

Toyo Tanso Co., Ltd. (TSE: 5310)

The graphite at the bottom of every crystal-growth furnace, and now at the core of the reactors being built to power AI. What I found, and what would change my mind.

Sourcing key used throughout: **[C]** figure reported by the company. **[M]** market data as of the July 17, 2026 close. **[P]** primary announcement from a named counterparty. **[E]** my own estimate or arithmetic. **[U]** unverified, from secondary sources, needs the annual report.

The idea

My starting point is a simple belief: the most durable way to be exposed to the AI buildout is to own its basic material inputs, the upstream consumables that every downstream technology needs no matter which architecture wins. Toyo Tanso fits that idea twice. In semiconductors, it makes the ultra-high-purity isostatic graphite crucibles, heaters, and susceptors that silicon pullers, SiC furnaces, and MOCVD reactors consume at high temperature. These are recurring consumables, not one-time equipment, and they get bought whether GaN beats SiC or the other way around. In nuclear, its IG-110 grade is one of a very small number of irradiation-qualified fine-grain graphites in the world. Graphite in a high-temperature gas-cooled reactor acts as both neutron moderator and structural component, which is what lets the reactor run hot while staying safe **[P]**. Every HTGR being built to power data centers is, structurally, a stack of precision graphite.

What I think the market gets wrong: it treats Toyo Tanso as a semiconductor cyclical with a nuclear headline attached, when the nuclear qualification moat took decades to build and does not rise or fall with the chip cycle. Two things temper that view as of July 2026. The stock has already re-rated substantially, and management guides this year's operating profit down on higher revenue. Both are addressed below rather than buried.

Where this came from

I did not find this name in a stock screener. It came out of mapping the compound-semiconductor supply chain layer by layer for my AI Supply Chain Globe project, then scoring 100+ companies against three tests: is it genuinely upstream and hard to replace, does the critical product actually move revenue, and is it underfollowed relative to how important it is. Toyo Tanso scored highest, ahead of Mersen, Aixtron, Tokai Carbon, and Soitec. The consumable-graphite layer turned out to be the most attractive place to look, because it does not care which device technology wins. They sell the crucible either way.

The numbers

Metric	Reading	Why it matters
FY2025 net sales [C]	¥46.2B, down 13.0% from ¥53.1B	The semiconductor downcycle is real and already in the numbers
FY2025 operating profit [C]	¥6.8B, down 44.8%	Operating margin fell from about 23% to about 15% [E]
FY2025 EPS / net margin [C][E]	¥260.58; net margin about 11.8%, from 18.7%	Margin, not revenue, is where the cycle shows up first
Q1 FY2026 (Jan to Mar) [C]	Sales ¥10.58B (-7.8%); operating profit ¥634M (-70.3%); net income ¥609M (-52.3%)	An 8% revenue decline produced a 70% profit decline. This is the operating-leverage warning label
Q1 FY2026 orders [C]	¥11.5B, above the ¥10.6B of sales booked	Orders running ahead of revenue is the strongest forward-looking datapoint in the release

FY2026 company guidance [C]	Sales ¥49.0B (+6.1%); operating profit -8.3%; ordinary profit -25.8%; net income ¥5.0B	Management is guiding revenue up and profit down. Read that twice before underwriting a recovery
FY2030 mid-term plan [C]	¥74B sales, 24% operating margin, ¥37.5B capex	Requires about 11% annual sales growth and roughly doubling operating margin from this year's implied ~13% [E]
Price and multiple [M]	¥6,480 close (Jul 17, 2026); market cap ~¥136B; P/E ~28x; 52-week range ¥3,850 to ¥8,990	Traded above ¥7,600 in late May, up 93% over twelve months, then gave back roughly 28% from the high [E]
Next catalyst [C]	Q2 FY2026 results, August 6, 2026	First real check on whether margins are bottoming and whether the order book held

Business mix, still unverified **[U]**: roughly 60% Special Graphite, 22% Compound and Other, 18% Carbon Products, with semiconductor end-markets somewhere near 45% of revenue. These come from secondary sources and I have not tied them to the annual securities report. Treat them as directional. Making isostatic graphite takes months per batch, and that slow production cycle is itself part of the moat. Coverage is thin, roughly a dozen analysts, mostly Japan-domestic.

The nuclear side

AI data centers need baseload power, that demand is reviving advanced nuclear, and high-temperature gas-cooled reactors (unlike light-water SMR designs) use graphite as both moderator and core structure. Timing matters: the anchor contract was announced in November 2025, so it is not new information and the market has had eight months to price it. Its value is as proof of qualification rather than as a catalyst. A US developer, under a DOE demonstration program, evaluated the world's fine-grain graphite producers and put IG-110 in the core structure of its first commercial reactor. The live question is conversion of the follow-on: Toyo Tanso has signed an advance payment agreement with X-energy covering four additional units planned with Energy Northwest, with a formal supply agreement to be announced if confirmed **[C]**. That second contract, not the first, is what I am actually watching.

Program	Status	Graphite relevance
X-energy Xe-100. Long Mott Generating Station, four units at Dow's Seadrift site, Texas [P]	Announced Nov 10, 2025; supported by the DOE Advanced Reactor Demonstration Program	Definitive supply agreement with Toyo Tanso USA for IG-110 core structural components, approximately \$40M, company estimate ¥5-6B at ¥145/USD [P][C] . Delivery planned 2028; revenue recognized percentage-of-completion across FY2027-28 [C]
Cascade Advanced Energy Facility, Energy Northwest with Amazon [C]	Four additional Xe-100 units; advance payment agreement signed with X-energy	Formal supply agreement to be announced if confirmed [C] . Conversion of this into a definitive contract is the nearest-term observable test of whether Seadrift was a one-off or the start of a program
X-energy wider pipeline [P]	Amazon and Energy Northwest 5+ GW by 2039; Centrica 6 GW in the UK	Announced engagements potentially exceeding 11 GW, about 144 Xe-100 units [P] . At the Seadrift rate that implies roughly \$1.2B to \$1.5B of graphite spread over more than a decade and split across suppliers [E]
SGL Carbon, separate award	Roughly \$100M over three years plus a ten-year framework [U]	For medium-grain NBG-18, a different component class from Toyo Tanso's fine-grain IG-110. Complementary, not head-to-head, but it caps how much pricing power to assume
Jimmy Energy, France [C]	High-temperature industrial-heat micro-reactor developer; graphite-moderated, helium-cooled	Order for a complete set of graphite products, with Jimmy selecting IG-110 specifically. Shipping first half of 2026, sales recorded in 2026 [C] . A second independent developer choosing the same grade is the clearest evidence that the qualification moat is real

Valar Atomics, private [U]	Ward 250 reported at zero-power criticality June 2026 under the DOE pilot; raised \$450M at about \$2B	Design is about as graphite-heavy as a reactor gets: graphite-moderated core, TRISO fuel in graphite compacts. Supplier undisclosed. Who they qualify is a checkable future datapoint, not a current input
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Why I track Valar even though it is private and I cannot own it: it tells me which direction demand is heading. If the HTGR future is a handful of utility-scale plants, graphite is a lumpy project business. If it is a world of mass-manufactured microreactors, nuclear graphite starts to look like what Toyo Tanso already does best, which is standardized recurring precision parts. The qualified-supplier list for irradiation-grade fine-grain graphite is short, and the US has no domestic production at scale. But I keep the sizing honest: the Seadrift order is about \$40M against roughly ¥46B of annual revenue. Even the full 144-unit pipeline, if it ever arrives and if Toyo Tanso keeps the whole fine-grain share, is a durable second leg rather than a transformation.

Ways I could be wrong

1. **Management is guiding profit down this year.** The strongest bear point is not mine, it is the company's. FY2026 guidance is sales up 6.1% with operating profit down 8.3% and ordinary profit down 25.8% [C]. If margin compression persists on rising revenue, the operating-leverage story cuts against me for longer than one cycle, and the FY2030 target of 24% starts to look like an aspiration rather than a plan.
2. **The stock already moved.** Up about 93% over twelve months as of late May, and even after giving back roughly 28% from the high it trades near 28x earnings on depressed profit [M][E]. The underfollowed condition that made the original screen interesting has largely played out, and the entry math is materially less forgiving than it was at ¥4,000.
3. **Nuclear is still small money.** About \$40M of contracted graphite against roughly ¥46B of annual revenue [P][C]. For the next several years the income statement is a semiconductor story. Nuclear is an option on the 2030s and I try to treat it that way rather than let it carry the case.
4. **Pricing power in nuclear graphite is limited.** X-energy buys fine-grain IG-110 from Toyo Tanso and medium-grain NBG-18 from SGL Carbon. Those are different component classes rather than head-to-head substitutes, but SGL's award is larger and runs on a longer framework. A supplier that is one of two qualified names on a program does not set price.
5. **Localization erodes the moat.** China proved it can happen: HTR-PM started on imported graphite and China then built domestic supply. If US industrial policy decides nuclear graphite must be made domestically, the export franchise weakens. The counterweight is that incumbents are the obvious partners for any onshoring effort.
6. **Valar may not pan out.** Zero-power criticality proves physics, not power operations or economics, and credible industry people have said exactly that. Valar sits in this memo as evidence about demand direction with one checkable catalyst, and contributes nothing to the base case.
7. **Valuation opinion is genuinely split.** One published fair-value estimate sits well above the current price while the consensus analyst target sits well below it [U]. When a dozen analysts disagree that widely, the honest reading is that this is a judgment call on the 2030s, not a modelling exercise.

Scenarios

I frame bear, base, and bull around management's FY2030 plan, and I vary operating margin rather than revenue, because both the March quarter and this year's guidance show margin is what actually swings. Bear: the downturn drags on, margins stay compressed through the ¥37.5B capex program, and FY2030 targets get reset. Base: revenue recovers roughly in line with guidance, margins begin recovering in FY2027 as the mix improves, and Seadrift graphite revenue lands across FY2027 and FY2028. Bull: a semiconductor upcycle plus the microreactor scenario starting to convert, where another HTGR developer qualifying IG-110 would be the visible trigger. The numbers behind these are scaffolding for my own thinking rather than forecasts; segment margin disclosure would be required to build anything tighter.

Risk ledger, ranked by severity

- **Operating leverage:** an 8% revenue decline produced a 70% operating-profit decline in Q1, and management guides profit down again this year
- **Valuation:** the 2026 run-up consumed much of the mispricing the original screen found
- **Execution:** ¥37.5B of capex against a FY2030 margin target that implies roughly doubling from current levels
- **Customer concentration:** a small set of large furnace operators, substrate growers, and now reactor developers
- **Structural:** thin Tokyo liquidity, yen exposure, China revenue exposure, and long-run localization of nuclear graphite

What would change my mind

Against the thesis: margins failing to recover through FY2027 as the order book converts. The Q1 order strength reversing at the August 6 print. Nuclear orders stalling at Seadrift while the 11 GW pipeline slips. A major HTGR developer qualifying a new entrant's fine-grain graphite, which would break the short-supplier-list premise. Furnace makers designing graphite consumables out of their equipment. For the thesis: the Cascade advance payment agreement converting into a definitive supply contract. A US microreactor developer, Valar or a peer, publicly qualifying IG-110. Orders continuing to run ahead of sales for a second and third quarter.

What I still have not verified

The segment revenue split and the roughly 45% semiconductor share come from secondary sources and need the annual securities report filed March 25, 2026. The exact date of the ¥8,990 high is unconfirmed; the stock traded above ¥7,600 in late May. Segment-level margin is not disclosed, which means the economics of nuclear graphite relative to semiconductor consumables cannot currently be proven from public filings by anyone, including me. That gap is the main reason I size this as a watch item rather than a conviction position.

Sources: Toyo Tanso FY2025 consolidated results (February 16, 2026) and Q1 FY2026 results (May 2026); X-energy press release dated November 10, 2025; market data as of the July 17, 2026 close; trade press and secondary sources where marked [U]. Toyo Tanso reports on a January to December fiscal year, so cross-source fiscal-year labels need care. Market figures move daily. This is independent research I produced for my own learning and portfolio of work. It is not investment advice, I hold no position, and I am not a licensed financial advisor.