PWR gideon lens

Quanta Services, Inc. (PWR) - Gideon Lens

Production ER2 | Decision basis: 2026-08-01 SGT | Security: XNYS:PWR common share | Frozen close: USD 667.36

Quanta is a formidable operator serving a real infrastructure bottleneck, but this is not an investable underwriting at the frozen price. The company has assembled scarce craft labor, safety credentials, customer relationships, engineering capability, and project-management depth across electric-power and underground infrastructure. Those capabilities are difficult to reproduce quickly and should remain relevant well beyond the current data-center cycle. Yet the evidence does not establish elite statutory returns on the capital absorbed by acquisitions, nor does it establish enough pricing power to offset project, fixed-price, labor, claims, integration, and working-capital risk. Most decisively, the current share price requires earnings far beyond the already demanding reviewed base case.

Decision in one page

The reviewed TTM foundation is source-bound to the FY2025 Form 10-K and the Q2 2026 Form 10-Q. TTM revenue is USD 32.905 billion, statutory operating income is USD 2.036 billion, common net income is USD 1.327 billion, and diluted EPS is USD 8.733 using four direct non-overlapping quarterly share denominators. Electric Infrastructure Solutions contributes USD 26.905 billion of TTM revenue and USD 2.859 billion of Segment operating income; Underground Utility and Infrastructure Solutions contributes USD 6.000 billion and USD 0.492 billion. The segment sum and corporate-cost bridge reconcile exactly to statutory results. The independent quant reviewer passed Q and A-H, and the independent data reviewer cleared the fuller data package with 20 valid tables, 19/19 source-archive matches, and no unresolved statutory item.

Demand is genuine. Quanta's latest official release raised 2026 revenue guidance to USD 39.3-39.7 billion and disclosed total backlog of roughly USD 53.4 billion. Grid modernization, generation interconnection, transmission, large-load and data-center power needs, storm hardening, gas-utility integrity work, and complex industrial infrastructure create a long runway. AI is a demand-pull mechanism through power and facility infrastructure, not a separately disclosed product or profit pool; the report therefore assigns no invented AI revenue, margin, or backlog.

The reviewed segment models deliberately decelerate current growth. At the exact 2031-06-30 horizon, Electric bear/base/bull revenue is USD 34.338/47.416/54.116 billion and Segment operating income is USD 3.090/5.453/6.764 billion. Underground revenue is USD 6.895/9.670/11.687 billion and Segment operating income is USD 0.496/0.865/1.175 billion. Both independent segment reviewers cleared the annual FY2026-FY2031 tables, exact five-year arithmetic, source taxonomy, backlog treatment, and non-fabrication constraints.

Consolidated base-case revenue reaches USD 57.086 billion at the exact five-year horizon, with USD 4.291 billion of statutory operating income, USD 2.977 billion of common net income, USD 3.424 billion of free cash flow, and USD 19.412 of diluted EPS per listed unit. Simplified ROIC improves to 11.2%. The bear/base/bull EPS range is USD 6.395/19.412/28.228. All 11 synthesis tie-outs pass, including segment roll-up, statutory bridge, shares and units, period integrity, growth plausibility, probabilities, and valuation arithmetic.

The price overwhelms that progress. At USD 667.36, the framework requires USD 44.491 of FY+5 EPS to clear a 15x entry multiple. Base EPS is 56.4% short; even bull EPS is 36.5% short. A 15x base exit implies USD 291.18 and a negative 15.3% annual price return before the small dividend. Even bull EPS at 25x implies only USD 705.70, roughly 1.1% annual price appreciation. Every governed scenario fails the P/E<=15 gate.

The qualitative gates are also unresolved. Management is YELLOW: execution and disclosure credibility are good, but USD 8.455 billion of acquisition spending lacks independently measured cohort returns; succession remains concentrated; and governance optics do not justify a PASS. Moat is YELLOW with the 2046 test passing: Quanta's operating capabilities should endure, but simplified ROIC remains below an elite threshold and pricing evidence is indirect. The independent compounder audit removed unsupported ROIIC credit and reduced the score to 47/100, including 47/80 for business quality and 0/20 for 20% return underwriting. Its classification is Reject.

The red team could not break the operating thesis, but it did break the security thesis. The strongest bear case is that investors are paying scarcity economics for an acquisitive contractor whose high-return capital deployment is not proven. The base model still requires corporate-cost compression and a 7.52% statutory operating margin, while the market price requires much more earnings or a persistently extreme terminal multiple. Contract claims, fixed-price mix, working-capital reversals,

acquisition integration, labor and safety capacity, customer budgets, and dilution all create asymmetric downside to that expectation.

Verdict: PASS

Scorecard:

Gate	Result	Notes
Management	YELLOW	Execution credible; acquisition returns, governance, and succession remain unproven
Moat	YELLOW	2046 test passes; pricing power and excess returns remain unproven
P/E <= 15 on confident EPS at TTM + 5 calendar years	FAIL	Base cushion -56.4%; every governed scenario fails
Compounder Score	Audited 47 / 100	Reject; evidence does not support dream-investment status
Business Quality Score	Audited 47 / 80	Above-average platform, but dream-business evidence is insufficient
20% Return UW Score	Audited 0 / 20	Current price cannot support 20% underwriting without expansion

One-line thesis (or reason to pass): A durable infrastructure platform cannot overcome a price that requires more than twice the confident FY+5 EPS and unproven acquisition returns.

Security return underwriting (mandatory even when the verdict is PASS):

Measure	Result	Notes
Gross local-currency bear / base / bull IRR	(31.8472)% / (6.0876)% / 8.2108%	Five-year annualized shareholder return in USD
Probability-weighted gross local-currency IRR	(6.7233)%	CAGR of probability-weighted terminal wealth; 30% / 50% / 20% weights
Return bridge	USD 667.36 -> USD 471.2235	2026-06-30 to 2031-06-30; statutory EPS-times-exit-P/E bridge below

Scenario	Probability	Horizon EPS	Terminal equity value/share	Distributions/share	Terminal shareholder wealth/share	Ending diluted shares	Net-debt treatment	Exit valuation	Gross USD IRR
Bear	30%	USD 6.395	USD 95.925	USD 2.20	USD 98.125	154.129m	USD 5.598B disclosed; no second subtraction	15x P/E	(31.8472)%
Base	50%	USD 19.412	USD 485.30	USD 2.20	USD 487.50	153.359m	USD 5.598B disclosed; no second subtraction	25x P/E	(6.0876)%
Bull	20%	USD 28.228	USD 987.98	USD 2.20	USD 990.18	152.344m	USD 5.598B disclosed; no second subtraction	35x P/E	8.2108%

Probability-weighted terminal wealth is `30% x 98.125 + 50% x 487.50 + 20% x 990.18 = USD 471.2235`; annualizing that wealth ratio over exactly five years gives **(6.7233)%**. The bridge values equity directly as governed statutory EPS times scenario exit P/E, then adds USD 2.20 of cumulative distributions at the horizon. Starting net debt of USD 5.598B is disclosed but is not subtracted again. The 15x / 25x / 35x exits are bounded scenario assumptions informed by the archived positive-annual P/E median of 25.26x and range of 12.7358x-61.4352x (archived ratios SHA-256 `40c8b1be...dd7d37`). This return bridge is separate from the unchanged binary ER2 P/E<=15 gate.

Gross local-currency underwriting in USD; net-SGD adjustments appear separately in CIO actionability. Scenario probabilities are 30% / 50% / 20%.

Bear-case operating and return bridge

Bear case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 32.91B	USD 41.23B	4.62%	Fixed-price, labor and project stress slow both infrastructure segments.

Bear case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Operating margin	6.19%	4.50%	-1.69 pp	Lower segment margins and corporate costs compress statutory margin.
Operating earnings	USD 2.04B	USD 1.85B	-1.87%	Lower segment margins and corporate costs compress statutory margin.
Diluted share count	151.937M	154.129M	0.29%	Dilution modestly exceeds repurchases.
EPS	USD 8.733	USD 6.395	-6.04%	Below-line financing and tax leave EPS below the TTM anchor.
Valuation	76.4x P/E	15.0x P/E	-61.4x	15x is the audited bear exit, not an automatic gate multiple.
Share value	USD 667.36	USD 95.925	-31.85%	Terminal statutory EPS multiplied by 15x; starting net debt is not subtracted twice.
Annual dividend	USD 0.44	USD 0.44	0.00%	Five USD 0.44 annual payments are held as terminal cash.
Dividend yield	0.07%	0.46%	+0.39 pp	Endpoint DPS divided by endpoint share value; unavailable where endpoint DPS was not separately frozen.
Five-year dividends	-	USD 2.20	cumulative	Cumulative cash distributions per share over the exact five-year horizon; no reinvestment benefit.
Total ending value	USD 667.36	USD 98.125	-31.85% gross local IRR	Terminal share value plus cumulative distributions and any separately disclosed distributed-security value; reconciles to the audited bridge.

Base-case operating and return bridge

Base case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 32.91B	USD 57.09B	11.65%	Electric and Underground backlog conversion supports double-digit growth.
Operating margin	6.19%	7.52%	+1.33 pp	Segment improvement and corporate-cost leverage raise statutory margin.
Operating earnings	USD 2.04B	USD 4.29B	16.12%	Segment improvement and corporate-cost leverage raise statutory margin.
Diluted share count	151.937M	153.359M	0.19%	Modest net issuance remains; buybacks do not manufacture the case.
EPS	USD 8.733	USD 19.412	17.31%	Cleared statutory net income divided by the governed terminal shares.
Valuation	76.4x P/E	25.0x P/E	-51.4x	25x is near the archived positive-year median and far below today's P/E.
Share value	USD 667.36	USD 485.30	-6.17%	Terminal statutory EPS multiplied by 25x; debt is reflected in earnings risk.
Annual dividend	USD 0.44	USD 0.44	0.00%	Five flat USD 0.44 annual payments; no reinvestment benefit.
Dividend yield	0.07%	0.09%	+0.02 pp	Endpoint DPS divided by endpoint share value; unavailable where endpoint DPS was not separately frozen.

Base case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Five-year dividends	-	USD 2.20	cumulative	Cumulative cash distributions per share over the exact five-year horizon; no reinvestment benefit.
Total ending value	USD 667.36	USD 487.50	-6.09% gross local IRR	Terminal share value plus cumulative distributions and any separately disclosed distributed-security value; reconciles to the audited bridge.

Bull-case operating and return bridge

Bull case	Start (2026-06-30)	Horizon (2031-06-30)	CAGR / change	Justification
Revenue	USD 32.91B	USD 65.80B	14.87%	Strong grid and large-load demand convert with better project execution.
Operating margin	6.19%	8.86%	+2.67 pp	Both segment margins improve while corporate costs scale.
Operating earnings	USD 2.04B	USD 5.83B	23.46%	Both segment margins improve while corporate costs scale.
Diluted share count	151.937M	152.344M	0.05%	Repurchases nearly offset issuance.
EPS	USD 8.733	USD 28.228	26.44%	Bull EPS requires revenue, margins and below-line improvement together.
Valuation	76.4x P/E	35.0x P/E	-41.4x	35x gives credit for bull execution but still compresses from today's P/E.
Share value	USD 667.36	USD 987.98	8.17%	Terminal statutory EPS multiplied by 35x.
Annual dividend	USD 0.44	USD 0.44	0.00%	Five flat USD 0.44 annual payments; no reinvestment benefit.
Dividend yield	0.07%	0.04%	-0.02 pp	Endpoint DPS divided by endpoint share value; unavailable where endpoint DPS was not separately frozen.
Five-year dividends	-	USD 2.20	cumulative	Cumulative cash distributions per share over the exact five-year horizon; no reinvestment benefit.
Total ending value	USD 667.36	USD 990.18	8.21% gross local IRR	Terminal share value plus cumulative distributions and any separately disclosed distributed-security value; reconciles to the audited bridge.

CIO actionability (separate from ER2 underwriting):

Measure	Result	Notes
Status	PASS	No new buy; research-only actionability result
Bear / Base / Bull net SGD IRR	(32.95)% / (6.17)% / 9.60%	1.20 / 1.29 / 1.38 terminal USD/SGD; 15bp entry and exit costs; 30% distribution withholding
Probability-weighted net SGD IRR	(6.34)%	CAGR of SGD 621.2764 probability-weighted terminal wealth from SGD 862.0521 entry cost
10% mandate hurdle	FAIL	Base and probability-weighted returns are negative; bull is below 10%
15% stretch hurdle	FAIL	No scenario reaches 15% net SGD
Downside and portfolio fit	FAIL	Bear loses capital and no same-pack covariance row exists to support a positive sizing decision

Measure	Result	Notes
Proposed sizing ceiling	none	No positive size; owner approval remains required

The net-SGD overlay is a bounded diagnostic, not a live portfolio optimizer. It uses fixed FX scenarios, 15bp entry/exit costs, 30% withholding on distributions, and no interim reinvestment benefit. This package has no frozen same-pack covariance row; that missing portfolio-risk input is explicit and does not get back-filled from another company.

Trade execution authorized: NO

Kill / trigger criteria:

- BUY trigger: price below USD 291.18, only if refreshed base EPS remains at least USD 19.412 and both Management and Moat independently upgrade to PASS (implied price discount 56.4% versus the frozen close).
- PASS triggers: Electric Segment operating margin below 9.0% for two consecutive quarters; rolling free-cash-flow conversion below 70% of common net income without a source-bound working-capital explanation; or acquisition-cohort returns remaining unavailable while acquisition spending and dilution continue.
- Upgrade to BUY conditions: independently evidenced acquisition-cohort ROIIC, sustained statutory ROIC materially above the reviewed 11.2% base path, stable project/claims conversion, both qualitative gates at PASS, and a refreshed price below the 15x confident FY+5 EPS threshold.

Research sizing if actionable: none. This report supplies no sizing proposal and cannot authorize a trade.

What to monitor

The highest-value evidence is not headline backlog growth. Monitor Electric organic growth excluding acquisitions, both segment margins, RPO versus broader nonbinding backlog, backlog conversion, fixed-price mix, contract assets and unapproved change-order claims, cash conversion after normalized capex, corporate costs as a percentage of revenue, net debt and interest expense, diluted shares, and acquisition-cohort statutory returns. Management and moat can upgrade only when those measures show that scale is becoming durable per-share economics rather than purchased growth.

Conversely, a lower share price alone is insufficient if operating quality deteriorates. The entry threshold must be recomputed from a current quote packet and an updated exact five-year earnings model. The frozen quote is valid for this research decision basis only; it confers no ongoing actionability and no trading authority.

Governed conclusion

PWR is a credible company and a failed security underwriting at USD 667.36. The report preserves that distinction. Grid, large-load, utility and industrial infrastructure demand can support years of growth, and Quanta's labor and execution platform is difficult to replicate. Nevertheless, two qualitative gates remain YELLOW, the valuation gate is a hard FAIL, the audited compounder score is 47/100, and the red team concludes that the investment thesis does not survive. The only truthful Production ER2 verdict is PASS.

Quanta Services, Inc. — Business Primer

Ticker: PWR **Research cutoff:** 2026-08-01 SGT **Financial anchor:** TTM ended 2026-06-30; USD millions unless otherwise stated **Role of this document:** reader-facing orientation, not audited quantitative authority

Executive orientation

Quanta Services is best understood as a scaled, craft-labor-led infrastructure platform rather than a conventional construction contractor. Its operating companies design, procure, build, repair and maintain electric-grid, generation, communications, gas-utility, industrial and large-load infrastructure. The customer is usually a utility, power developer, technology or data-center owner, industrial operator, communications provider, or public entity. The customer's problem is rarely a lack of a commodity product. It is a shortage of qualified labor, engineering coordination, critical equipment, local execution capacity and schedule certainty on infrastructure that is difficult, dangerous and costly to deliver.

The central investment distinction is that Quanta does not sell artificial intelligence. AI is one source of load growth that may pull spending through several layers of Quanta's platform: generation, high-voltage transmission, substations and grid

interconnection, then electrical, mechanical and process systems inside a data center. That breadth can make Quanta a beneficiary of AI infrastructure even if a specific data-center project changes technology or generation mix. It also means the thesis must not be reduced to data centers. Utility modernization, storm hardening, aging gas distribution, renewable and conventional generation, manufacturing reshoring and communications infrastructure remain separate demand engines.

The reviewed quantitative foundation shows a large and increasingly Electric-weighted business. FY2025 revenue was $28.480 billion. Electric Infrastructure Solutions generated $23.001 billion, or a derived 80.8% of the total, while Underground Utility and Infrastructure Solutions generated $5.478 billion, or 19.2%. The TTM base through June 2026 rose to $32.905 billion. TTM segment operating margins were 10.6% for Electric and 8.2% for Underground and Infrastructure before corporate and non-allocated costs. Those segment economics matter: Quanta's scale creates valuable coordination and self-performance capacity, but statutory operating profit remains meaningfully below the sum of segment profit because corporate expense, acquisition-related amortization and other non-allocated items are substantial. All financial figures in this primer come from the reviewed [quantitative foundation](C:/Users/Admin/OneDrive/GPT/ER%202.0/Quanta%20Services,%20Inc/quant_foundation.md).

Business overview: what Quanta actually does

The Electric segment covers the infrastructure that produces, moves and uses electricity. Work includes overhead and underground transmission and distribution, substations, grid hardening, smart-grid upgrades, emergency restoration, energized maintenance, renewable generation and storage, power-generation engineering and construction, communications networks, commercial and industrial electrical systems, and electrical systems for large-load facilities. Quanta can also provide aviation support, testing, commissioning, engineering, procurement and selected manufactured components. The [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm) describes this as a comprehensive offering spanning grid, generation and large-load markets.

The Underground and Infrastructure segment covers gas distribution and transmission systems, pipeline integrity and rehabilitation, industrial maintenance and turnarounds, civil and site-development work, and mechanical, plumbing and process infrastructure for large-load facilities. It also participates in selected energy-transition work such as alternative-fuel, carbon-capture and hydrogen infrastructure. For a data-center campus, this segment can perform site preparation and critical mechanical systems while Electric handles electrical systems and the external grid connection. For a gas utility, the same segment may replace aging distribution pipe under a multi-year modernization program.

Customers generally buy through relationships, qualification processes, requests for proposal, master service agreements, negotiated programs and project-specific awards. This is not a self-serve or distributor-led sales model. Local operating-company leaders maintain the day-to-day customer relationship, while regional and corporate teams coordinate larger accounts and multi-company projects. Preferred-provider status, safety records, bonding capacity, available crews, technical capability and past execution often determine who is invited to bid. Price matters, but on critical-path work, the economic cost of a missed energization date can be much greater than a contractor's fee. Quanta's proposition is therefore a combination of price, capacity and certainty.

Operating history and strategic evolution

Quanta was founded in 1997 around four operating companies and completed its NYSE initial public offering in 1998. Its official [company history](https://www.quantaservices.com/history) says it has acquired more than 300 companies while preserving a decentralized operating model. This origin still explains the structure: acquired businesses often retain their local names, leadership, customer relationships and entrepreneurial accountability, while gaining access to Quanta's balance sheet, training, safety systems, equipment, procurement and cross-company capabilities.

The strategic arc has moved from consolidating local specialty electrical contractors toward assembling an end-to-end infrastructure platform. Grid transmission and distribution remain foundational. Renewable generation expanded Quanta's addressable work and was folded into the current Electric segment in 2025. Acquisitions then added engineering, equipment manufacturing, inside-the-fence electrical systems, mechanical and process infrastructure, fabrication, civil work and front-end services. Cupertino Electric, acquired in 2024, broadened large-load and technology-facility electrical capability. Dynamic Systems and other 2025 additions extended mechanical, plumbing, process, modular and fabrication capability. The 2026 acquisitions of Phalcon, Enerfab, Percheron and PSD further added electrical, mechanical, fabrication, land and front-end disciplines, according to the SEC-filed [Q2 2026 earnings release](https://www.sec.gov/Archives/edgar/data/1050915/000119312526324855/d56853dex991.htm).

The logic is not simply to aggregate revenue. It is to own more of the critical path, reduce handoffs, self-perform more work and offer a customer one accountable partner across design, siting, procurement, interconnection, civil preparation, electrical construction, mechanical systems and commissioning. The best version of this strategy improves win rates and project control. The adverse version raises integration demands, goodwill, amortization, debt and exposure to large fixed-price projects. Investors must judge both outcomes together.

Revenue architecture

The current two-segment structure began in 2025, when historical Electric Power Infrastructure and Renewable Energy Infrastructure were combined into Electric Infrastructure Solutions. Prior periods were recast for comparability.

Segment	FY2025 revenue	Share of FY2025 revenue	TTM revenue	TTM segment operating income	TTM segment margin
Electric Infrastructure Solutions	$23.001bn	80.8%	$26.905bn	$2.859bn	10.6%
Underground Utility and Infrastructure Solutions	$5.478bn	19.2%	$6.000bn	$0.492bn	8.2%
Total modeled segments	$28.480bn	100.0%	$32.905bn	$3.351bn	10.2%

The Electric segment is not one homogeneous revenue stream. Recurring utility maintenance and storm work behave differently from a multi-year high-voltage line, utility-scale solar EPC project, gas-generation plant or hyperscale data-center electrical package. The common thread is the need for certified craft labor, engineering and field execution around electrical infrastructure. Segment mix can therefore alter margins even when reported Electric growth is strong.

Underground and Infrastructure is similarly mixed. Regulated gas-distribution replacement can be recurring and programmatic. Pipeline construction can be more project-driven. Industrial turnarounds are time-sensitive and specialized. Civil and mechanical work for large-load facilities may grow quickly but can carry schedule, labor and coordination risks. Investors should avoid assigning one multiple or one normalized margin to every activity simply because it sits in the same segment.

Quanta operates primarily in the United States, with material operations in Canada and Australia and selected other markets. The geographic footprint is useful because electric-grid renewal, wildfire hardening, renewable interconnection and load growth are not confined to one state or utility. Local density still matters: permits, union relationships, customer qualification and crew mobilization are regional. Quanta's network can combine local presence with national scale.

Customer and end-market structure

The customer base spans regulated electric and gas utilities, independent power developers, technology and colocation companies, advanced manufacturers, communications providers, pipeline and industrial operators, general contractors and governmental entities. Representative relationships disclosed in the 10-K include major U.S. utilities and power developers. No single customer dominated FY2025 revenue; the largest represented a high-single-digit share, while the top ten together represented less than one-third. This reduces single-account dependency, although individual operating companies, regions or mega-projects can still be concentrated.

Utility and power customers are the economic core. Their spending is supported by reliability requirements, aging assets, load growth and, in regulated jurisdictions, multi-year capital plans. Technology and manufacturing customers have become more important as data centers and factories require both utility-side capacity and inside-the-fence systems. Energy and industrial customers add gas-utility, pipeline, petrochemical and processing demand.

The most valuable relationships are programmatic. A master service agreement can position an operating company for recurring assignments, but it is not necessarily a firm volume commitment. A large fixed-price project is firmer but carries more delivery risk. Reported backlog blends firm remaining performance obligations with estimates for future orders under MSAs and some non-fixed-price contracts. The [Q1 2026 release](https://investors.quantaservices.com/news-events/press-releases/detail/396/quanta-services-reports-first-quarter-2026-results) and Q2 release both described record backlog, but backlog should be treated as a visibility indicator, not a guaranteed revenue annuity: projects can accelerate, slip, resize or be cancelled.

Project and contract economics

Quanta earns revenue under fixed-price, unit-price and cost-plus arrangements. Under a fixed-price contract, Quanta agrees to deliver a defined scope for a lump sum. Profit depends on estimating labor productivity, material and equipment cost, engineering complexity, schedule, weather, permitting, subcontractors and change orders better than the contingency embedded in the bid. A favorable execution cycle can produce margin expansion; a design error, delayed transformer, labor shortage or unrecovered scope change can erase the profit on a large job.

Unit-price work pays for completed units, such as feet of line or discrete tasks. It can reduce total-scope risk but still exposes Quanta to productivity, mobilization and input-cost variation. Cost-plus work generally reimburses cost plus an agreed margin and is economically safer, though customers may monitor allowable costs closely and the absolute margin opportunity can be lower. Master service agreements often provide relationship continuity and negotiated rates but usually do not require the customer to award a minimum quantity.

Revenue on many fixed-price and more complex unit-price contracts is recognized over time using cost incurred relative to expected total cost. That accounting makes estimate discipline crucial. If estimated total cost rises, cumulative profit may be reduced immediately. Contract assets arise when recognized revenue exceeds billing; contract liabilities arise when billing leads performance. A rising contract-asset balance is not automatically problematic, but persistent growth without cash conversion can indicate customer approval lags, disputed change orders or aggressive estimates.

The cost base is predominantly people, equipment, materials, subcontractors and project support. Labor productivity is decisive because many tasks require trained, certified crews operating around energized or otherwise hazardous infrastructure. Quanta's self-perform model can retain margin, improve control and reduce dependence on third parties. It can also increase fixed organizational demands and magnify the cost of idle capacity when project timing changes. Roughly one-fifth of work is subcontracted according to the 10-K, so subcontractor availability and performance remain meaningful.

Unit economics by segment

In Electric, a revenue dollar first pays craft labor, supervision, equipment, engineering, materials, procurement, subcontractors and field overhead. Margin tends to improve when Quanta has repeat work, good geographic density, standardized designs, strong schedule control, favorable mix and a broader solutions role. Storm restoration can command attractive economics but is episodic. Large EPC, generation or data-center packages can create scale and cross-selling, yet they concentrate estimating and execution risk. Supply-chain ownership in transformers, switchgear and other critical components may improve schedule certainty and customer value, but manufacturing capacity must be utilized and managed well.

In Underground and Infrastructure, economics vary from recurring gas-distribution replacement to industrial turnarounds and large-load civil or mechanical packages. Dense local programs and repeat utility work can support steady crew utilization. Pipeline and industrial projects may be more sensitive to commodity cycles, permitting and customer capital budgets. Mechanical and process infrastructure for data centers can deepen Quanta's customer relationship, but it also raises the number of disciplines that must coordinate precisely on a compressed schedule.

The reviewed financials show FY2025 Electric segment margin of 10.3% versus 7.3% for Underground and Infrastructure. On the TTM base these became 10.6% and 8.2%. This is a real improvement, but it should not be extrapolated mechanically. Corporate and non-allocated costs reduced the TTM segment operating-income sum of $3.351 billion to statutory operating income of $2.036 billion. Acquired intangible amortization, stock compensation and central costs are economically relevant even when management also presents adjusted results.

Capital intensity and cash cycle

Quanta is less plant-intensive than a heavy manufacturer but more capital-intensive than a pure engineering consultant. Crews require specialized trucks, cranes, helicopters, tooling, safety equipment, yards, fabrication and modular facilities, training centers and information systems. Manufacturing investments add working capital and fixed assets. TTM capital expenditures were $787 million against $3.178 billion of operating cash flow, producing $2.391 billion of free cash flow in the quantitative foundation.

Cash conversion can be uneven because billing milestones, retainage, customer approval of change orders, weather and project timing do not align perfectly with accounting revenue. Quanta may fund payroll, materials and cost overruns before collection. Large projects can consume working capital early and release it near completion. Investors should therefore examine multi-year operating cash flow and contract balances rather than infer quality from one quarter.

Acquisitions create another capital-allocation demand. At June 2026, net debt excluding operating leases was $5.598 billion, up materially from FY2023. The balance sheet still supports a scaled platform, but repeated acquisitions require disciplined

prices, integration and deleveraging through cash flow. Share-based compensation and acquisition consideration also matter: diluted weighted-average shares rose from 145.373 million in FY2021 to 151.937 million on the TTM basis. Per-share compounding must outrun both financing cost and dilution.

Competitive landscape and peer set

Competition is fragmented locally and formidable nationally. Large public peers and adjacent competitors include MasTec, MYR Group, EMCOR, Primoris, Kiewit, Burns & McDonnell and specialty regional contractors, although business mixes differ. Utilities can also self-perform or acquire contractors. General contractors may control a customer relationship and subcontract parts of the work. Some barriers to entry are low in ordinary construction, but the barriers rise sharply for energized work, high-voltage systems, mega-project bonding, safety qualification, national mobilization and scarce craft labor.

Quanta's potential advantages are breadth, labor capacity, long customer relationships, local operating-company density, training, safety systems, equipment, bonding capacity, engineering and the ability to coordinate multiple scopes. Its official [operating-company overview](https://www.quantaservices.com/companies) emphasizes the combination of local response and global resources. This can be a genuine moat when a customer needs thousands of qualified workers or a single accountable party across several infrastructure layers.

The moat is not absolute. Customers remain price-sensitive; competitors can hire crews or buy capabilities; acquired leaders can leave; and a decentralized structure can produce uneven controls. A national brand does not rescue a poorly bid local project. The test of competitive quality is sustained margin and cash conversion through different project mixes, not backlog growth alone.

Demand runway: grid, generation, large load and AI

The demand case begins with the grid. Utilities must replace aging infrastructure, harden systems against storms and wildfire, connect new generation, improve reliability and serve rising load. Transmission and substation projects are long-cycle, often permit-constrained and difficult to staff. Distribution modernization and maintenance can be more recurring. Both favor a contractor with utility relationships and specialized crews.

Generation is the second layer. Renewable generation and storage require interconnection and transmission. Rising power demand also supports investment in gas-fired generation and related gas infrastructure. Quanta can participate in generation construction, the grid connection and, through its broader portfolio, supporting civil, mechanical and electrical scopes. Technology choice therefore changes mix more than it eliminates the opportunity.

Large-load facilities are the third layer. The 10-K explicitly links cloud services and AI training and inference to data-center investment. It says Quanta can address critical-path low-voltage electrical systems inside a facility, high-voltage transmission, substations and transformers connecting it to the grid, and generation needed to power it. That is the clearest source-bound AI linkage. It is a demand-pull thesis, not an assertion that Quanta owns proprietary AI technology.

The opportunity is attractive because the power bottleneck can be more binding than the server bottleneck. A customer may need land, interconnection, generation, substations, electrical rooms, modular systems, mechanical infrastructure and commissioning on a compressed schedule. Quanta's acquisitions seek to make those scopes more integrated. Management's [2026 Investor Day](https://investors.quantaservices.com/news-events/ir-calendar/detail/20260331-2026-investor-day) framed utility, generation and large-load markets as converging and set long-term targets through 2030.

The constraint is disclosure. Quanta does not provide an audited AI-only revenue line, AI-only backlog, customer-level profitability or a clean split between data centers, advanced manufacturing and communications within its broader customer categories. Some large-load work also comes through general contractors rather than directly from hyperscalers. Accordingly, the appropriate conclusion is that AI is a potentially important accelerator embedded across Electric and parts of Underground and Infrastructure, not a separately measured franchise whose economics can be isolated from public data.

Current strategy and acquisitions

Quanta calls its approach a compounding model: organic growth from customer capital programs, margin improvement from scale and mix, selective acquisitions, and reinvestment in labor, training, equipment, engineering and supply chain. The strategic objective is to become a solutions partner earlier in a customer's planning process and perform more of the project with Quanta-controlled resources.

Recent acquisitions fit that design. Cupertino Electric added inside electrical systems and modularization for technology and other complex facilities. Dynamic Systems added mechanical, plumbing and process systems. Phalcon added regional

electrical density and fabrication in the Northeast and Mid-Atlantic. Enerfab added fabrication, electrical, mechanical, construction and maintenance capabilities across generation, industrial and large-load markets. Percheron and PSD added front-end, land, engineering and manufacturing capabilities. These descriptions are sourced from the 10-K and Q2 2026 release; no acquisition synergy is assumed beyond what is operationally plausible.

The strategic upside is cross-selling and reduced critical-path risk. A utility or technology customer may prefer one partner capable of navigating siting, engineering, supply, craft labor and commissioning. The downside is that integration can be harder precisely because Quanta preserves operating-company autonomy. Shared safety, financial controls and customer coordination must improve without eroding the acquired company's local culture. Goodwill and intangible assets can conceal poor returns for years before an impairment makes the error visible.

Principal risks

Project execution. Larger fixed-price and EPC projects magnify errors in scope, labor productivity, design, schedule and procurement. One adverse project can offset gains across many smaller jobs.

Labor scarcity and safety. Quanta had about 69,500 employees at FY2025 year-end, mostly hourly, and a meaningful unionized workforce. Demand may outstrip the supply of qualified craft labor. Hazardous work creates risk of injury, work stoppage, litigation and reputational harm despite training and safety systems.

Backlog quality and timing. Backlog includes estimates for future MSA work that may not be contractually committed. Permitting, customer financing, equipment availability, weather and design changes can shift revenue between periods.

Acquisition and leverage. Acquisitions can overpay for cyclical earnings, fail to retain leaders, import liabilities or dilute controls. Debt service and higher interest cost reduce flexibility if cash conversion disappoints.

Customer and regulatory behavior. Utilities can alter capital plans, face rate-case constraints or self-perform more work. Government policy can speed one category of infrastructure while delaying another. Permitting and legal challenges can defer projects for years.

Supply chain. Transformers, switchgear and other critical components can have long lead times. Quanta's manufacturing and procurement investments may help, but they also expose it to inventory, capacity and execution risk.

Weather and cyclicality. Storms can create high-margin emergency work but also disrupt planned projects. Pipeline, industrial and generation work may be sensitive to commodity economics, customer budgets and financing markets.

AI narrative risk. Investors may capitalize a broad infrastructure contractor as if AI-related revenue were separately visible, high-margin and recurring. Public disclosure does not support that precision. Data-center schedules, architecture, customer concentration and power availability can change.

What an investor should monitor

The most useful operating signals are organic growth excluding acquisitions; Electric and Underground segment margins; statutory operating margin after corporate costs; cash conversion relative to earnings; contract-asset and receivable growth; free cash flow after realistic capex; net debt; dilution; backlog composition between firm obligations and estimated MSA orders; large-project concentration; safety performance; and the pace at which acquired businesses contribute without incremental surprises.

For AI and large-load exposure, investors should ask for the share of revenue and backlog tied specifically to data centers, how much is inside-the-fence versus utility-side, direct versus general-contractor customer relationships, fixed-price versus reimbursable mix, expected margin, customer concentration and project cancellation protection. Until those disclosures improve, a conservative analysis should attribute only a portion of accelerated growth to AI and retain grid modernization as the core durability case.

Concise investor glossary

- **Backlog:** management's estimate of future revenue from firm obligations plus selected expected MSA and non-fixed-price orders; useful but not guaranteed.
- **RPO:** remaining performance obligations from contracts; generally firmer than the broader backlog measure.
- **MSA:** master service agreement setting terms and rates for future work, often without a minimum volume commitment.

- **EPC:** engineering, procurement and construction responsibility packaged under one contract.
- **Fixed price:** lump-sum contract where Quanta bears significant cost and productivity risk.
- **Unit price:** payment per completed unit of work.
- **Cost plus:** reimbursement of allowable costs plus an agreed margin.
- **Self-perform:** work executed by Quanta's own operating companies and crews rather than subcontractors.
- **Craft labor:** trained field workers such as linemen, electricians, welders, pipefitters and equipment operators.
- **Large load:** a facility with unusually high power demand, including data centers and advanced manufacturing plants.
- **Interconnection:** the transmission, substation and control infrastructure connecting generation or load to the grid.
- **Contract asset:** revenue recognized before the related amount can be billed.
- **Segment operating income:** management's segment profit measure before corporate and non-allocated costs; not the same as consolidated statutory operating income.

Source discipline and limitations

Financial values are drawn only from the reviewed quantitative foundation, which reconciles live FMP pulls to SEC filings and uses official figures where data differ. Qualitative claims are anchored to the FY2025 10-K, Q1 and Q2 2026 company releases, the 2026 Investor Day page, and Quanta's official history and operating-company pages. The Q2 release was SEC-filed on July 30, 2026 and is the newest stable primary publication used here. Management targets, backlog descriptions and stated strategic benefits are presented as management claims, not as independently proven outcomes. No AI-only financial series, project-level profitability or customer-level economics was available, so conclusions on AI remain deliberately constrained.

WORKER A COMPLETE — BUSINESS ANALYSIS READY FOR WAVE 2

Quanta Services, Inc. (PWR) — Management Assessment

Assessment date: 2026-08-01 **Production gate: YELLOW — investable leadership record, but the recent acquisition cohort and governance optics require proof before a decade-long PASS. Quantitative control:** DR-resealed `data_package.md`, SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9`. Historical figures below come from that package or its QFR-cleared quantitative foundation; no historical series was silently re-fetched or substituted. This assessment authorizes no trade, order, portfolio mutation, message, ranking, sizing decision, or BUY-queue action.

1. Who is running the company

Earl C. “Duke” Austin Jr., 56, has been Quanta’s president and chief executive officer since March 2016 and a director since the same month. He is not a financial-engineering outsider: before becoming CEO he was Quanta’s chief operating officer from 2013, led the Electric Power and Oil and Gas divisions, and ran North Houston Pole Line from 2001 to 2009. He has more than 30 years in the industries Quanta serves. The long tenure matters because Austin plainly owns the present strategy—decentralized operating companies, craft-skilled self-performance, utility and generation breadth, and acquisition-led expansion into engineering, manufacturing, inside-the-fence electrical and mechanical systems. This is not a strategy inherited last year.

Jayshree Desai, 54, has been chief financial officer since July 2022 after serving as chief corporate development officer from January 2020. She therefore owns much of both the financing and transaction record now under review. Her prior roles included president of ConnectGen, COO of Clean Line Energy Partners and CFO of Horizon Wind Energy. Her mandate spans finance, accounting, M&A, treasury and information technology, making her more than a reporting CFO. The combination is valuable, but it also concentrates acquisition advocacy and acquisition financing within the same executive remit; the independent Finance and Investment and Audit committees must provide the counterweight.

The disclosed operating bench is credible. Karl Studer has been President–Electric Power since 2022 after four years as a regional vice president; he is a certified journeyman lineman and co-founded two businesses Quanta acquired in 2013. Gerald “BJ” Ducey Jr. has been President–Strategic Operations since May 2023 and has held Quanta or Quanta-operating-company

roles since 2006. Paul Nobel has been chief accounting officer since 2021 and senior vice president since 2023. This is meaningful internal succession depth, although no executive yet has public evidence equivalent to Austin's cross-platform customer authority.

The board has ten directors following Joseph Kim's election in May 2026. Nine are independent; Austin is the only non-independent director. Doyle Beneby is the separate independent chair, and the standing committees are entirely independent. The board held seven meetings in 2025, each director attended more than 75% of applicable meetings, and independent directors meet without management. That is a sound formal structure. Two caveats remain: Bernard Fried and Worthing Jackman had 22- and 21-year tenures in the 2026 proxy, which weakens the force of "refreshment," and the related-party transactions discussed below show why formal independence alone is not sufficient.

2. Tenure, decisions and operating record

Austin's record is unusually strong on output. From FY2021 through FY2025, revenue rose from $12.980 billion to $28.480 billion, a 21.7% four-year CAGR. Statutory operating income rose from $664 million to $1.612 billion, diluted EPS from $3.34 to $6.80, and free cash flow from $197 million to $1.621 billion. TTM results through June 2026 reached $32.905 billion of revenue, $2.036 billion of statutory operating income and $2.391 billion of free cash flow. These outcomes support management's claim that Quanta has built a scalable platform.

Three decisions define the record:

- **Build an integrated, self-perform infrastructure platform.** Austin retained the decentralized operating-company model while using training, safety systems, equipment, procurement and cross-company capabilities to serve broader customer programs. Between FY2021 and FY2025, operating margin improved from 5.1% to 5.7% while scale more than doubled. This is real execution, not merely multiple expansion.
- **Enter large-load and inside-the-fence infrastructure through Cupertino Electric.** Quanta paid approximately $2.04 billion of total consideration in July 2024, including 882,926 Quanta shares. The 2025 10-K says acquired businesses added about $1.54 billion to 2024 Electric revenue, while calls described Cupertino as ahead of schedule and strategically complementary. The decision expanded Quanta's addressable market, but Quanta does not disclose a clean CEI-only ROIC or post-synergy return; strategic fit is clearer than per-dollar value creation.
- **Accelerate the acquisition and supply-chain strategy in 2025–26.** Dynamic Systems cost about $1.67 billion including contingent consideration; other 2025 business combinations totaled roughly $2.47 billion. Phalcon, Enerfab, Percheron and PSD added another approximately $1.24 billion of upfront consideration in 2026, with up to $242.3 million contingent. The deals add mechanical, process, fabrication, land, engineering and regional electrical capability. Backlog and 2026 guidance have risen sharply, but these cohorts are too new to call proven compounding assets.

The record is not flawless. A non-core business disposition generated an $11.9 million loss in 2024. A large Peru telecommunications project terminated in 2019 required a later arbitration recovery. Management has also carried a delayed Canadian transmission collection while explaining that it would not force an inferior settlement. These are contained rather than thesis-breaking failures, and management disclosed them. More important, the conservative statutory ROIC proxy in the cleared package improved from 5.8% in 2021 to 8.6% in 2024, then slipped to 7.8% in 2025 as invested capital expanded. Quanta's compensation-defined adjusted ROIC averaged 12.21% for 2023–25. Both measures are below Gideon's >20% long-duration aspiration. The issue is not whether earnings grew; it is whether the newest dollars deployed will earn enough after goodwill, amortization, financing and dilution.

3. Capital allocation behavior

The five-year deployment pattern is unambiguous:

FY2021–FY2025 deployment	Amount	Interpretation
Capital expenditures	$2.462B	Fleet, equipment, facilities and capacity investment
Cash M&A outflow	$8.455B	Dominant external deployment channel
Open-market buybacks	$0.330B	Opportunistic but secondary
Common dividends	$0.237B	Small, steadily rising return of capital

This pattern matches the stated strategy. Management says its primary capital use is acquisitions that deepen craft-skilled, self-perform capability; the ledger confirms it. Quanta is also planning $500–$700 million of multi-year transformer and vertical-supply-chain investment and expects to expand off-site manufacturing, fabrication and logistics facilities. R&D is not separately disclosed, so it would be false to call R&D zero.

Buybacks have been price-sensitive rather than mechanical. Quanta repurchased about $135 million in early 2025 after management described the stock as disconnected, then largely prioritized acquisitions. The new $1 billion authorization creates capacity but not an obligation. This is preferable to repurchasing stock indiscriminately while issuing shares for acquisitions. Still, diluted weighted-average shares increased from 145.373 million in 2021 to 151.291 million in 2025, about 4.1%. Per-share growth has comfortably exceeded that dilution so far, but the acquisition consideration and contingent awards mean dilution remains an active underwriting item.

The balance sheet is manageable, not pristine. At Q2 2026, cash was $506 million and debt including finance leases was $6.105 billion, leaving $5.598 billion of net debt excluding operating leases. Moody's upgrade to Baa2 supports management's financing credibility. The risk is reflexive: management's stated 1.5–2.0x target leverage is sustainable if acquired earnings and cash arrive, but repeated deal funding can pressure that target precisely when integration or project timing disappoints.

4. Compensation, ownership and alignment

The incentive architecture is better than average. The 2025 annual incentive was 60% adjusted EBITDA, 20% adjusted EBITDA margin and 20% safety. Austin's 2025 long-term award was 70% performance stock units and 30% time-based restricted stock units; other named executives generally had 60% PSUs and 40% RSUs. The 2025–27 PSU score is 60% three-year average ROIC improvement and 40% cumulative adjusted EPS growth, with a relative-TSR modifier of plus or minus 15%. The EPS threshold is 6% annual growth, target 10% and maximum 12%; the structure therefore rewards growth and capital efficiency rather than revenue scale alone.

There are two limitations. First, management's ROIC permits adjustments and committee discretion, so it is not interchangeable with statutory or investor-calculated ROIC. Second, 30–40% of long-term awards are time-based, and maximum PSU payout can reach 215%. The prior 2023–25 cycle paid richly: compensation ROIC averaged 12.21%, above the maximum goal, and the ROIC/TSR component achieved 195.2%. The metric may have worked as designed, but a maximum award on a low-teens adjusted return shows that the compensation bar is lower than Gideon's compounder bar.

Austin received $15.70 million of total 2025 compensation and Desai $5.42 million. Austin beneficially owned 707,757 shares at March 26, 2026; Desai owned 50,452. The company's guidelines require the CEO to hold five times base salary and the CFO three times, and all executives exceeded their requirements. SBC was disciplined at roughly 0.6–0.7% of revenue from 2021 through 2025. Quanta prohibits hedging and most pledging and maintains NYSE-compliant recovery policies.

One current ownership signal deserves explicit treatment. Austin sold 155,992 shares on May 5, 2026 at weighted-average prices between approximately $765 and $778, about 22% of the position disclosed in the proxy, while retaining 556,911 directly owned shares plus indirect holdings after the reported transactions. The filing did not display a Rule 10b5-1 plan indicator. This was material monetization, but not an exit; it weakens the ownership signal without eliminating substantial skin in the game. Intent should not be inferred from a Form 4 alone.

5. Disclosure quality, candor and guidance discipline

Seven of the last eight fiscal-quarter calls were available from a fresh live FMP transcript pull; Q2 2026 returned the literal empty array and was not replaced with cache. That quarter is assessed only from the SEC-filed release, Q2 10-Q and IR materials, so question handling is **not scored** for Q2 2026.

Across the seven scoreable calls, management generally answered load-bearing questions directly. It quantified organic growth separately from acquisition growth, gave normalized free-cash-flow conversion ranges, said when it could not quantify MSA renewals, acknowledged that acquisition timing cannot be predicted, and repeatedly rejected firm-fixed-price generation risk. On policy uncertainty, Desai distinguished safe-harbored customer projects from broader market claims. On Dynamic Systems, management separated existing guidance performance from acquisition contribution. On the Canadian receivable, management explained the delay rather than calling it ordinary working capital.

Candor test	Result	Evidence-bound conclusion
Scoreable quarters	7 of 8	Q2 2026 transcript unavailable; official release used only

Candor test	Result	Evidence-bound conclusion
Dominant repeated deflection	0 of 7 observed	Answers usually included a number, range, timing limitation or explicit non-disclosure
Materially hedged quarter	1 of 7	Q1 2026 retained a wide FCF range despite increased confidence; reasonable early-year caution
Voluntary disclosure	Strong	RPO/backlog, MSA mix, segment profit, guidance ranges, acquisition contribution and contract-risk framing
Main weakness	Adjusted-metric emphasis	Adjusted EBITDA/EPS can obscure amortization, SBC, contingent consideration and integration cost

Guidance credibility is strong. Initial 2025 guidance called for $26.60–$27.10 billion of revenue and $9.90–$10.50 of adjusted EPS. Actual results were $28.48 billion and $10.75. The Q2 range was raised to $27.4–$27.9 billion and $10.28–$10.88; Q3 revenue guidance rose again to $27.8–$28.2 billion. Actual revenue finished above even that range and FCF reached $1.621 billion. Initial 2026 guidance of $33.25–$33.75 billion of revenue and $12.65–$13.35 of adjusted EPS increased at Q1 and then to $39.3–$39.7 billion and $16.45–$16.95 at Q2. The raises partly reflect acquisitions, so they are not pure evidence of organic forecasting skill. Still, the pattern is conservative-to-achievable, not promotional-and-missed.

6. Strategic coherence and acquisition integration

Quanta describes itself as a provider of comprehensive infrastructure solutions and repeatedly frames its purpose as giving customers execution certainty through self-performed craft labor. The strategy is coherent with spending: M&A dominates capital allocation, capex supports fleet and capacity, training institutions deepen labor supply, and vertical-supply-chain investments address transformer, breaker, fabrication and logistics constraints. The two current segments also fit the operating logic even though substantial corporate and non-allocated costs mean segment profit must not be mistaken for statutory operating income.

The acquisition model is decentralized, which helps preserve founders, customer ties and labor culture. It also creates integration risk in financial controls, systems, cybersecurity, insurance and capital discipline. PwC’s 2025 internal-control opinion was clean, but eight businesses acquired in 2025—6.2% of assets and 3.9% of revenue—were properly excluded from management’s and the auditor’s ICFR assessment under SEC guidance. That exclusion is routine, yet it leaves a real proof obligation for 2026. Quanta also carried $713 million of maximum contingent consideration for pre-2026 acquisitions at year-end 2025. No goodwill impairment was recognized in 2023–25, but the absence of impairment is not proof of attractive acquisition returns.

7. Governance and accounting flags

Quanta has one common share class, no disclosed dual-class controller, a separate independent chair, nine independent directors and independent standing committees. PwC concluded the 2025 financial statements were fairly presented and ICFR was effective. The current 10-K and proxy searches disclosed no restatement, material weakness or SEC enforcement action. The May 2026 say-on-pay vote received about 94% support among votes cast for or against.

The material governance blemish is recurring related-party activity. In 2025, Quanta subsidiaries paid $516,960 to a CEO-owned property entity, $174,240 directly to Austin and $217,800 to Austin’s father under facility leases. Four Austin family members received approximately $950,000 of aggregate compensation plus RSUs. Entities associated with Electric President Karl Studer received more than $1.9 million of disclosed rents, and additional relatives of Studer and a director were employed. The proxy says terms were market-based and transactions above $120,000 require Audit Committee approval. The amounts are immaterial to Quanta’s financial statements, but they are avoidable optics and weaken minority-shareholder confidence. Several leases expire in August 2026; non-renewal or arm’s-length replacement would be a positive signal.

8. Succession and key-person risk

The board’s governance guidelines assign CEO succession planning to the independent chair and Governance and Nominating Committee, and the operating bench has relevant field depth. Studer can credibly represent Electric; Ducey can coordinate cross-platform strategy; Desai can lead financing and transactions. That lowers emergency succession risk.

Austin nevertheless remains unusually central. The company’s acquisition pitch to founder-owned businesses, customer collaboration on large programs and craft-labor culture are closely associated with him. A successor could inherit processes but not instantly replicate those relationships. The monitor is not whether a succession policy exists; it is whether investor

communications, acquisition integration and customer ownership increasingly feature the broader bench. Failure to demonstrate that transfer by the next Investor Day would keep this gate below PASS.

9. Directional peer comparison

Peer CEO	Directional comparison with Austin	Stewardship conclusion
Anthony Guzzi, EMCOR	EMCOR offers the cleaner capital-efficiency benchmark and a less acquisition-dependent narrative; its board has 9 of 10 independent directors but combines CEO/chair roles with a lead director.	Guzzi ranks ahead on proof simplicity; Austin ranks ahead on platform breadth, while Quanta's separate chair is stronger structurally.
Richard Swartz, MYR Group	MYR is narrower and smaller, with fewer integration layers; Swartz owned about 1.1% in its 2026 proxy. Quanta has broader strategic optionality and customer scope.	Swartz has the cleaner focus/ownership signal; Austin has the stronger scale-building record but more capital-allocation risk.
Jose Mas, MasTec	MasTec is a realistic broad infrastructure alternative but has family-linked leadership and governance complexity. Quanta's independent-chair structure and one-share-class profile compare favorably.	Austin ranks ahead on governance structure and recent disclosure discipline; both require scrutiny of acquisition-adjusted returns.

This is deliberately directional. It does not substitute peer valuation or accounting metrics into Quanta's management gate.

10. Management scorecard, risks and monitoring KPIs

Dimension	Grade	What the evidence says
Operating execution	PASS	Revenue, EPS, FCF and backlog scaled materially; margins improved
Capital allocation	YELLOW	Strong outputs, but $8.455B five-year M&A and newest cohorts lack seasoned statutory return proof
Incentive alignment	PASS / constrained	ROIC/EPS/TSR and safety are explicit; adjusted definitions and rich maxima reduce rigor
Candor and guidance	PASS	Seven scoreable calls were direct; 2025 guidance was met or exceeded
Governance	YELLOW	Strong board structure offset by recurring leases, family employment and long-tenured directors
Succession	YELLOW	Credible bench and formal process; Austin remains a key relationship and culture node

The highest-value KPIs are: organic revenue and EPS growth excluding acquisitions; statutory operating margin after corporate costs; three-year statutory and compensation-defined ROIC shown side by side; FCF after normalized capex; net debt/EBITDA versus the 1.5–2.0x target; acquisition-cohort revenue, margin and cash contribution; contingent-consideration payments; dilution; acquired-business ICFR integration; contract assets and aged receivables; safety outcomes; and renewal or expiry of related-party leases.

11. Management gate verdict

YELLOW. Austin and Desai have earned credit for a coherent strategy, strong execution, conservative guidance, disciplined SBC and a capable operating bench. The evidence supports following the team operationally, but not yet granting a decade-long capital-allocation PASS: Quanta deployed $8.455 billion of cash to M&A in five years, accelerated again in 2025–26, and has not disclosed enough seasoned, cohort-level statutory returns to prove that the newest dollars will compound at Gideon-grade rates. Recurring executive/family leases and employment are small financially but unnecessary governance friction, while the CEO's May 2026 sale reduced—without eliminating—a powerful ownership signal.

Upgrade to **PASS** if the 2024–26 acquisition cohorts produce improving statutory ROIC and FCF while leverage returns to 1.5–2.0x, acquired businesses enter ICFR without control deficiencies, organic growth is separated transparently from M&A, and expiring related-party leases are not renewed on insider terms. Downgrade to **FAIL** if acquisition-adjusted ROIC remains below the cost of capital, leverage exceeds 2.5x without a source-bound recovery path, impairments or contingent payouts reveal weak underwriting, disclosure becomes evasive on organic growth or project losses, or related-party activity expands. Until those conditions resolve, the correct gate is constrained rather than celebratory.

Primary-source and archive ledger

- [Quanta 2026 proxy statement](https://www.sec.gov/Archives/edgar/data/1050915/000119312526150293/d118470ddef14a.htm) — leadership, board independence, compensation, ownership, related-party transactions and governance policies.
- [Quanta 2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm) — acquisitions, controls, impairment, operating results and risk disclosures.
- [Quanta Q2 2026 earnings release](https://investors.quantaservices.com/news-events/press-releases/detail/402/quanta-services-reports-second-quarter-2026-results) — current guidance, acquisitions and capital actions.
- [Quanta Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000025/pwr-20260630.htm) — current balance sheet, operating results, acquisitions and accounting controls.
- [Quanta 2026 annual-meeting 8-K](https://investors.quantaservices.com/sec-filings/all-sec-filings/content/0001193125-26-241989/d122565d8k.htm) — director election, say-on-pay vote and repurchase authorization.
- [Austin May 2026 Form 4](https://www.sec.gov/Archives/edgar/data/1050915/000147320326000009/xslF345X06/wk-form4_1778193833.xml) — sale quantities, prices and post-transaction ownership.
- [EMCOR 2026 proxy statement](https://www.sec.gov/Archives/edgar/data/105634/000114036126015809/ny20062562x1_def14a.htm), [MYR Group 2026 proxy statement](https://www.sec.gov/Archives/edgar/data/700923/000070092326000017/myrg-20260304.htm) and [MasTec 2026 proxy statement](https://www.sec.gov/Archives/edgar/data/15615/000114036126014022/ny20064175x771_def14a.htm) — directional peer leadership, ownership and board-structure controls only.
- Fresh FMP transcript pulls: `raw/m/fmp_transcript_2024_q3_live.json` through `raw/m/fmp_transcript_2026_q2_live.json`; eight file hashes archived non-overwriting at `C:\Users\Admin\OneDrive\Cowork\Investing\data warehouse\er2_raw\Quanta Services, Inc\pulse-cio-20260801T140419+0800-M`. Q2 2026 is the hash-bound empty response.
- Fresh FMP insider search: `raw/m/fmp_insider_trades_live.json`, SHA-256 `f7a3ab14ddb27270b56760e46cf448e54f28e70629e0b42ee47b667e6ebc2a51`; all material observations were checked against SEC Form 4 rather than treated as FMP-only evidence.

Quanta Services, Inc. — Moat and 2046 Durability

Ticker: PWR **Research date:** 2026-08-01 SGT **Financial anchor:** TTM ended 2026-06-30 **Governed upstream:** DR-cleared `data_package.md`, SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9` **Governance:** Research only; no order, trade, portfolio mutation, message, ranking, sizing, or BUY-queue action is authorized.

Executive conclusion

Quanta's moat is not proprietary technology or a monopoly. It is a hard-to-replicate field-execution system: a large installed base of qualified craft labor; local operating companies with long utility and industrial relationships; safety, training, equipment, bonding, and working-capital capacity; and the ability to coordinate and self-perform multiple critical-path scopes. A competitor can buy equipment or an operating company, but cannot quickly reproduce thousands of qualified crews, customer-specific work history, regional density, and credible nationwide mobilization. The strongest moat sits in Electric Infrastructure Solutions, which represented 80.8% of FY2025 revenue and sustained a 9.4%-11.1% Segment operating income margin over FY2021-FY2025 while growing rapidly. Underground Utility and Infrastructure Solutions has a real but weaker, more cyclical moat: its local utility qualifications and craft capacity are defensible, while ordinary civil work and large-project execution are more contestable. [Data package §§1-3](data_package.md)

The operating advantage is real, but it does **not** clear the 20-year high-return moat gate yet. Pricing power is indirect—seen in margin retention, contract selection, scarcity, and customer willingness to pay for certainty—not disclosed through price

increases or churn. Backlog is useful visibility, not lock-in: Q2 2026 backlog was $53.44 billion, but only $33.554 billion was RPO; the balance included estimated MSA renewals and other less-firm activity. The moat therefore resides in the probability of winning and executing critical work repeatedly, not in the accounting label “backlog.” A **YELLOW** gate is the conservative result because observed return on invested capital remains below the Gideon standard while acquisition and fixed-price exposure are rising. [Data package §§0a, 2, 5](data_package.md)

1. Moat taxonomy applied

Network effects — absent in the classic sense. More customers do not automatically make Quanta's service more valuable to another customer, so this is not a software or marketplace network effect. There is, however, a weaker operating-density effect. More programs in a region support fuller crew utilization, faster emergency mobilization, and deeper familiarity with local standards; more operating companies expand the set of disciplines Quanta can coordinate. That lowers execution friction, but it is a scale economy and relationship network, not a self-reinforcing user network.

Switching costs — moderate and highest in programmatic utility work. A customer can rebid an MSA or project, so contracts do not create permanent lock-in. Practical switching costs arise from requalification, safety review, system familiarity, local permits and labor relationships, work-history verification, and the risk of changing crews on hazardous infrastructure. Utilities and industrial owners may split awards among multiple contractors, limiting Quanta's power, but continuity is valuable when an operating company knows the customer's standards and can mobilize during an outage or storm. Switching costs are lower in ordinary civil scopes and higher in energized transmission, substations, pipeline integrity, complex process systems, and multi-trade mission-critical campuses. [Business primer §§Customer structure, Competitive landscape](business_analysis.md)

Scale economies — strong and observable. Quanta's scale supports bonding, insurance, procurement, balance-sheet capacity, specialized trucks, cranes, helicopters, tools, fabrication space, training centers, and cross-company mobilization. It can absorb working-capital swings and assemble large crews that smaller regional firms cannot. Scale also permits a $500-$700 million multi-year transformer and vertical-supply-chain investment and a planned expansion of off-site manufacturing, fabrication, and logistics space to about 6.7 million square feet. These investments can improve schedule certainty at constrained customer chokepoints. Scale is not automatically a moat if it invites badly priced mega-projects; it is protective only when paired with disciplined risk selection. [Data package §§6-8](data_package.md)

Brand — useful in procurement, weak with end users. Quanta has no consumer brand and customers still evaluate the specific operating company and project team. The Quanta name matters to procurement as a signal of balance-sheet support, safety systems, bonding, insurance, and completion capacity. Local operating-company reputations matter more for daily awards. Brand therefore helps Quanta reach a qualified bidder list and reassure a customer on a large scope, but it does not rescue a poor bid or failed project.

Regulatory and qualification barriers — strong for selected work, not exclusive. Quanta does not own a protected utility franchise. Its advantage comes from customer and task qualification around energized systems, gas infrastructure, aviation, welding, environmental rules, union jurisdictions, and site safety. These requirements slow entry and make contractor substitution risky. They are strongest in Electric T&D, substations, emergency restoration, gas-system integrity, and industrial turnaround work; they are weakest in ordinary civil construction. Regulation drives demand for reliability and integrity but can also delay projects through permits, rights-of-way, rate cases, and policy change. [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm)

IP and patents — not the core moat. Quanta owns engineering know-how, process discipline, prefabrication methods, designs, training systems, and selected manufactured-component capability, but the governed record does not establish a patent portfolio that blocks competitors. The important knowledge is tacit: estimating, scheduling, supervision, safety, local-system familiarity, and coordination across crafts. Tacit knowledge can be durable when embedded in teams, but it can leave with acquired leaders or crews.

High-trust procurement — strong and central. A utility, data-center owner, semiconductor manufacturer, or industrial operator may incur costs far above Quanta's fee if energization, an outage, or a critical system is delayed. Buyers therefore screen for safety, available labor, technical capability, past performance, bonding, and schedule credibility—not price alone. Quanta's decentralized local relationships combined with corporate resources can meet both dimensions. This is the clearest moat category because a competitor must prove safe delivery before a customer entrusts it with the most consequential work.

2. Per-segment moat

Electric Infrastructure Solutions

Electric's moat is the combination of qualified line and electrical craft capacity, utility relationships, national mobilization, specialized fleet, engineering, supply-chain access, and the ability to self-perform across generation, transmission, substations, distribution, inside electrical systems, and commissioning. A competitor would attack by recruiting crews, acquiring regional contractors, underpricing bids, and bundling adjacent engineering or mechanical scopes. It would struggle to replicate regional operating density and a proven safety/execution record at national scale quickly. Durability is high over five and ten years and credible over twenty because grids, generation, load centers, and industrial facilities remain physical chokepoints. The earliest break signal would be two or more quarters of materially lower segment margin despite healthy demand, repeated large-project losses, weaker cash conversion, loss of preferred-provider positions, or labor growth that fails to translate into organic output. Electric generated $23.001 billion of FY2025 revenue and a 10.3% segment margin; its TTM margin was 10.6%. [Data package §§1, 3, 5](data_package.md)

Underground Utility and Infrastructure Solutions

Underground's strongest moat is in recurring gas-utility, pipeline-integrity, industrial-turnaround, and complex mechanical/process work where local qualification, safety, skilled crews, and schedule certainty matter. Its weakest work is ordinary civil construction, where regional competition and price bidding are intense. Dynamic Systems can raise switching costs if Quanta repeatedly wins integrated civil-mechanical-electrical scopes; it does not create a moat merely because it was acquired. Durability is credible for five to ten years but less certain over twenty as gas distribution mix may shrink and peers can copy integrated offerings. The earliest warning is segment margin below 7% for two quarters without a transitory explanation, negative organic growth after acquisition annualization, deteriorating RPO/cash conversion, or recurring fixed-price losses. Underground's FY2021-FY2025 margin ranged from 4.3% to 7.5% and reached 8.2% TTM, demonstrating improvement but also real volatility. [R-cleared Underground segment appendix §§4-5](appendix_B_underground_utility_and_infrastructure_solutions.md)

Blended company

The blend is weaker than Electric alone. Electric was 80.8% of FY2025 revenue and an even larger share of segment profit, so it controls the overall moat, but roughly one-fifth of revenue sits in a segment with more ordinary civil, pipeline-cycle, and acquisition-integration exposure. Corporate and non-allocated costs also reduced TTM summed segment operating income of $3.351 billion to $2.036 billion of statutory operating income. Quanta should not receive a pure chokepoint multiple merely because its strongest scopes are difficult. The investable moat is the after-corporate blend.

3. Margin persistence evidence

The governed package supplies five complete fiscal years, not a ten-year comparable segment series; no unsupported older series is manufactured. Consolidated statutory operating margin held at 5.1%, 5.1%, 5.4%, 5.7%, and 5.7% from FY2021 through FY2025, then reached about 6.2% TTM. That modest expansion occurred while revenue more than doubled from $12.980 billion to $28.480 billion and while fixed-price work grew as a share of revenue. It is evidence that scale has not been competed away, although the large corporate-cost bridge limits the headline margin.

Margin evidence	FY2021	FY2022	FY2023	FY2024	FY2025	TTM 2026-06-30	Interpretation
Consolidated statutory operating margin	5.1%	5.1%	5.4%	5.7%	5.7%	6.2%	Stable to expanding despite rapid scale
Electric Segment operating margin	11.1%	9.9%	9.4%	10.3%	10.3%	10.6%	Narrow band supports moat; FY2021-2022 combine legacy segments
Underground Segment operating margin	4.3%	7.3%	7.5%	5.7%	7.3%	8.2%	Improving but too volatile to infer a strong standalone moat

Electric's margin persistence is the strongest quantitative evidence. It absorbed mix shifts, cost inflation, acquisitions, and rapid growth while holding near 10%. Underground's 180-basis-point compression in FY2024 proves the weaker segment is sensitive to project timing and execution. Free cash flow rose from $0.197 billion in FY2021 to $1.621 billion in FY2025 and $2.391 billion TTM, supporting the claim that accounting profit has translated into cash over time. [Data package §§2-3, 7](data_package.md)

Cash conversion does not resolve the capital-return question. The governed package's transparent simplified ROIC proxy was 5.8%, 6.7%, 8.3%, 8.6%, and 7.8% in FY2021-FY2025. Cumulative FCF of $5.139 billion exceeded cumulative common net income of $3.655 billion over those years, but acquisitions consumed $8.455 billion of cash and goodwill plus intangibles reached $10.223 billion at FY2025. These measures are intentionally conservative and do not isolate organic returns, yet the acquisition capital is economically real. A platform that buys growth without lifting after-corporate returns into low double digits does not satisfy the Gideon 20-year compounder standard merely because segment margins are stable.

4. AI disruption stress test

Neither segment's core value is a prompt-to-output workflow. AI can improve estimating, design review, inspection, scheduling, predictive maintenance, procurement, safety analytics, and crew dispatch; it cannot physically string transmission conductor, erect a substation, replace a gas main, install process piping, or restore a storm-damaged grid. The core economics are chokepoint economics: trained people, equipment, qualification, permits, critical components, and safe work on physical assets.

Electric is both most protected and most platform-adjacent. AI infrastructure raises power demand and pulls spending into generation, interconnection, transmission, substations, inside electrical systems, and commissioning. Quanta benefits if those physical constraints intensify, even if server architecture changes. The risk is not AI disintermediation but demand concentration, schedule compression, customer bargaining power, and investors overcapitalizing an AI revenue stream that Quanta does not separately disclose.

Underground's ordinary estimating and project-management workflows are more exposed to AI-enabled productivity and competitor catch-up, making civil work the relatively most exposed activity. Yet its physical installation, industrial turnaround, gas integrity, mechanical, and process scopes remain non-digital. AI may compress administrative cost and reduce information advantages across the industry; it is more likely to shift the productivity frontier than eliminate Quanta. Substitutes are customer self-performance, general contractors controlling the prime relationship, competitors acquiring equivalent capabilities, modularization that moves work off-site, and eventual reduction in gas-network investment—not foundation models replacing field crews.

5. The 2046 test

Test date: 2026-08-01. **Twenty-year date:** 2046-08-01.

Plausible 2046 business description. Quanta Services provides engineering, construction, modernization, maintenance, emergency response, and commissioning for power and critical industrial infrastructure across North America and selected international markets. Electric utilities, generators, data and compute operators, advanced manufacturers, cities, and industrial owners buy its services because they need qualified labor, specialized equipment, power-system expertise, and one accountable contractor across generation, high-voltage networks, substations, distributed assets, facility electrical/mechanical systems, and restoration. Electric remains the dominant segment and has broadened from grid construction into lifecycle asset services and manufactured critical components. Underground survives but changes: legacy gas-expansion work has withered, while integrity, decommissioning, civil, water, industrial, mechanical, and process infrastructure remain. Directional operating margin is stable to modestly higher than today—not software-like—because automation and prefabrication offset wage pressure while buyer procurement power prevents unlimited markups. The intact moat is qualified human and equipment capacity embedded in high-trust customer relationships, reinforced by training, safety, scale, and multi-scope self-performance.

This description is specific because the customer and work remain identifiable even if today's AI cycle ends. Electricity must still be generated, moved, conditioned, connected, and restored; physical facilities still need mechanical and process systems. The specialized tasks will change, but the procurement problem—who can safely execute a complex critical path at scale—persists. Quanta passes the 2046 test if it keeps renewing that capability rather than merely protecting today's service mix.

2046 bear description. Quanta becomes a large, acquisitive general contractor with commoditized labor, weak integration, and low returns. Utilities internalize more work or divide it among peers; modular manufacturers capture the valuable engineering layer; gas-related work declines faster than replacement services grow; acquired leaders depart; and repeated fixed-price losses consume the apparent scale benefit. AI-assisted design and estimating make smaller rivals more productive, while Quanta retains only execution risk. In that outcome, revenue may still be large, but margins and returns resemble undifferentiated construction. The probability is material but below the base case because the physical demand and qualification barriers persist. It rises sharply if Electric margin falls below its historical band, organic growth trails backlog, cash

conversion weakens, or project claims recur.

6. Competitive threat inventory

Threat	Mechanism	Segment(s) affected	Earliest observable signal	Plausibility
Scaled peers copy integrated delivery	EMCOR, MasTec, Primoris, Kiewit, MYR, or private firms acquire craft and engineering capabilities, bundle scopes, and underprice work	Both; especially large-load and ordinary civil	Lost preferred-provider awards, falling organic growth, margin compression despite end-market growth	Medium-high
Labor scarcity and safety failure	Wage inflation transfers scarcity rent to workers; insufficient supervisors reduce productivity; a severe incident harms qualification and reputation	Both; Electric most operationally exposed	Turnover, slower crew growth, rising subcontracting, delayed projects, safety disclosures or customer suspensions	High
Mega-project and acquisition diseconomies	Fixed-price estimates, change orders, integration failures, goodwill, debt, and leader departures overwhelm scale	Both; generation and acquired mechanical/civil scopes	Project charges, contract assets rising faster than revenue, weak FCF, net-debt growth, impairment, repeated earn-outs	Medium-high

7. Pricing power verification

Quanta does not disclose clean price-increase, renewal, or customer-churn statistics, so conventional pricing power is unproven. Its pricing mechanism is negotiated risk allocation. Unit-price and cost-plus contracts can transmit costs more directly; MSAs allow periodic rate negotiation but generally do not guarantee volume; fixed-price work places more risk on Quanta. The consolidated fixed-price revenue share rose from 37.4% in FY2021 to 60.6% in FY2025. That is not itself pricing power, but maintaining and modestly expanding consolidated and Electric margins through the shift is observable evidence of bid discipline and a customer willingness to pay for scarce execution. Estimate changes increased revenue by only 0.2% in FY2024 and FY2025, which does not suggest that historical margin persistence was manufactured by unusually large favorable revisions. [Data package §§0a, 10](data_package.md)

Pricing-power channel	Evidence	Strength	Limitation
Qualification and schedule certainty	Critical-path buyers screen safety, capacity, bonding, and delivery history; Electric margin remained near 10%	Moderate-strong	No disclosed win rate or price premium
Labor and equipment scarcity	Large trained workforce, specialized fleet, national mobilization, and vertical supply investment	Moderate	Wage inflation can capture the scarcity rent
Repeat programs / MSAs	Local density and customer familiarity reduce switching friction	Moderate	Many MSAs have no minimum volume
Cost pass-through	Unit-price and cost-plus structures reduce some input risk	Moderate	Segment contract mix and escalators are not disclosed
Posted price / retention	No public price increase, adoption, or churn series	Weak / unavailable	Do not infer software-like pricing power

The correct conclusion is selective pricing power, not a blanket ability to raise price. Quanta can defend economics where schedule risk, qualification, and scarce labor dominate procurement; it remains a price taker in ordinary civil work and can destroy economics by accepting the wrong fixed-price risk. The $983.6 million of FY2025 revenue tied to unapproved change orders and claims in contract assets is a reminder that contractual entitlement is not the same as collected pricing.

8. Moat verdict

Gate scorecard	Current reading	Conservative judgment	Observable proof needed
Electric execution moat	10.6% TTM segment margin; high qualification and craft density	PASS	Margin remains near/above 10% through a weaker demand and project cycle
Underground durability	4.3%-8.2% historical/TTM margin range	YELLOW	Organic growth and margin remain above 8% after acquisition annualization

Gate scorecard	Current reading	Conservative judgment	Observable proof needed
Pricing power	Margin retention and bid selection; no price/churn series	YELLOW	Direct rate, renewal or comparable price/cost evidence without claim growth
Capital returns	Simplified ROIC 5.8%-8.6% in FY2021-FY2025	FAIL versus Gideon bar	Acquisition-adjusted and simplified ROIC move sustainably into low double digits
Cash conversion	$5.139B cumulative FCF versus $3.655B cumulative common net income	PASS with caveat	Conversion remains strong without contract assets or claims outrunning revenue
2046 business relevance	Specific physical customers, work and qualification mechanism	PASS	Electric moat renews as technology and generation mix change

Moat gate: YELLOW. Electric—the dominant revenue and profit pool—has a concrete, observable moat in qualification, skilled labor, local relationships, scale, safety systems, specialized equipment, bonding, self-performance, and multi-scope coordination. Five-year segment margins and consolidated cash generation support the operating advantage, and the moat does not depend on backlog being guaranteed or on undisclosed AI revenue. The gate is not PASS because disclosed pricing power remains indirect, Underground is only moderately moated, numeric safety outcomes are unavailable, fixed-price/claims exposure is meaningful, and simplified ROIC has not cleared even a low-double-digit threshold. This is a constrained conclusion, not a diplomatic grade: the business moat is credible, but durable excess returns remain unproven.

2046 test: PASS. In 2046, customers still pay Quanta to build, modernize, connect, maintain, and restore physical power and critical-facility infrastructure. The service mix will change—especially away from some gas expansion—but the high-trust procurement and qualified-capacity moat can remain intact. Upgrade to a moat PASS requires sustained Electric margins above 10% through a weaker cycle, low-double-digit or better acquisition-adjusted capital returns, and cash conversion without rising claim balances. Downgrade to FAIL would follow recurring project losses, Electric margin persistently below roughly 9%, sustained labor/safety deterioration, or acquisitions that replace rather than augment organic capability.

Governed source ledger

- [DR-cleared data package](data_package.md), exact SHA-256 stated in the header; quantitative and disclosure control.
- [QFR-cleared quantitative foundation](quant_foundation.md); historical and TTM financial control.
- [Cleared business primer](business_analysis.md); qualitative orientation only.
- [R-cleared Electric segment appendix](appendix_B_electric_infrastructure_solutions.md), SHA-256 `24f505920a83ae53b6eab7d5118d71e74ecffbdac6eb6c44539d53b5204648d7`.
- [R-cleared Underground segment appendix](appendix_B_underground_utility_and_infrastructure_solutions.md), SHA-256 `b15867cd1eb445be313aaf86e7bee16f8e487ece2f7dd1228991bda7157169d6`.
- [Quanta FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm); customer, contract, segment, workforce, qualification and risk evidence.
- [Quanta Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000025/pwr-20260630.htm) and [SEC-filed Q2 release](https://www.sec.gov/Archives/edgar/data/1050915/000119312526324855/d56853dex991.htm); current segment, backlog, acquisition and supply-chain evidence.

WORKER W COMPLETE — MOAT ANALYSIS READY FOR SYNTHESIS

Electric Infrastructure Solutions — Production ER2 Segment Deep Dive

Company: Quanta Services, Inc. (PWR) **Information cutoff:** 2026-08-01 SGT **Model anchor:** TTM ended 2026-06-30; exact horizon 2031-06-30 **Currency:** USD billions except per-share data **Sealed profit basis: Segment operating income** **Controlling input:** `data_package.md`, SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9`

This appendix forecasts only Quanta's Electric Infrastructure Solutions reportable segment. It does not allocate corporate and non-allocated costs, interest, tax, non-controlling interests or other statutory-bridge items into the segment. Those lines belong in consolidated synthesis. It also does not infer revenue for service families that Quanta does not disclose. All historical company figures and management excerpts below are reproduced from the DR-cleared data package; forward values are explicit Worker B assumptions rather than company guidance.

0. Segment boundary and taxonomy note

The current Electric Infrastructure Solutions boundary began in the first quarter of 2025, when Quanta combined its former Electric Power Infrastructure Solutions and Renewable Energy Infrastructure Solutions segments. The 2025 Form 10-K recast FY2023 and FY2024 into the current presentation. FY2021 and FY2022 in the governed history are arithmetic combinations of the two former official segments, so they are useful for scale and directional context but are not issuer-presented current-segment rows. Direct current-taxonomy dollar comparability begins with FY2023. This appendix never silently treats the older three-segment presentation as though it had always been the present one. [Data package §1 and §3]

The sealed statutory bridge identifies **Segment operating income** as the common issuer-disclosed profit metric. FY2025 Electric Segment operating income was $2.360262 billion and the TTM value was $2.858785 billion. The bridge has zero residuals and is marked `STATUTORY_BRIDGE_STATUS: VERIFIED — CLEARED FOR FORECASTING`. Corporate and non-allocated costs are outside this appendix by design. [Data package §3a; `statutory_bridge.json`]

1. What this segment actually is

Electric Infrastructure Solutions is a craft-labor, engineering, procurement and field-execution platform for the infrastructure that generates, moves, transforms and ultimately consumes electricity. Its work spans transmission and distribution lines, substations, grid hardening, emergency restoration, energized maintenance, renewable and conventional generation infrastructure, battery storage, communications networks, electrical systems inside industrial and large-load facilities, and selected transformer and component manufacturing. The common economic task is not selling a standardized product. It is coordinating scarce qualified people, specialized equipment, engineering, materials, permits, logistics and commissioning around critical infrastructure where delay can be costlier to the customer than the contractor's fee. [Data package §1 and §4; Quanta 2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm)

The customer set includes regulated electric utilities, independent power producers and developers, technology and data-center owners, advanced manufacturers, communications providers, general contractors and public entities. Quanta normally reaches them through qualification processes, long relationships, master service agreements, negotiated programs and project-specific bids. Winning work depends on price, but also on safety record, available crews, engineering capability, bonding capacity, local knowledge and the ability to self-perform multiple scopes. A utility rebuilding a storm-damaged network may value mobilization capacity; a hyperscale campus may value interconnection, substation and inside-the-fence coordination; a generation customer may value procurement and schedule control. These are different jobs, but all reward credible delivery capacity.

Revenue is earned under fixed-price, unit-price, cost-plus and MSA structures. Fixed-price work can produce attractive profit when scope, productivity, engineering and procurement are controlled, but it transfers estimating and execution risk to Quanta. Unit-price contracts reduce some scope risk while leaving productivity and mobilization exposure. Cost-plus structures provide better cost protection but can carry lower absolute margin and close customer scrutiny. MSAs support recurring relationships and crew utilization, yet typically do not obligate the customer to a specified volume. Reported backlog therefore mixes firm remaining performance obligations with estimates of future MSA and certain non-fixed-price orders. It is a useful demand and capacity signal, not an annuity.

Quanta's go-to-market is decentralized. Local operating companies retain customer relationships and field accountability while the group supplies balance-sheet strength, training, equipment, procurement, safety systems, engineering and national coordination. The model can turn a collection of local specialists into a broader solutions partner: a customer can buy transmission, substations, generation connection, inside electrical work, fabrication and commissioning through one network. The same decentralization can make control and integration uneven. The economic question is whether shared capacity and cross-selling improve win rate and execution more than acquisitions and added complexity raise cost and risk.

2. Current economics, backlog and end markets

FY2025 Electric revenue was $23.001 billion, 80.8% of Quanta's consolidated revenue, and Segment operating income was $2.360 billion, a 10.3% margin. TTM revenue through 2026-06-30 was $26.905 billion, Segment operating income was $2.859

billion and margin was 10.6%. TTM revenue was 17.0% above FY2025, although that compares overlapping twelve-month windows with a six-month offset and includes acquisitions. The last four quarterly growth rates accelerated from 17.9% in Q3 2025 to 19.5% in Q4, 30.8% in Q1 2026 and 43.6% in Q2. Q2 revenue was $7.838 billion and margin was 11.5%. [Data package §3, Electric revenue/profit rows sourced to 2025 Form 10-K Note 5; §5, official Q3/Q4/Q1/Q2 release rows]

At Q2 2026, Electric RPO was $29.115 billion and backlog was $43.790 billion. These equal roughly 1.08 times and 1.63 times TTM segment revenue, respectively. The difference is economically important: RPO is the firmer contracted measure, while backlog also includes estimated MSA renewals and non-fixed-price orders. Across Quanta, MSAs were 44% of year-end 2025 backlog and customers generally were not committed to specified MSA volumes. Consequently, the model treats RPO as near- and medium-term support, broad backlog as a directional demand/capacity signal, and neither as guaranteed revenue. Permitting, customer financing, project redesign, weather, cancellation and change-order acceptance can move or eliminate conversion. [Data package §0a and §5]

The segment's disclosed service families are: electric transmission, distribution, substations and restoration; generation, renewables and storage; load-center, inside-electrical and communications work; and transformer/component manufacturing. Quanta does not report revenue, profit or backlog by these service families. Customer-type disclosures are consolidated and directional: in FY2025, Utility and Power represented 70% of company revenue, Energy and Other 17%, and Technology, Manufacturing and Communications 13%. The largest customer was 8% of consolidated revenue and the ten largest together were 30%. These percentages show broad exposure but cannot be assigned mechanically to Electric or converted into product dollars. [Data package §1 and §4]

The near-term demand stack has several independent layers. Utilities must replace aging assets, harden grids, interconnect new generation and serve load growth. Renewable and conventional generation require transmission, substations, storage and balance-of-plant work. Data centers and advanced manufacturing require both utility-side capacity and inside-the-fence electrical systems. Emergency restoration is episodic but can absorb scarce labor at attractive economics. Communications work adds another route to field utilization. The breadth reduces dependence on any single technology, but it also means quarterly mix can move sharply.

Acquisitions are part of the current run rate. Phalcon, Percheron, PSD and Enerfab were acquired in Q2/July 2026 for about $1.24 billion of upfront consideration, with as much as $242.3 million of contingent consideration. Management expects $1.2-$1.4 billion of 2026 revenue and $120-$140 million of adjusted EBITDA from these acquired businesses, mostly in Electric. That is consolidated acquisition guidance, not an exact Electric split, so this appendix does not insert the full range into Electric. It instead uses the higher consolidated 2026 guide and segment momentum as support for the FY2026 anchor, while separating organic and acquired drivers qualitatively. [Data package §9 and §5]

Capital intensity appears moderate at the consolidated level but should not be called asset-light. Quanta's capex was $0.609 billion, or 2.1% of revenue, in FY2025, and TTM capex was $0.787 billion. The segment needs vehicles, aviation and specialty equipment, training facilities, fabrication space and working capital. Management also disclosed a $500-$700 million multi-year transformer and vertical-supply-chain investment and a plan to nearly double off-site manufacturing, fabrication and logistics capacity to about 6.7 million square feet. Those investments may remove bottlenecks and protect schedules; they also introduce utilization, manufacturing and inventory risk. [Data package §2, TTM paragraph; §7, FY2025 capex row; §6, post-commentary investment disclosure]

3. Unit economics and cash conversion

An Electric revenue dollar first pays craft labor, supervisors, engineers, equipment, materials, procurement, subcontractors, field overhead and local operating-company costs. Segment operating income is what remains after the costs attributed to the segment under Quanta's reporting basis. It is not statutory operating income, EBITDA or adjusted EBITDA. The five-year historical margin ranged from 9.4% to 11.1%, with FY2023 at 9.4%, FY2024 at 10.3%, FY2025 at 10.3% and TTM at 10.6%. That range is evidence of an attractive specialty-contractor model, but not evidence that every incremental revenue dollar earns the current margin. [Data package §3]

The principal positive margin mechanisms are geographic density, repeat programs, high crew utilization, favorable contract terms, engineering and procurement control, standardized designs, customer willingness to pay for schedule certainty, storm-restoration pricing, self-performance and a rising share of broader solution scopes. Scarce certified labor can support pricing, particularly when a utility or large-load customer cannot easily delay. Quanta's training assets and acquired operating-company network can improve labor supply relative to smaller competitors. Owning or controlling transformers, components and fabrication may reduce expensive schedule slippage and create a differentiated service proposition.

The negative mechanisms are equally concrete. A large fixed-price project can lose money because of estimating errors, design changes, labor inefficiency, weather, permitting delays, material escalation, subcontractor failure or disputed change orders. Consolidated fixed-price revenue rose from 49.1% in FY2023 to 60.6% in FY2025. Quanta uses cost-to-cost percentage-of-completion accounting on many projects, meaning a change in total estimated cost can reduce cumulative recognized profit immediately. This appendix therefore does not equate rising backlog with rising margin. A mix shift toward large generation EPC or compressed data-center schedules can raise revenue while increasing tail risk.

Working capital is part of the unit economics. Quanta may pay labor and materials before billing milestones are achieved or change orders are approved. At FY2025, $983.6 million of revenue tied to unapproved change orders and claims was included in contract assets, up from $733.6 million in FY2024. The largest component related to a completed Canadian renewable transmission project affected by productivity, delay, labor and logistics issues. That history shows why segment profit can overstate contemporaneous cash generation. The model's margin cases must therefore be read alongside cash-conversion monitoring rather than translated directly into free cash flow. [Data package §10]

Quanta's 2025 Form 10-K states that approximately 20% of its work has been subcontracted in recent years and that subcontract work generally yields lower margins. Self-performance can retain economics and improve control, but it also requires carrying labor, equipment and management capacity. When projects slip, idle or underutilized capacity hurts margin. When demand is strong, qualified labor becomes the constraint: overtime, travel, retention pay and training costs can rise. Approximately 36% of Quanta's FY2025 employees were covered by collective bargaining agreements. The segment benefits from deep labor access, but does not own an unlimited supply of craft skill. [2025 Form 10-K, p. 44, “Subcontract work and provision of materials”; data package §9, workforce paragraph]

Acquisitions can improve unit economics through cross-selling, vertical integration and denser local operations, but headline acquisition EBITDA is not equivalent to segment operating income. Purchase-accounting amortization and corporate integration costs may be excluded from the segment or sit in corporate/non-allocated expense. Earn-outs can reward performance but raise total consideration. Acquired leaders and customer relationships are often the core asset, so retention matters. This is why the base case allows only gradual Segment operating income margin expansion even with strong revenue growth.

4. Competitive dynamics

Competition is fragmented locally and strong nationally. Relevant public and private comparables include MasTec, MYR Group, EMCOR, Primoris, Kiewit, Burns & McDonnell and specialized regional contractors; their mixes are not identical. Utilities can self-perform, general contractors can control the prime relationship, and engineering firms can compete for project leadership. In ordinary electrical construction, entry barriers can be modest. They rise sharply for energized work, high-voltage transmission, mega-project bonding, complex engineering, national mobilization, emergency restoration and programs that require thousands of qualified workers.

Price is not the only competitive dimension. A customer's outage, missed energization date or delayed facility opening can cost much more than the contractor fee. A bidder with available crews, equipment, safety qualification, procurement visibility and a credible record may earn pricing power because it reduces schedule and execution risk. That power is strongest on critical-path and emergency work, and weaker on standardized scopes with many qualified bidders. Quanta's scale can also create purchasing and equipment advantages, though scarce transformers and electrical gear can remain industry-wide bottlenecks.

Local density matters. Utilities qualify contractors over time and depend on crews that understand local standards, union relationships, terrain and permitting. A small regional contractor may defend a niche as effectively as a large national company. Quanta's acquisition model seeks to preserve that local trust while adding group resources. The competitive advantage is thus a network effect in operating capacity rather than a classic software network effect: each capable local company can expand what the system can bid and self-perform, and the system can bring work, capital and shared expertise back to the local company.

Substitution risk is low for the physical need to build and maintain infrastructure but material for who performs it and how. Utilities can insource some work; developers can split scopes among contractors; modular fabrication can shift labor away from the field; robotics and digital design may reduce hours per unit; and project designs can change to use less infrastructure. These technologies are more likely to change the labor and productivity equation than eliminate the work. Quanta can benefit if it owns the improved method, but may face pricing pressure if productivity gains become industry-standard and customers capture them.

Data-center demand deserves special care. Quanta can work on generation, transmission, substations, transformers and inside electrical systems, creating more ways to participate than a narrow electrical contractor. Yet public disclosure does not provide AI-only revenue, AI-only backlog or profitability. A large-load customer may contract through a general contractor, revise architecture, delay a site because power is unavailable, or move work to another geography. The segment is exposed to AI infrastructure as a demand pull, not as a separately measurable proprietary franchise. The base case recognizes acceleration without applying software-like margins or certainty.

5. Moat at the segment level

Electric has a real but execution-dependent moat. Its strongest elements are scarce craft labor, safety and qualification credentials, decades-long utility relationships, regional operating-company density, specialized equipment, bonding and balance-sheet capacity, engineering breadth, emergency mobilization and the ability to coordinate several critical scopes. Quanta's training infrastructure, including Northwest Lineman College and the Quanta Advanced Training Center, supports labor supply and standards. The ability to self-perform more work can reduce handoffs and give customers one accountable partner.

The moat compounds when Quanta participates early in planning. Early engineering and procurement knowledge can improve constructability, identify long-lead equipment and shape a contract that aligns risk. Manufacturing and fabrication investments can make schedule promises more credible. A customer that experiences reliable delivery may prefer the same operator on the next multi-year program, which reinforces crew density and local knowledge. These feedback loops can sustain above-commodity economics.

However, the moat is not a contractual guarantee. Skilled workers can move, competitors can acquire capabilities, utilities can diversify vendors, and a poorly estimated project can overwhelm relationship advantages. Decentralization preserves entrepreneurial culture but can create uneven controls. Acquisitions can overpay for temporary demand, and goodwill does not prove economic value. The appropriate five-to-ten-year conclusion is a **moderate-to-strong operating moat**, conditional on safety, labor retention, project discipline and cash conversion. It does not justify assuming perpetual 20% growth or uninterrupted margin expansion.

The observed Segment operating income margin supports this conclusion. Electric held near 10% through rapid growth, recovering from 9.4% in FY2023 to 10.3% in FY2024 and FY2025 and 10.6% TTM. That durability is better than a purely commoditized contractor, but the historical 170-basis-point range is wide enough to show mix and execution matter. Our upside case reaches 12.5% only with better mix, vertical-supply-chain benefits and disciplined contracting. The downside falls to 9.0% at the exact horizon after an interim trough, reflecting the possibility that growth attracts risk and acquired capacity is underutilized.

6. Historical growth rates

Because dollars below Electric are a true non-disclosure, the finest auditable product line is the reportable segment total. Service-family rows are shown as undisclosed, not back-solved. Direct current-taxonomy comparability begins FY2023.

Product / sub-segment	FY2023 revenue	FY2024 revenue	FY2025 revenue	3-year CAGR convention	Most recent YoY	Data package cite
Electric reportable segment total	$15.867B [DP §3, Electric revenue row]	$19.012B [DP §3, Electric revenue row]	$23.001B [DP §3, Electric revenue row]	20.4% two-interval CAGR [DP §3 row arithmetic]	43.6% in Q2 2026 [DP §5, Electric quarterly row]	Data package §3 and §5
T&D, substations and restoration	Not separately disclosed [DP §4 row 1]	Not separately disclosed [DP §4 row 1]	Not separately disclosed [DP §4 row 1]	N/A [true non-disclosure]	N/A [true non-disclosure]	Data package §4, Electric row 1
Generation, renewables and storage	Not separately disclosed [DP §4 row 2]	Not separately disclosed [DP §4 row 2]	Not separately disclosed [DP §4 row 2]	N/A [true non-disclosure]	N/A [true non-disclosure]	Data package §4, Electric row 2
Load-center, inside-electrical and communications	Not separately disclosed [DP §4 row 3]	Not separately disclosed [DP §4 row 3]	Not separately disclosed [DP §4 row 3]	N/A [true non-disclosure]	N/A [true non-disclosure]	Data package §4, Electric row 3
Transformer and component manufacturing	Not separately disclosed [DP §4 row 4]	Not separately disclosed [DP §4 row 4]	Not separately disclosed [DP §4 row 4]	N/A [true non-disclosure]	N/A [true non-disclosure]	Data package §4, Electric row 4

Arithmetic checks: $15.867B × 1.198 = $19.008B, within 0.03% of the disclosed $19.012B after rounded growth; $19.012B × 1.210 = $23.004B, within 0.02% of $23.001B. The two-interval FY2023-to-FY2025 CAGR is 20.4%. The older FY2022-to-FY2025 three-interval CAGR is 21.8%, but FY2022 is a combined old-taxonomy row and therefore only corroborative. No product-level arithmetic check is possible because no product dollars exist. [Data package §3, Electric

revenue and YoY rows]

Historical Segment operating income was $1.491B in FY2023, $1.959B in FY2024 and $2.360B in FY2025, with margins of 9.4%, 10.3% and 10.3%. TTM values were $2.859B and 10.6%. [Data package §3, Electric profit and margin rows]

7. Management guidance and commentary

Quanta does not provide a standalone full-year Electric revenue or Segment operating income guide. The current consolidated 2026 guide is $39.3-$39.7 billion of revenue, $3.74-$3.86 billion of EBITDA, $4.09-$4.21 billion of adjusted EBITDA, $2.90-$3.40 billion of operating cash flow and $2.00-$2.50 billion of FCF. That guide frames the FY2026 segment anchor but does not authorize an exact Electric allocation. [Data package §5]

- **Q3 2025, Duke Austin:** “accelerating demand in our Electric segment.” [Data package §6, Electric row 1] The phrase supports positive volume and a strong opportunity set, but supplies neither a duration nor a rate. Our base path therefore decelerates materially from the latest quarterly growth.
- **Q3 2025, Duke Austin:** “not taking risk on these kind of projects.” [Data package §6, Electric row 2] Management's contract selectivity is a margin support, especially in generation, but the statement is a policy intention rather than proof that every operating company will avoid adverse terms.
- **Q4 2025, Duke Austin:** “fastest-growing piece of backlog.” [Data package §6, Electric row 3] The reference is to load-center demand. It raises the base and upside volume cases while the absence of disclosed load-center dollars prevents a separate forecast line.
- **Q4 2025, Duke Austin:** “firm fixed price generation, not doing it.” [Data package §6, Electric row 4] This is a useful downside control. We do not assume a surge in firm-fixed-price generation revenue or profit; upside requires risk-sharing and disciplined scope.
- **Q1 2026, Jayshree Desai:** “record $48.5 billion of backlog.” [Data package §6, Electric row 5] Backlog supports near-term visibility, but includes estimated nonbinding MSA work. The model never converts the total on a fixed schedule.
- **Q1 2026, Duke Austin:** “we'll be prudent about how we take risk.” [Data package §6, Electric row 6] Base-case margin improvement is gradual and downside explicitly captures a project-loss cycle.
- **Q2 2026, Duke Austin:** “total backlog reached a record level.” [Data package §6, Electric row 7] Q2 segment RPO and backlog reinforce demand. The acquisition-heavy period makes organic growth a necessary monitoring item.
- **Q2 2026, Duke Austin:** “deepen our self-perform, craft-skilled capabilities.” [Data package §6, Electric row 8] Acquisitions can expand capacity and control, but also raise integration, retention, leverage and contingent-payment risk.

Management also disclosed the $500-$700 million transformer/vertical-supply-chain investment, the 6.7 million-square-foot off-site footprint ambition and a 2030 opportunity to more than double earnings power. These are strategic claims, not forecast facts. The segment base case earns less than a doubling of TTM revenue by the exact five-year horizon, while the upside approaches a doubling only if capacity, demand and project selection all cooperate. [Data package §6, post-commentary paragraph]

8. Forward growth assumptions

The only auditable modeled product is the Electric reportable segment total. The 3-year historical CAGR shown below is the FY2022-to-FY2025 three-interval rate of 21.8%, clearly flagged as spanning the combined-old-taxonomy boundary; the directly recast FY2023-to-FY2025 rate is 20.4%. Current quarterly YoY is 43.6%, but the model assumes rapid deceleration because acquisitions, easy comparisons and project timing cannot persist indefinitely.

Base growth case

Product	3-year historical CAGR	Latest YoY	Management FY2026 guide	Base CAGR TTM to TTM+5y	Justification
Electric reportable segment total	21.8% with taxonomy caveat	43.6% Q2 2026	No segment guide; consolidated revenue $39.3-$39.7B	12.0%	RPO/backlog, grid spending and large-load work support double-digit growth; deceleration reflects scale, acquisitions annualizing, labor constraints and project timing.

The base case assumes FY2026 benefits from acquisitions and current backlog, followed by a deceleration to high-single-digit annual growth by FY2031. It does not require 43.6% quarterly growth to persist. The exact 12.0% TTM-to-TTM+5 CAGR produces $47.416 billion of horizon revenue, 76% above the TTM anchor but still below a full doubling.

Upside growth case

Product	3-year historical CAGR	Latest YoY	Management FY2026 guide	Bull CAGR TTM to TTM+5y	Justification
Electric reportable segment total	21.8% with taxonomy caveat	43.6% Q2 2026	No segment guide; consolidated revenue $39.3-$39.7B	15.0%	Faster RPO conversion, sustained grid and large-load awards, acquired capacity retention and supply-chain expansion keep growth above base while still decelerating sharply from Q2.

The upside is not a continuation of current quarterly growth. It assumes that utilities accelerate transmission and generation investment, large-load projects progress rather than slip, Quanta gains scope through self-performance, and transformer/fabrication capacity becomes productive. It also assumes contract selectivity prevents growth from destroying profit.

Downside growth case

Product	3-year historical CAGR	Latest YoY	Management FY2026 guide	Bear CAGR TTM to TTM+5y	Justification
Electric reportable segment total	21.8% with taxonomy caveat	43.6% Q2 2026	No segment guide; consolidated revenue $39.3-$39.7B	5.0%	Backlog conversion slows, MSA estimates do not become orders, projects slip and acquired capacity is underutilized; critical utility work still supports positive five-year growth.

The downside does not assume structural demand vanishes. It assumes timing, customer capital discipline, permitting, power-equipment constraints and execution cause a long digestion period after FY2026. Revenue grows only modestly from the TTM base even though current backlog is large.

Normalized growth case

Product	3-year historical CAGR	Latest YoY	Management FY2026 guide	Normalized CAGR TTM to TTM+5y	Justification
Electric reportable segment total	21.8% with taxonomy caveat	43.6% Q2 2026	No segment guide; consolidated revenue $39.3-$39.7B	9.0%	Growth settles above nominal GDP because of grid and power investment, but acquisition and backlog acceleration fade and share gains normalize.

Normalized is a steady-state reference, not a separate probability case in the final three-case distribution. It is useful for valuation because it removes both current surge conditions and an explicit project-loss cycle.

9. Forward Segment operating income margin assumptions

The profit metric in every table is exactly **Segment operating income**. The TTM starting margin is 10.6%. Service-family margins are not disclosed, so a revenue-weighted product margin cannot be computed without fabrication. The one-line segment model is therefore the finest auditable construction.

Case	TTM margin	FY2026 margin	TTM+5y margin	Change	Specific mechanism
Downside / bear	10.6%	9.8%	9.0%	(160) bps	Underutilized acquired capacity, adverse fixed-price execution, labor inefficiency and weaker change-order recovery offset pricing.
Normalized	10.6%	10.6%	10.5%	(10) bps	Current economics persist through mixed programs with no assumed structural leverage.
Base	10.6%	10.8%	11.5%	+90 bps	Density, self-performance, procurement control and better solutions mix provide gradual leverage while investment and project risk remain.
Upside / bull	10.6%	11.0%	12.5%	+190 bps	Favorable large-load/grid mix, disciplined risk-sharing, high utilization and productive vertical-supply investments create leverage.

The base margin expansion stays below 100 basis points, deliberately modest relative to the growth assumptions. It requires no product-margin precision. The upside exceeds 100 basis points and therefore needs a specific operational bridge: Quanta must gain more coordinated scope, keep acquired teams, improve fabrication and transformer utilization, avoid firm-fixed-price generation risk, preserve labor productivity and capture pricing for schedule certainty. If any of those fail, the upside margin is not defensible.

The downside falls more than 100 basis points. The mechanism is not generic recession alone. Rising fixed-price exposure, a large project loss, delayed customer approvals, acquisition integration and idle labor/equipment can compress Segment operating income even while reported revenue remains positive. The trough is modeled in FY2028-FY2029 before a modest recovery as poor projects complete and capacity is resized.

10. Segment rollup and explicit annual forecasts

All forecast tables are single-line segment rollups because no audited product revenue exists. Revenue multiplied by margin equals Segment operating income within rounding. FY2026-FY2031 are fiscal-year estimates. The exact five-year endpoint is separately calculated from the TTM ended 2026-06-30 anchor and is not mislabeled FY2031.

Downside / bear annual forecast

Fiscal year	Revenue	YoY	Segment operating income margin	Segment operating income	Main assumption
FY2026	$30.800B	33.9% vs FY2025	9.8%	$3.018B	Current backlog and acquisitions support growth, but mix and integration reduce margin.
FY2027	$31.500B	2.3%	9.2%	$2.898B	Delays and non-conversion of estimated MSA backlog sharply slow activity.
FY2028	$32.200B	2.2%	8.8%	$2.834B	A project-loss and underutilization cycle reaches its trough.
FY2029	$33.000B	2.5%	8.7%	$2.871B	Weak conversion persists; claims and labor inefficiency remain.
FY2030	$33.800B	2.4%	8.8%	$2.974B	Programmatic utility work begins stabilizing utilization.
FY2031	$34.700B	2.7%	9.0%	$3.123B	Margin recovers modestly, still below the TTM anchor.

Normalized annual forecast

Fiscal year	Revenue	YoY	Segment operating income margin	Segment operating income	Main assumption
FY2026	$31.800B	38.3% vs FY2025	10.6%	$3.371B	Current awards and acquisitions lift the fiscal-year base.

Fiscal year	Revenue	YoY	Segment operating income margin	Segment operating income	Main assumption
FY2027	$34.000B	6.9%	10.6%	$3.604B	Acquisition effects annualize and organic growth normalizes.
FY2028	$36.300B	6.8%	10.6%	$3.848B	Grid and large-load demand offset normal project churn.
FY2029	$38.600B	6.3%	10.5%	$4.053B	Scale rises without structural margin expansion.
FY2030	$40.200B	4.1%	10.5%	$4.221B	Growth approaches mature infrastructure-program rates.
FY2031	$42.600B	6.0%	10.5%	$4.473B	Project timing creates ordinary annual variation.

Base annual forecast

Fiscal year	Revenue	YoY	Segment operating income margin	Segment operating income	Main assumption
FY2026	$32.200B	40.0% vs FY2025	10.8%	$3.478B	Record awards, Q2 momentum and acquisitions support a strong year.
FY2027	$36.000B	11.8%	11.0%	$3.960B	RPO conversion and cross-selling continue as acquired teams settle in.
FY2028	$39.800B	10.6%	11.2%	$4.458B	Utility, generation and large-load programs remain broad.
FY2029	$43.400B	9.0%	11.3%	$4.904B	Growth decelerates with scale; density supports modest leverage.
FY2030	$46.000B	6.0%	11.4%	$5.244B	Capacity investments are productive without heroic utilization.
FY2031	$48.800B	6.1%	11.6%	$5.661B	Mature growth remains above the broader economy because of grid spending.

Upside / bull annual forecast

Fiscal year	Revenue	YoY	Segment operating income margin	Segment operating income	Main assumption
FY2026	$33.000B	43.5% vs FY2025	11.0%	$3.630B	Strong award conversion and acquisition contribution land on time.
FY2027	$37.800B	14.5%	11.4%	$4.309B	Large-load, grid and generation demand remain synchronized.
FY2028	$42.500B	12.4%	11.8%	$5.015B	Self-performance and vertical supply reduce bottlenecks.
FY2029	$47.000B	10.6%	12.1%	$5.687B	Quanta captures more scope while avoiding adverse contract terms.
FY2030	$51.800B	10.2%	12.4%	$6.423B	High utilization and standardized execution create leverage.
FY2031	$56.400B	8.9%	12.6%	$7.106B	Growth decelerates but durable customer programs sustain scale.

Exact TTM+5 horizon reconciliation

Case	TTM revenue anchor	Exact CAGR to 2031-06-30	TTM+5 revenue	Segment operating income margin	Segment operating income	Arithmetic tie
Downside / bear	$26.905B	5.0%	$34.338B	9.0%	$3.090B	$34.338B × 9.0% = $3.090B
Normalized	$26.905B	9.0%	$41.397B	10.5%	$4.347B	$41.397B × 10.5% = $4.347B
Base	$26.905B	12.0%	$47.416B	11.5%	$5.453B	$47.416B × 11.5% = $5.453B

Case	TTM revenue anchor	Exact CAGR to 2031-06-30	TTM+5 revenue	Segment operating income margin	Segment operating income	Arithmetic tie
Upside / bull	$26.905B	15.0%	$54.116B	12.5%	$6.764B	$54.116B × 12.5% = $6.764B

The annual fiscal paths and exact horizon estimates are mutually consistent within normal half-year timing differences. The horizon values compound directly from the sealed TTM anchor for exactly five years. The annual tables make the assumed deceleration and margin path visible rather than hiding them in a terminal CAGR.

11. Organic versus acquired growth, capital intensity and valuation inputs

The FY2026 acceleration is not assumed to be entirely organic. Management's expected $1.2-$1.4 billion of 2026 acquired revenue and $120-$140 million of adjusted EBITDA from Phalcon, Percheron, PSD and Enerfab is mostly Electric but not precisely allocated by segment. Cupertino Electric and other prior acquisitions also affect comparisons. Because an exact segment split is unavailable, the model does not publish a false organic percentage. Instead, FY2027 growth decelerates sharply in all cases as acquisition contributions annualize. A critical KPI for every earnings review is Electric organic growth excluding acquisitions; without it, high reported growth should receive a lower quality weight. [Data package §9, Q2/July 2026 acquisitions row; official Q2 2026 IR release]

Base-case revenue growth after FY2027 depends on recurring utility programs, transmission and distribution buildout, generation interconnection, large-load electrical work and scope expansion. Acquisitions may continue because management calls them a primary use of capital, but the forecast does not require a fixed annual acquisition budget. Any future deal should be added separately with purchase price, funding, acquired revenue, Segment operating income basis, retention and integration assumptions.

Capital-intensity inputs for synthesis should begin with consolidated historical capex of about 2%-3% of revenue, then recognize the $500-$700 million multi-year vertical-supply investment. Electric likely consumes a disproportionate share, but the issuer does not disclose segment capex. No segment capex number is fabricated here. The synthesis model should forecast consolidated capex and working capital, not multiply Electric profit by an invented conversion factor. Cash conversion should be stress-tested against contract assets, unapproved change orders, fixed-price mix, retainage and project timing. [Data package §7, FY2021-FY2025 capital-allocation table; §6, post-commentary investment disclosure]

At the governed quote of $667.36 per share on 2026-07-31, Quanta's valuation requires substantial future earnings growth. Worker B does not produce a consolidated target price because corporate expense, Underground profit, interest, tax, dilution and capital allocation sit outside this segment. It supplies the inputs synthesis needs: exact TTM Electric revenue and Segment operating income, annual scenario paths, horizon profit and the risks to conversion. Any sum-of-the-parts multiple applied to Electric must be reconciled back through corporate costs and net debt; applying a multiple directly to Segment operating income without those deductions would overstate equity value. [`quote_packet.json`, quote date 2026-07-31, SHA-256 `18bce43b3427ddacee4916b529eff7c8f2a2e0b1de5eb6e9e50e429531733cde`]

For valuation discipline, the normalized case is especially useful: $41.397 billion of exact-horizon revenue and $4.347 billion of Segment operating income at a 10.5% margin. The base implies $5.453 billion, and the upside $6.764 billion. These are segment profit values before substantial corporate/non-allocated expense. The downside produces $3.090 billion, only modestly above the current $2.859 billion despite five years of growth, illustrating how execution and utilization can offset volume.

12. Key risks, catalysts and monitoring KPIs

Fixed-price project loss — downside. Consolidated fixed-price mix reached 60.6% in FY2025. A single large generation, renewable, transmission or large-load project can suffer scope, engineering, procurement, labor, weather or schedule problems. Watch estimate revisions, contract assets, claims and any disclosure of losses or unfavorable forecast changes.

Backlog quality and conversion — all cases. Electric backlog is large, but a meaningful portion of broader Quanta backlog reflects estimated MSA work. Watch Electric RPO versus backlog, twelve-month backlog, cancellations, award timing and RPO conversion. A widening backlog-RPO gap with slowing revenue is a warning.

Labor capacity and safety — all cases. The moat requires trained crews, but rapid growth can dilute supervision, raise overtime and weaken productivity. Watch organic headcount, craft retention, training throughput, union availability, safety incidents and subcontractor dependence. Numerical current TRIR/DART is a true disclosure gap, so no safety-rate target is invented.

Acquisition integration — base and downside. Quanta must retain local leaders, customers and craft skill while applying controls. Watch acquired revenue, margins, contingent consideration, goodwill, integration charges, turnover and cross-selling evidence. Reported growth without cash conversion or with rising corporate costs is lower quality.

Large-load and AI narrative — upside and downside. Accelerating electricity demand can support generation, transmission, substations and inside-electrical work. Yet AI-only revenue, backlog and profit are undisclosed. Watch direct versus general-contractor relationships, project funding, cancellation protection, power availability, customer concentration and fixed-price terms.

Utility capital cycles and regulation — base and downside. Utilities have durable reliability and load-growth needs, but rate cases, affordability pressure, permitting and political intervention can delay programs. Watch customer capital plans, regulatory approvals, wildfire-hardening mandates and transmission queue progress.

Supply-chain investment — upside and downside. Transformer and fabrication ownership can protect schedule and increase scope, but $500-$700 million of investment creates utilization and execution risk. Watch facility commissioning, capacity utilization, external versus internal sales, inventory and whether lead times improve. [Data package §6, post-commentary investment disclosure]

Weather and emergency restoration — all cases. Storm work can create attractive episodic revenue but disrupt planned projects. It should not be capitalized as recurring growth. Separate storm contribution where disclosed.

Cash conversion and claims — downside. Unapproved change-order and claim revenue reached $983.6 million at FY2025. Watch days sales outstanding, contract assets, operating cash flow, FCF, claim collections and customer approvals. Segment margin is not sufficient evidence of quality. [Data package §10, project/contract control paragraph; 2025 Form 10-K Note 4]

Competition and pricing — normalized and downside. Regional specialists, national peers, utility self-performance and general contractors can compete for crews and scopes. Watch bid discipline, wage inflation, equipment costs, win rates and whether price compensates for risk.

Catalysts. Positive catalysts include faster RPO conversion, clear disclosure of Electric organic growth, evidence that large-load scopes carry disciplined risk-sharing, utility transmission awards, productive transformer/fabrication capacity, stable or rising Segment operating income margin, strong cash conversion and acquired-team retention. Negative catalysts include a large fixed-price charge, project cancellation, delayed equipment, rising contract assets, weak acquired margins, labor attrition, customer concentration or corporate costs consuming segment leverage.

The minimum recurring KPI set is Electric revenue and organic growth; Segment operating income and margin; Electric RPO, backlog and twelve-month backlog; backlog composition; fixed-price mix; project-loss and change-order commentary; contract assets and cash conversion; workforce and safety; acquisition contribution and retention; vertical-supply investment milestones; and the share of large-load work with customer and contract protections. Conclusions should be constrained when these disclosures are absent.

13. Constraints and conclusion

Electric is Quanta's economic engine and has a credible operating moat rooted in labor, qualification, customer relationships, scale and coordination. Demand is unusually strong across grid modernization, generation and large-load infrastructure, while Q2 RPO and backlog offer substantial visibility. The current run rate also includes acquisitions, and backlog is not synonymous with contracted revenue. Fixed-price exposure, working capital, labor, integration and project concentration keep this a contractor economics problem, not a software economics problem.

The base case uses 12.0% exact five-year revenue CAGR and 90 basis points of margin expansion, producing $47.416 billion of TTM+5 revenue and $5.453 billion of Segment operating income. The upside requires exceptional but explicit execution; the downside preserves positive structural demand while allowing a severe profit-cycle disappointment. The normalized case anchors steady-state valuation without pretending that today's surge lasts indefinitely.

[DATA GAP: Quanta does not disclose revenue, profit, backlog, RPO or margins for Electric service families below the reportable segment. No sub-segment dollars are modeled.] [DATA GAP: Quanta does not disclose an Electric-only FY2026 revenue or Segment operating income guide.] [DATA GAP: Electric organic growth excluding acquisitions is not quantified in the governed package.] [DATA GAP: Segment capex, working capital and free cash flow are not disclosed.] [DATA GAP: AI/data-center-only Electric revenue, backlog, customer concentration, contract mix and profitability are not disclosed.] [DATA GAP: Current numerical safety rates such as TRIR and DART were not disclosed in the searched sources.]

Summary table

Case	Segment TTM+5y Revenue	Exact profit metric	Segment TTM+5y Profit Margin	Segment TTM+5y Profit	Probability
Bear	$34.338B	Segment operating income	9.0%	$3.090B	20%
Base	$47.416B	Segment operating income	11.5%	$5.453B	60%
Bull	$54.116B	Segment operating income	12.5%	$6.764B	20%

Probability-weighted Electric TTM+5 revenue is $46.140 billion and probability-weighted Segment operating income is $5.242 billion. These are inputs to consolidated synthesis, not a standalone equity valuation or trade recommendation.

The 60% base weight reflects record RPO/backlog, accelerating recent quarterly growth and management's repeated demand confidence, tempered by explicit contract-risk discipline. Bear retains 20% because fixed-price exposure, nonbinding MSA estimates, claims, labor constraints and acquisition integration can overwhelm volume; bull is also 20% because it requires simultaneous above-base conversion, capacity utilization and contracting discipline rather than merely scaling every assumption upward.

Source ledger

- Quanta Services 2025 Form 10-K: [SEC filing](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm).
- Quanta Services Q2 2026 Form 10-Q: [SEC filing](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000025/pwr-20260630.htm).
- Quanta Services Q2 2026 results: [official IR release](https://investors.quantaservices.com/news-events/press-releases/detail/402/quanta-services-reports-second-quarter-2026-results).
- DR-cleared `data_package.md`, SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9`; controlling source for all historical Quanta figures, management excerpts and accounting classifications.
- QFR-sealed `statutory_bridge.json`, SHA-256 `fd60289c88cba734a999f687251dea4c6a3cf70f8a34f0cffbf63a9e1d4db9e6`; controlling source for Segment operating income identity and bridge treatment.

`TRADE_EXECUTION_AUTHORIZED: false`

`WORKER B COMPLETE — ELECTRIC INFRASTRUCTURE SOLUTIONS READY FOR RED-TEAM REVIEW`

Underground Utility and Infrastructure Solutions — Segment Deep Dive

Company: Quanta Services, Inc. (`PWR`) **Production ER2 action:** `CIO-20260727-PWR-FULL-ER2` **Information cutoff:** 2026-08-01 SGT **Historical authority:** DR-cleared `data_package.md`, SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9` **Profit basis: Segment operating income TTM anchor:** 2026-06-30; **five-year horizon:** 2031-06-30 **Reporting scale:** USD billions unless otherwise stated **Trade execution authorized:** `false`

0. Segment boundary and taxonomy note

Underground Utility and Infrastructure Solutions is one of Quanta's two current reportable segments. The boundary is stable across the five-year historical table: unlike Electric, Underground did not require an arithmetic combination of legacy segments. Quanta changed the overall reporting structure in Q1 2025 by combining Electric Power and Renewable Energy into Electric, but the Underground historical revenue and Segment operating income series in the cleared package remains an issuer-disclosed line for FY2021-FY2025. The most important within-segment change is economic rather than a formal reporting restatement: the July 2025 acquisition of Dynamic Systems added turnkey mechanical, plumbing and process infrastructure, particularly for technology, semiconductor, healthcare and other large-load facilities. Thus the segment label is comparable, while its mix and organic/acquired growth are not perfectly like-for-like after mid-2025. [Data package §1; §9,

Dynamic Systems row]

1. What the segment actually is

Underground is a portfolio of field-service and project businesses that work below ground, on industrial sites and inside complex facilities. Its traditional core serves regulated gas utilities and pipeline owners. Quanta operating companies replace and maintain gas distribution mains and service lines; build or rehabilitate transmission pipelines; inspect, test and restore pipeline integrity; and perform recurring compliance, maintenance and emergency work. These assignments are commonly awarded through master service agreements, unit-price schedules, negotiated programs or project contracts. The customer often values a contractor's local crews, safety qualification, productivity and ability to mobilize as much as its headline bid price.

The second family is civil and industrial work: site clearing, earthwork, soil stabilization, infrastructure development, fabrication, industrial maintenance and time-sensitive turnarounds. This work can be recurring where Quanta is embedded at an industrial site, or project-driven where a customer is expanding a facility. It shares the segment's reliance on craft labor and field execution but can have different cycle and contract risks from regulated gas distribution.

The third family is mechanical, plumbing and process infrastructure for large-load facilities. Dynamic Systems expanded Quanta's capability to deliver critical mechanical systems, plumbing, process piping, modular fabrication and related execution for technology, semiconductor, healthcare and industrial customers. On a data-center campus, Underground may perform site and mechanical scopes while the Electric segment handles inside electrical systems, substations and the external grid connection. The strategic proposition is an integrated critical path: fewer handoffs, more self-performance and one provider able to coordinate civil, mechanical and electrical work. Quanta's [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm) and [Q2 2026 release](https://investors.quantaservices.com/news-events/press-releases/detail/402/quanta-services-reports-second-quarter-2026-results) are the official descriptions behind this boundary.

The customer set therefore spans regulated gas utilities, pipeline and energy operators, industrial and petrochemical facilities, general contractors, technology and colocation companies, semiconductor manufacturers, healthcare systems and other owners of complex facilities. Quanta does not disclose segment revenue by those customers or service families. Consolidated FY2025 customer-type disclosure was 70% Utility and Power, 17% Energy and Other, and 13% Technology, Manufacturing and Communications; those percentages cannot be assigned mechanically to Underground. The largest consolidated customer was 8% of revenue and the top ten were 30%, but the segment's own concentration is not disclosed. [Data package §1, geography and customer-mix paragraph]

The sales motion is relationship-led rather than transactional. Utilities prequalify contractors for multi-year programs; industrial customers value outage execution and safety; and large-load customers value schedule certainty and coordination. Backlog provides evidence of awarded or expected activity, but it is not equivalent to a firm order book. Master service agreements may establish rates and terms without minimum volumes. Project awards may be deferred by permits, right-of-way, financing, design changes, equipment availability or customer priorities. The segment's economics therefore depend on both demand and conversion discipline.

2. Current economics, disclosure taxonomy, backlog and end markets

The TTM ended 2026-06-30 is the forecast anchor. Underground generated **$6.000 billion** of revenue and **$492.095 million** of **Segment operating income**, an **8.2%** margin. This is not statutory consolidated operating income. The sealed bridge subtracts corporate and non-allocated costs once at the consolidated level; this appendix does not allocate those costs to Underground or embed interest, tax or noncontrolling interests in segment margin. [Data package §3, TTM paragraph; §3a, TTM bridge, Underground row; `OFFICIAL_TTM_RECON_2026H1`]

The FY2025 anchor was $5.478 billion revenue and $398.276 million Segment operating income, a 7.3% margin. The TTM step-up therefore reflects a combination of organic execution, full and partial acquisition contributions, and stronger recent-quarter mix. The last four reported quarters produced Underground revenue growth of 15.9%, 20.6%, 9.1% and 30.7% year over year, with Segment operating margins of 8.4%, 7.7%, 7.5% and 9.1%. This is an improving pattern but not a stable run rate: quarterly mix, project closeouts and acquisition timing can move both revenue and margin. [SEC FY2025 Form 10-K Note 5 via data package §3; official Q3 2025, Q4 2025, Q1 2026 and Q2 2026 releases via §5]

Disclosure stops at the reportable segment. The following taxonomy is therefore analytical context, not a fabricated revenue split.

Service family	Disclosed activities	Dollar revenue disclosed?	Modeling treatment
Gas utility and pipeline	Distribution, transmission, integrity, rehabilitation and maintenance	No	Directional driver only; no product forecast dollars
Civil and industrial	Civil works, site development, fabrication, turnarounds and industrial services	No	Directional driver only; no product forecast dollars
Mechanical/plumbing/process load-center work	Dynamic Systems and related mission-critical facility services	No	Acquisition and mix driver only; no product forecast dollars
Underground reportable segment total	All service families above	Yes	Sole auditable revenue and Segment operating income model line

This constraint matters. A tempting approach would allocate the $6.000 billion TTM total among gas, civil and mechanical activities and then assign different growth rates and margins. Public disclosure does not support those allocations. The model instead uses the reportable segment as the only financial projection line, while service-family evidence changes scenario assumptions qualitatively.

Demand visibility is real but mixed in quality. Underground backlog rose from $4.51 billion at FY2021 to $6.289 billion in FY2022, $6.482 billion in FY2023, $5.91 billion in FY2024, $7.81 billion in FY2025 and **$9.65 billion at Q2 2026**. Q2 Underground RPO was **$4.440 billion**. The $5.210 billion difference between backlog and RPO is not necessarily bad business, but it is less firm: the broader measure includes estimated MSA renewals and certain short-term or non-fixed-price orders. At the consolidated level, MSAs represented 44% of FY2025 backlog and generally did not commit customers to specified volume. [Data package §0a, ad hoc KPI table; §5, post-table backlog paragraph]

The latest Underground backlog equals about 1.61 times TTM segment revenue, while RPO equals about 0.74 times. Those ratios are calculations from sealed data, not company guidance. They support a multi-year demand runway but not the timing or margin of conversion. The FY2024 backlog decline and segment revenue decline demonstrate that even essential infrastructure demand is uneven. Conversely, the 2025 and H1 2026 recovery shows that acquisitions and new programs can reaccelerate the segment quickly.

End-market durability differs by family. Gas-distribution replacement and pipeline integrity are supported by safety, reliability, environmental compliance and recurring maintenance. They should be less sensitive to a single technology cycle, but utility rate cases, methane policy, permitting and customer budgets can change the pace. Industrial maintenance can be recurring, while project and turnaround work follows customer schedules and commodity economics. Large-load mechanical and process work benefits from data-center and advanced-manufacturing construction, but it is susceptible to site-specific delays, owner concentration, design changes and compressed schedules. The model therefore does not treat every Underground dollar as utility-like recurring revenue.

3. Unit economics, capital intensity and cash conversion

Revenue becomes Segment operating income through a project-level spread between contract consideration and the costs of craft labor, supervision, equipment, materials, subcontractors, engineering, depreciation and local overhead. The basic economic unit is not a seat or subscription. It is a crew, project or program delivered safely and productively. Utilization, geographic density and repeatability matter because crews and equipment earn more when mobilization, training and idle time are spread over more productive hours.

Gas utility programs can produce attractive repeat economics when the same operating company works for the same utility across a dense territory under an MSA or unit-price schedule. The contractor learns local standards, maintains qualified crews and reduces mobilization. However, volume may not be guaranteed, and inflation in wages, fuel or materials can outrun rates until repricing catches up. Pipeline projects can be larger and less recurring; permitting, right-of-way and environmental conditions can alter schedule and productivity.

Industrial and civil work depends on scope discipline. Turnarounds reward mobilization, specialized labor and on-time completion because an owner's lost production can dwarf the contractor fee. Civil work may look commoditized at the task level, but integrated site capability can become valuable when linked to a larger mechanical or electrical award. The downside is that ordinary civil work has many regional competitors and can be bid aggressively.

Mechanical, plumbing and process infrastructure adds a potentially attractive coordination premium. Prefabrication and modular work can shift labor from a constrained jobsite to a controlled facility, improve quality and reduce schedule variance. Owning more of the critical path may increase Quanta's share of wallet and reduce interface failures. But the same integration can concentrate execution risk: a late design revision or sequence failure can disrupt multiple trades. Fixed-price exposure,

change-order recovery and craft availability are therefore more important than headline demand.

Historical margin illustrates both operating leverage and volatility. Segment operating margin rose from 4.3% in FY2021 to 7.3% in FY2022 and 7.5% in FY2023, fell to 5.7% in FY2024, recovered to 7.3% in FY2025 and reached 8.2% on the TTM basis. A margin model that simply extrapolates the TTM recovery would ignore the 180-basis-point FY2024 decline. The base case allows only 80 basis points of expansion over five years, to 9.0% at FY2031 and 8.95% at the exact horizon. The bull case requires both favorable mix and execution; the bear case explicitly assumes that project pressure and acquisition integration overwhelm scale benefits.

Quanta does not disclose capex or free cash flow by segment. Consolidated TTM capex was $787 million and free cash flow was $2.391 billion. It would be fabrication to allocate a share to Underground. Economically, the segment needs trucks, heavy equipment, tooling, fabrication and modular facilities, yards, safety gear, training and working capital. Mechanical and fabrication growth can increase both fixed assets and work in process; large projects can require payroll and material funding before billing and collection. [Data package §2, TTM paragraph; SEC cash-flow statements/QF official control]

Cash conversion is especially sensitive to contract assets, retainage and change orders. Consolidated fixed-price revenue share rose from 49.1% in FY2023 to 60.6% in FY2025. At FY2025, Quanta had recognized $983.6 million of revenue associated with unapproved change orders and claims in contract assets, versus $733.6 million a year earlier. That amount is consolidated, not Underground-specific, but it demonstrates the economic hazard: accounting profit can precede cash, and collection can depend on customer approval or claims resolution. [Data package §10, project and contract controls]

Organic and acquired economics must be separated conceptually even where Quanta does not disclose the exact dollars. Dynamic Systems added a full-year 2026 contribution relative to a partial FY2025 period. That is real reported growth but not a repeatable organic rate. Integration can yield cross-selling and utilization benefits; it can also raise intangible amortization and central cost outside the segment metric. Synthesis must therefore combine this appendix with the statutory bridge rather than capitalizing Segment operating income as though it were after all acquisition costs.

4. Competitive dynamics

Competition is fragmented locally and scaled nationally. For gas utility distribution and pipeline work, relevant public peers and adjacent providers include Primoris Services and MasTec, alongside private contractors and utility self-performance. Primoris describes a Utilities segment that builds and maintains gas and electric distribution and transmission systems and communications infrastructure, with substantial MSA activity. Its [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1361538/000110465926018677/prim-20251231x10k.htm) shows why local productivity, renewals and gas operations matter. MasTec reports separate Power Delivery and Pipeline Infrastructure activities; its [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/15615/000001561526000020/mtz-20251231.htm) illustrates the breadth of national competition.

For large-load mechanical and process infrastructure, EMCOR is an important adjacent benchmark. EMCOR describes itself as a major U.S. electrical and mechanical construction and facilities-services provider operating through many subsidiaries and serving commercial, technology, manufacturing, industrial and healthcare customers. Its [FY2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/105634/000010563426000025/eme-20251231.htm) confirms that the end market is competitive and populated by another scaled, decentralized specialty contractor. Private mechanical firms, general contractors and locally strong operators add further pressure.

Customers retain meaningful bargaining power. Utilities can split territories among contractors, rebid MSAs, defer programs or self-perform. General contractors can control access to a technology project and pressure subcontractor terms. Large industrial owners can negotiate scope and risk allocation aggressively. Pricing power therefore does not arise from a monopoly; it arises from scarcity and qualification. When qualified craft labor, bonding capacity, safety records or schedule certainty are scarce, Quanta can defend price and contract terms. When ordinary civil capacity is abundant, price competition can compress margins.

Entry barriers vary by task. Small civil jobs and ordinary mechanical work have modest barriers. Energized utility work, pipeline integrity, complex process systems and multi-trade mission-critical campuses require safety qualification, engineering coordination, specialized equipment, labor credentials, bonding and a proven record. The customer's risk of selecting an underqualified contractor may exceed the fee savings. Quanta's size also supports rapid mobilization and cross-company coordination that a small local firm cannot easily replicate.

Substitution risk is mainly organizational, not technological. Utilities may bring work in-house, owners may choose a general contractor that subcontracts Quanta's scopes, or competitors may acquire similar capabilities. Automation and prefabrication

can change how work is performed but do not eliminate the physical need to install, inspect and maintain infrastructure. The relevant threat is that a peer captures the integration benefit or that Quanta's decentralized operating companies fail to coordinate well enough to earn it.

5. Segment-level moat and durability

Underground has a **moderate, execution-dependent moat**, not an invulnerable franchise. Its strongest protection is the installed network of qualified crews, local customer relationships and operating companies. Utility qualification, safety performance and familiarity with local systems accumulate over years. A customer may prefer continuity on hazardous, regulated work, particularly when the contractor has demonstrated reliable productivity and emergency response.

Craft capacity is a second barrier. Management's statement that “craft skill is at the core” is more than branding: scarce welders, pipefitters, equipment operators, mechanics and supervisors constrain how rapidly the industry can respond. Quanta's consolidated training infrastructure, broad labor pool and ability to move resources across operating companies should improve win capacity. Yet labor is not owned intellectual property. Competitors can recruit, unions can reallocate members and wage inflation can transfer scarcity rents to workers.

Breadth is a third potential advantage. Gas, civil, mechanical, process and electrical capabilities can let Quanta engage earlier, self-perform more work and reduce handoffs. Dynamic Systems makes that advantage more credible for large-load facilities. If Quanta turns a mechanical award into a coordinated site-plus-electrical-plus-grid relationship, its switching cost rises. If the operating companies remain siloed, the theoretical platform moat will not appear in margins or cash flow.

Balance sheet and bonding capacity matter on large projects. A customer commissioning a mission-critical facility or multi-year utility program needs confidence that a contractor can absorb working-capital swings, procure equipment and complete the job. Quanta's scale provides capacity smaller firms lack. It also creates a risk: a larger balance sheet can encourage larger projects where a single estimate error is more consequential.

The moat should last five to ten years if Quanta maintains safety, retains acquired leaders, trains enough craft labor and refuses uneconomic risk. It weakens if customer concentration rises, labor productivity falls, fixed-price project losses recur, acquisitions dilute local accountability or peers replicate the integrated offering. The evidence standard is not backlog growth alone. Durable moat evidence would be sustained organic growth, 8%-plus Segment operating margins, good cash conversion and controlled contract assets through different mixes.

6. Historical growth rates and arithmetic checks

The only dollar-disclosed product line is the reportable segment total. No service-family dollars are back-solved. Every historical cell below reproduces the same cleared row, whose specific official controls are the FY2023 and FY2025 Forms 10-K, Note 5, as recorded in data-package §3.

Product / sub-segment	FY2021 rev	FY2022 rev	FY2023 rev	FY2024 rev	FY2025 rev	FY2022-FY2025 CAGR	Most recent FY YoY	Data package cite
Underground reportable segment total	$3.531B [§3 Underground revenue row]	$4.355B [§3 Underground revenue row]	$5.015B [§3 Underground revenue row]	$4.660B [§3 Underground revenue row]	$5.478B [§3 Underground revenue row]	7.95% [calculation from §3 row]	17.5% [§3 Underground YoY row]	`data_package.md` §3, Underground table
Gas utility and pipeline	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	N/A	N/A	`data_package.md` §4, Underground gas row
Civil and industrial	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	N/A	N/A	`data_package.md` §4, Underground civil row
Mechanical/plumbing/process	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	Not separately disclosed [§4 row]	N/A	N/A	`data_package.md` §4, Underground mechanical row

Arithmetic checks: $3.531B × 1.234 = $4.357B versus the disclosed $4.355B, a 0.05% rounding difference; $4.355B × 1.152 = $5.017B versus $5.015B, a 0.04% difference; $5.015B × 0.929 = $4.659B versus $4.660B, a 0.02% difference; and $4.660B × 1.175 = $5.476B versus $5.478B, a 0.04% difference. All are within the mandatory 2% tolerance. The FY2021-FY2025 CAGR is 11.60%, while the less acquisition- and rebound-sensitive FY2022-FY2025 CAGR is 7.95%.

Recent quarter checks provide a more current but more volatile signal. Underground year-over-year growth was 15.9% in Q3 2025, 20.6% in Q4, 9.1% in Q1 2026 and 30.7% in Q2. The full range is retained rather than averaged away. The base

forecast decelerates from the Q2 rate because acquisition timing and comparisons normalize; it does not assume that 30.7% persists for five years.

7. Management guidance and commentary from the cleared package

The Q2 transcript endpoint returned an empty array, so the data package properly used the official IR/SEC release instead of a cached transcript. The following is every Underground-relevant excerpt in §6, reproduced without re-fetching calls.

Period / speaker	Verified excerpt	Specific source / data-package row	Interpretation for this model
Q3 2025, Duke Austin	“record backlog of $39.2 billion”	FMP transcript, 2025-10-30; §6 Underground row 1	Broad portfolio visibility improved, but the quoted figure is consolidated and does not set Underground conversion.
Q3 2025, Duke Austin	“craft skill is at the core”	FMP transcript, 2025-10-30; §6 Underground row 2	Crew availability and productivity are load-bearing capacity and margin variables.
Q4 2025, Duke Austin	“total backlog of $44 billion”	FMP transcript, 2026-02-19; §6 Underground row 3	Backlog supports the opening 2026 base but includes nonbinding estimates.
Q4 2025, Duke Austin	“acquisitions we completed in 2025”	FMP transcript, 2026-02-19; §6 Underground row 4	Dynamic Systems changes mix and makes reported growth partly acquired.
Q1 2026, Duke Austin	“opportunity to more than double the earnings power”	FMP transcript, 2026-04-30; §6 Underground row 5	This is an aspiration for scenario testing, not evidence for the base forecast.
Q1 2026, Duke Austin	“primary use of capital”	FMP transcript, 2026-04-30; §6 Underground row 6	Further M&A is plausible; this appendix does not assume undisclosed future deals.
Q2 2026, Duke Austin	“significantly increasing our full-year 2026 financial expectations”	Official IR/SEC Q2 release, 2026-07-30; §6 Underground row 7	The near-term anchor must reflect stronger company demand, while acquisition contribution remains separated conceptually.
Q2 2026, Duke Austin	“partner of choice”	Official IR/SEC Q2 release, 2026-07-30; §6 Underground row 8	Supports the qualitative moat case but does not justify a higher forecast by itself.

Current consolidated 2026 guidance in the package is $39.3-$39.7 billion revenue, $1.74-$1.82 billion common net income, $11.41-$11.92 GAAP diluted EPS, $16.45-$16.95 adjusted EPS, $3.74-$3.86 billion EBITDA, $4.09-$4.21 billion adjusted EBITDA, $2.90-$3.40 billion operating cash flow and $2.00-$2.50 billion free cash flow. Management does not provide a current segment-specific revenue split in the cleared package. The base Underground FY2026 forecast of $6.65 billion is therefore an analyst assumption anchored to TTM performance, not falsely labeled management guidance. [Data package §5, guidance paragraph]

8. Forward growth assumptions and explicit revenue forecasts

8.1 Service-family driver framework without fabricated dollars

Service family	Historical dollar CAGR	Latest disclosed YoY	FY+1 management guide	Base driver	Bear change	Bull change
Gas utility and pipeline	Not disclosed	Not disclosed	Not separately disclosed	Mid-single-digit program growth from safety, integrity and modernization; assumes steady MSA conversion	Utility deferrals, weak pipeline activity and rate pressure	Faster integrity work, larger programs and strong crew utilization
Civil and industrial	Not disclosed	Not disclosed	Not separately disclosed	Mid- to high-single-digit activity with normal project cyclicality	Customer capex delay and aggressive bidding	Strong industrial projects and cross-sold site work
Mechanical/plumbing/process	Not disclosed	Not disclosed	Not separately disclosed	Above-segment growth as Dynamic Systems annualizes and large-load work expands, then decelerates	Data-center schedule slips and integration drag	Faster large-load awards, prefabrication utilization and cross-selling
Underground reportable segment total	7.95% FY2022-FY2025	30.7% Q2 2026	No current segment guide in cleared package	10.01% TTM-to-horizon CAGR	2.82% TTM-to-horizon CAGR	14.26% TTM-to-horizon CAGR

These service-family views are qualitative bounds, not a hidden sum-of-products model. Because the issuer does not disclose service-family revenue, the reportable segment total is the only line that can be forecast and reconciled. Organic/acquired

separation is likewise directional. The 2026 step-up includes a full-year Dynamic Systems effect relative to partial 2025 ownership; no undisclosed acquisition revenue is added after the latest known transactions.

8.2 Base-case growth assumptions

Product	3-year historical CAGR	Latest YoY	Mgmt FY+1 guide	Base CAGR TTM→TTM+5y	Justification
Underground reportable segment total	7.95%	30.7%	No current segment split in cleared package	10.01%	Growth decelerates from acquisition-affected Q2, but stays above the FY2022-FY2025 CAGR because backlog reached $9.65B, Dynamic Systems annualizes and large-load plus utility work broaden the runway.

The base path does not compound 30.7%. FY2026 growth is 21.4% versus FY2025 because H1 already includes a strong Q2 and more Dynamic Systems contribution. It then falls to 10.5%, 9.1%, 8.5%, 7.5% and 7.0%. This path resembles a contractor moving from a step-up year into steady program growth rather than a software-style perpetual growth curve. A visible reason exists for every deceleration: acquisition comparisons normalize, the segment becomes larger, backlog converts over multiple years and labor limits delivery.

8.3 Bear-case growth assumptions

Product	3-year historical CAGR	Latest YoY	Mgmt FY+1 guide	Bear CAGR TTM→TTM+5y	Justification
Underground reportable segment total	7.95%	30.7%	No current segment split in cleared package	2.82%	Backlog conversion slips, MSA estimates prove less firm, large-load schedules move right and industrial/gas work grows only modestly after the 2026 acquisition step-up.

The bear case is not a collapse. Essential gas utility and integrity demand keeps nominal revenue positive, but FY2027 growth falls to 3.0% and then roughly 2%. The case assumes that Q2's 30.7% is a poor indicator of organic durability. It is supported by the segment's FY2024 7.1% revenue decline, which proves that customer timing can outweigh structural need over a year.

8.4 Bull-case growth assumptions

Product	3-year historical CAGR	Latest YoY	Mgmt FY+1 guide	Bull CAGR TTM→TTM+5y	Justification
Underground reportable segment total	7.95%	30.7%	No current segment split in cleared package	14.26%	Strong large-load mechanical awards, successful cross-selling, robust gas integrity programs and adequate craft capacity keep growth above history, while annual deceleration still recognizes scale.

The bull path also decelerates: 26.0% FY2026 growth falls to 13.8%, 14.0%, 12.3%, 10.9% and 9.9%. The temporary reacceleration in FY2028 represents conversion of multi-year large-load and infrastructure programs, not an assumed permanent increase. The case requires both demand and execution; if schedule certainty or crew capacity breaks, it does not hold.

8.5 Explicit annual revenue forecast, FY2026-FY2031

“Normalized” is a planning reference that strips out a high-growth narrative and holds the business near a 7% post-2026 growth rate. It is not a fourth probabilistic case and is not included in the ending probability table.

Scenario	FY2026 revenue	YoY	FY2027 revenue	YoY	FY2028 revenue	YoY	FY2029 revenue	YoY	FY2030 revenue	YoY	FY2031 revenue	YoY
Normalized	$6.45B	17.7%	$6.90B	7.0%	$7.38B	7.0%	$7.90B	7.0%	$8.45B	7.0%	$9.04B	7.0%
Bear / downside	$6.25B	14.1%	$6.44B	3.0%	$6.57B	2.0%	$6.70B	2.0%	$6.83B	1.9%	$6.96B	1.9%
Base	$6.65B	21.4%	$7.35B	10.5%	$8.02B	9.1%	$8.70B	8.5%	$9.35B	7.5%	$10.00B	7.0%
Bull / upside	$6.90B	26.0%	$7.85B	13.8%	$8.95B	14.0%	$10.05B	12.3%	$11.15B	10.9%	$12.25B	9.9%

The exact 2031-06-30 horizon is six months before FY2031 year-end. Geometric interpolation between FY2030 and FY2031 produces horizon revenues of $6.895 billion bear, $9.670 billion base, $11.687 billion bull and $8.740 billion normalized. Those are the numbers used in the final summary, so the model compounds from the TTM anchor for exactly five calendar years rather than six fiscal years.

9. Forward Segment operating income margin assumptions

The required profit metric is exactly **Segment operating income**. Segment margin is Segment operating income divided by segment revenue. Corporate and non-allocated costs, interest, tax and noncontrolling interests are excluded here and must be forecast once in synthesis.

Scenario	TTM margin	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	2031-06-30 horizon
Normalized	8.2%	8.2%	8.3%	8.35%	8.4%	8.45%	8.5%	8.475%
Bear / downside	8.2%	7.8%	7.6%	7.4%	7.3%	7.2%	7.2%	7.2%
Base	8.2%	8.4%	8.6%	8.7%	8.8%	8.9%	9.0%	8.95%
Bull / upside	8.2%	8.7%	9.0%	9.3%	9.6%	9.9%	10.2%	10.05%

The base margin expands 75 basis points at the exact horizon. It requires better project mix, learning on Dynamic Systems integration, prefabrication and utilization, but remains below an aggressive double-digit assumption. The normalized case adds only 28 basis points. The bear case falls 100 basis points from TTM as customer delays, labor inefficiency, price pressure and change-order friction offset scale. The bull case expands 185 basis points, above the 100-basis-point threshold that requires an explicit mechanism: the mechanism is a larger share of coordinated mechanical/process work, higher off-site fabrication utilization, dense repeat programs, less subcontracting and fewer project handoffs. It is not mere “operating leverage.”

The bull margin is intentionally below the Electric segment's current level because Underground remains a mix of gas, civil, industrial and mechanical work with different risk. The FY2021-FY2025 history demonstrates a 320-basis-point range, so all scenario outcomes are economically plausible. The base should be reduced if organic growth, project closeouts or cash conversion weaken even while reported revenue rises.

Annual Segment operating income forecast

Scenario	FY2026 revenue	FY2026 SOI	FY2027 revenue	FY2027 SOI	FY2028 revenue	FY2028 SOI	FY2029 revenue	FY2029 SOI	FY2030 revenue	FY2030 SOI	FY2031 revenue	FY2031 SOI
Normalized	$6.45B	$0.529B	$6.90B	$0.573B	$7.38B	$0.616B	$7.90B	$0.664B	$8.45B	$0.714B	$9.04B	$0.768B
Bear / downside	$6.25B	$0.488B	$6.44B	$0.489B	$6.57B	$0.486B	$6.70B	$0.489B	$6.83B	$0.492B	$6.96B	$0.501B
Base	$6.65B	$0.559B	$7.35B	$0.632B	$8.02B	$0.698B	$8.70B	$0.766B	$9.35B	$0.832B	$10.00B	$0.900B
Bull / upside	$6.90B	$0.600B	$7.85B	$0.707B	$8.95B	$0.832B	$10.05B	$0.965B	$11.15B	$1.104B	$12.25B	$1.250B

Every SOI value equals revenue multiplied by the same-row Segment operating income margin, rounded to the nearest $1 million. No corporate or bridge line is embedded.

10. Segment rollup, assumption bridges and valuation inputs

Because service-family revenue is not disclosed, the bottom-up rollup contains one auditable financial line. This is a constraint, not a missing sum.

Case	Financial projection line	TTM revenue	TTM SOI margin	TTM SOI	TTM+5y revenue	TTM+5y SOI margin	TTM+5y SOI	Revenue tie
Bear	Underground reportable segment total	$6.000B	8.2%	$0.492B	$6.895B	7.2%	$0.496B	100.0%
Base	Underground reportable segment total	$6.000B	8.2%	$0.492B	$9.670B	8.95%	$0.865B	100.0%
Bull	Underground reportable segment total	$6.000B	8.2%	$0.492B	$11.687B	10.05%	$1.175B	100.0%

The base bridge is $6.000 billion TTM revenue compounded at 10.01% to $9.670 billion at 2031-06-30. Applying an 8.95% Segment operating income margin yields $865 million. The bear bridge uses 2.82% growth and a 7.2% margin, yielding $496 million—roughly flat profit despite higher nominal revenue. The bull bridge uses 14.26% growth and a 10.05% margin, yielding $1.175 billion. All totals reconstruct exactly within rounding.

The probability-weighted planning output using 25% bear, 55% base and 20% bull is approximately **$9.38 billion revenue** and **$835 million Segment operating income** at the exact horizon. The weights favor base because recent segment growth, margin recovery and backlog support continued expansion, while assigning more weight to bear than bull because backlog includes nonbinding MSA estimates and the segment retains fixed-price, acquisition-integration and cash-conversion risk. The implied weighted margin is 8.9%. These are not standalone valuation conclusions. Synthesis must add Electric Segment operating income, subtract corporate and non-allocated costs, then forecast interest, tax, NCI and share count on the sealed bridge before deriving EPS or enterprise value.

Useful valuation inputs from this segment are therefore:

- TTM revenue $6.000 billion; TTM Segment operating income $492.095 million; 8.2% margin.
- Exact-horizon revenue range $6.895-$11.687 billion and Segment operating income range $496 million-$1.175 billion.
- Base exact-horizon Segment operating income $865 million, with a 10.01% revenue CAGR and 75 basis points of margin expansion.
- Probability-weighted exact-horizon Segment operating income about $835 million.
- No disclosed segment capex, free cash flow, customer concentration or product mix; a segment DCF would require unsupported allocations.
- The packet quote of $667.36 per PWR common share is a company security price, not an Underground valuation. No segment multiple is inferred from it.

A high terminal multiple is not automatically justified by the bull revenue path. A contractor deserves a premium only if it turns backlog into recurring cash earnings without repeated project losses or acquisition dilution. Conversely, a low multiple based solely on “construction” may miss the value of qualified craft capacity, programmatic relationships and integrated critical-path work. The consolidated synthesis should test both views using after-corporate earnings and cash conversion.

Assumption bridge from history to cases

Driver	Historical / current evidence	Bear rule	Base rule	Bull rule
Backlog	$9.65B Underground at Q2 2026; $4.44B RPO	Slow conversion and more MSA deferral	Multi-year conversion with normal timing slippage	Faster awards and conversion without treating backlog as guaranteed
Organic versus acquired	Dynamic Systems entered July 2025; product dollars not disclosed	2026 step-up fades; weak organic growth	Full-year acquisition contribution then normal organic deceleration	Successful cross-sell and sustained large-load organic growth
Gas utility / integrity	Recurring critical-path modernization and compliance need	Customer budget and regulatory delays	Mid-single-digit durable activity	Larger programs and strong crew utilization
Civil / industrial	Project- and schedule-sensitive	Capex deferral and price competition	Normal cycle and disciplined bidding	Strong industrial expansion and bundled site work
Mechanical / process	Large-load and complex-facility exposure	Site delays and integration pressure	Above-segment growth that decelerates with scale	Rapid campus awards and prefabrication utilization
Labor	“craft skill is at the core”	Scarcity raises cost and limits volume	Training supports planned growth	Recruiting and training create operating leverage
Contract risk	Consolidated fixed-price mix 60.6% in FY2025	Cost overruns and unrecovered changes	Selective risk and normal closeouts	Favorable mix without relaxing bid discipline

11. Risks, catalysts, KPIs and constraints

Bear — backlog quality and timing. Underground backlog includes MSA estimates and non-fixed-price work beyond $4.440 billion of RPO. Customers can alter volume, permits can slip and design can change. A rising backlog with flat revenue or weak cash conversion would signal a timing or quality problem.

Bear — fixed-price and project execution. Quanta's consolidated fixed-price share has risen materially. Labor productivity, engineering, materials, equipment and schedule errors can cause immediate margin revisions under cost-to-cost accounting. Mechanical and process expansion may increase coordination complexity. Segment margin below 7.0% for two consecutive quarters would challenge the base trajectory.

Bear — change orders and cash conversion. The $983.6 million consolidated unapproved change-order and claims balance is not assigned to Underground, but it proves the risk exists. Investors should monitor contract assets, receivables and operating cash flow relative to operating earnings. A segment can report attractive SOI while consuming cash; public disclosure may not isolate it.

Bear — acquisition integration and comparability. Dynamic Systems changed mix, and subsequent transactions broaden Quanta's platform. The segment could lose acquired leaders, fail to coordinate operating companies or bid larger work without adequate controls. Reported growth could look strong while organic growth and return on invested capital weaken. Goodwill and amortization sit partly outside the segment metric, making consolidated review essential.

Bear — craft labor and safety. Skilled workers are both the moat and bottleneck. Wage inflation, turnover, union constraints, insufficient supervisors or safety incidents can reduce capacity and margin. Numerical current TRIR, DART and lost-time rates were not disclosed in the searched sources, so the model cannot claim improving safety statistics. `[DATA GAP: current numerical segment or consolidated safety rates are not disclosed in the cleared package.]`

Bear — gas and industrial cyclicality. Gas utility programs are essential but subject to rate cases, policy, methane rules and customer budgets. Pipeline and industrial work can be affected by commodity economics and permits. A shift away from large pipeline projects could be manageable if recurring integrity work grows, but the revenue mix is not disclosed.

Bear — customer and project concentration. Consolidated customer concentration is moderate, but segment and project concentration are not disclosed. A small number of large-load mechanical projects could influence quarterly performance. `[DATA GAP: Underground customer, project and end-market dollar concentration are not separately disclosed.]`

Bull — integrated large-load awards. Dynamic Systems can let Quanta perform mechanical and process scopes alongside Electric's grid and inside-electrical work. Evidence would include repeat awards, stronger organic growth after acquisition annualization and margin gains without rising contract assets. The model does not assign an AI-only revenue figure because none is disclosed.

Bull — gas integrity and modernization. Recurring safety, reliability and environmental requirements can support steady utility and pipeline work. Larger multi-year programs and dense territories could raise utilization. The bull case requires contract structures that preserve pricing and productivity economics.

Bull — prefabrication and self-performance. More off-site fabrication and controlled-environment work could lower jobsite congestion, improve quality and reduce handoffs. This supports margin only if facilities are utilized and working capital remains controlled. Empty capacity would reverse the mechanism.

Bull — cross-selling and operating-company coordination. Quanta's decentralized model preserves local relationships. The upside is that central coordination combines several operating companies for complex customers without destroying local accountability. The KPI is not the number of acquisitions; it is organic follow-on work and consolidated cash returns.

Monitoring scorecard. The load-bearing quarterly and annual indicators are Underground revenue growth excluding acquisitions if management discloses it; Segment operating income margin; backlog and RPO separately; backlog conversion; contract assets and receivables; operating cash flow and free cash flow; customer concentration; fixed-price mix; large-project losses or favorable closeouts; employee and craft-capacity growth; safety measures if disclosed; acquisition contribution and integration costs; net debt; and share dilution. The base case should not survive merely because revenue meets forecast if SOI margin, cash conversion or organic growth deteriorates.

Kill criteria. Re-underwrite toward bear if Underground organic growth turns negative after acquisition annualization, margin remains below 7% for two quarters without a source-bound transitory cause, backlog grows while RPO and cash conversion weaken, unapproved claims materially rise, a large fixed-price loss appears, or management stops separating acquired contribution. Re-underwrite toward bull only after evidence of sustained organic double-digit growth, 9%-plus margin, healthy cash conversion and controlled project risk.

Constraints. Quanta does not disclose service-family dollars, segment capex, segment free cash flow, segment customer concentration, AI-only revenue, current numerical safety rates or a quantified project-loss distribution. This appendix does not

invent them. Corporate and non-allocated costs are intentionally absent from Segment operating income forecasts and must be forecast once in synthesis. No forecast here authorizes a trade, order, message, portfolio mutation, rank, size or BUY-queue action.

Segment summary

Case	Segment TTM+5y Revenue	Exact profit metric	Segment TTM+5y Profit Margin	Segment TTM+5y Profit	Probability
Bear	$6.895B	Segment operating income	7.2%	$0.496B	25%
Base	$9.670B	Segment operating income	8.95%	$0.865B	55%
Bull	$11.687B	Segment operating income	10.05%	$1.175B	20%

WORKER B COMPLETE — UNDERGROUND UTILITY AND INFRASTRUCTURE SOLUTIONS SEGMENT READY FOR REVIEW

Quanta Services, Inc. — Synthesis (Combined Earnings Model)

This appendix consolidates the two peer-reviewed reportable-segment models into a statutory earnings, cash-flow, return-on-capital, share-count, and per-listed-unit valuation model. It is mechanical and source-bound: segment revenue and Segment operating income come from the R-final appendices; the corporate and below-line classifications come from the QFR- and DR-cleared statutory bridge; and price, security unit, share basis, split factor, and currency conversion come only from the sealed quote packet. No undisclosed product revenue, acquisition, accounting classification, or balancing plug is introduced.

1. Anchors and sealed controls

- **Today:** 2026-08-01.
- **Fiscal year end:** December 31.
- **TTM anchor:** 2026-06-30.
- **TTM quarters:** Q3 2025, Q4 2025, Q1 2026, and Q2 2026. These are four direct, non-overlapping quarters for the diluted-share denominator; revenue, operating income, and net income are equivalently reconstructed as FY2025 less H1 2025 plus H1 2026.
- **Latest completed fiscal year:** FY2025, used only for historical reconciliation.
- **Horizon:** 2031-06-30, exactly 5.0 calendar years after 2026-06-30. “TTM+5y” never means six fiscal years.
- **Valuation price:** USD 667.36 per PWR common share, XNYS:PWR, CUSIP 74762E102, raw NYSE close for the 2026-07-31 session. The raw FMP quote evidence SHA-256 is `6731686586771db0843bf07f0ff9f1e7d84d6cd0816350f4c14b0622341e11f3`; the QFR-sealed packet SHA-256 is `18bce43b3427ddacee4916b529eff7c8f2a2e0b1de5eb6e9e50e429531733cde`. Actionability expires at 2026-08-04 04:00 SGT under the next-scheduled-session-close policy.
- **Reporting and quote currency:** USD. The quoted and financial-statement security is the same common share. It is not an ADR or ADS.
- **Split bridge:** 152.439 million Q2 diluted weighted-average common shares on 2026-06-30 × 1.0 split factor = 152.439 million quote-basis diluted financial shares on 2026-07-31. No intervening split occurred. The split inventory SHA-256 is `aaad3ff8862d282cb69aeec87db4f54c48f82c2656ecc9a2e446f07ed278f754`.
- **Listed-unit bridge:** 1.0 depositary ratio × 1.0 share-class factor = 1.0 financial share per listed unit; 152.439 million quote-basis shares ÷ 1.0 = 152.439 million listed-unit equivalents. The unit evidence is the Q2 2026 Form 10-Q, SHA-256 `bab73becc52179586fe155bc1c0e3b8956e1dd08da291b8d5628ddf87151691a`.
- **FX bridge:** 1.0 USD per USD on 2026-07-31, identity conversion, so no external FX series is needed.
- **Historical statutory bridge:** exact-byte SHA-256 `fd60289c88cba734a999f687251dea4c6a3cf70f8a34f0cffbf63a9e1d4db9e6`; the strict validator returned `STATUTORY_BRIDGE_VALID`, and the durable DR record says `STATUTORY BRIDGE VERIFIED — CLEARED FOR`

`FORECASTING` with zero unresolved issues. The quote validator also passed against its expected hash as of 2026-08-01 20:09:36 SGT.

- **Authority boundary:** `trade_execution_authorized=false`. This model makes no order, trade, message, ranking, position-size, portfolio, or BUY-queue decision.

The quote packet deliberately uses the latest Q2 three-month diluted denominator for the starting security-unit bridge. The TTM historical EPS denominator is separately reconstructed from four direct quarters and equals 151.937077 million. The distinction prevents a period-average share count from being silently misrepresented as another period's denominator.

2. Segment-level forward assumptions

The exact profit metric for both reportable segments is **Segment operating income**. The issuer does not disclose dollar revenue by service family below either segment, so the reportable-segment total is the finest auditable financial line. The values below reproduce, rather than re-derive, the R-final segment appendices.

Segment	Exact profit metric	TTM revenue (USD B)	Bear TTM+5y rev (USD B)	Base TTM+5y rev (USD B)	Bull TTM+5y rev (USD B)	Bear profit margin	Base profit margin	Bull profit margin
Electric Infrastructure Solutions	Segment operating income	26.905	34.338	47.416	54.116	9.00%	11.50%	12.50%
Underground Utility and Infrastructure Solutions	Segment operating income	6.000	6.895	9.670	11.687	7.20%	8.95%	10.05%

Sources: `appendix_B_electric_infrastructure_solutions.md` §§8–10, exact-horizon table; `appendix_B_underground_utility_and_infrastructure_solutions.md` §§8–10, exact-horizon rollup. Electric uses 5.0%, 12.0%, and 15.0% bear/base/bull revenue CAGRs. Underground uses 2.82%, 10.01%, and 14.26%. The base paths decelerate sharply from acquisition-affected Q2 2026 growth, while margins retain project-execution, labor, fixed-price, and integration risk.

There is no product-weighting illusion in these inputs. Service families are operational drivers, not disclosed dollar units. Each R-final appendix therefore treats the reportable segment as a one-line rollup and explicitly records true non-disclosure below it.

3. Combined revenue build

Quanta reports no corporate revenue elimination between the two segment totals and consolidated revenue. The TTM segment sum of USD 32.905 billion equals consolidated revenue exactly.

Line	Bear	Base	Bull
Sum of segment TTM+5y revenue (USD B)	41.233	57.086	65.803
Corporate eliminations (USD B)	0.000	0.000	0.000
Combined TTM+5y revenue (USD B)	**41.233**	**57.086**	**65.803**
Implied TTM → TTM+5y CAGR over exactly 5.0 years	4.62%	11.65%	14.87%

The base case grows revenue 73.5% from the TTM anchor, but it does not assume current quarterly growth persists. Electric supplies 83.1% of base horizon revenue and therefore controls the combined growth outcome. Underground is a meaningful source of variability because its base horizon depends on Dynamic Systems annualization, large-load work, and acquisition integration, but it remains only 16.9% of base revenue.

The fiscal-year paths below come directly from the segment annual tables. They are planning points, while the valuation endpoint remains the exact 2031-06-30 TTM+5 date.

Case	FY2026 revenue	FY2027 revenue	FY2028 revenue	FY2029 revenue	FY2030 revenue	FY2031 revenue
Bear (USD B)	37.050	37.940	38.770	39.700	40.630	41.660
Base (USD B)	38.850	43.350	47.820	52.100	55.350	58.800
Bull (USD B)	39.900	45.650	51.450	57.050	62.950	68.650

The base FY2026 revenue point is 1.6% below the midpoint of management's USD 39.3–39.7 billion 2026 guide. The bear is 6.2% below the midpoint; the bull is 1.0% above it. These differences are intentionally small enough to keep the current-year model tied to disclosed expectations while allowing segment allocation uncertainty.

4. Combined operating-income build

The TTM statutory bridge subtracts USD 1.315121 billion of **Corporate and non-allocated costs** from USD 3.350880 billion of summed Segment operating income to reach USD 2.035759 billion of statutory operating income. There are no operating bridge adjustments. The forecast preserves that exact classification.

Line	Bear	Base	Bull
Electric TTM+5y Segment operating income (USD B)	3.090	5.453	6.764
Underground TTM+5y Segment operating income (USD B)	0.496	0.865	1.175
Sum of segment profit on sealed metric (USD B)	3.586	6.318	7.939
Corporate and non-allocated costs (USD B)	(1.732)	(2.027)	(2.106)
Consolidated segment-profit metric after corporate (USD B)	1.854	4.291	5.833
Operating bridge adjustments (USD B)	0.000	0.000	0.000
Combined statutory TTM+5y operating income (USD B)	**1.854**	**4.291**	**5.833**
Implied statutory operating margin	4.50%	7.52%	8.86%

The corporate forecast is explicit. Bear costs equal 4.20% of revenue, above the 4.00% TTM ratio, because acquisition/integration costs, amortization, SBC, and project support do not scale down. Base costs equal 3.55%, allowing only 45 basis points of leverage over five years despite substantial revenue growth. Bull costs equal 3.20%, which requires disciplined integration, better support-function utilization, and no material acquisition or project-control failure. No corporate cost is allocated back to a segment. The operating bridge stays at zero because the sealed statutory packet contains no operating adjustment row; adding one would be a plug.

The annual statutory build uses scenario-specific corporate-cost ratios that converge toward those exact-horizon assumptions.

Bear annual build (USD B except margins)	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Segment operating income sum	3.506	3.387	3.320	3.360	3.466	3.624
Corporate cost	(1.519)	(1.593)	(1.648)	(1.707)	(1.727)	(1.750)
Statutory operating income	1.987	1.794	1.672	1.653	1.739	1.874
Statutory OI margin	5.36%	4.73%	4.31%	4.16%	4.28%	4.50%

Base annual build (USD B except margins)	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Segment operating income sum	4.037	4.592	5.156	5.670	6.076	6.561
Corporate cost	(1.515)	(1.647)	(1.769)	(1.902)	(1.993)	(2.087)
Statutory operating income	2.522	2.945	3.387	3.768	4.083	4.474
Statutory OI margin	6.49%	6.79%	7.08%	7.23%	7.38%	7.61%

Bull annual build (USD B except margins)	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Segment operating income sum	4.230	5.016	5.847	6.652	7.527	8.356

Bull annual build (USD B except margins)	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Corporate cost	(1.516)	(1.666)	(1.801)	(1.940)	(2.077)	(2.197)
Statutory operating income	2.714	3.350	4.046	4.712	5.450	6.159
Statutory OI margin	6.80%	7.34%	7.86%	8.26%	8.66%	8.97%

5. Net income, EPS, FCF, and ROIC

Below-line items remain separate. Interest expense is modeled from the current USD 6.105 billion gross-debt burden and scenario deleveraging: bear expense reaches USD 0.460 billion at the horizon, base USD 0.280 billion, and bull USD 0.150 billion. Interest income is USD 0.015/0.025/0.040 billion. Other income is not a plug: it is a USD 0.050 billion expense in bear, zero in base, and USD 0.030 billion income in bull. Tax rates are 26.0%, 25.2%, and 24.5%, consistent with the bridge's 25%–26% rule. NCI deductions are 2.0%, 1.4%, and 1.0% of post-tax income, compared with 1.74% of TTM post-tax income before NCI.

Line	Bear	Base	Bull
Combined TTM+5y statutory OI (USD B)	1.854	4.291	5.833
Interest and other financing expense (USD B)	(0.460)	(0.280)	(0.150)
Interest income (USD B)	0.015	0.025	0.040
Other income / expense (USD B)	(0.050)	0.000	0.030
Pretax income (USD B)	1.359	4.036	5.753
Tax rate	26.0%	25.2%	24.5%
Income after tax before NCI (USD B)	1.006	3.019	4.344
NCI deduction (USD B)	(0.020)	(0.042)	(0.043)
Net income attributable to common (USD B)	**0.986**	**2.977**	**4.300**
Quote-basis diluted financial shares at TTM+5y (M)	154.129	153.359	152.344
EPS in USD per quote-basis financial share	6.395	19.412	28.228
Financial shares per listed unit	1.000	1.000	1.000
EPS in USD per listed unit	6.395	19.412	28.228
FX: USD quote per USD reporting	1.000	1.000	1.000
EPS in USD per listed unit at TTM+5y	**6.395**	**19.412**	**28.228**

The required unit formula is applied exactly: `EPS_REPORTING_PER_QUOTE_BASIS_FINANCIAL_SHARE = NI_REPORTING ÷ QUOTE_BASIS_DILUTED_FINANCIAL_SHARES`; then `EPS_QUOTE_PER_LISTED_UNIT = EPS_REPORTING_PER_QUOTE_BASIS_FINANCIAL_SHARE × 1.0 × 1.0`. The identity factors are still reproduced because PWR is a common share quoted and reported in USD.

FY2026–FY2031 consolidated paths

Bear path	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Pretax income (USD B)	1.661	1.418	1.246	1.187	1.254	1.379
Net income (USD B)	1.205	1.028	0.904	0.861	0.910	1.000
Diluted shares (M)	152.500	152.780	153.120	153.460	153.800	154.130
EPS (USD/listed unit)	7.90	6.73	5.90	5.61	5.91	6.49
FCF (USD B)	0.843	0.668	0.542	0.559	0.637	0.750
Simplified ROIC	7.2%	6.3%	5.7%	5.4%	5.5%	5.8%

Base path	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Pretax income (USD B)	2.237	2.673	3.127	3.510	3.827	4.220

Base path	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Net income (USD B)	1.650	1.971	2.306	2.589	2.823	3.112
Diluted shares (M)	152.500	152.670	152.840	153.010	153.180	153.360
EPS (USD/listed unit)	10.82	12.91	15.09	16.92	18.43	20.29
FCF (USD B)	1.650	2.070	2.537	2.900	3.246	3.579
Simplified ROIC	9.2%	9.8%	10.4%	10.7%	11.0%	11.4%

Bull path	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
Pretax income (USD B)	2.461	3.147	3.894	4.596	5.365	6.104
Net income (USD B)	1.839	2.352	2.911	3.436	4.010	4.563
Diluted shares (M)	152.440	152.420	152.400	152.380	152.360	152.340
EPS (USD/listed unit)	12.07	15.43	19.10	22.55	26.32	29.95
FCF (USD B)	1.931	2.634	3.493	4.294	5.012	5.703
Simplified ROIC	10.0%	11.1%	12.2%	13.0%	13.9%	14.6%

FCF is not allocated by segment because Quanta does not disclose segment capex or working capital. It is modeled after statutory earnings using explicit conversion ranges. Bear conversion is 60%–75% of common NI after a weak project/working-capital cycle; base rises from 100% to 115%; bull rises from 105% to 125%. These are conservative relative to TTM FCF of USD 2.391 billion versus USD 1.327 billion of common NI, and they recognize that TTM working-capital release may not recur. Consolidated capex is separately assumed at roughly 2.5%–3.2% of revenue, consistent with the historical 2%–3% range and the USD 500–700 million multi-year supply-chain investment. The conversion ratios include depreciation/amortization, SBC, capex, working-capital changes, and other noncash items without fabricating each undisclosed component.

Simplified ROIC uses statutory NOPAT divided by period-end invested capital, matching the data package's conservative convention. Invested-capital turns progress to 1.75× bear, 2.00× base, and 2.15× bull from FY2025's 1.87×. Exact-horizon invested capital is therefore USD 23.562/28.543/30.606 billion; NOPAT is USD 1.372/3.210/4.404 billion; ROIC is 5.8%/11.2%/14.4%. Even the bull remains below Gideon's >20% long-duration aspiration. This aligns with management's YELLOW gate: earnings growth is credible, but acquisition-heavy capital deployment has not yet proved elite statutory returns.

6. Share-count path

The path starts from the packet's 152.439 million quote-basis diluted financial shares, not the 151.937 million TTM denominator and not an ADR count. TTM SBC expense was USD 225.738 million. Dividing that by the USD 667.36 packet price gives an approximate 0.338 million shares of annual issuance. This is a disclosed approximation, not a grant-by-grant forecast. No undisclosed future acquisition shares are added.

Scenario / year ending June 30	Starting shares (M)	Buyback (USD B)	Avg price (USD)	Shares retired (M)	SBC issuance (M)	Ending shares (M)
Bear 2027	152.439	0.000	500	0.000	0.338	152.777
Bear 2028	152.777	0.000	500	0.000	0.338	153.115
Bear 2029	153.115	0.000	500	0.000	0.338	153.453
Bear 2030	153.453	0.000	500	0.000	0.338	153.791
Bear 2031	153.791	0.000	500	0.000	0.338	154.129
Base 2027	152.439	0.100	650	0.154	0.338	152.623
Base 2028	152.623	0.100	650	0.154	0.338	152.807
Base 2029	152.807	0.100	650	0.154	0.338	152.991
Base 2030	152.991	0.100	650	0.154	0.338	153.175
Base 2031	153.175	0.100	650	0.154	0.338	153.359
Bull 2027	152.439	0.250	700	0.357	0.338	152.420
Bull 2028	152.420	0.250	700	0.357	0.338	152.401
Bull 2029	152.401	0.250	700	0.357	0.338	152.382
Bull 2030	152.382	0.250	700	0.357	0.338	152.363
Bull 2031	152.363	0.250	700	0.357	0.338	152.344

The arithmetic is explicit: base ending shares equal 152.439 + 5 × (0.338 − 0.154) = 153.359 million. Bear has no repurchase because cash is reserved for project and leverage stress. Bull uses only USD 250 million annually, well below the new USD 1 billion authorization and subordinate to investment needs. Historical diluted shares rose from 145.373 million in FY2021 to 151.937 million TTM, a 6.564 million increase. Five years of current-value SBC issuance would explain only about 1.69 million shares; acquisitions, award timing, and denominator mechanics explain why historical dilution was larger. The forward path therefore excludes unannounced stock-financed M&A but flags it as downside to per-share outcomes.

7. P/E 15 test and current valuation

Case	EPS in USD per listed unit at TTM+5y	EPS × 15	Packet price per listed unit	Cushion %	Pass?
Bear	6.395	95.93	667.36	(85.6)%	FAIL
Base	19.412	291.18	667.36	(56.4)%	FAIL
Bull	28.228	423.42	667.36	(36.6)%	FAIL

The required EPS at USD 667.36 for a 15× TTM+5 multiple is **USD 44.491 per listed unit**. The confident base case reaches only USD 19.412, a 56.4% shortfall. The base case, not the bull case, controls the gate. The bull also fails. Therefore the binary result is **P/E 15 gate: FAIL — cushion (56.4)%**.

At the packet price and starting quote-basis shares, equity value is approximately USD 101.732 billion. Adding Q2 net debt of USD 5.598 billion gives a simplified enterprise value of USD 107.330 billion. The price is 76.4× TTM diluted EPS of USD 8.733, and the TTM FCF yield is 2.35%. Current price divided by historical FY2021–FY2025 EPS is 199.8×, 201.0×, 133.5×, 110.7×, and 98.1×, respectively. These are not historical observed market multiples; they are a transparent current-price cross-check against the disclosed earnings history. A genuine historical trading-multiple series is absent from the sealed package and is not fabricated.

Case	Exit P/E	Implied 2031-06-30 price	Five-year price CAGR from USD 667.36
Bear	12×	76.74	(35.1)%
Bear	15×	95.93	(32.2)%
Base	15×	291.18	(15.3)%
Base	20×	388.24	(10.3)%
Bull	20×	564.56	(3.3)%
Bull	25×	705.70	1.1%

The table excludes dividends because the current USD 0.11 quarterly payment is immaterial to the gap. Even a bull result requires roughly 25× earnings merely to produce about 1% annual price appreciation. The valuation conflict is stark: Quanta may be a high-quality infrastructure compounder, but the current price capitalizes an outcome materially beyond the already demanding bull operating case or assumes a persistently high terminal multiple.

8. Reflexivity and historical bridge checks

The TTM revenue reconstruction is exact: Electric USD 26.905 billion + Underground USD 6.000 billion = USD 32.905 billion, equal to consolidated TTM revenue. The segment-profit bridge is also exact to the sealed packet's USD 0.001 million tolerance: USD 2.858785 billion + USD 0.492095 billion − USD 1.315121 billion corporate costs = USD 2.035759 billion statutory operating income. No operating adjustment is used.

The latest-FY sanity check likewise ties: FY2025 Electric USD 2.360262 billion + Underground USD 0.398276 billion − corporate costs USD 1.147029 billion = USD 1.611509 billion statutory operating income. FY2025 segment revenue USD 23.001 billion + USD 5.478 billion = USD 28.480 billion consolidated revenue within displayed rounding. Both anchors are inside 2%, and statutory profit residuals are zero.

The model does not scale segment outputs to a desired consolidated result. The forward combined revenue equals the segment sum in all cases, and statutory OI is the segment-profit sum less the separately forecast corporate line. FCF and ROIC are consolidated cross-checks after statutory earnings; they are not allocated into segments using unsupported ratios.

9. Latest-interim bridge reconciliation

The latest interim construction is **TRIGGERED** for revenue, OI, and NI: `FY2025 − H1 2025 + H1 2026 = TTM ended 2026-06-30`. Both H1 periods cover January 1 through June 30, so start/end coverage is identical and the subtraction removes the prior-year six months before adding the current-year six months. There is no overlap with separate quarter amounts in those financial-statement totals.

Diluted shares use the more rigorous direct-quarter method rather than subtracting cumulative denominators: `(151.496 × 92 + 151.736 × 92 + 152.086 × 90 + 152.439 × 91) ÷ 365 = 151.937077 million`. The four periods are Q3 2025, Q4 2025, Q1 2026, and Q2 2026, totaling 365 days without overlap. TTM EPS equals USD 1,326.876 million ÷ 151.937077 million = USD 8.733063. This directly addresses the non-additivity of weighted-average share denominators.

The exact valuation horizon is 2031-06-30. It lies between FY2030 and FY2031, so the segment appendices provide separate exact-horizon values. For example, Electric's base USD 47.416 billion and Underground's base USD 9.670 billion are not silently replaced with FY2031's USD 48.8 billion and USD 10.0 billion.

10. Sensitivity — variables that matter most

The sensitivity holds every other base assumption fixed. Electric CAGR changes its horizon revenue mechanically over exactly five years. Underground margin changes only the exact sealed Segment operating income basis. Share and tax sensitivities use the same listed-unit and currency bridge.

Variable	Down setting	Base setting	Up setting	EPS down	EPS base	EPS up	Base-to-extreme EPS effect
Electric revenue CAGR	10.0%	12.0%	14.0%	17.851	19.412	21.091	(1.561) / +1.679
Underground horizon SOI margin	6.95%	8.95%	10.95%	18.483	19.412	20.343	(0.929) / +0.931
Ending diluted shares	161.027M (+5%)	153.359M	145.691M (–5%)	18.486	19.412	20.432	(0.926) / +1.020
Tax rate	28.2%	25.2%	22.2%	18.631	19.412	20.188	(0.781) / +0.776

Electric growth is the largest tested operating sensitivity, followed by Underground margin and share count. Yet none comes remotely close to the USD 44.491 required EPS. Even combining the favorable tested extremes would not close the valuation gap. The verdict is therefore driven less by a single forecast variable than by the price requiring a much more aggressive growth-margin-capital-allocation combination than the confident case supports.

High-value monitoring KPIs are Electric organic growth excluding acquisitions; both segments' Segment operating income margins; RPO versus broader backlog; backlog conversion; fixed-price mix; contract assets and unapproved change-order claims; operating cash flow and FCF after normalized capex; corporate costs as a percentage of revenue; net debt and interest expense; acquisition-cohort statutory returns; diluted shares; safety and skilled-workforce capacity. Base should be cut if revenue is met through acquisitions while statutory margin, FCF, or ROIC misses.

11. Combined earnings summary

Case	Revenue (USD B)	OI (USD B)	OI margin	NI (USD B)	EPS (USD/listed unit)	Probability	EPS × 15	Vs. USD 667.36
Bear	41.233	1.854	4.50%	0.986	6.395	30%	95.93	(85.6)%
Base	57.086	4.291	7.52%	2.977	19.412	50%	291.18	(56.4)%
Bull	65.803	5.833	8.86%	4.300	28.228	20%	423.42	(36.6)%
Probability-weighted	54.074	3.868	7.15%	2.644	17.270	100%	259.05	(61.2)%

Weights are 30% bear, 50% base, and 20% bull. Base remains most likely because backlog/RPO, grid and large-load spending, and recent execution support expansion. Bear receives more weight than bull because MSA backlog is partly nonbinding, acquisitions and fixed-price work carry integration/execution risk, management is YELLOW on capital allocation, and the current surge must decelerate.

12. Tie-out checks

- **PASS — Reported-financial and statutory-bridge tie-out.** TTM revenue: 26.905 + 6.000 = 32.905, exactly consolidated TTM revenue (`data_package.md` §§2–3). TTM OI: 2.858785 + 0.492095 − 1.315121 + 0.000 = 2.035759, exactly statutory OI. FY2025 OI: 2.360262 + 0.398276 − 1.147029 = 1.611509. All statutory residuals equal zero versus USD 0.001 million tolerance (`statutory_bridge.json`).

- **PASS — NI / shares / listed unit / FX equals EPS.** Bear: 985.7 ÷ 154.129 × 1.0 × 1.0 = USD 6.395. Base: 2,977.0 ÷ 153.359 × 1.0 × 1.0 = USD 19.412. Bull: 4,300.3 ÷ 152.344 × 1.0 × 1.0 = USD 28.228. Rounding is below USD 0.01 per share (`quote_packet.json`; §5 table).

- **PASS — Segment sum at horizon.** Bear 34.338 + 6.895 = 41.233; base 47.416 + 9.670 = 57.086; bull 54.116 + 11.687 = 65.803. Corporate revenue eliminations are zero, so each segment sum is 100.0% of combined revenue (§§2–3).

- **PASS — Product-to-segment rollup.** Both R-final appendices document true non-disclosure below the reportable segment. The sole auditable financial line is therefore 100% of segment revenue in every case; no fabricated service-family dollar row exists (`appendix_B_electric_infrastructure_solutions.md` §10; `appendix_B_underground_utility_and_infrastructure_solutions.md` §10).

- **PASS — Weighted margin.** Each segment has one auditable product line, so its revenue-weighted product margin equals its segment margin exactly: Electric 9.0%/11.5%/12.5% and Underground 7.2%/8.95%/10.05%. The conditional multi-product calculation is not triggered because product dollars and margins are not disclosed (§2).

- **PASS — Share-count and security-unit path.** 152.439 million financial-statement shares × 1.0 split factor = 152.439 million quote-basis shares; ÷ (1.0 depositary × 1.0 class factor) = 152.439 million listed-unit equivalents. Base ending shares: 152.439 + 5 × (0.338 − 0.154) = 153.359 million. Bear and bull similarly tie to 154.129 and 152.344 million (§6; `quote_packet.json`).

- **PASS — Growth plausibility.** Electric base 12.0% is below 1.2 × its 21.8% three-interval historical CAGR. Underground base 10.01% is 47 basis points above 1.2 × its 7.95% FY2022–FY2025 CAGR, but the R-final appendix supplies the required explicit justification: 30.7% latest YoY, USD 9.65 billion backlog, Dynamic Systems annualization, large-load/mechanical work, and a declining annual path. The excess is disclosed, small, and evidence-supported rather than hidden (`appendix_B_underground_utility_and_infrastructure_solutions.md` §§8.1–8.2).

- **PASS — Historical arithmetic.** Electric: 26.905 × 1.05^5 = 34.338; × 1.12^5 = 47.416; × 1.15^5 = 54.116. Underground: 6.000 × 1.0282^5 = 6.895; × 1.1001^5 = 9.667 versus displayed 9.670; × 1.1426^5 = 11.685 versus 11.687. Every difference is under 0.03%, far inside 1%; N is exactly five calendar years (R-final §10 tables).

- **PASS — Recency anchor.** Base FY2026 revenue USD 38.850 billion is 18.1% above TTM USD 32.905 billion, exceeding the ordinary 10% band. The permitted quantified step-change support is present: management's official 2026 revenue guide is USD 39.3–39.7 billion, and known acquisitions are expected to add USD 1.2–1.4 billion of 2026 revenue. The model is 1.6% below the guide midpoint rather than inventing an unsupported run-rate (`data_package.md` §§5, 9; segment appendices §7).

- **PASS — Period and horizon integrity.** Revenue/OI/NI use FY2025 − like-for-like H1 2025 + H1 2026. Shares use four direct non-overlapping quarters totaling 365 days. Every endpoint CAGR is 2026-06-30 to 2031-06-30, exactly 5.0 years. Exact-horizon values remain distinct from FY2031 fiscal estimates (§§1, 3, 9).

- **PASS — Valuation, unit bridge, hashes, and probability arithmetic.** Exact packet hashes recompute to `18bce43b3427ddacee4916b529eff7c8f2a2e0b1de5eb6e9e50e429531733cde` and `fd60289c88cba734a999f687251dea4c6a3cf70f8a34f0cffbf63a9e1d4db9e6`. Listing, USD 667.36 price, 1.0 split, 1.0 unit factor, and 1.0 FX all match. EPS × 15 equals USD 95.93/291.18/423.42. Probabilities sum to 30% + 50% + 20% = 100%; weighted EPS equals 0.30 × 6.395 + 0.50 × 19.412 + 0.20 × 28.228 = USD 17.270. The base cushion is `(291.18 − 667.36) ÷ 667.36 = (56.4)%`, and base controls the FAIL.

13. Constrained conclusion

Quanta's operating case is credible. Electric has a real execution-and-scale moat, physical grid and large-load infrastructure demand is durable, and the base model allows revenue and statutory margins to compound while still decelerating from current growth. Underground adds opportunity but also exposes the company to acquisition integration, civil/project cyclicality, and cash-conversion risk. The combined base produces USD 57.086 billion revenue, USD 4.291 billion statutory operating income, USD 2.977 billion common net income, USD 3.424 billion FCF, and USD 19.412 EPS at the exact 2031-06-30 horizon. Simplified ROIC improves to 11.2%, but remains far below an elite 20% compounder threshold.

The price overwhelms that operating progress. USD 667.36 requires USD 44.491 EPS for the framework's 15× gate, more than double the confident base and 58% above the bull. Even a bull USD 28.228 EPS outcome at 25× produces only about 1.1% annual price appreciation before a small dividend. The model therefore cannot convert business quality into an investable valuation conclusion. The truthful constrained result is **P/E 15 gate FAIL**, with a base cushion of **(56.4)%**. A materially lower price, much higher source-bound earnings power, or a demonstrated step-up in statutory ROIC and per-share cash generation would be required before the valuation gate could clear.

No conclusion here authorizes a trade, order, message, portfolio mutation, ranking, sizing decision, or BUY-queue action.

Quanta Services, Inc. - Compounder Score

Ticker: PWR **Listing:** XNYS:PWR common share **Analysis date:** 2026-08-01 **Reporting and quote currency:** USD **Frozen valuation price:** $667.36 per share, the 2026-07-31 NYSE close **TTM anchor:** 2026-06-30 **Five-year underwriting horizon:** 2031-06-30 **Diagnostic classification: Reject Compounder Score: 52 / 100 Business Quality Score: 52 / 80 Valuation / 20% Return Underwriting Score: 0 / 20 Confidence:** Medium

This score is diagnostic only. It does not approve or reject the separate ER2 verdict, authorize a BUY queue action, rank or size a position, or authorize any order, trade, message, or portfolio mutation.

1. Executive Verdict

Quanta is an unusually capable infrastructure contractor with a real operating advantage in craft labor, qualification, safety systems, specialized equipment, local customer relationships, bonding capacity, and the coordination of complex scopes. Electric Infrastructure Solutions is the dominant earnings engine and is benefiting from grid modernization, generation, large-load, data-center, and supply-chain investment. Underground adds gas-utility, industrial, civil, mechanical, and process capability. The evidence supports a long runway and strong recent execution.

The evidence does not support calling PWR an elite high-ROIIC compounder at the current capital base. The consistent full-capital ROIC proxy, which keeps acquisition goodwill and intangibles in the denominator, was only 5.8% to 8.6% from FY2021 through FY2025 and ended FY2025 at 7.8%. A capital-base-change ROIIC proxy was approximately 9.5% over FY2022-FY2025 and 10.7% over FY2021-FY2025. Those calculations are not perfect organic ROIIC measures, but they are economically conservative because acquisition capital is real. The exact acquisition-inclusive reinvestment denominator cannot be reconstructed from the governed package: net capex, non-cash working-capital reinvestment, disposals, and organic versus acquired NOPAT are not fully separated. The score therefore receives only limited incremental-return credit rather than converting missing evidence into a favorable assumption.

Cash generation is a genuine strength. FY2021-FY2025 cumulative operating cash flow was $7.600 billion, cumulative FCF was $5.138 billion, and cumulative common net income was $3.655 billion. Thus CFO/common NI was 2.08x and FCF/common NI was 1.41x over the period. TTM FCF was $2.391 billion against $1.327 billion of common net income. However, five-year cash M&A outflow was $8.455 billion and capex was $2.462 billion. Goodwill plus intangibles reached $10.223 billion at FY2025. Strong cash conversion has not yet established that the newest acquisition cohorts earn elite incremental returns.

Valuation is the decisive failure. At $667.36, market capitalization is approximately $101.732 billion and simplified enterprise value is $107.330 billion. The shares trade at 76.4x TTM diluted EPS, 42.5x TTM FCF, and approximately 70.5x normalized TTM NOPAT; the FCF yield is 2.35%. The S-cleared base EPS of $19.412 fails the unchanged 15x earnings gate by 56.4%. The separate return bridge uses 25x base P/E, producing $485.30 of terminal equity value and $487.50 including distributions, for a negative 6.09% annualized gross USD return. The bounded bull at 35x P/E produces $990.18 of terminal wealth and an 8.21% gross USD return, still below the 20% diagnostic hurdle.

The 20% case fails without qualification. From the base EPS and $2.20 distribution assumption, a 20% five-year return requires about 85.43x terminal P/E versus the bounded 25x base exit. That is unsupported. The score-implied result is therefore **Reject**, not because the operating platform is poor, but because the combined ROIIC evidence and purchase price fail the rubric's central test.

2. Data Source Map

The score uses only the governed ER2 chain. No stale cache, unverified third-party ratio, or undisclosed product estimate is introduced.

Required evidence	Governing source	Period / basis	Use in score
Price, security unit, shares	`quote_packet.json`; `quant_foundation.md`	$667.36 close on 2026-07-31; Q2 2026 share bridge	Market value, share basis, per-share return
Market cap and enterprise value	`appendix_synthesis.md`	Quote-basis shares; Q2 2026 net debt	$101.732B equity value; $107.330B EV
Income statement	`quant_foundation.md`; `data_package.md`	FY2021-FY2025 and TTM to 2026-06-30	Revenue, OI, NOPAT, NI, margins
Balance sheet	`quant_foundation.md`; `data_package.md`	FY2021-FY2025; Q2 2026	Invested capital, cash, debt, goodwill/intangibles
Cash flow	`quant_foundation.md`; `data_package.md`	FY2021-FY2025 and TTM	CFO, capex, FCF, M&A, dividends, repurchases
Share count and SBC	`quant_foundation.md`; `appendix_synthesis.md`	FY2021-TTM; TTM SBC	Dilution, SBC ratios, forward share paths
Segment economics	Reviewed Electric and Underground appendices	TTM and exact 2031-06-30 horizon	Runway, margins, scenario revenue and profit
Management / allocation	`appendix_management.md`	Current through 2026-08-01	Incentives, M&A, disclosure, governance
Moat and durability	`appendix_moat.md`	2046 durability review	Advantage, pricing, threats, gate constraints
Valuation and return cases	`appendix_synthesis.md`	2026-06-30 to 2031-06-30	Earnings, NOPAT, FCF, shares, P/E 15 failure
TAM / market opportunity	Segment appendices and data package	Current backlog/RPO and end-market evidence	Runway evidence without invented TAM
Competitors	Moat and management appendices	Current directional review	Competitive intensity and stewardship context

Hash controls used here are: Synthesis `509371339faf1ed7652412f3923a3ff02b96ebf554f87dc79d4a0b82c6c996f9`; Moat `10db77bcef4b1ad7b4f1cdeb39b6ba4476f239c4fe2f79bd6ceb986d1869bf12`; Management `230f22f9f2c7e830d9ee20ac8c5c4c56080df8f9d68d5d643362dbcdad27ce59`; Data Package `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9`; Electric review-final `24f505920a83ae53b6eab7d5118d71e74ecffbdac6eb6c44539d53b5204648d7`; and Underground review-final `b15867cd1eb445be313aaf86e7bee16f8e487ece2f7dd1228991bda7157169d6`.

3. Key Financial and Quality Metrics

The governed annual history contains five fiscal years, which supplies four year-to-year compounding intervals rather than a true ten-year set. Ten-year calculations and a strict five-year ROIIC denominator are therefore marked insufficient rather than fabricated.

Metric	Result	Formula / interpretation
Revenue CAGR, FY2021-FY2025	21.7%	($28.480B / $12.980B)^(1/4) - 1
Simplified NOPAT CAGR, FY2021-FY2025	22.8%	($1.190B / $0.524B)^(1/4) - 1
FCF CAGR, FY2021-FY2025	69.5%	($1.621B / $0.197B)^(1/4) - 1; low-base affected
Five-observation median full-capital ROIC proxy	7.8%	Median of 5.8%, 6.7%, 8.3%, 8.6%, 7.8%
Three-year capital-base ROIIC proxy	9.5%	($1.190B - $0.634B) / ($15.267B - $9.435B)
Four-year capital-base ROIIC proxy	10.7%	($1.190B - $0.524B) / ($15.267B - $9.058B)
Four-year gross disclosed-capital yield	6.1%	$0.666B NOPAT increase / ($8.455B M&A + $2.462B capex)

Metric	Result	Formula / interpretation
Cumulative CFO / common NI	2.08x	$7.600B / $3.655B, FY2021-FY2025
Cumulative FCF / common NI	1.41x	$5.138B / $3.655B, FY2021-FY2025
Cumulative FCF / simplified NOPAT	1.21x	$5.138B / $4.251B, FY2021-FY2025
Diluted-share CAGR, FY2021-FY2025	1.0%	(151.291M / 145.373M)^(1/4) - 1
TTM SBC / revenue	0.69%	$225.738M / $32.905B
TTM SBC / FCF	9.44%	$225.738M / $2.391B
FY2025 net debt / EBITDA	2.21x	$5.555B / $2.517B
EV / normalized TTM NOPAT	70.5x	$107.330B / $1.523B; 25.2% normalized tax
EV / TTM statutory OI	52.7x	$107.330B / $2.036B
Market cap / TTM FCF	42.5x	$101.732B / $2.391B
TTM FCF yield	2.35%	$2.391B / $101.732B
Current dividend yield	0.066%	$0.44 annualized / $667.36
TTM open-market net buyback yield	0.0%	No TTM open-market repurchases in the sealed history

ROIC needs accounting context. The reported/simple proxy includes the economic cost of acquisitions through the full invested-capital denominator. Adding FY2025 operating lease liabilities to that denominator lowers the proxy from 7.8% to approximately 7.6%. R&D is not separately disclosed, so an R&D capitalization adjustment cannot be truthfully calculated. Removing all $10.223 billion of goodwill plus intangibles from FY2025 invested capital mechanically raises the proxy to approximately 23.6%, but that is not the governing result: it discards most of the capital paid for acquired businesses. The gap between 7.8% and 23.6% is precisely why acquisition-adjusted returns must remain a hard monitoring item.

4. Rubric Scorecard

Category	Score	Maximum	Evidence-bound judgment
1. Incremental returns on capital	11	25	Full-capital ROIC is below 10%; ROIIC proxies are only 9.5%-10.7%; cash conversion and real unit economics prevent a lower score
2. Reinvestment runway	17	20	Grid, generation, large-load, utility, industrial, and mechanical work provide substantial runway; return preservation is not proven
3. Durability of moat	10	15	Electric advantage is observable; direct pricing and lock-in evidence are limited; Underground and fixed-price risk constrain durability
4. Accounting and financial quality	8	10	Strong cash conversion, low SBC, clean audit; acquisition accounting, claims, leverage, and insider-related dealings require caution
5. Capital allocation discipline	6	10	Strategy is coherent and incentives include ROIC, but $8.455B of M&A lacks seasoned cohort returns
Business Quality Score / 80	**52**	**80**	Above-average platform, below elite compounder standard
20% Return Underwriting Score / 20	**0**	**20**	All governed cases fail; price requires unsupported earnings and/or terminal multiple expansion
Compounder Score / 100	**52**	**100**	**Reject under this diagnostic rubric**

Category 1 detail: 1A 1/5, because the five-observation median full-capital ROIC is below 10%; 1B 2/8, because the best auditable ROIIC proxies fall in the rubric's 8%-15% band; 1C 1/3, because returns improved through FY2024 but fell in FY2025 as acquisition capital grew; 1D 2/3, because segment margins, qualification, and self-performance support unit economics while fixed-price and claims risk remain; 1E 3/3, because multi-year cash conversion is strong; and 1F 2/3, because the low full-capital result is not caused by a tiny or negative capital base, although the answer is highly sensitive to acquisition-intangible treatment.

Category 2 detail: 2A 5/5, 2B 4/5, 2C 4/4, 2D 2/3, 2E 2/2, and 2F 0/1. Quanta has deployed capital at scale and expanded its addressable scopes, but the newest cohorts have not demonstrated that growth avoids ROIC compression. Category 3 detail: 3A 4/4, 3B 1/3, 3C 2/3, 3D 1/2, 3E 1/2, and 3F 1/1. Scarce craft capacity and execution breadth are real; disclosed price/churn measures and guaranteed customer lock-in are not.

Category 4 detail: 4A 2/2, 4B 2/2, 4C 2/2, 4D 1/2, 4E 1/1, and 4F 0/1. The clean audit and cash evidence are meaningful. The final point is withheld for avoidable related-party leases and family employment, rising contract-asset claims, and the unseasoned acquired-business control perimeter. Category 5 detail: 5A 2/2, 5B 1/2, 5C 1/2, 5D 1/2, 5E 1/1, and 5F 0/1. Management has built a coherent platform and buybacks have not been mechanical, but acquisition cohort returns and post-deal dilution are not disclosed well enough for full credit.

5. ROIIC and Reinvestment Analysis

The central analytical distinction is between growth and value-creating reinvestment. Revenue more than doubled from FY2021 to FY2025, while NOPAT and FCF grew strongly. Yet invested capital rose from $9.058 billion to $15.267 billion, and M&A absorbed $8.455 billion of cash. The four-year capital-base ROIIC proxy of 10.7% is positive but not elite; the three-year proxy of 9.5% suggests no acceleration. A separate gross disclosed-capital calculation, using cumulative cash acquisitions plus gross capex as a deliberately demanding denominator, produces only 6.1%. That measure is not standard ROIIC because it omits depreciation, working-capital releases, and disposals, but it shows why acquisition-inclusive returns cannot be assumed from earnings growth alone.

Organic ROIIC cannot be isolated. Quanta does not publish organic NOPAT, segment capital, segment FCF, or a complete acquisition-cohort return ledger. R&D is not separately disclosed. Working-capital changes are affected by project timing, retainage, and claims. These gaps are economically important rather than clerical. Awarding a high ROIIC score would require inventing the allocation between acquired and organic profit or removing acquisition capital from the denominator while retaining acquired earnings.

The forward S model also limits enthusiasm. Exact-horizon simplified ROIC is 5.8% bear, 11.2% base, and 14.4% bull. Even the bull does not reach 20%. Using FY2025 invested capital as the nearest disclosed starting capital, the implied NOPAT return on incremental modeled capital is only about 2% bear, 15% base, and 21% bull; these are directional because the start and exact horizon differ by six months. The base requires a meaningful improvement, while the bull requires both high growth and successful integration. This score is capped because a credible runway is not the same as proven high-return reinvestment.

6. Runway Analysis

The runway is the strongest part of the score. At Q2 2026, total backlog was $53.44 billion and RPO was $33.554 billion. Electric backlog was $43.790 billion and RPO was $29.115 billion; Underground backlog was $9.650 billion and RPO was $4.440 billion. Electric's TTM revenue was $26.905 billion, so RPO alone equaled roughly 1.08x revenue. Physical demand spans transmission, distribution, substations, generation, restoration, large-load sites, inside electrical work, communications, and supply-chain components. Underground adds utility integrity, gas, civil, industrial, mechanical, plumbing, and process work.

Backlog is not an annuity. At FY2025, 44% of backlog consisted of MSAs, and customers generally were not committed to specified MSA volumes. Permitting, financing, cancellation, weather, material constraints, and change-order acceptance can shift conversion. Skilled labor is both a barrier and a capacity constraint. The base segment forecasts therefore decelerate: Electric uses a 12.0% five-year revenue CAGR and Underground 10.01%, rather than extrapolating Q2 growth of 43.6% and 30.7%.

Quanta has a repeatable expansion logic: acquire founder-led specialized contractors, preserve local operating accountability, coordinate them for complex programs, train labor, and invest in scarce equipment and fabrication. The platform has scaled. The deduction comes from return preservation. The newest 2024-2026 acquisition cohorts are too recent for seasoned statutory return proof, and supply-chain verticalization adds utilization and inventory risk. Runway earns 17/20, but it cannot override Category 1.

7. Moat Analysis

The moat can be explained in one paragraph. Quanta combines scarce craft labor, qualification records, safety systems, bonding and insurance capacity, specialized fleet and equipment, local operating-company relationships, and the ability to self-perform and coordinate multiple critical-path scopes. This lowers execution risk for customers on projects where delay

costs are high. The advantage raises Quanta's probability of winning and completing complex work; it is not a contractual monopoly or a proprietary technology license.

Electric has the strongest evidence. Its Segment operating income margin remained between 9.4% and 11.1% from FY2021-FY2025 despite rapid growth, and TTM margin was 10.6%. Underground's margin ranged from 4.3% to 8.2%, which is less durable. Pricing power is indirect: bid selection, capacity scarcity, margin retention, and willingness to pay for execution certainty. The issuer does not disclose price increases, churn, or renewal economics. Backlog includes nonbinding elements and therefore does not prove switching costs.

Stress resilience is mixed. Essential grid and utility work persists, and Quanta has produced strong cash flow. However, fixed-price revenue rose from 49.1% in FY2023 to 60.6% in FY2025. Cost-to-cost accounting can recognize unfavorable estimate changes promptly, but project losses, unapproved claims, and working-capital absorption remain real. AI may support demand for power infrastructure and improve planning, but it can also increase competitor productivity; it does not eliminate physical execution. The moat is credible and durable enough for 10/15, not yet a 2046 high-return PASS on this scoring rubric.

8. Accounting and Capital Allocation Analysis

Financial quality is good, not pristine. PwC found the FY2025 statements fairly presented and ICFR effective. There was no identified restatement or material weakness. SBC remained approximately 0.6%-0.7% of revenue, and TTM SBC was 9.44% of FCF. Diluted shares rose about 1.0% annually from FY2021 through FY2025, while per-share earnings grew much faster. Cash flow supports earnings across multiple years.

The main accounting risk is project estimation rather than an identified misstatement. At FY2025, $983.6 million of revenue associated with unapproved change orders and claims sat in contract assets, up from $733.6 million. Rising fixed-price exposure raises the consequence of estimate error. Eight businesses acquired in 2025 were properly excluded from the 2025 ICFR assessment under SEC rules; that is normal, but their control integration remains unproven. Goodwill and intangible assets exceed common equity, so impairment and acquisition-return monitoring matter.

Capital allocation is acquisition-led. Capex was $2.462 billion and cash M&A was $8.455 billion in FY2021-FY2025, versus only $0.330 billion of open-market buybacks and $0.237 billion of common dividends. Management's strategy is coherent, and incentives include adjusted ROIC, EPS, TSR, and safety. Buybacks appear opportunistic rather than automatic. Offsetting those positives, compensation ROIC is adjusted and not comparable to statutory ROIC; maximum payouts can occur at a much lower bar than this rubric demands. Related-party leases and family employment are immaterial financially but avoidable. The CEO's May 2026 sale reduced, without eliminating, the ownership signal. Capital allocation earns 6/10 until acquisition cohorts demonstrate after-goodwill, per-share cash returns.

9. 20% Return Underwriting

The table preserves the S-cleared operating cases and values the security directly from statutory EPS. Scenario-specific exit P/Es are 15x bear, 25x base, and 35x bull. These are bounded return assumptions informed by the archived positive-annual P/E median of 25.26x and range of 12.7358x-61.4352x (SHA-256 `40c8b1be...dd7d37`); they are not the binary ER2 P/E<=15 gate, which remains unchanged. Current Q2 net debt of $5.598 billion is disclosed for context but is not subtracted a second time because EPS-times-P/E already values equity. Dividends remain $2.20 over five years and ending share counts remain S-cleared.

Underwriting line	Bear	Base	Bull
Starting TTM revenue	$32.905B	$32.905B	$32.905B
Five-year revenue CAGR	4.62%	11.65%	14.87%
Horizon operating margin	4.50%	7.52%	8.86%
Tax rate	26.0%	25.2%	24.5%
Horizon NOPAT	$1.372B	$3.210B	$4.404B
NOPAT CAGR from normalized TTM	(2.1)%	16.1%	23.7%
Horizon FCF / common NI	75%	115%	125%
Ending diluted shares	154.129M	153.359M	152.344M
Horizon statutory EPS	$6.395	$19.412	$28.228
Exit P/E	15x	25x	35x

Underwriting line	Bear	Base	Bull
Starting net debt, disclosure only	$5.598B	$5.598B	$5.598B
Terminal equity value per share	$95.925	$485.30	$987.98
Five-year dividends received	$2.20	$2.20	$2.20
Terminal shareholder wealth per share	$98.125	$487.50	$990.18
Scenario probability	30%	50%	20%
Gross local-currency annualized shareholder IRR	(31.8472)%	(6.0876)%	8.2108%
Maximum starting price for 20% IRR	$39.435	$195.915	$397.938

The base-case 20% purchase price is approximately $195.92 under these assumptions, 70.6% below $667.36. It is not a target price or trade instruction; it discounts $487.50 of terminal shareholder wealth at 20% for five years. A 20% return from the frozen price requires exit P/Es of approximately 259.33x / 85.43x / 58.75x in bear/base/bull. The unchanged ER2 base P/E-15 gate still fails by 56.4%.

The mandatory probability-weighted return is calculated from terminal wealth, not by averaging scenario IRRs. Using 30% / 50% / 20% weights, expected terminal shareholder wealth is `0.30 x $98.125 + 0.50 x $487.50 + 0.20 x $990.18 = $471.2235` per share. Against $667.36 over five years, `(471.2235 / 667.36)^(1/5) - 1` gives a **(6.7233)% probability-weighted gross USD IRR**.

The separate CIO diagnostic begins at SGD 862.052069 per share using USD/SGD 1.2898 and a 15bp entry cost. With 15bp exit cost, 30% distribution withholding, and terminal USD/SGD of 1.20 / 1.29 / 1.38, terminal SGD wealth is 116.785335 / 627.084545 / 1,363.492481. Net-SGD IRRs are **(32.95)% / (6.17)% / 9.60%**; the probability-weighted net-SGD IRR is **(6.34)%**. Both CIO hurdles fail and bear downside is unacceptable. No same-pack covariance row exists, so portfolio risk cannot support positive sizing. CIO status is **PASS/no new buy**, proposed size is none, approval is required, and trade authority remains false.

Category 6 remains zero throughout: 6A 0/6 because base IRR is below 10%; 6B 0/4 because the base 20% case requires an unsupported 85.43x exit P/E; 6C 0/3 because bear downside is unacceptable; 6D 0/3 because the return burden is not credibly beatable; 6E 0/2 because the price requires an outcome beyond the governed base; and 6F 0/2 because dividends and demonstrated buybacks are immaterial.

10. Hard Veto Checklist

Hard veto	Status	Evidence-bound conclusion
ROIIC below cost of capital with no credible improvement path	Watch	9.5%-10.7% proxies are modest; base ROIC reaches 11.2%, but acquisition returns remain unproven
High ROIC caused by tiny or negative capital	Pass	Full-capital ROIC is low, not artificially high; invested capital is positive and includes acquisition capital
Growth requires persistent external financing	Watch	Cash generation is strong, but large M&A increased net debt and share count
Material dilution without per-share value creation	Watch	Historical EPS growth exceeded roughly 1% annual share growth; future acquisition dilution remains possible
Large acquisitions without disclosed returns	Watch	$8.455B five-year M&A; cohort-level statutory returns are not disclosed
Structural FCF shortfall versus earnings	Pass	Multi-year CFO and FCF exceed common NI; claims and project timing still need monitoring
Concentration, regulation, cyclicality, or leverage can permanently impair equity	Watch	Project, fixed-price, MSA, labor, claims, and leverage risks are material but not presently existential
20% return requires unsupported terminal valuation	**Fail**	Base needs approximately 85.43x exit P/E versus the bounded 25x base assumption
Flawless execution needed to justify current price	**Fail**	Bull still fails the binary P/E<=15 gate and reaches only 8.21% gross USD / 9.60% net SGD
Moat cannot be explained	Pass	Labor, qualification, scale, equipment, relationships, and multi-scope execution form a coherent moat
Accounting or governance impairs trust	Watch	Clean audit and controls offset related-party transactions, claims, and new-cohort ICFR integration

Hard veto	Status	Evidence-bound conclusion
Balance sheet can wipe out equity in a downturn	Pass / Watch	Baa2 and strong cash flow support solvency; 2.21x FY2025 net debt/EBITDA and acquisition funding reduce flexibility

The two failed valuation vetoes are sufficient to prevent an investable-now or lower-price classification under the formal threshold logic at the current score. They do not imply imminent business failure. They mean the current security price leaves no defensible 20% return underwriting margin.

11. Final Decision

Score-implied classification: Reject. Total score is below 70, the 20% return case is not plausible at the frozen price, and two valuation hard vetoes fail. The evidence supports a high-capability operating platform and a large demand runway. It does not support elite acquisition-inclusive ROIIC or a price that already capitalizes outcomes beyond the governed bull case.

An upgrade would require both quality and valuation evidence: sustained full-capital ROIC in at least the low teens; disclosed or reconstructable acquisition-cohort returns; organic growth separated from acquired growth; declining leverage; maintained FCF after normalized capex; stable contract assets and claims; and a price or source-bound earnings step-up that makes a 20% return work without terminal multiple expansion. A lower price alone could change the valuation score, but the rubric would still require stronger ROIIC evidence before calling the company an elite compounder.

Compounder Score note: 52 / 100 implies Reject; a real operating moat and long runway are outweighed by modest acquisition-inclusive return evidence and an extreme starting valuation.

Business Quality Score note: 52 / 80 implies an above-average infrastructure platform, not an elite compounder; full-capital ROIC is below 10%, ROIIC proxies are about 9.5%-10.7%, and moat plus management remain constrained.

20% Return UW Score note: 0 / 20; base IRR is approximately negative 6.09%, probability-weighted IRR negative 6.72%, base 20% buy price approximately $195.92, and the hurdle requires an unsupported terminal P/E.

No conclusion here authorizes an order, trade, message, portfolio change, ranking, sizing decision, or BUY-queue action.

12. Machine-Readable JSON

The authoritative machine-readable record is `compounder_score.json`. The controlling fields are mirrored below.


```
{
  "business_quality_score": 52,
  "valuation_underwriting_score": 0,
  "total_score": 52,
  "classification": "Reject",
  "clears_20pct_hurdle": false,
  "base_case_irr": -0.0608761079,
  "bear_case_irr": -0.3184716920,
  "bull_case_irr": 0.0821084678,
  "max_buy_price_for_20pct_irr": 195.9153164,
  "source_confidence": "Medium",
  "cio_actionability": "PASS",
  "trade_execution_authorized": false
}
```


WORKER CS COMPLETE - COMPOUNDER SCORE READY FOR INDEPENDENT AUDIT

Quanta Services, Inc. (PWR) - Independent Scoring Audit

Audit date: 2026-08-01 **Frozen valuation anchor:** USD 667.36 per XNYS:PWR common share, 2026-07-31 close **Audited CS artifacts:** `appendix_compounder_score.md` SHA-256 `6c688afdfb867ce69044a68bcf55ab0510049f8e75614b5ac225fdd4e898fbdb`; `compounder_score.json` SHA-256 `80dabed7cef75e527a2ccc417fa5561d19932216ae806e0dfd6c15576543d38a` **Upstream controls:** S SHA-256 `509371339faf1ed7652412f3923a3ff02b96ebf554f87dc79d4a0b82c6c996f9`; W SHA-256 `10db77bcef4b1ad7b4f1cdeb39b6ba4476f239c4fe2f79bd6ceb986d1869bf12`; M SHA-256 `230f22f9f2c7e830d9ee20ac8c5c4c56080df8f9d68d5d643362dbcdad27ce59`; D SHA-256 `6d18490ba6a8ceddba788c5cbb5264b0d1cb0f7dd6601a083de14e1d45bf1af9`; reviewed segment SHAs `24f505920a83ae53b6eab7d5118d71e74ecffbdac6eb6c44539d53b5204648d7` and

`b15867cd1eb445be313aaf86e7bee16f8e487ece2f7dd1228991bda7157169d6`.

This is an independent rubric audit. It changes no CS or upstream artifact and authorizes no trade, order, message, portfolio mutation, ranking, sizing, or BUY-queue action. The score is diagnostic only.

1. Original vs Audited Scores

The repaired JSON and Markdown agree: Business Quality Score is 52 / 80, Valuation / 20% Return Underwriting Score is 0 / 20, Compounder Score is 52 / 100, and the score-implied classification is Reject. Corrected bear, base, and bull gross shareholder IRRs are negative 31.85%, negative 6.09%, and positive 8.21%. The base-case maximum starting price for a 20% five-year IRR is USD 195.915. The scores and classification do not change.

The audited result is lower because the original score gives credit to ROIIC even though it explicitly lacks the rubric's required cumulative-reinvestment calculation. Acquisition spending was material, so acquisition-inclusive ROIIC is also required and unavailable. The same gap caps the acquisition-heavy capital-allocation category. All valuation points remain zero.

Item	Original	Audited	Notes
Business Quality Score / 80	52	47	ROIIC and acquisition-allocation credit reduced
Valuation / 20% Return UW Score / 20	0	0	Every governed case fails at USD 667.36
Total Score / 100	52	47	Arithmetic: 47 + 0 = 47
Classification	Reject	Reject	Total below 70 and valuation hard vetoes fail

Audited category scores are Incremental Returns 8/25, Reinvestment Runway 17/20, Durability of Moat 10/15, Accounting and Financial Quality 8/10, Capital Allocation 4/10, and Price / 20% Underwriting 0/20. These sum to Business Quality Score 47 / 80 and Compounder Score 47 / 100.

2. Score Reductions and Reasons

Rubric item	Original	Audited	Evidence status	Audit action
1A normalized ROIC	1/5	1/5	Partly supported	Preserve; proxy is below 10% but not fully normalized
1B ROIIC	2/8	0/8	Missing data	Set to zero under the explicit ROIIC cap
1C ROIIC trend	1/3	0/3	Unsupported	Set to zero because valid 3-year and 5-year ROIIC trends do not exist
1D unit economics	2/3	2/3	Supported	Preserve; segment margins and execution evidence are real but mixed
1E cash conversion	3/3	3/3	Supported	Preserve; five fiscal years are tested
1F no accounting artifact	2/3	2/3	Partly supported	Preserve; full capital is retained, but normalization is incomplete
2A market opportunity	5/5	5/5	Supported	Preserve; backlog/RPO and physical end markets are source-bound
2B reinvestment at scale	4/5	4/5	Partly supported	Preserve; scale is proven, returns on newest capital are not
2C organic opportunity	4/4	4/4	Supported	Preserve; Electric and infrastructure demand support runway
2D repeatable playbook	2/3	2/3	Partly supported	Preserve; integration and project execution remain open
2E market structure	2/2	2/2	Supported	Preserve; skilled labor, qualification, and critical-path demand support duration

Rubric item	Original	Audited	Evidence status	Audit action
2F no ROIC collapse	0/1	0/1	Unsupported	Preserve zero; the newest acquisition cohorts are unseasoned
3A clear advantage	4/4	4/4	Supported	Preserve; Electric's execution moat is observable
3B pricing power	1/3	1/3	Partly supported	Preserve; margin resilience exists, direct price/churn evidence does not
3C competitive evidence	2/3	2/3	Partly supported	Preserve; scale and qualifications matter, peers remain capable
3D customer stickiness	1/2	1/2	Partly supported	Preserve; high-trust procurement exists, MSAs may lack minimum volume
3E stress resilience	1/2	1/2	Partly supported	Preserve; cash conversion is strong, fixed-price and claims risk remain
3F low disruption risk	1/1	1/1	Supported	Preserve; core field work is physically delivered
4A clean earnings	2/2	2/2	Supported	Preserve; audit and ICFR were clean
4B cash supports earnings	2/2	2/2	Supported	Preserve; multi-year CFO and FCF exceed common net income
4C SBC and dilution	2/2	2/2	Supported	Preserve; SBC is low and forward diluted shares are modeled
4D balance sheet	1/2	1/2	Supported	Preserve; investment grade is offset by 2.21x leverage and acquisition funding
4E disclosure	1/1	1/1	Supported	Preserve; major gaps are explicitly disclosed rather than filled
4F governance red flags	0/1	0/1	Supported	Preserve zero; related-party and integration-control issues remain
5A reinvestment priority	2/2	1/2	Partly supported	Reduce; strategic fit is clearer than after-goodwill value creation
5B acquisition discipline	1/2	0/2	Missing data	Set to zero; USD 8.455B of five-year cash M&A lacks cohort returns
5C buyback discipline	1/2	1/2	Supported	Preserve; use was selective but small
5D incentive alignment	1/2	1/2	Partly supported	Preserve; ROIC is included, but adjusted definitions and rich maxima weaken it
5E owner mentality	1/1	1/1	Partly supported	Preserve narrowly; retained ownership offsets the sale and optics
5F past decisions	0/1	0/1	Missing data	Preserve zero; seasoned per-dollar returns are unavailable
6A base-case IRR	0/6	0/6	Supported	Preserve zero; base IRR is negative 6.09%
6B exit multiple	0/4	0/4	Supported	Preserve zero; a 20% base return needs about 85.43x exit P/E
6C bear case	0/3	0/3	Supported	Preserve zero; bear IRR is negative 31.85%
6D reverse DCF	0/3	0/3	Supported	Preserve zero; required growth is not credibly beatable

Rubric item	Original	Audited	Evidence status	Audit action
6E price perfection	0/2	0/2	Supported	Preserve zero; even governed bull value is below price
6F cash returns	0/2	0/2	Supported	Preserve zero; dividend and demonstrated buyback yields are immaterial

The five-point reduction is therefore mechanical and conservative: two points removed from 1B, one from 1C, one from 5A, and one from 5B. It does not depend on a different market view.

3. Unsupported Claims

The evidence does not support treating the 9.53% and 10.73% capital-base ratios as rubric-compliant ROIIC. They are correctly calculated as change in simplified NOPAT divided by change in period-end invested capital, but the rubric requires cumulative reinvestment: net capex, non-cash working capital, capitalized growth investment, acquisitions, and disposals. The denominator cannot be reconstructed from the governed package. Calling the ratios conservative proxies is fair; awarding 1B points from them is not.

The evidence also does not support a directional ROIIC trend score. Comparing a three-year proxy with a four-year proxy is not the requested 3-year versus 5-year ROIIC analysis, and both share the same denominator defect. This score is reduced because missing data cannot become one point of positive evidence.

Management's acquisition rationale is coherent, but cohort-level statutory NOPAT, invested capital, cash contribution, and organic/acquired profit splits are not disclosed. That prevents proof that USD 8.455 billion of FY2021-FY2025 cash M&A earned attractive acquisition-inclusive returns. It also prevents a full reinvestment-rate calculation. The operating runway remains well supported, so Categories 2 and 3 are not broadly cut; the tighter adjustment belongs in Categories 1 and 5.

4. Calculation Errors

The principal defect is a scoring-method error rather than bad arithmetic. The original calculation breaks at the transition from a clearly labeled capital-base proxy to a positive 1B rubric score. Under the CSA rule, if ROIIC is not calculated, 1B must be zero. The same issue makes 1C unscoreable.

The remaining core arithmetic independently reproduces. Frozen market value is USD 667.36 multiplied by 152.439 million shares, or USD 101.7317 billion. Adding USD 5.598 billion net debt gives USD 107.3297 billion enterprise value. Dividing by USD 1.522748 billion normalized TTM NOPAT gives 70.484x EV/NOPAT. TTM FCF yield is USD 2.391 billion divided by market value, or 2.350%.

The original revenue CAGR, NOPAT CAGR, diluted-share CAGR, and capital-base proxies reproduce at about 21.71%, 22.76%, 1.00%, 9.53%, and 10.73%. Multi-year CFO/common NI, FCF/common NI, and FCF/NOPAT reproduce at 2.079x, 1.406x, and 1.209x. The FCF CAGR is strongly low-base affected and is not used to inflate a separate score.

Return mechanics reproduce under the corrected equity-level method. Statutory EPS of USD 6.395 / USD 19.412 / USD 28.228 times 15x / 25x / 35x exit P/E gives terminal equity per share of USD 95.925 / USD 485.30 / USD 987.98. Adding USD 2.20 of distributions at the horizon gives wealth of USD 98.125 / USD 487.50 / USD 990.18 and gross IRRs of **(31.8472)% / (6.0876)% / 8.2108%**. Starting net debt of USD 5.598B is disclosed but not subtracted again. Discounting base wealth at 20% for five years gives USD 195.915.

The 20% hurdle also reproduces: required terminal wealth is USD 1,660.605235 per share, implying exit P/Es of 259.328x / 85.432x / 58.750x after the USD 2.20 distribution. This does not rescue 6A or 6B. Archived annual P/E evidence is bound by SHA-256 `40c8b1be...dd7d37`; the scenario bounds do not replace the P/E<=15 gate.

5. Missing Data

The most important missing evidence is a cumulative reinvestment ledger and acquisition-cohort return series. Specifically absent are organic versus acquired NOPAT, net non-cash working-capital investment, disposals, segment invested capital, acquisition-cohort cash flows, and a consistently defined 5-year acquisition-inclusive ROIIC. R&D is a true non-disclosure rather than zero. A ten-year comparable series is also unavailable; FY2021-FY2025 supplies five observations but only four compounding intervals. Direct price/churn evidence, segment capex and FCF, current numeric safety rates, and an observed historical trading-multiple series are also absent.

These gaps lower confidence to Medium. They constrain quality scores; they do not weaken the negative valuation conclusion because the frozen price and S-cleared operating cases are fully bound.

6. Hard-Veto and Threshold Test Audit

All threshold booleans remain correct. Total score is below 80, Business Quality is below 65, valuation is below 15, ROIIC plus runway is below 35, base IRR is below 20%, bear IRR is below 8%-10%, hard vetoes are present, and the base 20% case requires unsupported terminal valuation.

The twelve-veto classifications remain directionally sound. Veto 8 fails because the base 20% case requires roughly 85.43x exit P/E. Veto 9 fails because even the bounded bull case reaches only 8.21% gross USD and 9.60% net SGD. Acquisition returns, financing, dilution, project risk, and governance appropriately remain Watch. No score threshold maps this result to Investable now.

7. Final 20% Hurdle Pass/Fail

FAIL. The audited Valuation / 20% Return Underwriting score is 0/20. The corrected gross USD base IRR is negative 6.09%, bear is negative 31.85%, bull is positive 8.21%, and probability-weighted is negative 6.72%. None clears 20%; the base case requires about 85.43x exit P/E.

8. Dream Business / Dream Investment Classification

Neither. Quanta is an above-average infrastructure platform with a credible Electric execution moat and a long physical-investment runway. It is not yet a dream business because full-capital ROIC is below 10%, valid acquisition-inclusive ROIIC is unavailable, management and moat gates are YELLOW, and acquisition cohorts are unseasoned. It is not a dream investment because the starting price overwhelms the bounded EPS-times-P/E base case.

9. Stage 7 Scorecard Notes

- **Compounder Score note:** 47 / 100 implies Reject; a credible operating moat and runway do not offset unproven acquisition-inclusive ROIIC and extreme valuation.
- **Business Quality Score note:** 47 / 80 implies an above-average platform, not an elite compounder; valid ROIIC and seasoned acquisition-cohort returns remain unavailable.
- **20% Return UW Score note:** 0 / 20; base and probability-weighted returns are negative, and the base 20% hurdle requires about 85.43x exit P/E.

10. Auditor JSON

The machine-readable audit is saved separately as `compounder_score_audit.json`. It binds the original artifact hashes, audited category and subcategory scores, reproduced calculations, reductions, gaps, classification mapping, and `trade_execution_authorized=false`.

SCORING AUDIT COMPLETE - AUDITED SCORE CLEARED FOR STAGE 7

11. Mandatory Security-Return Repair Addendum

The corrected gross local-currency bridge is explicit without changing governed operating scenarios, score, classification, or PASS verdict. Statutory EPS of USD 6.395 / USD 19.412 / USD 28.228 at 15x / 25x / 35x P/E gives terminal equity per share of USD 95.925 / USD 485.30 / USD 987.98. Adding USD 2.20 of distributions gives terminal wealth of USD 98.125 / USD 487.50 / USD 990.18. Ending diluted shares remain 154.129m / 153.359m / 152.344m. USD 5.598B of starting net debt is disclosed, not subtracted again.

The gross USD IRRs are **(31.8472)% / (6.0876)% / 8.2108%**. With weights of 30% / 50% / 20%, probability-weighted terminal wealth is USD 471.2235 and the wealth-CAGR method gives **(6.7233)%**.

The CIO diagnostic uses starting USD/SGD 1.2898, terminal 1.20 / 1.29 / 1.38, 15bp entry/exit costs, and 30% withholding. Terminal SGD wealth is 116.785335 / 627.084545 / 1,363.492481; net-SGD IRRs are **(32.95)% / (6.17)% / 9.60%**, and probability-weighted net-SGD IRR is **(6.34)%**. All IRRs are finite. The 10% and 15% hurdles fail, downside is unacceptable, no same-pack covariance row exists, size is none, approval is required, and trade authority remains false. CIO status is

PASS/no new buy.

Quanta Services, Inc. (PWR) — Red Team

Analysis date: 2026-08-01 **Frozen security anchor:** XNYS:PWR common share, USD 667.36 closing price on 2026-07-31 **Governed synthesis:** `appendix_synthesis.md`, SHA-256 `509371339faf1ed7652412f3923a3ff02b96ebf554f87dc79d4a0b82c6c996f9`, 11/11 tie-outs passed **Audited diagnostic:** 47/100, Reject; scoring-audit Markdown SHA-256 `e2d3931b1cda594161d75e600968a011ebd0b13b2128d467ef36a48740de2f95`; JSON SHA-256 `6c8137ac4d2cf27085d968feac237f4cf084faf7bb1d8b76db8ab7a82ca4923f`

This is an adversarial research test, not a portfolio instruction. It authorizes no trade, order, message, ranking, sizing, portfolio mutation, or BUY-queue action. Numbers come from the governed package or transparent derivation.

1. Strongest bear thesis

The strongest bear thesis is not that Quanta lacks demand. It is that investors are paying software-like scarcity economics for an acquisition-heavy contractor whose after-corporate statutory returns remain contractor-like. Electric's field-execution moat, record backlog, and exposure to grid and large-load infrastructure are real, but the market price already requires a simultaneous victory on organic growth, acquired-team retention, labor capacity, project selection, cash conversion, and terminal valuation. The governed base case reaches USD 19.412 of EPS at the 2031-06-30 horizon, while USD 44.491 is required for the framework's 15× gate. Even the bull reaches only USD 28.228. At conservative exit multiples, the audited shareholder IRRs are negative 35.81%, negative 15.97%, and negative 6.15% in bear, base, and bull.

A well-informed short seller would argue that the current multiple converts cyclical backlog, estimated MSA activity, acquisition revenue, and an AI-power narrative into permanent high-return earnings before those returns exist. Over the next one to three years, annualization of acquired revenue can expose slower organic growth, while fixed-price project complexity, wage pressure, integration costs, and working-capital claims prevent the promised margin leverage. Electric then holds near or below its historical margin band rather than expanding, Underground fails to sustain post-acquisition growth, and corporate costs absorb the apparent segment leverage. The confirming anchor would be Electric Segment operating margin below 9.0% for two consecutive reported quarters despite continued end-market demand.

2. The most fragile assumption

The most fragile Stage 5 assumption is **Electric Infrastructure Solutions' 12.0% TTM-to-TTM+5 revenue CAGR**, which produces USD 47.416 billion of horizon revenue. Electric supplies 83.1% of base horizon revenue, so the combined model is effectively an Electric growth thesis. The 12.0% rate is below recent historical growth, but history is acquisition-affected, the current 43.6% quarterly growth rate is not an organic five-year run rate, and the issuer does not disclose Electric organic growth excluding acquisitions. The model also lacks service-family revenue, AI/data-center revenue, customer concentration, and segment capex, preventing a true bottom-up decomposition of the most important growth line.

The synthesis sensitivity shows the consequence cleanly: reducing Electric CAGR from 12.0% to 10.0% cuts horizon EPS from USD 19.412 to USD 17.851, a USD 1.561 or 8.0% reduction. That sensitivity is not catastrophic relative to the valuation gap; it is revealing. It means the security does not fail because the analyst chose 12% instead of 10%. It fails because even the more optimistic 12% path, combined with margin expansion and benign below-line assumptions, produces less than half the required EPS. The fragile assumption can break the operating narrative, while no reasonable repair to that one assumption rescues the price.

3. The Stage 5 number most likely to be optimistic

The single Stage 5 number most likely to be revised down is the **base exact-horizon statutory operating margin of 7.52%**. It requires consolidated operating income of USD 4.291 billion, versus a 6.2% TTM margin, while revenue grows 73.5%. The segment assumptions look modest in isolation—Electric rises from 10.6% to 11.5%, Underground from 8.2% to 8.95%—but those gains must survive a rising fixed-price mix, acquired-company integration, labor scarcity, vertical-supply investment, and large-load project complexity. The corporate-cost ratio must also fall from 4.00% TTM to 3.55%, even though acquisitions, amortization, SBC, systems, insurance, and project controls do not vanish with scale.

This is precisely where segment optics can mislead. Quanta's summed TTM Segment operating income was USD 3.351 billion, but USD 1.315 billion of corporate and non-allocated costs reduced statutory operating income to USD 2.036 billion.

Investors cannot capitalize the attractive Electric segment margin while treating the large corporate bridge as incidental. If corporate costs remain at 4.0% rather than falling to 3.55%, or if Electric margin holds near 10.5% rather than reaching 11.5%, a meaningful part of the modeled statutory leverage disappears.

4. Reverse assumptions demanded by USD 667.36

The valuation is so stretched that reversing the price is more informative than debating small forecast changes.

Reverse test	Governed base or bull	What USD 667.36 requires	Adversarial reading
EPS at 15×	Base USD 19.412; bull USD 28.228	USD 44.491	Required EPS is 129% above base and 58% above bull
Common net income at base shares	USD 2.977B	USD 6.823B	More than double the base earnings result
Statutory OI at base revenue and below-line rules	USD 4.291B	About USD 9.506B	Implies a 16.65% statutory OI margin versus 7.52% base
Statutory OI at bull revenue and below-line rules	USD 5.833B	About USD 9.148B	Implies a 13.90% margin versus 8.86% bull
Shares needed if base NI is unchanged	153.359M base ending shares	About 66.913M	Implies retiring roughly 56% of starting shares
Base starting price for a 20% five-year return	USD 667.36 actual	USD 112.39 maximum	Current price is nearly six times the audited hurdle price
Base exit EV/NOPAT for 20% return	70.48× starting EV/NOPAT	About 83.2× exit	The base return needs multiple expansion from an already extreme level

These are mechanical derivations, not alternative forecasts. The price can be defended only by abandoning at least one conservative valuation discipline: accept an unusually high terminal multiple, assume earnings far beyond the governed bull case, or assume a capital-return program unsupported by FCF and dilution evidence. None is a source-bound confident case.

5. Cross-examination of management commentary

“Opportunity to more than double the earnings power.” This Q1 2026 aspiration is not compatible with treating the current price as conservatively underwritten. The governed base roughly doubles common net income, from USD 1.327 billion TTM to USD 2.977 billion, yet still fails the 15× gate by 56.4% and produces a negative audited IRR. Management can fulfill the aspiration and shareholders can still earn a poor return. The first sign of overpromise would be reported growth remaining acquisition-led while statutory operating margin and simplified ROIC fail to advance.

“Primary use of capital.” Management’s reference to acquisitions matches USD 8.455 billion of FY2021-FY2025 cash M&A, but strategic consistency is not proof of attractive ROIIC. The package cannot reconstruct organic versus acquired NOPAT, acquisition-cohort invested capital, or cumulative reinvestment. Goodwill and intangibles reached USD 10.223 billion at FY2025. The first evidence of a broken claim would be another large acquisition cycle accompanied by net leverage above 2.5×, higher contingent payouts, weak acquired-business cash conversion, or an impairment.

“We’ll be prudent about how we take risk.” Management repeatedly rejects firm-fixed-price generation risk, which is positive, but consolidated fixed-price revenue still rose to 60.6% in FY2025. Prudence must therefore be demonstrated across hundreds of operating-company decisions, not merely stated at the corporate level. A warning would appear first in contract assets, unfavorable cost-to-cost revisions, claim balances, project charges, or segment margins—not necessarily in revenue or backlog.

6. Model, tie-out, and source falsification

The red team did not find a mechanical break in the 11 synthesis tie-outs. TTM revenue, the segment-profit bridge, direct-quarter diluted shares, security-unit conversion, probability arithmetic, and the 2031-06-30 horizon are internally consistent. The frozen USD 667.36 price and upstream hashes match the governed package. Arithmetic integrity therefore survives.

What does not survive is false precision. Below-segment service-family dollars are undisclosed. Electric organic growth excluding acquisitions is undisclosed. Segment capex, working capital, FCF, invested capital, customer concentration, current numerical safety rates, and AI-only economics are undisclosed. Q2 2026’s FMP transcript endpoint returned an empty array, so the official release controls and analyst cross-examination of that quarter is limited. These are transparent gaps, not fatal

data corruption, but they concentrate forecast risk in top-down assumptions. The correct response is wider ranges and a constrained conclusion, not invented product rows or confidence borrowed from the 11/11 arithmetic score.

The recency anchor also deserves skepticism. Q2 2026 revenue grew 41.1%, Electric 43.6%, and Underground 30.7%; 2026 guidance rose to USD 39.3–39.7 billion. Yet recent acquisitions are expected to add USD 1.2–1.4 billion of 2026 revenue, and backlog includes nonbinding estimates. The base current-year forecast can tie to guidance while the five-year organic slope is still materially too high. A correct starting point does not guarantee a correct terminal path.

7. Acquisition, ROIIC, and cash-conversion attack

The audited score's most important reduction is correct: capital-base change proxies are not strict ROIIC. Quanta has demonstrated strong accounting-to-cash conversion—cumulative FY2021-FY2025 FCF of USD 5.139 billion versus USD 3.655 billion of common net income—but it simultaneously spent USD 8.455 billion on cash M&A. Without acquired versus organic NOPAT and cohort capital, the package cannot prove that the purchased earnings created attractive after-goodwill returns. Simplified historical ROIC remained roughly 5.8%–8.6%, and the synthesis base improves only to about 11.2% at the horizon. That is a credible business, not a >20% long-duration compounder.

TTM FCF of USD 2.391 billion also benefits from working-capital behavior that may not repeat. FY2025 included USD 983.6 million of revenue associated with unapproved change orders and claims in contract assets, up from USD 733.6 million. The balance equaled roughly 3.0% of TTM revenue. A contractor can report segment profit before collection risk resolves. If claims and contract assets rise faster than revenue while operating cash flow lags net income, the apparent FCF quality should be revised sharply downward.

The modeled share path is transparent but favorable to management: base diluted shares rise only to 153.359 million, and bull shares decline slightly through USD 250 million annual buybacks. Historical diluted shares rose from 145.373 million in FY2021 to 151.937 million TTM, while acquisitions used stock and future deals remain likely. Excluding unannounced stock-financed M&A is proper modeling discipline, but it makes dilution a one-sided risk to realized per-share earnings.

8. Operational and structural attack surface

Project and cycle risk. Fixed-price accounting recognizes revenue over time using cost estimates. Labor productivity, engineering, equipment, weather, scope, and change-order errors can cause rapid margin reversal. Backlog of USD 53.440 billion is not all contractual RPO; RPO was USD 33.554 billion, leaving 37% of headline backlog outside that firmer measure. A delayed utility, generation, or large-load program can strand crews and equipment even while structural demand remains intact.

Regulation and customers. Grid reliability and load growth support demand, but utility rate cases, affordability pressure, permitting, rights-of-way, interconnection queues, wildfire liability, and customer cancellation rights control timing. Large-load projects add power-availability and customer-funding risk. Segment customer and project concentration are undisclosed, so a few large programs may matter more than the financial tables reveal.

Labor and safety. Craft capacity is both moat and bottleneck. Wage inflation may transfer scarcity rents from shareholder to worker; rapid hiring can thin supervision; a severe safety event can impair customer qualification. Approximately 36% of the FY2025 workforce was covered by collective bargaining agreements. Current numerical TRIR, DART, and lost-time rates are missing, which prevents a quantitative safety trend test. The absence of data is not evidence of deterioration, but it blocks a full-confidence moat claim.

AI. AI is unlikely to replace physical field work, so direct disruption risk is low. The bear mechanism is second-order: AI-assisted design, estimating, scheduling, and procurement can narrow smaller competitors' productivity gaps, while AI-driven load-center enthusiasm can encourage capacity, acquisition, and fixed-price commitments before power availability or customer economics are settled. Quanta benefits from the buildout but can still overpay for growth or absorb execution risk after customers retain the economic upside.

9. The score-derived 20% claim

The audited scoring report already says the 20% return case does not clear, and the red team agrees. There is no defensible positive 20% claim to attack; the assumption most likely to tempt an override is terminal-multiple persistence. The base case requires about 83.2× exit EV/NOPAT, above today's 70.48×, while its conservative IRR is negative 15.97%. The bull can mathematically clear 20% only near a 60.6× exit EV/NOPAT—still far above the governed conservative bull multiple—and otherwise produces a negative 6.15% IRR. Revenue growth, buybacks, dividends, or cash conversion cannot individually

bridge that gap.

10. Pre-mortem: how the thesis fails by 2031

By 2031, Quanta reports much higher revenue but only modest per-share value creation. Acquisitions annualize, exposing mid-single-digit organic growth. Electric's margin slips below 9% after one large fixed-price loss and persistent labor inefficiency; Underground remains around 7% as Dynamic Systems integration and project timing disappoint. Corporate costs stay near 4% of revenue because systems, insurance, integration, and amortization scale with the platform. Contract assets and claims consume cash, debt remains elevated, and share issuance offsets small buybacks. Simplified ROIC never reaches low double digits. The market then stops paying a scarcity multiple for backlog and reprices the company as a capable but capital-intensive contractor. The mistake was not missing the infrastructure cycle; it was paying in advance for flawless conversion of that cycle into high-return per-share earnings.

11. Contradiction register

Bullish proposition	Contradictory evidence	Required resolution
Record backlog creates visibility	Only USD 33.554B of USD 53.440B backlog is RPO; MSAs may be nonbinding	Show organic conversion and cash, not backlog growth alone
Management avoids bad fixed-price risk	Fixed-price share reached 60.6%	Keep project charges low and margins/cash stable through scale-up
M&A deepens the moat	USD 8.455B of five-year cash M&A lacks cohort ROIIC	Publish or demonstrate acquisition-inclusive statutory returns
Cash conversion is excellent	USD 983.6M of unapproved claims sits in contract assets	Claims must resolve without cash erosion or write-downs
Craft labor is a durable moat	Labor is scarce; current numerical safety rates are unavailable	Sustain productivity, retention, qualification, and safety evidence
The base share path is conservative	Historical dilution and stock-financed M&A exceed modeled SBC effects	Per-share growth must remain strong after all acquisition shares
Quanta is a quality compounder	Simplified ROIC is below 10% historically and 11.2% in base	Achieve low-double-digit acquisition-inclusive ROIC first
Current price reflects durable growth	Every governed case fails the 15× gate and conservative 20% test	Price must fall or source-bound earnings power must rise dramatically

12. Forced-exit signal and kill criteria

The single observable signal that forces abandonment of the current quality thesis is **Electric Segment operating margin below 9.0% for two consecutive reported quarters**, measured from issuer segment disclosure. Electric is the dominant revenue and profit engine; two quarters below the low end of its historical band during healthy infrastructure demand would show that project, labor, pricing, or integration costs have breached the execution moat. This is a research exit/re-underwrite threshold, not an instruction to transact.

Additional kill criteria are: Underground margin below 7.0% for two quarters without a source-bound transitory explanation; net debt/EBITDA above 2.5× without a credible recovery path; a material fixed-price charge or impairment; claims/contract assets exceeding 4% of TTM revenue or rising more than 25% year over year while operating cash flow lags; or continued acquisition-led growth without organic-growth and cohort-return disclosure. The 4% and 25% levels are analyst monitoring thresholds, not issuer guidance.

13. What survives

The physical-demand thesis survives. Power generation, transmission, substations, distribution, industrial and large-load systems require qualified field execution. Electric's near-10% segment-margin history, trained craft capacity, safety and qualification systems, specialized equipment, bonding, local relationships, and national mobilization form a credible moat. The 2046 business-relevance test survives because AI cannot physically build or restore critical infrastructure. Multi-year cash conversion, clean audited statements, disciplined SBC, an investment-grade rating, conservative guidance history, and explicit rejection of some high-risk generation contracts are genuine strengths.

What survives is therefore a **good operating company with a real but incomplete moat**, not a conservatively priced elite compounder. Management and moat remain YELLOW, acquisition-inclusive ROIIC is unproven, and price overwhelms the evidence.

14. Red-team conclusion

Thesis does NOT survive at USD 667.36. The specific break is valuation joined to unproven capital efficiency: the source-bound base produces USD 19.412 of 2031-06-30 EPS and an audited negative 15.97% shareholder IRR, while the bull also fails the P/E 15 gate and produces a negative conservative IRR. The report should be written around a credible infrastructure platform whose current security price requires performance beyond the governed bull case or continued extreme terminal multiples.

The operating thesis survives only as a watchlist-quality proposition. A materially lower price, source-bound evidence of far greater per-share earnings power, sustained Electric margin above 10% through a weaker cycle, improving acquisition-inclusive ROIC, and cash conversion without rising claims would justify re-underwriting. Until then, the red team supports **PASS / Reject**, with no trade authority and no softening of the failed valuation gate.

Governed source register

The attack used eight governed upstream artifacts: `appendix_synthesis.md`; `appendix_scoring_audit.md`; `compounder_score_audit.json`; `data_package.md`; `appendix_management.md`; `appendix_moat.md`; `appendix_B_electric_infrastructure_solutions.md`; and `appendix_B_underground_utility_and_infrastructure_solutions.md`. Their hashes are recorded above or in the scoring-audit map. Management excerpts retain the source labels and dates preserved in `data_package.md`; no unsupported competitor claim was introduced.

RT COMPLETE — RED TEAM STAGE CLEARED FOR STAGE 7

Quanta Services, Inc. (PWR) — Production ER2 Data Package

Action: CIO-20260727-PWR-FULL-ER2 **Run:** `pulse-cio-20260801T140419+0800` **Worker:** D **Information cutoff:** 2026-08-01 SGT **Reporting currency / scale:** USD billions unless a table states USD millions **Fiscal year end:** December 31 **Latest completed quarter:** Q2 2026 ended 2026-06-30, released 2026-07-30 **TTM anchor:** Q3 2025 + Q4 2025 + Q1 2026 + Q2 2026, ending 2026-06-30 **Forward horizon:** 2031-06-30, exactly five calendar years after the TTM end **Trade execution authorized:** `false`

This package reads the QFR-cleared quantitative foundation and reproduces the QFR-sealed statutory bridge. It adds source-bound operating context, management commentary, backlog, contract mix, acquisitions, workforce, capital allocation and data-gap classifications. It does not authorize a trade, order, portfolio mutation, message, ranking, sizing decision or BUY-queue action.

Source-control ledger

The governed quantitative artifacts were read but not modified. `statutory_bridge.json` validated successfully, and its exact SHA-256 matches the QFR seal: `fd60289c88cba734a999f687251dea4c6a3cf70f8a34f0cffbf63a9e1d4db9e6`. QFR also sealed `quant_foundation.md` at `4792747926f7e42b3717e874948d3010424eec14b9b64a6a988dc0647a83e5e1` and reported zero unresolved issues.

Source ID	Source and covered period	Retrieval / archive evidence	Use and precedence
QF	`quant_foundation.md`; FY2021-FY2025 and TTM 2026-06-30	Current-run governed artifact in the company workdir	Controlling for historical statements and segment taxonomy
QFR	`quant_foundation_review.md`; review completed 2026-08-01	Current-run independent review	Controls Wave 1 clearance and sealed hashes
BRIDGE	`statutory_bridge.json`; FY2025 and TTM	Validator-clean current-run packet	Controlling for labels, signs, classifications and bridge values
SEC21K	[2021 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091522000008/pwr-20211231.htm)	`raw\d\sec_pwr_2021_10k.html`; 4,022,581 bytes; SHA `1ed55a98fc73251208e8a031165413a6654ea7bfa769786e988118de2569731f`	Official control for FY2021 workforce; freshly fetched from SEC and archived non-overwriting
SEC22K	[2022 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091523000010/pwr-20221231.htm)	`raw\d\sec_pwr_2022_10k.html`; 3,780,642 bytes; SHA `c2406872d6eedbfbe149709de0d67521f5c7d44b7caa55127f56c4239df3e239`	Official control for FY2022 workforce; freshly fetched from SEC and archived non-overwriting

Source ID	Source and covered period	Retrieval / archive evidence	Use and precedence
SEC23K	[2023 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091524000009/pwr-20231231.htm)	`raw\d\sec_pwr_2023_10k.html`; 2,905,452 bytes; SHA `c08c04c47276eea544a38f71ef0aea616206a5b4e620616a6ab109816121c1ea`	Official control for FY2021-FY2023 contract mix, FY2022-FY2023 backlog and FY2023 workforce; freshly fetched from SEC and archived non-overwriting
SEC24K	[2024 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091525000005/pwr-20241231.htm)	`raw\d\sec_pwr_2024_10k.html`; 2,967,843 bytes; SHA `f60040ce8ad525b0952dfb54bf77f422bafa6d45afe316c3f377cc91ff1dfdb8`	Official control for FY2024 workforce; freshly fetched from SEC and archived non-overwriting
SEC25K	[2025 Form 10-K](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000006/pwr-20251231.htm)	`raw\pwr_2025_10K_SEC.html`; SHA `dc2d12521fc9f5feb0511c4e076850b1b0a671dda07798d1155e8f4232c99f7b`	Official control for FY2023-FY2025, segments, contracts, workforce and risks
SEC26Q2	[Q2 2026 Form 10-Q](https://www.sec.gov/Archives/edgar/data/1050915/000105091526000025/pwr-20260630.htm)	`raw\pwr_2026Q2_10Q_SEC.html`; SHA `bab73becc52179586fe155bc1c0e3b8956e1dd08da291b8d5628ddf87151691a`	Official control for Q2/H1 2026 and comparative H1 2025
IR26Q2	[Q2 2026 earnings release](https://investors.quantaservices.com/news-events/press-releases/detail/402/quanta-services-reports-second-quarter-2026-results) and SEC Exhibit 99.1	`raw\pwr_2026Q2_earnings_release_SEC_ex99-1.html`; SHA `9b146f185a5c45d72b4ca42957898bc643001bd13024a91681d1fd5341e30c5f`	Official control for current guidance, acquisitions, RPO and backlog
IR26Q1	[Q1 2026 earnings release](https://investors.quantaservices.com/news-events/press-releases/detail/396/quanta-services-reports-first-quarter-2026-results)	Live IR source and SEC Q1 archive	Official current-quarter comparison
IR25Q4	[Q4/FY2025 earnings release](https://investors.quantaservices.com/news-events/press-releases/detail/390/quanta-services-reports-fourth-quarter-and-full-year-2025-results)	Live IR source; Q4 SEC Exhibit separately reviewed by QFR	Official Q4 comparison and backlog
IR25Q3	[Q3 2025 earnings release](https://investors.quantaservices.com/news-events/press-releases/detail/385/quanta-services-reports-third-quarter-2025-results)	Live IR source and `raw\pwr_2025Q3_10Q_SEC.html`	Official Q3 comparison and backlog
FMP-D	Fifteen live `/stable/` endpoint pulls made for Worker D	`raw\d\`; 15 files; copied non-overwriting to the investing warehouse	Comparison and supplemental inputs; never overrides official SEC values

The 15 FMP archives consist of annual and quarterly income statements, balance sheets and cash-flow statements; annual key metrics, ratios and enterprise values; annual and quarterly revenue-product segmentation; and four fiscal-quarter transcript requests. The Q3 2025, Q4 2025 and Q1 2026 transcript responses contain one correctly dated transcript each. The Q2 2026 transcript response is the literal empty JSON array `[]`, two bytes, SHA-256 `4f53cda18c2baa0c0354bb5f9a3ecbe5ed12ab4d8e11ba873c2f11161202b945`. Four additional official SEC annual filings for FY2021-FY2024 were freshly fetched, hash-bound and copied non-overwriting to the same run-specific warehouse archive. No warehouse file was read as an analytical input.

0a. Industry classification and disclosure inventory

Industry: specialty infrastructure engineering and construction contractor. **Reporting regime:** U.S. GAAP domestic issuer; Forms 10-K, 10-Q and 8-K. **FMP status:** consolidated statements are populated, but product/segment endpoints are thin and the quarterly Electric series is not standalone-usable in the current reporting window. Official segment tables therefore control. Quanta is not a standard checklist industry, so the ad hoc inventory covers backlog/RPO, end-market and customer mix, exact segment operating income, contract form and project risk, workforce and safety, acquisitions and contingent consideration, debt and capital allocation, capex/FCF, and liability exposure.

Official sources searched in this run were the FY2021-FY2025 Forms 10-K, Q3 2025/Q1 2026/Q2 2026 Forms 10-Q, Q3/Q4/Q1/Q2 earnings releases, current IR financial-results page, SEC-filed earnings exhibit and the current investor materials referenced by IR. Search terms included `segment operating income`, `revenue by contract type`, `fixed price`, `remaining performance obligations`, `backlog`, `MSA`, `customer type`, `geographic`, `employees`, `craft`, `safety`, `TRIR`, `DART`, `recordable`, `acquisition`, `contingent consideration`, `capital expenditures`, `free cash flow`, `claims`, `change orders`, `wildfire`, `insurance` and `project loss`.

Dataset / table family	Official source searched	Search terms or table names	Years available	Included?	If excluded, why	Downstream relevance
Segment economics	2023/2025 10-K; 2025-2026 releases and 10-Qs	Segment Information; Supplemental Segment Data	FY2021-FY2025 plus TTM and last four quarters	Yes	None	Segment models and synthesis
RPO / backlog	Annual and quarterly releases	Remaining Performance Obligations and Backlog	FY2021-FY2025 plus Q1/Q2 2026	Yes	Legacy segment names retained where necessary	Revenue visibility and risk
Contract mix	2023 and 2025 10-K Note 4	Fixed price, unit-price, cost-plus, MSA	FY2021-FY2025	Yes	None; five-year fixed-price share is complete	Margin and execution risk
Customer / end-market mix	2025 10-K Item 1	Utility and Power; Energy and Other; Technology, Manufacturing and Communications	FY2023-FY2025	Yes	Directional percentages only; no fabricated dollars	Demand durability and concentration
Geography	2025 10-K Note 4	United States, Canada, Australia, Others	FY2023-FY2025	Yes	None	FX and geographic exposure
Workforce / safety	2021-2025 10-K Human Capital	employees, craft, union, safety, TRIR, DART	Workforce FY2021-FY2025; safety qualitative	Yes / Partly	Workforce history included; current numerical incident rates are a true non-disclosure in searched sources	Capacity and operational risk
Acquisitions / contingent consideration	2025 10-K; Q2 2026 release	acquired businesses, purchase price, contingent consideration	2025 through July 2026	Yes	Purchase accounting detail for July 2026 Enerfab is not yet fully filed	Integration, leverage and dilution
Capital / liquidity	SEC statements and FMP live statements	cash flow, capex, debt, goodwill, intangible assets	FY2021-FY2025 plus TTM	Yes	R&D is not separately disclosed	ROIC and balance-sheet durability
Project / liability risk	2025 10-K risk factors and revenue note	fixed price, claims, change orders, wildfire, insurance	FY2023-FY2025 current disclosure	Yes	Quantified expected-loss distribution not disclosed	Bear case and kill criteria

Ad hoc KPI history

KPI family	Granularity	FY2021	FY2022	FY2023	FY2024	FY2025	Latest interim / TTM	Source path
Total RPO ($B)	Consolidated	5.90	8.80	13.89	16.76	23.76	33.55 at Q2 2026	Official annual/Q2 releases
Total backlog ($B)	Consolidated	19.27	24.09	30.11	34.54	43.98	53.44 at Q2 2026	Official annual/Q2 releases
Electric/current-combined backlog ($B)	Segment; legacy Electric Power + Renewable combined where required	14.77	17.805116	23.626030	28.63 recast	36.17	43.79 at Q2 2026	FY2023 10-K backlog table for FY2022-FY2023: exact arithmetic sums of legacy Electric Power and Renewable; other years from official backlog tables
Underground backlog ($B)	Segment	4.51	6.288651	6.482389	5.91 recast	7.81	9.65 at Q2 2026	FY2023 10-K backlog table for FY2022-FY2023; other years from official backlog tables
Fixed-price revenue share	Consolidated	37.4%	42.7%	49.1%	56.2%	60.6%	No Q2 annualized disclosure	2023 and 2025 10-K Note 4 revenue-by-contract-type tables
Technology/manufacturing/communications customer mix	Consolidated, directional	Not disclosed	Not disclosed	6%	9%	13%	No Q2 mix update	2025 10-K Item 1
Employees	Consolidated	43,700	47,300	52,500	58,400	69,500	Phalcon/Perchero n/PSD/Enerfab add roughly 7,420 described employees	2021-2025 10-K Human Capital disclosures; Q2 release
FCF ($B)	Consolidated	0.197	0.703	1.141	1.477	1.621	2.391 TTM	SEC cash flow; QF

Backlog is not GAAP revenue. It includes RPO plus estimated MSA renewals and certain non-fixed-price orders, so cancellation, timing and renewal assumptions matter. At 2025 year-end, MSAs represented 44% of total backlog and customers generally were not committed to specified MSA volumes. At Q2 2026, total backlog comprised $33.554 billion of RPO plus $19.886 billion of estimated MSA and short-term/non-fixed-price orders.

1. Reporting structure and taxonomy

Quanta has two reportable segments. **Electric Infrastructure Solutions** serves electric power, power generation, large load center and communications markets, including T&D, substations, renewable and gas generation infrastructure, battery storage, emergency restoration, communications, inside electrical work and transformer/component manufacturing. **Underground Utility and Infrastructure Solutions** serves gas utility, pipeline, industrial and civil markets and now also includes turnkey mechanical, plumbing and process infrastructure for technology, semiconductor, healthcare and other load centers.

Beginning Q1 2025, management combined the historical Electric Power Infrastructure Solutions and Renewable Energy Infrastructure Solutions segments into Electric. The 2025 Form 10-K recast FY2023 and FY2024. FY2021-FY2022 remain shown in the old three-segment taxonomy in official source tables; this package combines Electric Power and Renewable for revenue/profit comparison but explicitly marks that the current taxonomy is directly comparable only from FY2023. No silent reclassification is used.

FY2025 reportable segment	Revenue ($B)	Share of consolidated	Segment operating income ($B)	Margin	Official source
Electric Infrastructure Solutions	23.001	80.8%	2.360	10.3%	2025 10-K Note 5
Underground Utility and Infrastructure Solutions	5.478	19.2%	0.398	7.3%	2025 10-K Note 5
Total reportable segments	28.480	100.0%	2.759	9.7% before corporate costs	Exact sum

Geography is U.S.-dominant: FY2025 revenue was 93.0% U.S., 3.6% Canada, 2.7% Australia and 0.7% other. Foreign revenue was 7.0% in 2025 versus 8.7% in 2024 and 14.2% in 2023. Customer mix was Utility and Power 70%, Energy and Other 17%, and Technology/Manufacturing/Communications 13% in 2025. The largest customer was 8% of revenue and the ten largest were 30%; no customer was at or above 10% in 2023-2025.

2. Consolidated historicals

Official SEC amounts control where FMP fields differ. FMP live pulls tie revenue for FY2021-FY2024 but understate FY2025 official revenue by $128.215 million and use an operating-income presentation that differs from the QFR-cleared statutory total. The table therefore uses the official QF series. FCF is operating cash flow less capex. R&D is not separately disclosed; an FMP zero is not treated as economic zero.

Metric	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	12.980	17.074	20.882	23.673	28.480	SEC/QF; FMP live comparison
Statutory operating income ($B)	0.664	0.872	1.128	1.346	1.612	SEC/QF official control
Operating margin	5.1%	5.1%	5.4%	5.7%	5.7%	Calculation
Net income attributable to common ($B)	0.486	0.491	0.745	0.905	1.028	SEC/QF
Diluted EPS ($)	3.34	3.32	5.00	6.03	6.80	SEC/QF
Diluted weighted-average shares (M)	145.373	147.992	148.823	150.056	151.291	SEC/QF
Capex ($B)	0.386	0.428	0.435	0.604	0.609	SEC cash flow/QF
Free cash flow ($B)	0.197	0.703	1.141	1.477	1.621	SEC cash flow/QF
Simplified NOPAT ($B)	0.524	0.634	0.873	1.030	1.190	Statutory OI × (1 – FMP effective tax rate)
Period-end invested capital ($B)	9.058	9.435	10.458	12.000	15.267	Live FMP key metrics
Simplified ROIC proxy	5.8%	6.7%	8.3%	8.6%	7.8%	NOPAT / period-end invested capital

The ROIC proxy is intentionally conservative and transparent: numerator equals statutory operating income after the FMP effective tax rate; denominator equals FMP period-end invested capital, not an analyst-adjusted average. Acquisition-heavy growth and intangible assets depress the result. This is not an issuer-reported KPI and should not be silently substituted for a fully normalized acquisition-adjusted ROIC analysis downstream.

TTM revenue was $32.905 billion, statutory operating income $2.036 billion, pretax income $1.756 billion, common net income $1.327 billion, day-weighted diluted shares 151.937 million and diluted EPS $8.733. TTM operating cash flow was $3.178 billion, capex $0.787 billion and FCF $2.391 billion. These amounts use FY2025 less H1 2025 plus H1 2026, except diluted shares, which use the four direct quarterly denominators day-weighted over 365 days.

3. Segment historicals

The exact sealed metric is **Segment operating income**. FY2021-FY2022 Electric below is an arithmetic combination of official Electric Power plus Renewable rows; the source taxonomy remained separate then. FY2023-FY2025 is the issuer-recast current Electric taxonomy.

Electric Infrastructure Solutions / historical combined basis	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	9.450	12.719	15.867	19.012	23.001	SEC 2023/2025 10-K Note 5
YoY	N/A	34.6%	24.8%	19.8%	21.0%	Calculation
Segment operating income ($B)	1.047	1.263	1.491	1.959	2.360	SEC 2023/2025 10-K Note 5
Margin on Segment operating income	11.1%	9.9%	9.4%	10.3%	10.3%	Calculation

Underground Utility and Infrastructure Solutions	FY2021	FY2022	FY2023	FY2024	FY2025	Source
Revenue ($B)	3.531	4.355	5.015	4.660	5.478	SEC 2023/2025 10-K Note 5
YoY	N/A	23.4%	15.2%	(7.1)%	17.5%	Calculation
Segment operating income ($B)	0.150	0.318	0.378	0.265	0.398	SEC 2023/2025 10-K Note 5
Margin on Segment operating income	4.3%	7.3%	7.5%	5.7%	7.3%	Calculation

The TTM forecast base is Electric revenue $26.905 billion, Segment operating income $2.859 billion and margin 10.6%; Underground revenue $6.000 billion, Segment operating income $0.492 billion and margin 8.2%. The two segments sum exactly to TTM revenue $32.905 billion and Segment operating income $3.351 billion before corporate and non-allocated costs.

3a. Historical statutory-profit bridge and forecast-driver ledger

The common basis is exactly **Segment operating income**, issuer disclosed. There are no operating bridge adjustment rows between consolidated segment profit after corporate/non-allocated costs and statutory operating income. Values below are USD millions and reproduce the sealed packet without reclassification.

FY2025 bridge

Bridge line	Classification	Value	Source ID	Running subtotal
Electric Infrastructure Solutions	segment profit	2,360.262	SEC_2025_10K	2,360.262
Underground Utility and Infrastructure Solutions	segment profit	398.276	SEC_2025_10K	2,758.538
Sum of reportable segment profit	segment profit	2,758.538	SEC_2025_10K	2,758.538
Corporate and non-allocated costs	corporate_unallocated	(1,147.029)	SEC_2025_10K	1,611.509
Consolidated segment profit metric	subtotal	1,611.509	SEC_2025_10K	1,611.509
Statutory operating income	statutory subtotal	1,611.509	SEC_2025_10K	1,611.509

Bridge line	Classification	Value	Source ID	Running subtotal
Interest and other financing expenses	interest	(261.445)	SEC_2025_10K	1,350.064
Interest income	interest	15.702	SEC_2025_10K	1,365.766
Other income, net	other_non_operating	23.739	SEC_2025_10K	1,389.505
Pretax income	statutory subtotal	1,389.505	SEC_2025_10K	1,389.505
Provision for income taxes	tax	(347.588)	SEC_2025_10K	1,041.917
Less: Net income attributable to non-controlling interests	noncontrolling_interests	(13.539)	SEC_2025_10K	1,028.378
Net income	statutory subtotal	1,028.378	SEC_2025_10K	1,028.378

TTM ended 2026-06-30 bridge

Bridge line	Classification	Value	Source ID	Running subtotal
Electric Infrastructure Solutions	segment profit	2,858.785	OFFICIAL_TTM_RECON_2026H1	2,858.785
Underground Utility and Infrastructure Solutions	segment profit	492.095	OFFICIAL_TTM_RECON_2026H1	3,350.880
Sum of reportable segment profit	segment profit	3,350.880	OFFICIAL_TTM_RECON_2026H1	3,350.880
Corporate and non-allocated costs	corporate_unallocated	(1,315.121)	OFFICIAL_TTM_RECON_2026H1	2,035.759
Consolidated segment profit metric	subtotal	2,035.759	OFFICIAL_TTM_RECON_2026H1	2,035.759
Statutory operating income	statutory subtotal	2,035.759	OFFICIAL_TTM_RECON_2026H1	2,035.759
Interest and other financing expenses	interest	(294.369)	OFFICIAL_TTM_RECON_2026H1	1,741.390
Interest income	interest	14.294	OFFICIAL_TTM_RECON_2026H1	1,755.684
FY2025: Other income, net; H1 2025/H1 2026: Other (expense) income, net	other_non_operating	(0.132)	OFFICIAL_TTM_RECON_2026H1	1,755.552
Pretax income	statutory subtotal	1,755.552	OFFICIAL_TTM_RECON_2026H1	1,755.552
Provision for income taxes	tax	(405.117)	OFFICIAL_TTM_RECON_2026H1	1,350.435
Less: Net income attributable to non-controlling interests	noncontrolling_interests	(23.559)	OFFICIAL_TTM_RECON_2026H1	1,326.876
Net income	statutory subtotal	1,326.876	OFFICIAL_TTM_RECON_2026H1	1,326.876

All five packet residuals are zero for both anchors, versus a $0.001 million tolerance.

Historical bridge line	FY value	TTM value	Forecast treatment	Driver and source	Bear / base / bull rule
Corporate and non-allocated costs	(1,147.029)	(1,315.121)	Independently forecast corporate expense	Revenue scale plus disclosed amortization, SBC, acquisition/integration and corporate costs; 10-K/Q2 release	Bear: higher acquisition/integration and SBC burden; base: percentage of revenue informed by TTM; bull: modest scale leverage only
Interest and other financing expenses	(261.445)	(294.369)	Debt and interest-rate schedule	Gross debt, acquisition funding, maturity profile and current rate; SEC balance sheet	Bear: higher debt/rate; base: current debt with planned FCF reduction; bull: faster deleveraging
Interest income	15.702	14.294	Cash balance × yield	SEC cash balance and conservative yield	Bear: lower cash/yield; base: normalized cash; bull: higher cash/yield
Other income / expense, net	23.739	(0.132)	Independently forecast non-operating line	Source history is volatile and near zero TTM	Bear: small expense; base: zero-centered; bull: small income; never use as a plug

Historical bridge line	FY value	TTM value	Forecast treatment	Driver and source	Bear / base / bull rule
Provision for income taxes	(347.588)	(405.117)	Pretax income × effective tax rate	FY2025 25.0% statutory rate and 2026 guidance context	Bear: 26%; base: 25%-25.5%; bull: 24%-25% only with evidence
Less: Net income attributable to non-controlling interests	(13.539)	(23.559)	Percentage of applicable JV/segment earnings	SEC historical NCI and JV disclosure	Bear: higher deduction; base: TTM relationship; bull: lower deduction only if ownership mix supports it

STATUTORY_BRIDGE_STATUS: VERIFIED — CLEARED FOR FORECASTING

4. Product and sub-segment historicals

Quanta separately discloses dollars only at the two reportable segments in the current taxonomy. Electric service families—T&D, substations, power generation, renewables/storage, communications, inside electrical, transformer/component manufacturing—and Underground service families—gas utility, pipeline, civil, industrial, mechanical/plumbing/process infrastructure—are described but not separately revenue-disclosed. No product dollar series is invented or back-solved.

Segment	Product / service family	What it is	Dollar disclosure?	Historical revenue and source
Electric	Electric T&D, substations and restoration	Design, construction, upgrade, maintenance and emergency restoration	No below segment	True non-disclosure after 2025 10-K Note 5 and Q2 release search
Electric	Power generation, renewables and storage	Generation EPC-related solutions, solar, wind, gas and storage infrastructure	No below segment	True non-disclosure; only segment total disclosed
Electric	Load center / inside electrical / communications	Electrical, modular and communications infrastructure	No below segment	True non-disclosure; customer-type mix is directional only
Electric	Transformer and component manufacturing	Critical-path supply-chain products and fabrication	No below segment	True non-disclosure; capex plan disclosed, revenue not isolated
Underground	Gas utility and pipeline	Distribution, transmission, integrity and maintenance	No below segment	True non-disclosure; large-diameter work described directionally
Underground	Civil and industrial	Civil works, fabrication, turnaround and industrial services	No below segment	True non-disclosure
Underground	Mechanical/plumbing/process load-center work	Dynamic Systems and related mission-critical facility services	No below segment	True non-disclosure; acquisitions contribute to segment total

Segment	Product / end market	Disclosure method	Last four quarters YoY growth	Source
Electric	Reportable segment total	Dollar revenue and YoY derivable	17.9%, 19.5%, 30.8%, 43.6%	Q3/Q4/Q1/Q2 official releases
Underground	Reportable segment total	Dollar revenue and YoY derivable	15.9%, 20.6%, 9.1%, 30.7%	Q3/Q4/Q1/Q2 official releases
Consolidated	Technology/manufacturing/communications customer type	Annual directional share, not product revenue	Not separately disclosed quarterly	2025 10-K Item 1
Consolidated	Utility and Power	Annual directional share, not product revenue	Not separately disclosed quarterly	2025 10-K Item 1

5. Most recent quarterly trend

Quanta's FY ends December 31. Most recently completed fiscal quarter at time of writing: FY2026 Q2, covering 2026-04-01 through 2026-06-30, reported 2026-07-30 via the [official IR release](https://investors.quantaservices.com/news-events/press-releases/detail/402/quanta-services-reports-second-quarter-2026-results).

Quarter	Consolidated revenue ($B)	YoY	Statutory OI margin	Total RPO ($B)	Total backlog ($B)	Source
Q3 2025	7.631	17.5%	6.8%	21.0	39.2	Official Q3 release, 2025-10-30

Quarter	Consolidated revenue ($B)	YoY	Statutory OI margin	Total RPO ($B)	Total backlog ($B)	Source
Q4 2025	7.842	19.7%	6.2%	23.763	43.976	Official Q4 release, 2026-02-19
Q1 2026	7.875	26.3%	4.3%	26.242	48.471	Official Q1 release, 2026-04-30
Q2 2026	9.557	41.1%	7.3%	33.554	53.440	Official Q2 release, 2026-07-30

Quarter	Electric revenue ($B)	YoY	Segment operating margin	Underground revenue ($B)	YoY	Segment operating margin	Source
Q3 2025	6.172	17.9%	11.4%	1.459	15.9%	8.4%	Official Q3 release
Q4 2025	6.427	19.5%	10.8%	1.415	20.6%	7.7%	Official Q4 release
Q1 2026	6.469	30.8%	8.7%	1.406	9.1%	7.5%	Official Q1 release
Q2 2026	7.838	43.6%	11.5%	1.719	30.7%	9.1%	Official Q2 release

At Q2, Electric RPO was $29.115 billion and backlog $43.790 billion; Underground RPO was $4.440 billion and backlog $9.650 billion. Twelve-month backlog was $32.314 billion, equal to 98% of TTM revenue, but it is not a guaranteed conversion schedule. The official release warns that accelerations, cancellations, permitting, adverse weather and change-order acceptance can shift recognition.

Current 2026 guidance is revenue $39.3-$39.7 billion, common net income $1.74-$1.82 billion, GAAP diluted EPS $11.41-$11.92, adjusted EPS $16.45-$16.95, EBITDA $3.74-$3.86 billion, adjusted EBITDA $4.09-$4.21 billion, operating cash flow $2.90-$3.40 billion and FCF $2.00-$2.50 billion. This is management guidance, not a Worker D forecast.

6. Management commentary on forward growth

Transcript integrity and fallback

FMP transcript pulls were made for all four fiscal quarters. Q3 2025 returned date 2025-10-30, Q4 2025 returned 2026-02-19 and Q1 2026 returned 2026-04-30, each within the expected call window. Q2 2026 returned `[]`; the identical endpoint was not replaced by a cached transcript. The official Q2 IR earnings release, SEC Exhibit 99.1, Q2 10-Q and IR operational materials control that quarter. Short excerpts below are deliberately limited; interpretations are paraphrases tied to the same source.

Electric Infrastructure Solutions

Fiscal period / call date	Speaker	Short verified excerpt	Topic	Modeling interpretation	Source
Q3 2025 / 2025-10-30	Duke Austin, CEO	“accelerating demand in our Electric segment”	Demand	Supports positive volume, but not an unconstrained growth rate	FMP transcript 2025 Q3; date-verified
Q3 2025 / 2025-10-30	Duke Austin, CEO	“not taking risk on these kind of projects”	Contract risk	Large generation work should be modeled only with risk-adjusted contract structure	FMP transcript 2025 Q3
Q4 2025 / 2026-02-19	Duke Austin, CEO	“fastest-growing piece of backlog”	Load centers	Data-center exposure is expanding, but backlog composition must remain source-bound	FMP transcript 2025 Q4
Q4 2025 / 2026-02-19	Duke Austin, CEO	“firm fixed price generation, not doing it.”	Generation	Do not assume firm-fixed-price generation margin without contract evidence	`raw\d\fmp_transcript_2025_q4.json`; live FMP response dated 2026-02-19; SHA `ef7eb1eb88fef0812e1509d11038f1598e398baa0e07274e3833c63ef8926449`
Q1 2026 / 2026-04-30	Jayshree Desai, CFO	“record $48.5 billion of backlog”	Visibility	Supports near-term revenue visibility but includes nonbinding MSA estimates	FMP transcript 2026 Q1
Q1 2026 / 2026-04-30	Duke Austin, CEO	“we’ll be prudent about how we take risk”	Execution	Bear case should widen for generation/project execution, base case should retain discipline	FMP transcript 2026 Q1
Q2 2026 / 2026-07-30	Duke Austin, CEO	“total backlog reached a record level”	Demand	Q2 momentum supports the current-year guide, subject to conversion timing	Official IR/SEC Q2 release fallback
Q2 2026 / 2026-07-30	Duke Austin, CEO	“deepen our self-perform, craft-skilled capabilities”	Acquisitions	Acquisitions expand capacity but raise integration, debt and contingent-payment risk	Official Q2 2026 IR release, Duke Austin quotation; SEC Exhibit 99.1 fallback

Underground Utility and Infrastructure Solutions

Fiscal period / call date	Speaker	Short verified excerpt	Topic	Modeling interpretation	Source
Q3 2025 / 2025-10-30	Duke Austin, CEO	“record backlog of $39.2 billion”	Portfolio demand	Broad-based backlog supports both segments, but segment mix must come from official tables	FMP transcript 2025 Q3
Q3 2025 / 2025-10-30	Duke Austin, CEO	“craft skill is at the core”	Workforce	Capacity and training are a central driver; labor availability remains a constraint	FMP transcript 2025 Q3
Q4 2025 / 2026-02-19	Duke Austin, CEO	“total backlog of $44 billion”	Visibility	Year-end backlog supports the 2026 opening base, not a guaranteed order book	FMP transcript 2025 Q4
Q4 2025 / 2026-02-19	Duke Austin, CEO	“acquisitions we completed in 2025”	M&A	Dynamic Systems and other deals materially changed mix and comparability	FMP transcript 2025 Q4
Q1 2026 / 2026-04-30	Duke Austin, CEO	“opportunity to more than double the earnings power”	Long-range aspiration	Treat 2030 ambition as a testable management target, not as a forecast fact	FMP transcript 2026 Q1; Duke Austin statement before handoff to CFO
Q1 2026 / 2026-04-30	Duke Austin, CEO	“primary use of capital”	Capital allocation	Acquisitions remain likely; model leverage and share issuance explicitly	FMP transcript 2026 Q1
Q2 2026 / 2026-07-30	Duke Austin, CEO	“significantly increasing our full-year 2026 financial expectations”	Guidance	Raise current-year anchor to the official Q2 range, with acquisition contribution separated	Official IR/SEC Q2 release fallback
Q2 2026 / 2026-07-30	Duke Austin, CEO	“partner of choice”	Competitive position	Qualitative confidence does not remove project, integration or customer risks	Official IR/SEC Q2 release fallback

Management also disclosed a $500-$700 million multi-year transformer/vertical-supply-chain investment and a plan to nearly double off-site manufacturing, fabrication and logistics facilities to about 6.7 million square feet. Quanta described 2030 earnings-power ambitions at its March 2026 Investor Day. Downstream models must separate organic execution from acquired revenue, avoid treating nonbinding MSA estimates as contracted RPO, and retain the stated unwillingness to accept certain generation-project risks.

7. Capital allocation history

R&D is not separately disclosed by this contractor; the FMP statement field is zero-filled and is classified as true non-disclosure, not zero economic investment. M&A reflects cash outflow reported by live FMP cash-flow statements. Buybacks use the official open-market series from QF and exclude employee tax-withholding settlements.

Year	Capex ($B)	Capex / revenue	R&D ($B)	R&D / revenue	Buybacks ($B)	Dividends ($B)	M&A cash outflow ($B)	Source
2021	0.386	3.0%	Not separately disclosed	N/A	0.067	0.034	2.591	SEC/QF; FMP cash flow
2022	0.428	2.5%	Not separately disclosed	N/A	0.128	0.041	0.273	SEC/QF; FMP cash flow
2023	0.435	2.1%	Not separately disclosed	N/A	0.000	0.048	0.659	SEC/QF; FMP cash flow
2024	0.604	2.6%	Not separately disclosed	N/A	0.000	0.054	1.828	SEC/QF; FMP cash flow
2025	0.609	2.1%	Not separately disclosed	N/A	0.135	0.060	3.104	SEC/QF; FMP cash flow

At Q2 2026, the board had authorized a new $1 billion repurchase program, while the prior program had repurchased 540,788 shares for about $135 million before expiry. The quarterly dividend was $0.11 per share. These authorizations do not imply future use; acquisitions remained a major deployment priority.

8. Balance-sheet snapshot

Item at FY2025	$B	Source
Cash and equivalents	0.440	2025 10-K / QF

Item at FY2025	$B	Source
Short-term investments	0.000	2025 10-K / live FMP balance sheet
Gross debt including finance leases, excluding operating leases	5.995	2025 10-K / QF
Operating lease liabilities	0.424	2025 10-K / QF
Net debt excluding operating leases	5.555	Calculation from QF
FMP EBITDA	2.517	Live FMP annual income statement
Net debt / FMP EBITDA	2.21×	Calculation
Goodwill + intangible assets	10.223	2025 10-K / live FMP balance sheet
Total stockholders' equity	8.938	2025 10-K
Tangible book value	(1.285)	Equity less goodwill and intangibles

At Q2 2026, cash was $0.506 billion, debt including finance leases was $6.105 billion, operating lease liabilities were $0.498 billion and net debt excluding operating leases was $5.598 billion. Moody's upgraded the senior unsecured notes to Baa2 and commercial paper to Prime-2 in June 2026, but acquisition funding increased gross debt and contingent obligations remain relevant.

9. Recent corporate actions

- **2025-07-25 — Dynamic Systems:** acquired turnkey mechanical, plumbing and process infrastructure capability, primarily in Underground, expanding technology/semiconductor/healthcare/load-center exposure. Source: 2025 10-K.
- **Q4 2025 — Tri-City, Wilson and Billings:** acquisitions expanded electrical, utility and helicopter capabilities; aggregate upfront consideration was about $1.7 billion funded with cash and stock. Source: Q4 transcript and 2025 10-K.
- **2026-03-31 — Investor Day:** management outlined a 2030 opportunity to more than double earnings power. This remains an aspiration requiring scenario testing. Source: official Investor Day/earnings references.
- **2026-05 — Capital return:** board authorized a new $1 billion repurchase program and declared a $0.11 quarterly dividend. Source: Q2 2026 release.
- **2026-06 — Hyosung HICO Breaker JV:** formed a domestic high-voltage circuit-breaker manufacturing joint venture to address critical supply-chain constraints. Source: Q2 2026 release.
- **2026-06 — Credit rating:** Moody's upgraded Quanta's senior unsecured rating to Baa2 and commercial-paper rating to Prime-2. Source: Q2 2026 release.
- **Q2/July 2026 — Phalcon, Percheron, PSD and Enerfab:** aggregate upfront consideration about $1.24 billion, including about $1.07 billion cash and $173.3 million stock, plus up to $242.3 million contingent consideration. Expected 2026 contribution is $1.2-$1.4 billion revenue and $120-$140 million adjusted EBITDA, mostly Electric. Source: Q2 2026 release.

These transactions add roughly 7,420 described employees across Phalcon, Enerfab, Percheron and PSD to a FY2025 workforce of about 69,500, but exact pro-forma headcount after overlaps and timing is not disclosed. FY2025 employees included about 55,700 hourly and 13,800 salaried staff; 36% were covered by collective bargaining agreements. Quanta's training infrastructure includes Northwest Lineman College and the Quanta Advanced Training Center. Numerical current TRIR/DART/lost-time rates were not disclosed in the searched 2025 10-K, Q2 10-Q or Q2 release.

10. Open data gaps and risk controls

Classification	Gap / control	Sources and search terms checked	Downstream treatment
True non-disclosure	Revenue below the two reportable segments	2025 10-K Note 5; Q1/Q2 releases; `product`, `service`, `load center`, `manufacturing`	Do not invent product dollars; model at segment level
True non-disclosure	Current numerical safety rates such as TRIR, DART and lost-time incident rate	2025 10-K; Q2 10-Q; Q2 release; `TRIR`, `DART`, `recordable`, `lost time`	Use qualitative safety controls and monitor future sustainability data; no fabricated rate

Classification	Gap / control	Sources and search terms checked	Downstream treatment
True non-disclosure	R&D expense	SEC statements and live FMP statement; `research and development`	Show N/A, not zero; capex/training/acquisition investment remains visible
True non-disclosure	Customer/end-market dollar revenue below management's directional percentages	2025 10-K Item 1; `customer type`, `technology`, `utility`	Use percentages only; no back-solved dollars
True non-disclosure	Fully quantified fixed-price project-loss probability distribution	2025 10-K risk/revenue note; `fixed price`, `loss`, `change order`, `claim`	Scenario-test margin and cash conversion; no statistical precision
Estimated	FY2021-FY2022 current-Electric combined revenue/profit	Official Electric Power + Renewable rows	Labeled arithmetic combination across old taxonomy; current direct comparability starts FY2023
Not fetched / omitted	Full Q2 2026 verbatim call transcript	Live FMP endpoint returned `[]`; official IR provides audio and prepared commentary	Official IR/SEC release and filed statements control; no cached transcript used
Not applicable	Product-level last-four-quarter growth below segments	Issuer does not report product dollars	Segment trends are the finest auditable granularity

Project, contract and liability controls

Fixed-price revenue rose from 49.1% in FY2023 to 60.6% in FY2025. Quanta recognizes these contracts over time using cost-to-cost progress, so revisions in estimated costs or variable consideration can affect current-period revenue and margin. Estimate changes increased reported revenue by 0.2% in each of FY2024 and FY2025 and 0.4% in FY2023. This is not material historically, but the rising fixed-price mix is a load-bearing monitoring item.

At FY2025, $983.6 million of revenue associated with unapproved change orders and claims was recognized in contract assets, versus $733.6 million in FY2024. The largest component related to a completed Canadian renewable transmission project affected by productivity, delay, labor and logistics issues. Collection and claim resolution therefore remain cash-conversion risks even though the project was completed in 2024.

Other explicit 10-K risks include wildfire and explosion exposure, possible liabilities beyond insurance coverage, permitting/right-of-way delays, adverse weather, material and equipment availability, skilled-labor shortages, customer cancellation rights, MSA volume noncommitment, acquisition integration, goodwill/intangible impairment and funding access. These constraints should narrow confidence ranges rather than be ignored.

Worker D self-verification

- **Largest-segment current growth:** the official Q2 2026 release reports Electric revenue of $7.838 billion versus $5.458 billion, a derived 43.6% YoY increase, and an 11.5% Segment operating income margin. The source was fetched live from Quanta IR in this run.
- **Management-commentary check:** the live FMP Q1 2026 transcript returned date 2026-04-30 and contains the short verified backlog and risk excerpts used above. The Q2 2026 endpoint was empty and is explicitly replaced only by official IR/SEC disclosure, not cache.
- **FY2025 revenue check:** live FMP annual income statement returned $28.351 billion versus official $28.480 billion, a 0.45% difference and therefore within the required 1% self-check. The official SEC amount controls, and the difference is disclosed rather than silently normalized.

FMP archive manifest

Artifact group	Files	Local archive	Warehouse copy	Status
Statements and metrics	9	`raw\d\`	`data warehouse\er2_raw\Quanta Services, Inc\pulse-cio-20260801T140419+0800\d\`	9/9 preserved
Segment endpoints	2	`raw\d\`	Same non-overwriting warehouse directory	2/2 preserved
Transcript endpoints	4	`raw\d\`	Same non-overwriting warehouse directory	3 populated; Q2 explicitly empty

Artifact group	Files	Local archive	Warehouse copy	Status
Official annual SEC filings	4	`raw\d\sec_pwr_2021_10k.html` through `sec_pwr_2024_10k.html`	Same non-overwriting warehouse directory	4/4 freshly fetched and exact-hash matched
Total	19	Current ER2 workdir	Investing data warehouse	19/19 preserved; zero warehouse reads

Terminal control

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WORKER D COMPLETE — DATA PACKAGE READY FOR INDEPENDENT REVIEW
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