low, base, and high cases are used where financing terms, asset values, or support realization are uncertain. [MOD-01]

1. The visible venture round and the invisible asset bill

A venture round is easy to date and easy to quote. It is a poor measure of how physical growth is financed. The equity may pay for R&D, operating losses, supplier deposits, factory overruns, or debt service rather than the machine that appears in a press photograph. Conversely, an asset may be financed by a landlord, lessor, customer, public agency, supplier, or special-purpose borrower and never appear as a conventional capital expenditure by the operating company. The analytical task is to follow cash and claims through legal entities, then rebuild the economic asset base.

The distinction begins with ownership. Legal title determines who can sell, pledge, or repossess an asset. It does not alone determine who loses money. A lessor may own a robot, but the startup may guarantee a minimum payment and bear maintenance, insurance, and end-of-term purchase obligations. A data-center developer may own the shell, while the tenant funds specialized electrical infrastructure through a long lease that is almost impossible to exit. A project SPV may own a battery factory, while the parent supplies completion equity and customers supply prepayments. The residual-value holder is the party exposed after all contractual protections, removal costs, and guarantees are applied, not necessarily the name on the title certificate.

The five cases make the hidden asset bill visible in different ways.

Waymo's financing record is dominated by equity. The $5.6 billion 2024 round and $16.0 billion 2026 round are large enough to fund technology, fleet, depots, insurance, manufacturing integration, and expansion without a disclosed external fleet-finance program. The operating structure nevertheless moves some physical work outside Waymo. Uber manages and dispatches Waymo vehicles in Austin and Atlanta and provides depot services. Moove manages fleet operations, facilities, and charging in Phoenix and Miami. Those arrangements may reduce operating complexity or local capital needs, but public records do not establish that the partners bear vehicle residual-value risk. The conservative conclusion is that Waymo or Alphabet remains the principal economic backstop unless a local title or guarantee structure proves otherwise. [WY-01; WY-02]

Serve Robotics shows the smaller-company version of the same physical problem. Its delivery robots are productive assets, not merely demonstrations. Serve financed approximately $4.46 million of robot parts and manufacturing costs through Farnam in a transaction accounted for as a failed sale-leaseback. The equipment stayed collateral, and Serve retained a 45% end-of-term purchase option. That structure placed a senior claim on specific hardware without transferring the full economics of the fleet. Magna then received a low-strike warrant linked partly to manufacturing milestones. Cash outlay fell, but common shareholders paid through dilution. Non-cancellable component commitments added another fixed claim on future cash. [SR-01]

CoreWeave is the most developed asset-finance system in the group. Customer contracts and prepayments support delayed-draw term loans at borrower subsidiaries; GPUs and related assets secure the debt; data-center buildings are leased; developers and joint ventures finance parts of campus construction; software vendors finance licenses; and the parent sometimes guarantees subsidiary obligations. At 31 December 2025, the company had $21.6 billion of debt principal and $8.2 billion of operating lease liabilities. The company also held $8.2 billion of deferred revenue, much of it linked to customer prepayments. Those sources funded a very large asset build, but they also placed lenders, landlords, and customers ahead of common equity in different parts of the cash-flow chain. [CW-01]

Anduril's visible financing is equity and public support. The company raised $1.5 billion in 2024 for hyperscale manufacturing, later raised additional large equity rounds, and committed to at least $910.5 million of capital investment at Arsenal-1 in Ohio. JobsOhio executed a $310 million grant linked to jobs, payroll, and capital commitments. Ohio approved a 30-year refundable job-creation tax credit, and site-preparation support was sought separately. The grant can reduce the equity required for qualifying construction and equipment. The tax credit cannot be treated as upfront funding because it is earned through future payroll. The public record does not yet show a dedicated Arsenal-1 construction loan, equipment lease line, or customer progress-payment facility. That absence is a research result, not proof that no such arrangement exists. [AN-01; AN-02]

Northvolt demonstrates why announced financing must be separated from usable liquidity. The company announced $5 billion of non-recourse project finance for Northvolt Ett, backed by customer offtakes and a syndicate that included public lenders and guarantee providers. BMW later cancelled a EUR2 billion order, parts of the expansion were paused, and guarantee-backed support was suspended. By the Chapter 11 filing, the company reported access to $145 million of cash collateral and $100 million of customer-provided DIP finance, against approximately $5.8 billion of debt. The capital structure had been large; the immediately available liquidity was not. [NV-01; NV-02]

Comparative company table - operating and asset scope

Company	Sector	Principal physical assets	Legal owner / operator	Revenue recipient	Principal maintenance burden
Waymo	Autonomous mobility	Robotaxi vehicles, sensors, depots, charging, integration plant	Vehicle title unclear; Waymo controls driver; Uber/Moove operate selected city fleets	Waymo / platform arrangements	Local operator in selected markets; technology and likely fleet residual with Waymo
Serve	Last-mile robotics	Delivery robots, parts, work in progress, storage and charging	Serve group owns/controls fleet and operates it	Serve	Serve
CoreWeave	AI cloud infrastructure	GPUs, networking, leased data centers, power/cooling, software licenses	Borrower subsidiaries own pledged equipment; landlords/JVs own facilities; CoreWeave operates	CoreWeave / pledged contract entities	CoreWeave and site/service providers by contract

Company	Sector	Principal physical assets	Legal owner / operator	Revenue recipient	Principal maintenance burden
Anduril	Defense manufacturing	Arsenal-1 buildings, production lines, tooling, inventory	Owner entity not public; Anduril will operate	Anduril	Anduril, subject to supplier/property contracts
Northvolt	Battery manufacturing	Ett factory, recycling, lines, inventory and utilities	Northvolt Ett AB SPV owned project assets; Northvolt group operated	Project/operating entities	Northvolt group; later estate/buyer

Unknown ownership is not filled by inference. City-, asset-, and contract-level detail appears in the workbook Asset Ownership sheet.

Comparative company table - financing and downside

Company	Equity / parent capital	Debt, leases and SPVs	Customer / supplier finance	Government / guarantees	Capital intensity and downside
Waymo	$5.6bn 2024 + $16.0bn 2026; Alphabet significant majority of 2026	No disclosed fleet ABS; operating-partner assets unclear	No material prepayment identified; operating partners reduce local burden	No central public support identified; implicit parent backstop	Standalone capex/revenue unknown; Alphabet bears slow-ramp loss
Serve	Equity remains dominant	Farnam ~$4.46m equipment finance; failed sale-leaseback	Magna warrant; supplier commitments; no material customer prepayment identified	None identified	FY2024 capex/revenue 5.66x; equity bears utilization and residual loss
CoreWeave	Equity supplements asset finance	$21.6bn principal; $8.2bn op leases; DDTL borrower entities/JVs	$8.2bn deferred revenue; 15%-25% weighted-average prepayment; software vendor financing	Parent guarantees on some facilities; limited-recourse/JV support	FY2025 capex/revenue 2.01x; refinancing, contract and collateral risk
Anduril	Large private rounds fund corporate/factory equity	No disclosed Arsenal-1 project debt or equipment lease line	Defense demand support; progress payments unquantified; supplier finance unknown	$310m grant; 30-year JCTC; $70m site support request	Grant = 34.0% of pledged capex; overrun and clawback risk
Northvolt	Historic equity subordinated to project and rescue capital	$5.0bn project facility; Northvolt Ett AB SPV; $100m DIP	>$55bn stated offtakes; BMW cancellation; Scania rescue finance	EIB/NIB loans and state/export-credit guarantees	Ramp failure; $30m cash vs $5.8bn debt at filing

Capital intensity uses comparable periods only where revenue and capex are public. Headline commitments are not treated as funded balances.

Asset ownership and economic exposure map

Company / asset	Legal owner	Operator / user	Financier / first claimant	Revenue recipient	Residual-value and maintenance holder
Waymo vehicles and depots	Vehicle title and depot lessee not public city by city	Waymo Driver; Uber/Moove operate selected markets	Parent/equity presumed; no disclosed fleet lender	Waymo/platform under partner arrangements	Likely Waymo/Alphabet for vehicles; local operator duties under contract
Serve robot fleet	Serve group; financed robots pledged as collateral	Serve	Farnam while outstanding; suppliers on unpaid commitments	Serve	Serve bears upkeep/utilization; financier bears unrecovered collateral unless recourse
CoreWeave GPU pools and facilities	Borrower subsidiaries own pledged equipment; landlords/JVs own buildings	CoreWeave	DDTL lenders, lessors, service providers	CoreWeave / contract entities	Split among lenders, CoreWeave guarantor, landlords and JV investors
Anduril Arsenal-1	Not publicly identified	Anduril	Equity/public support visible; secured financier unknown	Anduril	Anduril and any owner/financier; public clawback linked to performance
Northvolt Ett	Northvolt Ett AB SPV	Northvolt group before distress	Project lenders and guaranteed tranches	Project/operating entities	SPV equity, lenders/guarantors, estate and buyers by recovery

Legal title and economic loss are shown separately. Insurer and customer rights remain contract-specific and are recorded as unknown where not public.

The sources-and-uses problem is equally important. A company can announce $10 billion of capacity financing while drawing only a fraction. Borrowing may depend on eligible assets, customer credit, equipment delivery, completion tests, or stabilized operations. Government awards may require matching capex and payroll. Purchase commitments may consume cash before the related assets produce revenue. Deferred revenue can increase operating cash flow even though the company has not yet earned revenue. Each case in the workbook therefore separates announced amount, contractual commitment, eligible borrowing capacity, funded amount, cash received, and accounting balance.

That separation changes investor interpretation. CoreWeave's $8.5 billion DDTL 4.0 was a commitment with an initial borrowing limit below the headline amount and additional availability as assets stabilized. A later 2026 facility reported by Fitch was still proposed at the evidence cut-off and is not included as funded capital. Anduril's tax credit has potentially large nominal value, but it is not a cash balance. Northvolt's state-backed guarantee supported debt capacity, but a guarantee on a suspended expansion is not a drawable grant. Waymo's equity announcement is closer to funded corporate capital, yet the exact Alphabet and outside-investor split is not fully disclosed. [CW-03; AN-01; NV-01; WY-01]

A credible capital stack must also avoid double counting. A leased data center can appear as a right-of-use asset and lease liability; adding both the full asset cost and all future payments without adjustment exaggerates the investment. Customer prepayments cannot be counted as both financing and earned revenue. Project debt cannot be added again merely because the SPV is consolidated. Interest expense is a financing cost, while principal repayment is a cash use; neither is a second capital source. The workbook applies these rules and leaves a visible unexplained balance where disclosure is insufficient. [MOD-01]

2. How hardware financing works

The financing toolkit is best understood by asking what happens in failure. A cheap-looking instrument can be expensive when utilization falls, and an expensive-looking instrument can protect equity by transferring residual loss. The instrument name is secondary. The collateral, covenants, repayment source, recourse, accounting treatment, and failure behavior determine the economics.

Hardware financing toolkit - capital, security, repayment and accounting

Instrument	Who supplies capital	Security / repayment source	Accounting presentation	Case evidence
Equipment / finance lease	Bank, leasing company, equipment financier	Specific equipment; fixed rentals and often purchase/termination amounts	ROU asset and lease liability, or financing liability if no sale	Serve Farnam robot financing
Operating lease	Landlord or lessor	Leasehold rights and fixed rent from operating cash	ROU asset and operating lease liability	CoreWeave data-center leases
Sale-leaseback	Asset buyer/lessor	Sold asset plus lease cash flow	Sale gain/loss only if control transfers; otherwise financing	Serve failed sale-leaseback boundary
Venture debt	Specialist lender or bank	Corporate assets, cash runway and future equity	Debt; fees and warrants separate	Not the dominant principal-case instrument
Asset-backed facility	Bank/private credit syndicate	Eligible equipment, contracts, cash accounts and equity pledges	Debt at borrower entity; consolidation depends on control	CoreWeave DDTLs
SPV / project finance	Project lenders and infrastructure investors	Project assets and contracted cash flow	Project debt; consolidated if controlled	Northvolt Ett AB
Supplier finance	Manufacturer, component vendor, software vendor	Invoices, retention rights, licenses, equity or future purchases	AP, financing liability, stock compensation or commitment	Magna warrant; CoreWeave license finance
Customer advance	Customer	Delivery/service obligation and sometimes dedicated capacity	Deferred revenue, deposit liability, or debt if refund economics are debt-like	CoreWeave prepayments; Magnetar deposit
Government grant / credit / guarantee	Public agency or public lender	Performance conditions, tax basis, or lender claim	Grant/other income, tax asset, debt or contingent support	Anduril Ohio; Northvolt EIB/NIB/guarantees
Parent / strategic capital	Parent, OEM, customer or supplier investor	Equity rights, guarantee, commercial rights or implicit support	Equity, intercompany balance, warrant or unpriced service	Alphabet-Waymo; Magna-Serve; Scania-Northvolt

Hardware financing toolkit - covenants, hidden cost and failure behavior

Instrument	Typical constraints	Principal advantage	Hidden economic cost	Failure behavior
Equipment / operating lease	Use, location, insurance, maintenance, minimum term, return condition	Matches payments to use and preserves cash	Fixed burden, residual guarantees, removal and end-of-term options	Repossession plus termination/deficiency claims
Venture debt	Minimum liquidity, fundraising, negative covenants, MAC/default clauses	Delays dilution	Coupon, fees, warrants and refinancing dependence	Acceleration against corporate liquidity and assets
Asset-backed debt	Borrowing base, concentration, reserves, DSCR, cash sweeps, asset custody	Can expand with eligible assets/contracts	Structural rigidity; availability falls in stress	Cash trap, equity cure, foreclosure on collateral
SPV / project finance	Completion, performance tests, reserve accounts, distribution lock-up	Can isolate project debt and lower parent equity	High documentation cost and support leakage	Project control shifts to lenders; parent exposed through support
Supplier finance	Purchase volumes, exclusivity, payment terms, warranties	Reduces upfront cash and buffers inventory	Pricing concessions, dilution, dependency	Terms shorten and deliveries stop when credit weakens
Customer capital	Dedicated capacity, delivery milestones, SLA, refund/cancellation terms	Funds assets before revenue recognition	Discounts, refunds, customer control and concentration	Refund claims, credits, contract loss and borrowing-base erosion
Government support	Jobs, payroll, capex, location, reporting and retention	Reduces private capital or borrowing cost	Matching investment, delay, compliance and clawback	Award withheld/clawed back or guarantee called
Parent / strategic capital	Governance, commercial rights and continued sponsorship	Long-duration loss absorption	Opportunity cost, control and obscured standalone economics	Parent decides rescue; reputation can make legal discretion costly

Failure behavior, rather than the label "non-dilutive," determines the common-equity downside.

An equipment lease supplies an asset rather than unrestricted cash. In a finance lease, the user controls substantially all of the asset's economic benefits and recognizes a right-of-use asset and liability. The lessor often has title and first claim, but the lessee may bear maintenance, insurance, damage, and obsolescence. An operating lease can look lighter because ownership remains with the lessor and payments are presented as operating expense, yet a long, non-cancellable lease can impose nearly the same fixed cash burden. CoreWeave's data-center leases demonstrate the scale problem: the buildings may sit with landlords, but the company reported billions of dollars of lease liabilities and long-duration capacity commitments. Serve's Farnam structure was even more direct. The failed sale-leaseback accounting signaled that the purported transfer did not shift enough control or risk to qualify as a sale, so the transaction remained financing secured by robot hardware. [SR-01; CW-01]

A sale-leaseback monetizes an asset after purchase. The company sells the asset and leases it back, receiving cash while keeping use. The accounting benefit depends on a real sale. The economic cost is the rental stream plus any residual guarantees, repurchase options, or maintenance duties. In stress, the buyer-lessor may repossess while the operator still owes termination amounts. Serve's failed sale-leaseback is useful precisely because it reveals the boundary: a transaction described commercially as leasing can remain debt-like when the operator retains the main economics.

Venture debt is corporate credit underwritten partly to equity sponsorship and future fundraising. It usually carries interest, fees, covenants, and warrants. It can extend runway without immediate full dilution, but it creates a maturity wall and often depends on another equity round for repayment. None of the principal cases is best understood as a simple venture-debt story. Serve's equipment financing was asset-specific. CoreWeave's large facilities are contract- and asset-backed. Northvolt's project debt depended on factory assets and offtakes. The difference matters: venture debt is repaid from corporate liquidity, while asset debt is expected to amortize from a defined asset pool or contracted revenue stream.

Asset-backed facilities lend against eligible collateral. Borrowing capacity expands only when qualifying assets are delivered, perfected, insured, and accepted under the borrowing base. Haircuts reflect equipment type, customer quality, concentration, depreciation, and secondary-market value. Typical protections include collateral custody, cash sweeps, minimum coverage, concentration limits, reserve accounts, and restrictions on asset movement. CoreWeave's DDTLs fit this model. Borrower subsidiaries acquire GPUs and related infrastructure for specific customer deployments, pledge substantially all their assets, and draw as the equipment becomes eligible. The advantage is scale: financing can grow with contracted deployments. The hidden cost is structural rigidity. A cancelled customer contract, delayed site, ineligible GPU, or collateral-value decline can reduce availability exactly when the company needs more cash. Parent guarantees in some facilities also weaken the claim that risk is isolated. [CW-01; CW-03]

An SPV isolates assets and contracts in a separate legal entity. Project finance goes further by designing repayment around project cash flow and restricting lender recourse to the project, subject to negotiated support. Covenants focus on completion, operating performance, reserve accounts, distribution tests, insurance, and debt-service coverage. The structure works when the asset has durable cash flows, stable technology, and enforceable contracts. Northvolt Ett AB was an SPV for the Skelleftea project and raised non-recourse project debt supported by offtakes. The operating assumptions failed before the capital structure could season. Customers, public guarantors, lenders, suppliers, and equity then faced a complex recovery problem. The SPV changed priority and legal scope; it did not create secondary-market value for a partly ramped battery factory. [NV-01; NV-02]

Supplier financing appears in accounts payable, extended payment terms, tooling support, inventory consignment, milestone pricing, or equity-linked compensation. It often goes unnoticed because no loan agreement is announced. Serve's Magna warrant is a clean example of economic supplier finance. Magna received equity upside for manufacturing support, reducing cash required during the ramp but diluting shareholders. Supplier credit can scale with purchasing, yet it is fragile when the startup loses bargaining power. In a slowdown, suppliers may shorten terms, demand deposits, halt deliveries, or assert retention-of-title rights. Supplier financing therefore tends to disappear when working-capital stress is highest.

Customer deposits and prepayments convert future delivery obligations into present liquidity. The cash can reduce external financing needs, but the economic cost includes discounts, dedicated capacity, delivery milestones, refund provisions, performance security, and customer control over asset allocation. CoreWeave's deferred revenue and take-or-pay contracts are central to its financing model. The customer funds part of the infrastructure and gives lenders a contracted repayment source. The company, however, must build and operate the capacity, and a concentrated customer can demand concessions or affect borrowing eligibility. Northvolt's offtakes improved bankability but did not equal cash receipts and did not prevent cancellation. Serve's Uber deployment agreement creates demand potential, not disclosed prepaid fleet capital. [CW-01; NV-01; SR-01]

Government support takes several forms. A grant is a conditional transfer and may require matching investment, hiring, reporting, or repayment if milestones fail. A government loan supplies debt at public-policy terms and ranks according to its contract. A guarantee protects a lender and may lower pricing or increase capacity; it does not deliver the guaranteed amount to the operating company. A tax credit creates value only when the company produces the qualifying output, payroll, or investment and can monetize the credit. Anduril's Ohio package contains all the timing distinctions investors often collapse: a $310 million grant commitment, a payroll-based refundable tax credit earned over decades, and site support pursued through a separate public program. Northvolt's public layer included EIB and NIB lending plus state and export-credit guarantees. [AN-01; NV-01]

Parent support can be explicit or unpriced. Explicit support includes equity injections, intercompany loans, guarantees, and shared procurement. Unpriced support includes engineering, compute, insurance, legal work, real estate, brand, tax capacity, and willingness to absorb losses. Waymo's relationship with Alphabet is the clearest case. The parent funded the significant majority of the 2026 round and consolidates Waymo. A standalone robotaxi company would need to replace Alphabet's capital, shared systems, and shock absorption with external equity, debt, leases, insurance capital, or partner funding. The correct comparison is not Waymo's stand-alone reported assets, which are unavailable, but the total assets and services economically supporting its operation. [WY-01]

Strategic-investor financing blends commercial and financing terms. A supplier or customer may invest equity to secure capacity, influence product development, or support a key partner. The investment can lower near-term cash burn and improve bankability, but it may create exclusivity, warrants, governance rights, pricing concessions, or dependency. Magna's Serve warrant and Scania's Northvolt DIP financing occupy different points on this spectrum. One supported manufacturing before scale. The other provided rescue liquidity after the original capital stack failed. [SR-01; NV-02]

The annual cost of each source must include more than the coupon. Debt cost equals average drawn balance times effective interest rate, plus fees and warrant value. Lease burden includes fixed payments, maintenance, insurance, and any retained residual exposure. Customer capital costs include discounts, refund risk, service obligations, and capacity restrictions. Government benefit must be reduced by compliance cost, matching investment, delayed realization, and expected clawback. Parent capital has an opportunity cost even when no interest is charged. The workbook uses low, base, and high cases rather than hiding missing terms inside a single precise number. [MOD-01]

The failure sequence differs by instrument. Corporate equity absorbs losses first and has no contractual repayment. Venture lenders can accelerate and seize pledged corporate assets. Asset lenders can cut borrowing capacity, trap cash, and foreclose on collateral. Lessors can repossess, but may face removal and resale costs. Customers may assert refunds,

service credits, or priority rights to dedicated capacity. Suppliers can stop shipment and claim unpaid inventory. Governments may claw back grants or deny future credits. Parents can choose whether to rescue a subsidiary, but reputation and strategic value may make legal discretion economically constrained. This sequence, rather than the label "non-dilutive," determines common-equity risk.

3. The parent-funded model

Waymo is the cleanest example of a parent-funded platform because the parent absorbs both development uncertainty and the absence of conventional asset-level cash flows. Alphabet disclosed that Waymo is consolidated and that the significant majority of the February 2026 $16.0 billion financing was funded by Alphabet. Waymo had already raised $5.6 billion in October 2024 in a round led by Alphabet. Public disclosure does not identify a stand-alone fleet ABS, equipment line, or project facility comparable with CoreWeave's DDTLs. The default assumption is therefore that equity and parent support finance the system until evidence shows a separate asset stack. [WY-01]

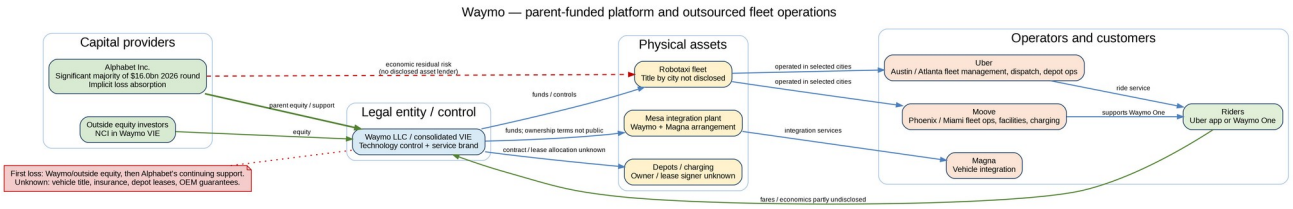

Figure 1. Waymo: parent-funded platform and outsourced operating layer.

Sources: WY-01, WY-02; legal title and city-level recourse remain partly unknown.

The physical assets are broader than the vehicles. They include sensor suites, compute hardware, integration tooling, validation fleets, depots, charging equipment, spare parts, mapping and simulation infrastructure, insurance reserves, and the working capital required to put a new city into commercial service. Some of these assets may sit with partners. Uber manages and dispatches Waymo vehicles in Austin and Atlanta and provides cleaning, repair, and depot operations. Moove manages fleet operations, facilities, and charging in Phoenix and Miami while Waymo retains control of the Waymo Driver and offers the service. Magna participates in vehicle integration at the Mesa facility. The contracts split operation from technology control; they do not publicly establish that partners finance or own the core fleet. [WY-02]

The ownership map is therefore partly confirmed and partly inferred. Waymo controls the driving system and receives platform economics. Uber or Moove performs local operating work in selected markets. The vehicle titleholder, depot lessee, insurer, maintenance obligor, and residual-value guarantor are not disclosed city by city. In the absence of a disclosed transfer, Waymo and Alphabet remain the likely economic residual holders because a partner that merely manages operations has no obvious reason to absorb vehicle obsolescence caused by autonomy technology, regulation, or a Waymo-specific integration. This is a strong inference, not a documented title search.

Parent funding changes the growth constraint. A stand-alone robotaxi startup would usually need repeated equity, vehicle leases, fleet debt, insurance collateral, or an OEM/fleet partner willing to own the cars. Those providers would demand asset eligibility, minimum utilization, pricing covenants, residual guarantees, or parent support. Waymo can instead deploy capital before each city has stable unit economics. That flexibility reduces near-term refinancing and covenant risk. It does not reduce the capital consumed. It relocates the capital charge to Alphabet shareholders.

The model estimates Alphabet's contribution to the 2026 round at $9.6 billion in the low case, $12.0 billion in the base case, and $14.4 billion in the high case. The range interprets "significant majority" as 60%, 75%, and 90%. Applying an 8%, 12%, and 16% annual opportunity cost produces an implied parent capital charge of $768 million, $1.44 billion, and $2.30 billion per year. These are not accounting expenses and do not measure all historical support. They answer a narrower question: what annual return would an independent investor require on the latest disclosed parent capital alone? [WY-01; MOD-01]

Unpriced subsidy is harder to measure. Alphabet can share engineering systems, AI research, compute procurement, legal services, security, insurance expertise, real estate, recruiting, stock compensation infrastructure, tax attributes, and brand. Alphabet also has the balance sheet to absorb a safety incident, regulatory delay, or several years of underutilized fleets without a forced asset sale. None of those services is free economically. If intercompany charges are below market, Waymo's stand-alone loss is understated. If services are charged at market, the parent still supplies capacity and credit quality that a startup would have to buy externally.

The downside waterfall begins with Waymo operating cash and dedicated reserves, then Waymo equity and outside investors' noncontrolling interests. Alphabet's exposure follows through its majority funding, consolidation, shared obligations, and strategic choice to continue support. Local operators may bear performance penalties or operating-cost overruns under their service contracts, but public evidence does not support placing vehicle residual loss ahead of Waymo. Vehicle suppliers and landlords retain contractual claims. In a shutdown, specialized sensor integration, low-volume vehicle configurations, depot improvements, and autonomy-dependent hardware would probably recover less than ordinary fleet book value.

The parent-funded model is scalable in one sense and non-scalable in another. It can expand rapidly without waiting for asset cash flows to satisfy lenders. Its financing capacity is tied to Alphabet's willingness and governance, not to a borrowing base that automatically rises with deployed vehicles. That means growth can continue through weak early utilization, but each new market may require another discretionary allocation of parent capital. The model avoids startup-level bankruptcy risk until the parent withdraws support. It does not produce a self-funding asset platform unless ride economics eventually cover vehicle replacement, depot costs, insurance, technology refresh, and a return on the full economic asset base.

For common equity, the benefit is survival and strategic patience. The cost is opacity. Outside investors cannot observe stand-alone capex, working capital, lease liabilities, fleet-level insurance, intercompany charges, or city-level return on capital. The parent can preserve value through cross-subsidy, but it can also continue investing after a standalone lender or equity market would impose discipline. Waymo therefore appears less leveraged than CoreWeave and less fragile than Serve, while potentially using more economic capital than either on a per-revenue basis. The balance sheet does not settle the question because much of the balance sheet is Alphabet's.

4. The leased-fleet model

Serve Robotics shows how a small operator can combine equity, secured equipment financing, supplier commitments, and strategic dilution to deploy a physical fleet. The company is often described through autonomy software and delivery partnerships. Its cash economics are those of a fleet owner: robots must be manufactured, stored, repaired, insured, charged, repositioned, and replaced before order density is proven.

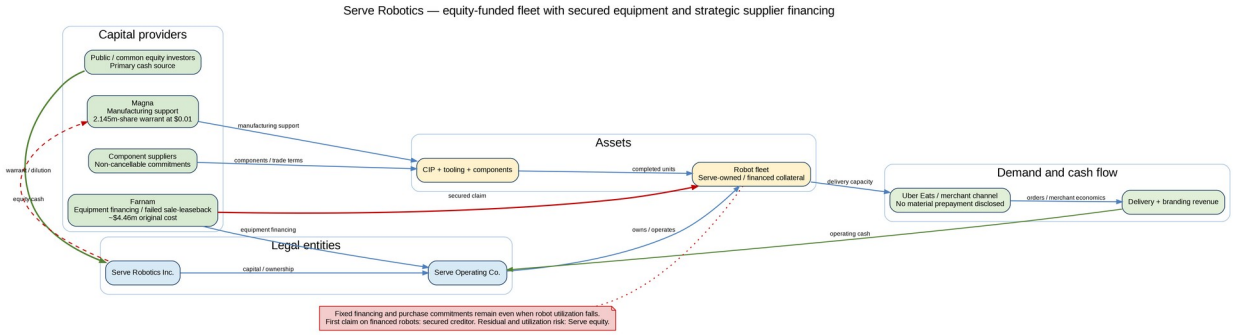

Figure 2. Serve Robotics: equity-funded fleet with secured equipment finance and equity-linked supplier support.

Sources: SR-01, SR-02.

Serve's 2024 filing describes the consolidated group as Serve Robotics Inc., Serve Operating Co., and Serve Robotics Canada Inc. The robot fleet sits economically within that group. At year-end 2024 the company reported more than 100 robots, and in the second quarter of 2025 it reported 160 average daily active robots and $18.6 million of property and equipment. There is no disclosed fleet SPV that would isolate robot assets from the operating company. [SR-01; SR-02]

The Farnam transaction financed roughly $4.46 million of robot parts and manufacturing costs. It was accounted for as a failed sale-leaseback and therefore as a financing agreement, with the robot equipment held as collateral. The contract included a 45% end-of-term purchase option. The accounting treatment is informative: Serve obtained liquidity, but the transaction did not transfer enough control and economics to qualify as a sale. The lessor or financier held a secured claim; Serve retained use, operational responsibility, and much of the residual exposure. [SR-01]

The modeled annual payment burden is approximately $2.27 million based on disclosed payments and terms. That equals about 51% of the original financed cost per year, before maintenance, storage, insurance, communications, charging, field support, and the end-of-term purchase decision. The figure is a burden proxy rather than a contractual effective yield because full payment timing and fees are not public. It shows why an apparently small equipment line can matter to a pre-scale fleet.

The disclosed utilization data are mixed. Serve reported approximately 1,234 daily supply hours across 160 average active robots in Q2 2025, or 7.71 supply hours per robot per day. Against 12 available hours, utilization is 64.3%; against 16 hours, it is 48.2%; against a full 20-hour service window, it is 38.6%. The base case uses 16 hours because robots require charging, maintenance, repositioning, and market downtime. This is supply-hour utilization, not productive-delivery utilization. A robot can be available without completing a revenue-generating delivery, so the figure is an upper bound on economic utilization. [SR-02; MOD-01]

Annualized total revenue per active robot was about $34,900 using the Q2 2025 run rate, but fleet-linked revenue per robot was only about $12,050 after separating software and other revenue. The model compares annualized fleet revenue with the Farnam payment proxy and produces coverage of roughly 0.28 times. This is not a company-wide debt-service ratio, because the original financing did not necessarily map one-to-one to the 2025 active fleet and the liability was largely repaid by mid-2025. It is a unit-economics warning: the disclosed fleet revenue run rate would not have supported a similar financing burden without equity or other revenue.

Capital intensity is correspondingly high. FY2024 cash capital expenditure was about 5.66 times revenue; including accrued equipment purchases raises the ratio to about 6.74 times. The company was buying the fleet before the revenue base existed. Gross asset value therefore grew much faster than earned revenue, and equity remained the primary shock absorber. A fleet financing ratio based on the original Farnam amount and FY2024 gross property and equipment is approximately 30.6%. The rest of the asset build had to be supported by equity, working capital, supplier terms, or other cash sources. [SR-01; MOD-01]

Magna supplied another layer of financing through economics rather than cash. Serve issued a warrant for 2.145 million shares at a $0.01 exercise price, with vesting tied partly to a manufacturing milestone. The company recognized $8.57 million of stock-based compensation related to the warrant in 2024. Magna received substantial equity upside for supporting production. Serve reduced immediate cash needs, but existing shareholders transferred value. The instrument therefore belongs in the capital stack even though it is neither debt nor accounts payable. [SR-01]

Purchase commitments add rigidity. Serve disclosed non-cancellable commitments for robot assets, software, and storage services, including remaining obligations under a component supply agreement. A purchase order becomes financing only

when the supplier extends terms or carries inventory; a non-cancellable commitment can instead increase the startup's cash burden by forcing purchases ahead of demand. Public disclosure does not show enough supplier-payment detail to classify the full amount as supplier financing. The model records the commitment as an operating claim and does not count it as funded capital.

Customer support is also narrower than the headline partnership suggests. The Uber Eats agreement to deploy up to 2,000 robots creates a potential demand channel. The evidence package does not identify a large customer prepayment, take-or-pay minimum, or capacity reservation that would fund manufacturing. Serve therefore appears to finance the fleet first and earn delivery revenue later. Weak utilization falls on Serve equity rather than on Uber customers.

Residual-value risk is substantial because the robots are specialized, software-dependent, and deployed in a young market without a deep secondary market. Using the disclosed original financed asset value as a reference, the model estimates residual exposure at $4.46 million in a low-recovery case, $4.01 million in the base case, and $2.90 million in the high-recovery case after removal and remarketing costs. The low/base/high labels refer to recovery quality, so the low-recovery case creates the highest loss. These figures are scenario amounts, not appraisals.

A 25% utilization shortfall does not reduce lease or financing payments by 25%. It cuts revenue while fixed payments, maintenance capacity, and purchase commitments remain. Applying a proportional 25% reduction to fleet-linked revenue lowers the modeled fleet-revenue coverage of the Farnam burden from 0.28 times to about 0.21 times. Equity must fund the gap, reduce deployment, renegotiate suppliers, or raise new capital. A lessor can repossess collateral, but specialized robots may have little value outside Serve's software and operating network. In that case, the lessor's legal priority does not guarantee full recovery, while Serve loses the fleet and remains exposed to any deficiency or termination claim.

Serve's model can evolve into a genuinely asset-financed fleet only if lenders gain confidence in robot resale value or, more realistically, in contracted cash flows. That requires stable revenue per robot, contribution margin after field operations, measurable uptime, and customer commitments that survive a change in operator. Until then, equipment financing mainly accelerates deployment and defers equity issuance. It does not transfer the central risk that the robots may be underused or economically obsolete.

5. The SPV and asset-backed model

CoreWeave is a cloud company financed like an infrastructure platform. Its economic unit is not a generic software subscription. It is a contracted block of compute capacity supported by GPUs, networking, power, cooling, leased data-center space, customer commitments, and a borrower entity. The capital stack must therefore be read contract by contract and subsidiary by subsidiary.

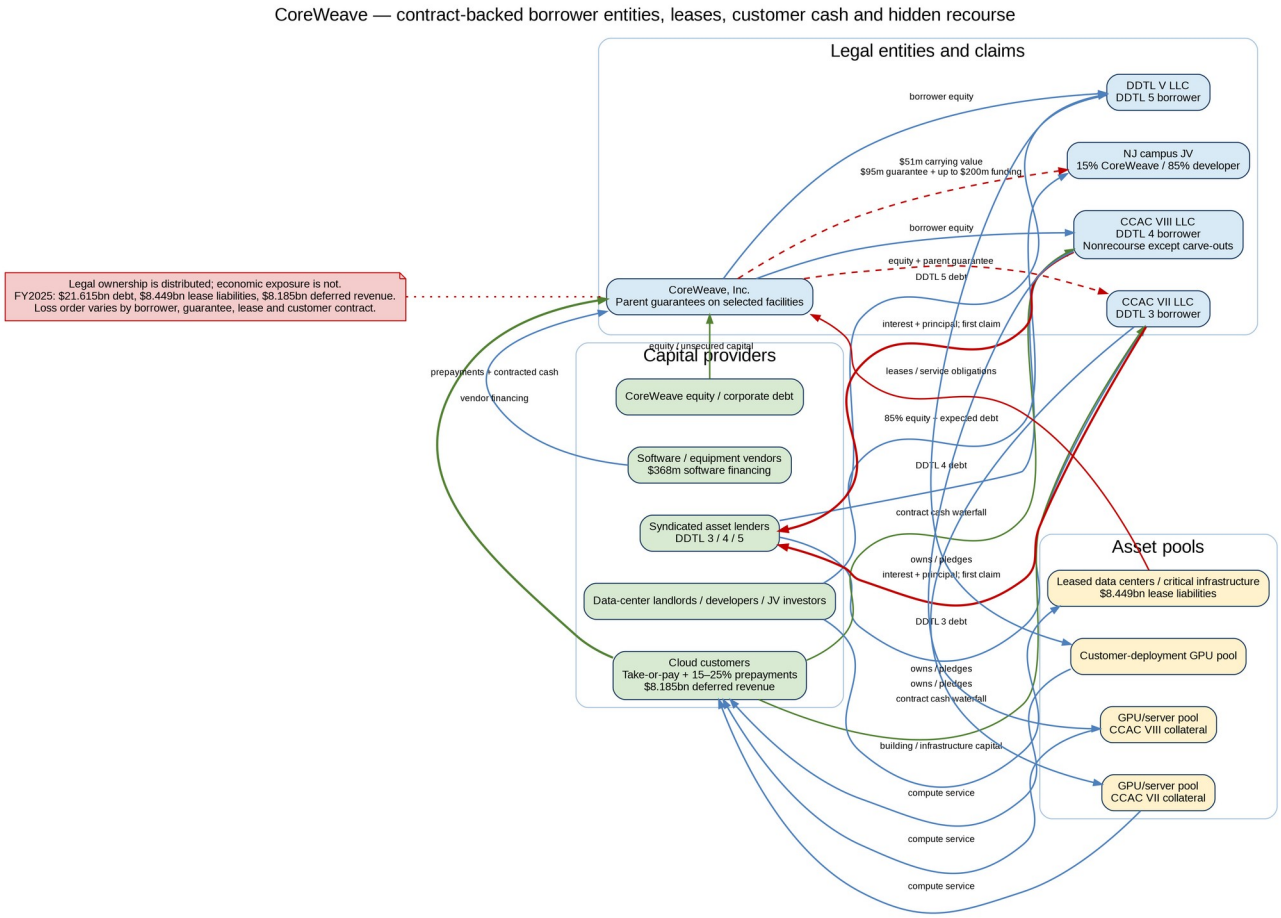

Figure 3. CoreWeave: customer-backed borrower entities, leased campuses, guarantees, and priority claims.

Sources: CW-01, CW-02, CW-03.

The company states that it primarily finances infrastructure development through asset-level debt supported by take-or-pay customer contracts, with equity and corporate debt as supplements. At 31 December 2025, CoreWeave reported $21.6 billion of debt principal, not the lower interim figure contained in parts of the supplied package. It also reported $8.195 billion of operating lease liabilities, $254 million of finance lease liabilities, $8.185 billion of deferred revenue, and $60.7 billion of remaining performance obligations. The FY2025 debt figure is used throughout the model because it is the filed year-end balance and is period-comparable with the other FY2025 statements. [CW-01]

The DDTL structure explains how capital expands. CoreWeave Compute Acquisition Co. VII LLC borrowed under DDTL 3.0 to acquire computing equipment for a long-term OpenAI deployment. The facility was secured by substantially all assets of the borrower and supported by a parent guarantee. Borrowing was constrained by the depreciable cost of eligible GPU servers. CoreWeave Compute Acquisition Co. VIII LLC later became the collateral entity for DDTL 4.0, an $8.5 billion facility described as non-recourse at the facility level, with initial availability of approximately $7.5 billion and more as assets stabilized. CoreWeave Financing DDTL V, LLC issued DDTL 5.0 for deployments tied to two large customer contracts. A July 2026 DDTL 5.5 described by Fitch remained proposed at the evidence cut-off and is classified as announced rather than funded. [CW-03]

These entities create legal separation, but the degree of economic recourse varies. DDTL 3.0 carries an unconditional parent guarantee. DDTL 4.0 was described as non-recourse, but the full transaction documents would still need to be tested for completion support, service obligations, cross-defaults, cash traps, and reputational commitments. The presence of a borrower subsidiary alone does not answer the recourse question. The model classifies DDTL 3.0 as economically recourse despite subsidiary collateral, DDTL 4.0 as limited or potentially genuine non-recourse subject to document review, and DDTL 5.0 as unclear from the public release.

Customer contracts are part of the collateral system. CoreWeave's committed contracts are generally take-or-pay and run from one to six years. The company disclosed a weighted-average customer prepayment of 15% to 25% of total contract value across active contracts. At year-end 2025, deferred revenue was $8.185 billion, up by $4.174 billion during the year. That increase contributed materially to operating cash flow. The customer is therefore a capital provider as well as a revenue counterparty.

The benefit is obvious: customer cash arrives before service is fully delivered and reduces the equity needed to buy equipment. The constraint is just as real. Prepaid capacity is dedicated capacity. The company owes service, uptime, delivery, and often schedule commitments. If a site is late, power is unavailable, or equipment fails qualification, the cash does not become free corporate capital. It may create refund exposure, credits, concessions, or litigation. Customer concentration also enters the borrowing base because the lender underwrites both the equipment and the contract counterparty. One customer represented 67% of FY2025 revenue. [CW-01]

Lease finance supports the physical shell. CoreWeave says it leases all data centers and certain equipment. Operating lease liabilities of $8.195 billion and finance lease liabilities of $254 million show that legal ownership sits elsewhere while fixed economic obligations remain with the company. Lease accounting puts right-of-use assets and liabilities on the balance sheet, but the reported amount can still understate total economic dependency because service agreements, power commitments, developer guarantees, and tenant improvements may sit outside the basic lease liability.

The New Jersey joint venture illustrates hidden recourse. CoreWeave owns 15% and a third-party infrastructure developer owns 85%. The company disclosed exposure through its investment, a $95 million guarantee of contingent consideration, a $15 million lease prepayment, and up to $200 million of potential funding if the joint venture cannot secure third-party financing. The project may be unconsolidated, yet CoreWeave has several routes back into the loss. The appropriate classification is limited recourse, not off-balance-sheet disappearance. [CW-01]

A separate data-center service-provider arrangement combines a loan receivable, a long-term finance lease, and a financing obligation. CoreWeave can lend up to $305 million to the provider at 13% while committing to use critical infrastructure for 14 years. That arrangement can help a developer build capacity, but it also turns the supposed asset provider into a borrower from its customer. CoreWeave is simultaneously tenant, lender, and long-duration user. The legal owner may bear building residual value; CoreWeave bears counterparty risk, fixed-use obligations, and the risk that specialized infrastructure has little alternative use.

Software-license financing adds another asset-like liability. CoreWeave reported $431 million of notional software-license financing and $368 million outstanding at year-end 2025. A $230 million customer deposit associated with Magnetar was reclassified as debt because the refund economics implied a 12% annual return if unused. These items show why financing cannot be reconstructed from bank debt alone. Vendor credit, customer liabilities, leases, and service-provider obligations compete for the same operating cash. [CW-01]

The cost model produces three different pictures. Average FY2025 debt principal was about $14.82 billion. Contractual annual debt cost, including modeled fees, was approximately 8.23%, while cash interest expense implied a 5.86% rate on the average balance. Adjusted EBITDA covered cash interest about 3.52 times, which looks comfortable. Cash flow available for debt service tells a different story. Using operating cash flow less capital expenditure and required principal payments, coverage was approximately 0.70 times. Removing the $4.174 billion increase in deferred revenue turns FY2025 operating cash flow negative by about $1.12 billion and the comparable coverage measure negative. [CW-01; MOD-01]

The difference is not an accounting trick. Adjusted EBITDA measures operating earnings before financing and many non-cash or growth costs. Infrastructure debt must be serviced with cash after equipment purchases, lease payments, working capital, and scheduled principal. Customer prepayments are valid cash, so the reported cash-flow measure is relevant. The normalized measure asks whether the business would have funded the same build without another year of advance customer capital. Investors need both.

Capital intensity is high by any definition. FY2025 capex was approximately 2.01 times revenue. In Q1 2026, capex was approximately 3.70 times revenue, illustrating how deployment timing can overwhelm a growing revenue base. Revenue

divided by average gross property and equipment was about 0.22 times. Selected asset financing - asset debt, leases, customer financing, and related sources that can be mapped without obvious double counting - represented about 78.6% of year-end gross property and equipment. A broader claims measure including more liabilities was about 1.13 times gross property and equipment, showing that several claims are supported by the same economic asset system. [CW-01; CW-02; MOD-01]

Residual-value risk is shared but not eliminated. GPU lenders have first claim on pledged equipment and contracts. Landlords own shells and may retain general-purpose real estate value. CoreWeave bears technology mismatch, integration, customer concentration, removal, and stranded-site risk. In the model, a low-recovery case produces $19.86 billion of residual exposure, the base case $16.20 billion, and the high-recovery case $11.50 billion across the selected asset base after secondary-market recovery and removal costs. These are stress estimates, not predictions. They reflect rapid hardware obsolescence, specialized integration, and the possibility that a lender can repossess faster than it can remarket.

A 25% revenue or utilization shortfall lowers the modeled FY2025 cash-flow coverage from 0.70 times to roughly 0.52 times if cash flow falls proportionally while debt service remains fixed. Actual outcomes can be worse because lower utilization may also reduce borrowing-base eligibility and increase customer credits. A delayed site can produce negative carry: interest, lease payments, and equipment depreciation begin before revenue. A customer cancellation can remove both revenue and collateral eligibility. A failed refinancing can force cash sweeps, equity cures, asset sales, or foreclosure.

CoreWeave's structure genuinely reduces the equity required per dollar of deployed hardware. It does so because lenders, landlords, customers, and developers provide capital against assets and contracts. The reduction is durable only while contracts remain enforceable, customers remain creditworthy, collateral retains value, and sites enter service on time. The model scales automatically with eligible assets to a greater degree than Waymo's parent-funded model or Serve's equity-funded fleet. It is also more brittle. Growth is constrained by covenants, concentration, collateral quality, and refinancing markets rather than only by investor willingness.

6. The customer-financed model

Customer financing ranges from a refundable deposit to a take-or-pay contract, an offtake, a milestone payment, or a rescue loan. The common feature is that the customer supplies cash or bankability before the startup has fully delivered the product. The common analytical mistake is to call the resulting liquidity revenue.

CoreWeave provides the strongest operating example. Customer prepayments are recorded as deferred revenue until service is delivered. The company disclosed a 15% to 25% weighted-average prepayment across active contracts and $8.185 billion of deferred revenue at year-end 2025. Lenders can underwrite the corresponding take-or-pay contracts, so one customer dollar can support more than one dollar of installed equipment when combined with debt. The financing benefit is real. The customer has effectively supplied junior or contract-linked capital without receiving a conventional security interest.

The economic cost appears in the delivery obligation. Capacity must be built to the promised specification and schedule. The company may grant pricing discounts, reserve equipment for one customer, or accept service credits and refund rights. A customer that supplies a large share of capital can also influence contract amendments and refinancing. Concentration is therefore a financing risk as well as a revenue risk. In CoreWeave's case, the same customer relationship can affect deferred revenue, future revenue, asset eligibility, and lender confidence at once. [CW-01]

A cash-flow bridge shows the importance. FY2025 operating cash flow was positive, but the $4.174 billion increase in deferred revenue was a major source. Subtracting that increase produces an operating-cash-flow-before-new-prepayments proxy of negative $1.116 billion. The calculation does not imply the cash should be ignored. It shows how much of the year's operating liquidity depended on customers advancing funds for future service. A hardware-finance model that treats the advance as both operating performance and financing capacity would double count it. [MOD-01]

Northvolt's offtakes were a different form of customer support. The $5 billion project facility was raised against long-term offtake contracts said to exceed $55 billion. Those contracts made projected plant cash flow more bankable. They were not the same as $55 billion of cash, and the evidence does not show that the full amount was prepaid. When BMW cancelled a EUR2 billion order after delays, one of the assumptions supporting capacity and financing weakened. Scania later supplied $100 million of DIP financing, converting a customer relationship into rescue capital. [NV-01; NV-02]

Anduril's defense contracts can support financing, but contract ceilings and awards must be read carefully. A ceiling authorizes potential procurement; it is not funded cash. Progress payments, mobilization advances, milestone billings, or government-owned equipment can reduce working-capital needs, but the public documents reviewed do not disclose enough contract schedules to quantify those effects at Arsenal-1. The correct classification is demand support with possible customer financing, not confirmed funded customer capital. [AN-02]

Serve's Uber relationship is weaker as a financing instrument. An agreement to deploy up to 2,000 robots offers distribution and demand, but no material prepayment or minimum-volume financing was identified. Uber may reduce customer-acquisition costs and improve utilization, yet Serve still buys or commits to robots before the corresponding delivery revenue is earned. A strategic customer can therefore improve commercial scale without financing the asset base.

Customer finance transfers some risk only when the customer cannot freely walk away. A non-refundable deposit transfers cancellation risk. A take-or-pay contract transfers some utilization risk, but only if the supplier can perform and the customer remains solvent. An offtake transfers demand risk subject to quality, schedule, and termination clauses. A refundable deposit can become debt-like when it accrues a return, as CoreWeave's Magnetar arrangement demonstrates. A rescue loan gives the customer lender priority and may preserve supply, but existing equity and unsecured creditors bear the dilution or subordination.

The annual economic cost of customer capital is therefore modeled as the sum of discount value, dedicated-capacity cost, expected refund exposure, service credits, and optionality surrendered to the customer. Public disclosure rarely provides enough detail to calculate each item. The workbook records the cash received separately from the modeled cost and assigns low, base, and high percentages to the obligation where necessary. The absence of a stated coupon does not make the capital free.

Working capital determines whether customer and supplier financing reinforce or offset each other. Long component lead times can require supplier deposits months before customer milestones. Work in progress and acceptance testing can trap cash. Receivable delays and retainage can turn a nominally profitable contract into a financing requirement. Conversely, advance customer milestones and long supplier terms can create a negative cash conversion cycle. The five cases provide incomplete inventory, receivable, and payable data, so the workbook does not fabricate a precise consolidated cycle for private companies. It instead records the known direction of each burden and the missing inputs.

A customer-financed manufacturer can scale with less equity when advances rise with orders and are not refundable after procurement begins. The model is fragile when a small number of customers control acceptance, cancellation, or quality tests. It is also fragile when capacity is customer-specific. A cancelled standard product may be resold. A cancelled battery chemistry, defense configuration, or bespoke GPU deployment may leave inventory and equipment with little alternative use. Customer capital lowers the initial equity check while potentially increasing asset specificity and residual loss.

7. The government-supported factory

Anduril and Northvolt show two different public-capital functions. Anduril's Ohio support reduces the private cost of building a factory. Northvolt's public layer helped lenders fund a project. A grant, a tax credit, a public loan, and a guarantee should not be added as though each were cash in the same bank account.

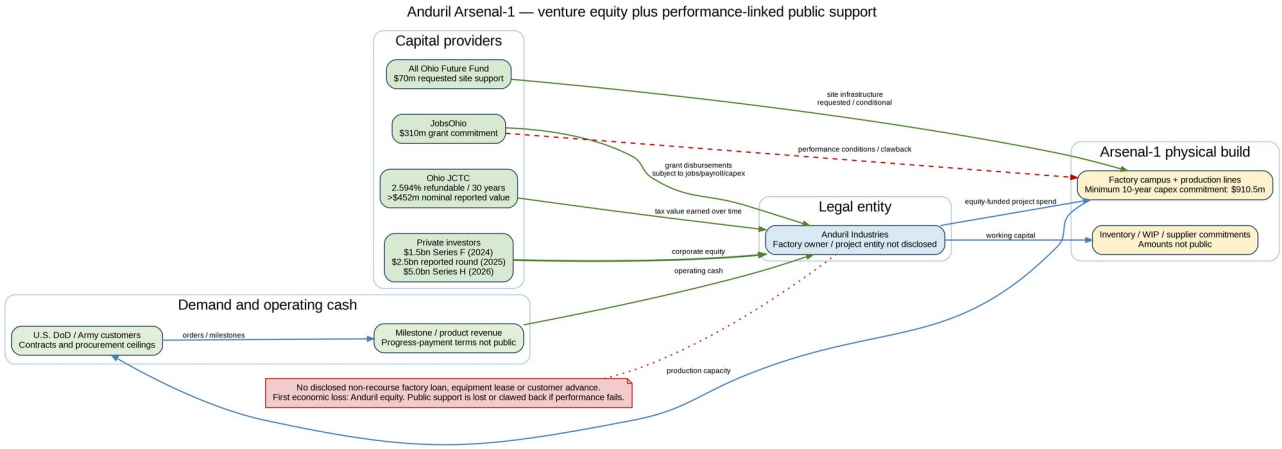

Figure 4. Anduril Arsenal-1: corporate equity plus conditional public support.

Sources: AN-01, AN-02; project-level debt and equipment ownership are not publicly established.

Arsenal-1 carries a minimum ten-year capital-investment commitment of $910.5 million. The executed $310 million JobsOhio grant equals 34.0% of that amount. Adding the separately requested $70 million of site support raises visible upfront or infrastructure support to 41.7%, before the payroll tax credit. The 30-year refundable credit is valuable only as qualifying payroll is created and maintained. It is therefore discounted in the model rather than booked at its reported maximum value. [AN-01; MOD-01]

After compliance cost, matching investment, timing, and expected clawback, modeled net public benefit is $293.7 million in the low case, $426.1 million in the base case, and $544.7 million in the high case. The corresponding private capital requirement is $616.8 million, $484.4 million, and $365.8 million. Public support per dollar of private capital ranges from 0.48 to 1.49. These are project-economics estimates, not a claim that each amount has been received. Capacity-based support cannot be calculated credibly because a consistent annual production-capacity denominator is not public. [MOD-01]

The unresolved financing is below the corporate level. Public evidence does not identify the Arsenal-1 property owner, equipment lessor, construction lender, inventory financier, or customer progress-payment schedule. Equity plus incentives is the visible stack; equipment finance or contract advances remain plausible but unproven. The legal owner of the site and production tools matters because it determines collateral, tax treatment, removal rights, and loss allocation after a missed job or capex milestone.

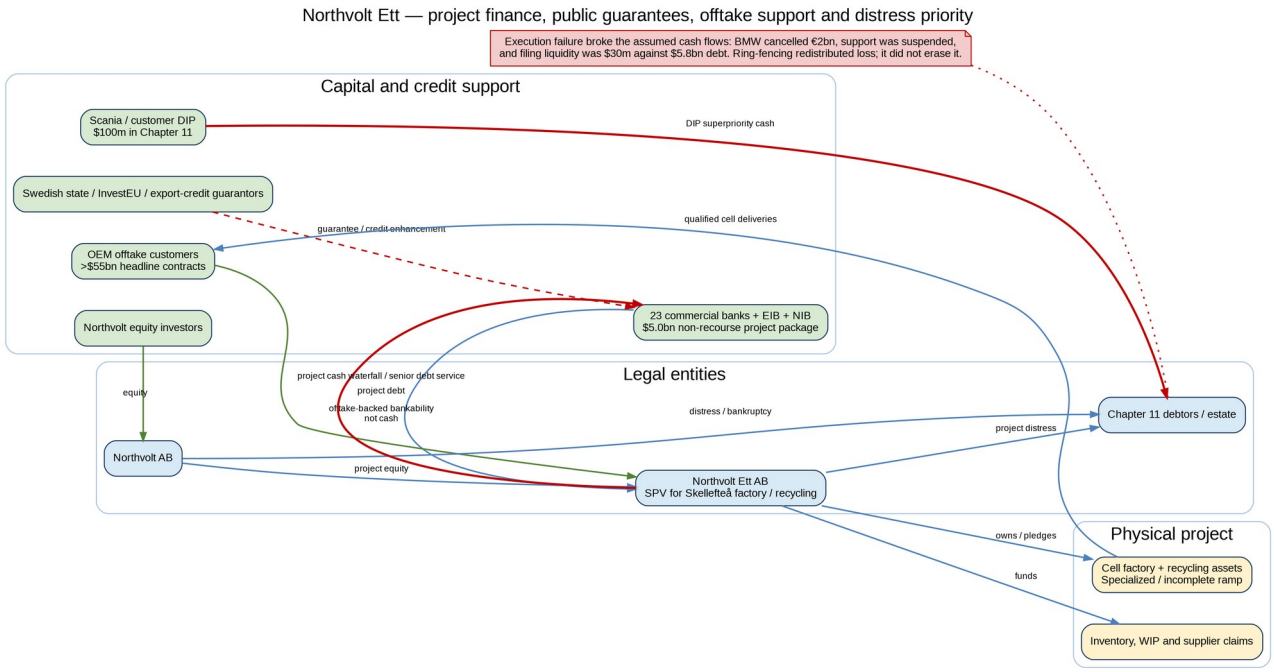

Figure 5. Northvolt: project SPV, offtake-backed debt, public guarantees, and restructuring claims.

Sources: NV-01, NV-02.

Northvolt's public layer was debt and guarantees rather than a simple grant. EIB and NIB loans, Swedish and export-credit guarantees, commercial banks, and customer offtakes supported the $5 billion Northvolt Ett project package. The structure could reduce pricing and expand debt capacity, but the factory still had to reach yield, quality, volume, and delivery targets. When the ramp failed, a guarantee package was suspended and the company entered restructuring. Public support had improved financeability; it had not repaired the underlying production economics. [NV-01; NV-02]

The comparison is direct. Anduril's grant can permanently reduce private capital if conditions are met. Northvolt's guaranteed debt still required repayment and placed public guarantors behind specified lender claims. A tax credit reduces future unit cost; it does not pay today's construction invoice unless monetized. Government procurement can stabilize demand; it is financing only when cash is advanced or contracts are bankable and enforceable. The correct public-capital model is therefore a probability-weighted schedule of cash, tax value, matching investment, compliance cost, and clawback, not the sum of press-release headlines.

8. Who bears residual-value risk

Residual-value loss equals financed or book value less recoverable secondary-market value, after removal, transport, reconfiguration, and sale costs. Hardware startups often omit the last four items. Specialized assets can have a quoted component value and still produce little net recovery once they are removed from a failed operating system.

Modeled residual-value exposure

Company / asset proxy	Reference value	Severe / low recovery	Base	Benign / high recovery	Primary loss holders
Waymo robotaxi fleet	100 index	90.0 index	72.5 index	55.0 index	Waymo/Alphabet; partner exposure unknown
Serve original financed robot pool	$4.456m	$4.456m	$4.010m	$2.896m	Serve; financier for unrecovered collateral subject to recourse
CoreWeave gross technology equipment	$20.903bn	$19.858bn	$16.200bn	$11.497bn	Borrower equity/CoreWeave, then lenders/guarantors by recovery
Anduril Arsenal-1 pledged capex	$910.5m	$883.2m	$710.2m	$546.3m	Anduril; owner/financier and public counterparties by contract
Northvolt project-finance proxy	$5.0bn	$5.0bn	$4.4bn	$3.5bn	SPV equity, lenders/guarantors, suppliers and government

Exposure = reference value - max(recovery value - removal/cleanup cost, 0). These are scenario losses, not appraisals.

Waymo's risk is modeled as an index because fleet values and title data are not public. A base exposure of 72.5 on a 100 cost index assumes some vehicle salvage value but limited recovery for autonomy-specific integration. Alphabet and Waymo are the likely residual holders unless fleet partners own vehicles or receive guarantees. The uncertainty is legal ownership, not whether specialized hardware can lose value.

Serve's base modeled exposure is $4.01 million on the original financed robot pool. The robots depend on Serve software, field operations, and a thin secondary market. A lessor has first claim while financing is outstanding, but repossession may

yield little. Serve bears lost operating capacity and any remaining contractual deficiency; the lessor bears unrecovered collateral value unless protected by recourse.

CoreWeave's base exposure is $16.2 billion across the selected GPU and infrastructure base. GPUs have a secondary market, but recovery depends on generation, condition, export restrictions, networking, site removal, and whether customer-specific clusters can be redeployed. Asset lenders take first claim; parent guarantees and service obligations can return loss to CoreWeave. Landlords retain general real-estate value but may be left with specialized power and cooling built for a departed tenant.

Anduril's base modeled exposure is $710.2 million against the Arsenal-1 commitment after assumed recoveries. Production tools may be reusable within defense manufacturing, but security requirements, bespoke integration, and incomplete ramp can narrow buyers. The company, public-support counterparties, landlords, and any undisclosed equipment financiers would divide the loss according to title and clawback terms.

Northvolt's base modeled exposure is $4.4 billion on the project-finance reference amount. A battery factory has buildings, land, and equipment, yet incomplete lines, chemistry-specific tooling, environmental obligations, and removal costs can destroy recovery. The later sale process may preserve operating value, but creditor losses show that replacement cost was not recoverable value. [NV-02]

The party with first claim is not always the party with the largest loss. Senior lenders can foreclose and still recover less than principal. Lessors can repossess and face a nonexistent resale market. Customers can lose deposits or supply continuity. Governments can lose loans, guarantees, and expected employment. Common equity remains the first contractual loss absorber, but parent guarantees, service obligations, and public clawbacks can move loss across the legal boundary.

9. What happens when utilization disappoints

Asset-heavy models fail through fixed claims meeting variable revenue. A 25% utilization shortfall cuts productive hours and contribution while interest, minimum rent, maintenance capacity, insurance, and many supplier commitments continue. It can also shrink borrowing capacity if lenders advance only against contracted or operating assets.

Downside scenario outputs and funding consequences

Case	Shock	Quantified output	Immediate financing effect	Likely first economic absorber
CoreWeave	Utilization/revenue 25% below plan	Cash-flow coverage ~0.70x to ~0.52x	Less cash, possible borrowing-base/covenant pressure; leases and interest persist	Borrower/SPV equity then CoreWeave equity/guarantor
CoreWeave	Remove FY2025 deferred-revenue increase	OCF proxy -$1.116bn; coverage negative	Shows dependence on new customer advances for growth liquidity	CoreWeave equity and new capital providers
Serve	Fleet utilization 25% below plan	Fleet revenue/payment ~0.28x to ~0.21x	Equity funds fixed fleet burden; supplier negotiation likely	Serve common equity
Anduril	Asset cost 20% above plan	+$182.1m private funding need	More equity/debt before production cash flow	Anduril equity
Anduril	Base public benefit lost	+$426.1m private funding need	Grant/tax/site value must be replaced; possible clawback review	Anduril equity; public counterparty by contract
Northvolt	Failed ramp and refinancing	DIP 1.7% of filing debt; bridge liquidity 4.2%	Control shifts toward senior/rescue capital; project claims enforced	Equity, unsecureds, suppliers; guarantors/lenders by recovery
Waymo	25% utilization shortfall	Unquantified; standalone fleet data unavailable	Parent capital absorbs longer payback and asset underuse	Waymo/Alphabet

Coverage ratios are analytical reconstructions, not contractual covenant definitions.

CoreWeave's FY2025 cash-flow debt-service coverage is about 0.70 times in the base reconstruction and about 0.52 times after a proportional 25% operating shortfall. Excluding the year's deferred-revenue increase makes the starting coverage negative. A delayed site adds lease and interest carry before service revenue. A customer cancellation can remove revenue, prepayment support, and borrowing-base eligibility together. The likely responses are trapped cash, equity cures, covenant waivers, reduced capex, asset sales, or refinancing at a higher cost. [CW-01; MOD-01]

Serve's modeled fleet-revenue coverage of the Farnam burden falls from about 0.28 times to 0.21 times under a 25% shortfall. Equity funds the difference because the customer agreement does not disclose a take-or-pay floor. Robot resale proceeds are unlikely to finance a clean exit. The practical response is slower deployment, supplier renegotiation, or another equity raise.

At Anduril, a 20% cost overrun on the pledged Arsenal-1 investment adds $182.1 million before considering lost incentives. Loss of the base modeled public benefit adds another $426.1 million to the private funding need. A delayed ramp can also postpone payroll credits and trigger grant review. The public package therefore creates both support and performance-linked downside.

Northvolt is the realized stress case. Customer cancellation weakened projected cash flow; expansion delays affected guarantee-backed financing; emergency liquidity covered only a small fraction of debt; restructuring moved control to senior and rescue capital. At filing, $100 million of DIP financing was about 1.7% of reported debt, and cash collateral plus DIP was about 4.2%. The sequence confirms that announced project capacity is not liquidity. [NV-02; MOD-01]

Hidden recourse test

Structure	Visible separation	Recourse channel	Classification	Evidence gap
Waymo city operating partnerships	Partner performs fleet/depot operations	Alphabet majority funding, consolidation and likely residual support	Economically recourse to parent	Vehicle title, insurance, depot leases and OEM guarantees
Serve Farnam financing	Specific robot collateral	Corporate payment obligation and purchase option	Corporate/asset recourse	Full deficiency and termination language
CoreWeave DDTL 3.0	CCAC VII borrower pool	Unconditional parent guarantee	Economically recourse despite subsidiary	Full cash-sweep and cross-default schedules
CoreWeave DDTL 4.0	CCAC VIII; described non-recourse	Possible service/completion/reputation support not fully public	Limited / potentially genuine non-recourse	Full credit agreement and support undertakings
CoreWeave NJ JV	Unconsolidated 15% interest	$95m guarantee, $15m prepayment, up to $200m funding	Limited recourse with explicit leakage	Project debt and completion terms
Northvolt Ett project finance	Northvolt Ett AB SPV; non-recourse label	Offtakes, guarantees, group services and restructuring support	Limited recourse; recovery allocation unclear	Security package and final creditor recoveries
Anduril Arsenal-1	No disclosed project borrower	Corporate equity plus performance-linked public support	Corporate risk; no off-balance-sheet claim proven	Owner entity, equipment leases and construction finance

Classification is based on documented guarantees and support. “Unclear” is retained where underlying contracts are unavailable.

The contractual waterfall differs by case, but the economic order is consistent: operating cash and restricted reserves are consumed first; SPV and corporate equity absorb loss; subordinated and rescue capital follow; senior lenders and lessors enforce collateral; suppliers and customers assert contractual claims; governments seek clawback or honor guarantees; a parent decides whether to rescue. Guarantees, minimum payments, repurchase clauses, completion support, cross-defaults, and reputation can reorder that sequence. Any structure called non-recourse should be tested against those provisions before loss is assigned away from the parent.

10. Which financing structures actually scale

A financing model scales when capital availability rises with productive assets and durable cash flow without requiring common equity to absorb every incremental loss. That definition excludes simple deferral. Debt that must be repaid from the next equity round delays dilution. A lease with a residual guarantee moves title but not risk. A customer deposit that is freely refundable supplies temporary liquidity, not permanent capital.

Comparative financing archetypes

Company	Archetype	How capacity expands	Dilution / cost of capital	Primary fragility	Common-equity implication
Waymo	Parent-funded platform	Repeated parent allocation and partner operations	Low lender burden; high parent opportunity cost and control	Support discretion, opaque unit economics	Lower bankruptcy risk, but full economic capital sits with Alphabet
Serve	Venture-equity-funded operator	Equity plus modest equipment/supplier finance	High dilution; secured claim on robots	Underutilization and weak resale value	Debt mostly defers, rather than removes, equity need
CoreWeave	Asset-financed / SPV infrastructure platform	Eligible assets, contracts, customer cash and leased sites	Lower incremental equity; high fixed claims and refinancing exposure	Customer concentration, site delays, collateral depreciation	Strong upside leverage and severe downside asymmetry
Anduril	Government-supported industrial company	Corporate equity plus earned grant/tax/site support	Public support lowers private capital; conditions restrict flexibility	Overruns, procurement concentration, clawback	Higher project ROIC if support is realized and retained
Northvolt	Offtake-backed project-financed manufacturer	Project debt against plant and customer contracts	Lower parent equity before ramp; senior claims dominate failure	Yield/ramp failure and poor factory recovery	Ring-fencing protects only as far as contracts and asset value hold

CoreWeave comes closest to automatic expansion. Eligible GPUs and contracted deployments can support more asset debt, customer advances, and lease capacity. The model genuinely reduces equity per dollar of hardware. It breaks when customer concentration, delayed sites, collateral depreciation, or refinancing pressure removes borrowing capacity. Northvolt attempted the same logic at factory scale, but the asset could not meet the operating assumptions on which debt and offtakes depended.

Waymo scales through parent discretion. It avoids lender constraints and startup-level refinancing risk, but each expansion remains an allocation of Alphabet capital until fleet cash flow pays for replacement and growth. The model is durable for the subsidiary and expensive for the parent. It is not generally available to independent startups.

Serve's equipment finance and supplier warrant reduced immediate cash needs but did not transfer utilization risk. The company still needed equity to build ahead of revenue. Anduril's grant and tax incentives can permanently reduce private capital if performance conditions are met; the unanswered question is whether production contracts and equipment finance will create a repeatable asset stack after Arsenal-1.

Asset-light scorecard - physical and contractual burden

Company	Assets legally owned	Lease / purchase commitments	Maintenance burden	Customer delivery obligations
Waymo	Vehicle/depot title partly unknown; technology controlled	Operating-partner and plant commitments not quantified	Split with city partners; technology burden retained	Ride availability, safety and partner service commitments
Serve	Robot fleet and work in progress in group	Supplier and service commitments; historical equipment financing	Serve	No material prepaid capacity identified
CoreWeave	GPU pools in borrower entities; facilities mostly leased/JV-held	$8.2bn operating lease liabilities plus other commitments	CoreWeave and providers under long contracts	$8.2bn deferred revenue; take-or-pay capacity delivery

Company	Assets legally owned	Lease / purchase commitments	Maintenance burden	Customer delivery obligations
Anduril	Factory owner not public	Minimum $910.5m capex commitment; equipment terms unknown	Anduril/contract counterparties	Defense delivery obligations; progress-payment terms unknown
Northvolt	Factory in project SPV	Project debt and long-term industrial commitments	Project/operator before distress	Offtakes, quality and schedule conditions

Asset-light scorecard - recourse and economic exposure

Company	Guarantees / hidden recourse	Residual-value exposure	Working-capital burden	Required equity support	Assessment
Waymo	Alphabet consolidation and majority funding	Likely parent/Waymo; amount unavailable	Standalone data unavailable	High and discretionary	Legally opaque, economically parent-heavy
Serve	Corporate obligation around robot collateral	High; thin resale market	Inventory, commitments and pre-revenue build	High	Not asset-light
CoreWeave	Parent guarantees, JV funding and long service obligations	Shared but large; base modeled $16.2bn	Customer prepayments fund growth but create delivery liabilities	Lower per asset, still needed for mismatch	Asset-financed, not asset-light
Anduril	Public performance/clawback; project recourse unknown	Specialized factory; base modeled $710m	Inventory/progress payments not public	Material after support	Industrial, with conditional public subsidy
Northvolt	Guarantees and group/project support	Very high; base modeled $4.4bn	Ramp inventory and supplier burden contributed to stress	Exhausted before rescue	SPV-held assets did not remove economic loss

No single score is assigned. Each dimension is retained so legal ownership cannot hide fixed claims or residual exposure.

The asset-light scorecard avoids a single arbitrary number. Waymo has low disclosed debt but high parent support and uncertain fleet ownership. Serve legally owns or controls the fleet and bears maintenance and utilization. CoreWeave leases buildings and borrows through subsidiaries, yet carries large fixed claims, guarantees, and delivery obligations. Anduril's factory burden is visible even though its legal ownership map is not. Northvolt's SPV structure moved assets away from the parent but did not prevent equity, creditors, customers, and public bodies from absorbing loss.

Investor returns follow the same pattern. Debt and leases can avoid dilution in strong outcomes, but lender priority and fixed payments create downside asymmetry. Supplier warrants conserve cash but dilute upside. Government support can raise project ROIC by lowering net invested capital, subject to conditions. Customer advances reduce funding needs but can concentrate control and lock capacity. In the workbook, CoreWeave's reported-balance after-tax operating return proxy is slightly negative and becomes more negative relative to the full economic asset base; adjusted EBITDA divided by average gross property and equipment is 13.2%, showing why earnings and cash-return measures must be read together. Serve's modeled ROIC is deeply negative because the fleet was built far ahead of revenue. [MOD-01]

The structures that truly reduce equity are those in which another party supplies capital and retains a real share of loss: non-recourse asset lenders without parent support, lessors without residual guarantees, customers with non-refundable commitments, governments with earned grants, and partners that own reusable assets. The structures that merely defer equity are short-maturity venture debt, guaranteed leases, refundable deposits, supplier payables that contract under stress, and SPVs supported by parent completion or repurchase promises.

The central finding is not that one instrument is best. It is that the same machine can produce radically different common-equity risk depending on who pays, who owns, who gets the revenue, who has first claim, and who is left with the asset after failure. A parent-funded robotaxi fleet, a leased delivery fleet, a customer-backed GPU cluster, a publicly supported defense factory, and an offtake-backed battery plant are not members of one financing category. The financing contract, not the hardware label, determines scalability.

Findings hierarchy

Confirmed

Waymo's 2024 and 2026 equity rounds, Alphabet's majority role in the later round, Serve's Farnam financing and Magna warrant, CoreWeave's filed debt, leases, deferred revenue and borrower entities, Anduril's executed JobsOhio grant and tax-credit approval, and Northvolt's project-finance and restructuring events are directly documented. The legal separation of Northvolt Ett AB and specified CoreWeave borrowers is also documented. [WY-01; SR-01; CW-01; AN-01; NV-01]

Strongly supported

Alphabet is Waymo's principal economic shock absorber; Serve bears most robot utilization risk; CoreWeave's customer contracts and prepayments are financing inputs; Anduril's factory is materially public-supported; and Northvolt's ring-fencing redistributed rather than eliminated loss. Each conclusion is supported by multiple disclosures and the observed capital structure.

Modeled

Financing costs, opportunity costs, debt-service coverage, capital-intensity ratios, residual-value exposures, Anduril public-benefit realization, parent-subsidy ranges, and downside waterfalls depend on stated formulas and assumptions. They are auditable in the companion workbook and should be updated when contractual schedules or asset appraisals become available. [MOD-01]

Plausible but unproven

Waymo or Alphabet likely retains city-level vehicle residual risk; Arsenal-1 may use equipment leases, construction finance, supplier credit, or customer progress payments; and some CoreWeave entities described as non-recourse may carry economic support beyond the public summaries. These propositions require title records, contracts, or security documents.

Unknown

The public record does not establish Waymo vehicle title, insurance, maintenance, and depot lease responsibility city by city; Arsenal-1's property and equipment ownership and full clawback schedule; CoreWeave's complete advance-rate grids, reserve tests, and customer-to-borrower mapping; or the final Northvolt recovery allocation among project lenders, guarantors, trade creditors, and operating entities.

Appendix A. Assumption-book snapshot

The full assumption book is in the companion workbook. The snapshot below lists the variables that drive the largest modeled outputs. Bounds are scenarios, not forecasts. [MOD-01]

Company	Variable	Low	Base	High	Unit	Confidence
Waymo	Alphabet share of 2026 round	60%	75%	90%	% of round	Medium
Waymo	Parent capital opportunity cost	8%	12%	16%	% / year	Medium
Waymo	Vehicle recovery / removal	20% / 10%	35% / 7.5%	50% / 5%	% of value	Low
Serve	Robot recovery / repossession cost	5% / 15%	20% / 10%	40% / 5%	% of financed cost	Low
Serve	Available operating hours	12	16	20	hours/day	Medium
CoreWeave	GPU recovery / removal	15% / 10%	30% / 7.5%	50% / 5%	% of gross tech assets	Low
CoreWeave	Annual lease-burden inclusion	$0.825bn	$1.077bn	$1.131bn	$ / year	High
Anduril	JobsOhio grant realization	80%	95%	100%	% of commitment	Medium
Anduril	Site support realized	$0m	$35m	$70m	$	Low
Anduril	JCTC realization / discount rate	50% / 12%	75% / 10%	100% / 8%	%	Medium
Northvolt	Factory recovery / cleanup cost	10% / 12%	20% / 8%	35% / 5%	% of project proxy	Low

Low/base/high columns describe the selected assumption case. For residual value, lower recovery generally produces higher exposure.

Appendix B. Financing-lineage snapshot

Every modeled conclusion is linked to source inputs, formulas, legal-entity scope and uncertainty in the workbook Financing Lineage tab. Selected examples follow. [MOD-01]

Metric / conclusion	Source inputs	Formula / treatment	Entity scope	Uncertainty / sensitivity
Waymo visible equity and parent cost	2024 $5.6bn; 2026 $16.0bn; “significant majority” parent-funded	Round sum; 2026 amount x parent-share x opportunity cost	Waymo / Alphabet consolidated relationship	Parent share, historical support and shared services
Serve FY2024 capital intensity	Cash capex and FY2024 revenue	Capex / revenue; accrued capex shown separately	Serve consolidated group	Revenue mix and fleet vintage
Serve utilization	Daily supply hours and average active robots	Hours / robots / assumed available hours	Active fleet	Supply hours are not productive delivery hours
CoreWeave FY2025 debt service	OCF, cash interest, principal payments, current debt	CFADS proxy / interest + required principal	CoreWeave consolidated; not covenant-specific	Customer prepayments and exact principal schedule
CoreWeave residual exposure	Gross technology equipment and recovery/removal assumptions	Asset proxy - net recovery	Selected technology asset base	GPU market cycle, age and contract allocation
Anduril public benefit	Grant, site support, JCTC nominal value	Probability/time adjusted value - compliance/clawback reserve	Arsenal-1 project economics	Disbursement schedule, owner entity and final job performance
Northvolt rescue liquidity	DIP, cash collateral, debt at filing	Liquidity / debt	Chapter 11 debtors	Later debt growth and entity-specific recoveries
Asset-light assessment	Ownership, leases, guarantees, commitments, maintenance and residual risk	Dimension-by-dimension scorecard; no single score	Company and SPV economic perimeter	Private contracts and off-balance-sheet commitments

The workbook preserves committed versus funded capital, financing versus revenue, and consolidated versus legal-entity scope.

Appendix C. Source register and research gaps

Source-code register

Code	Evidence source	Use in analysis
EP-01	Supplied executive evidence memo, dossiers, ledgers, diagrams, filings, timeline and source materials	Primary record for all five cases; retains original source IDs and citations
WY-01	Alphabet 2025 annual disclosure and Waymo 2024/2026 financing announcements	Consolidation, funding rounds and parent role
WY-02	Waymo/Uber, Waymo/Moove and manufacturing-partner disclosures	Fleet operations, facilities, charging and integration responsibilities
AN-01	JobsOhio, Ohio Tax Credit Authority and site-support records	Grant, payroll tax credit, job/payroll/capex commitments and conditions
AN-02	Anduril financing releases and defense-contract disclosures	Corporate equity and demand support; contract ceilings kept separate from funded cash
SR-01	Serve Robotics FY2024 Form 10-K	Entities, robot assets, Farnam financing, Magna warrant and purchase commitments
SR-02	Serve FY2025 and Q1 2026 operating updates	Active robots, supply hours, asset and revenue run-rate inputs
CW-01	CoreWeave FY2025 Form 10-K	Year-end debt, leases, deferred revenue, customer contracts, VIE/JV and guarantee exposure
CW-02	CoreWeave Q1 2026 Form 10-Q	Current-period capex, financing and operating updates
CW-03	CoreWeave DDTL transaction releases and Fitch July 2026 proposed-facility note	Borrower entities, collateral, pricing, availability and commitment status
NV-01	Northvolt project-finance announcement and EIB/NIB records	SPV scope, lender/guarantee stack and offtake-backed financing
NV-02	Northvolt restructuring disclosures and current reporting through the evidence cut-off	Cash, debt, DIP, bankruptcy, sale process and creditor-loss context
MOD-01	Companion calculation workbook	Source ledger, assumptions, formulas, scenarios, waterfalls, lineage and findings confidence

Full URLs, filing dates, status and confidence are stored in the workbook Source Ledger. The uploaded evidence package remains the controlling source record.

Priority research gaps

Company	Missing evidence	Why it changes the model
Waymo	City-level vehicle title, depot leases, insurance layers, OEM commitments and guarantees	Determines asset ownership, maintenance, first claim and residual loss
Anduril	Arsenal-1 owner entity, equipment leases, construction debt, supplier terms, progress payments and grant clawback schedule	Determines true private-equity need and public recourse
Serve	Full Farnam deficiency/termination language, Magna purchase schedules and customer minimums	Determines lessor loss, supplier finance and utilization transfer
CoreWeave	Borrowing-base grids, customer-to-borrower mapping, reserves, cash sweeps, cross-defaults and complete support undertakings	Determines automatic capacity, hidden recourse and default waterfall
Northvolt	Security packages, guarantee calls and final entity-by-entity recoveries	Determines who ultimately absorbed project and parent-level loss

The model leaves these questions as unknowns rather than assigning unsupported amounts.