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BUSINESS EDITION — CONSTRUCTION & MANUFACTURING SECTOR

20 MAY 2026

Operation Epic Fury — Day 82 | CEASEFIRE COLLAPSED | Strait of Hormuz Largely Closed | Brent ~$110/bbl

Verticals Covered:

General Construction | Data Center Construction | Heavy Civil & Infrastructure
Steelmaking & Refractories | Cement, Glass & Non-Ferrous Metals
Petrochemical & Refining | Food & Agricultural Processing | Defense Industrial Base

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⚡ FLASH — CEASEFIRE COLLAPSED | Op Epic Fury Day 82 | Hormuz Largely Shut | Brent ~$110 | Diesel ~$5.60 Nat. Avg, $6+ Midwest

CONFLICT STATUS	The two-week ceasefire announced 07-APR did not hold. Talks in Islamabad never produced a framework; the parties have since cycled through multiple failed proposals. As of mid-May, the US naval blockade of Iranian Gulf ports continues and the Strait of Hormuz remains largely closed to commercial traffic, with up to ~20,000 seafarers reported stranded earlier in the conflict. Trump on 18-MAY again said he had held off a planned strike at the request of Gulf allies and that "serious" talks were underway; Iran has not confirmed. Axios reporting describes a near-miss on a one-page memorandum of understanding, but no deal has been signed. Treat all "imminent deal" headlines as unconfirmed until a Western carrier announces Gulf route resumption.
PHYSICAL MARKET	A ceasefire would NOT equal immediate normalization, and there is no ceasefire to begin with. Sequence to physical relief once a deal is signed: (1) Hormuz transit protocol accepted by Lloyd's insurers — days to weeks; (2) tanker war-risk premiums fall — 1 to 2 weeks; (3) Maersk / MSC / CMA CGM announce Gulf route resumption — 1 to 3 weeks; (4) diesel at the US pump responds — 3 to 5 weeks; (5) construction materials and freight costs normalize — 4 to 6 weeks minimum. Plan Q2 and Q3 procurement on the assumption that elevated energy and freight costs persist through the summer.
ANALYST ASSESSMENT	**PRIMARY ASSESSMENT:** Construction and manufacturing operators face a sustained, not transitory, cost and risk environment. Three independent cost shocks are now stacked: (1) Iran-war energy and freight escalation, reversible only on a genuine ceasefire-plus-normalization horizon; (2) the restructured Section 232 metals regime, now assessed on FULL customs value at rates up to 50 percent, which is a policy variable independent of the war; (3) the China critical-minerals architecture, currently in a suspension window that expires November 2026. A ceasefire addresses only the first. Operators planning past Q3 should budget for all three persisting. **PROCUREMENT POSTURE:** Do NOT stand down buffer inventory, cancel forward contracts, or relax cyber hardening on the strength of any ceasefire headline. Maintain a $5.50-plus diesel floor in all project cost models. Review every fixed-price contract signed before 06-APR for Section 232 escalation exposure.
ALT HYP	**RAPID RESOLUTION (assessed unlikely, roughly 20-30%):** A signed memorandum of understanding produces a credible Hormuz monitoring mechanism within weeks; Western carriers resume Gulf routes; Brent eases toward $90 over the fourth quarter, consistent with Goldman Sachs' revised forecast. Diesel follows over 5 to 8 weeks. Even in this case, the Section 232 and China-minerals cost layers remain. **ESCALATION (assessed roughly even chance, 35-45%):** Talks collapse definitively; strikes resume; Brent re-spikes toward the $130-150 range Citi has flagged if flows stay disrupted through end-June. Diesel sets new national records; construction freight and metals costs re-escalate. Monitor: no

	Western carrier Gulf-route announcement; any new strike reporting; SPC/insurer war-risk reclassification.

ENERGY	Brent ~$110/bbl, WTI ~$95 (mid-May). Diesel national average ~$5.60/gal, with Michigan, Illinois and Indiana at or above $6.00 record territory. Do NOT model a ceasefire as imminent energy relief. Construction equipment fuel budgets for Q2 and Q3: hold a $5.50-plus diesel floor.
SUPPLY CHAIN	Hormuz largely closed; no Western carrier has resumed Gulf routes. Cape-of-Good-Hope rerouting adds roughly 10 to 20 days transit and an 18 to 27 percent cost premium on affected lanes. Imported equipment, MEP systems and specialty hardware: extend lead-time assumptions in all project schedules.
CONSTR-UCTION	Section 232 derivative tariffs (restructured 02-APR, effective 06-APR) now apply to FULL customs value at up to 50 percent on fabricated steel, aluminum and copper articles. Data center construction demand stays elevated but faces a widening state-moratorium and grid-interconnection overhang. Review every fabricated-metal supply contract for pass-through exposure.
CYBER / ICS	CISA AA26-097a (07-APR): Iranian-affiliated APT actively disrupting internet-facing Rockwell / Allen-Bradley PLCs across energy, water, government and manufacturing. The Stryker destructive-wiper attack (March, claimed by Handala) wiped 200,000-plus devices in 79 countries. CIRCIA final rule with 72-hour reporting is targeted for May 2026. Cyber posture is independent of any ceasefire.
METALS	Copper at or near record highs: COMEX traded around $6.18 to $6.42/lb in May, with an intraday all-time high of $6.71 on 13-MAY. Steel HRC roughly $950 to $980 per short ton (Nucor raised list for nine consecutive weeks into the period). Aluminum elevated. Section 232 stacks on top of these spot levels.
REFRACTORIES	High-temperature lining materials (magnesia, alumina, graphite, bauxite, zirconia) are a China-concentrated supply chain. The China critical-minerals suspension window runs only through November 2026. RHI Magnesita and peers report soft global steel-refractory demand but a comparatively strong North America, aided by EAF conversion and local-for-local production. See the dedicated Refractories section.
ISM PMI	April 2026: Manufacturing PMI 52.7 (unchanged from March; 18th straight month of overall economic expansion). Prices Index 84.6 — a 6.3-point jump and the highest reading since April 2022, up 25.6 points over three months. New Orders 54.1; Production 53.4; Employment still soft. Input-cost inflation is the dominant signal for construction estimators.

FLASH ENTRIES — IMMEDIATE OPERATIONAL SIGNIFICANCE

⚡ FLASH — ENERGY | Ceasefire Collapsed, Hormuz Largely Closed | Brent ~$110 / WTI ~$95 | Diesel ~$5.60 Nat. Avg, $6+ Midwest

CURRENT MARKET: The 07-APR ceasefire did not hold. Brent has traded around $108 to $111 through mid-May as US-Iran talks repeatedly stalled; WTI near $95. The IEA has warned global oil inventories are drawing down rapidly. Goldman Sachs raised its Q4 Brent forecast to $90 (from $80); Citi has flagged a path toward $130 to $150 if flows stay disrupted through end-June. [Trading Economics — Brent] [CNBC 07-MAY]
DIESEL — THE OPERATOR NUMBER: The US retail diesel average is roughly $5.60/gal (week of 18-MAY). Midwest refining issues have pushed Michigan, Illinois and Indiana to or above $6.00 — new all-time state records. The brief mid-April dip has fully reversed. [AgWeb 05-MAY] [EIA Weekly Petroleum Status]
CONSTRUCTION OPERATOR IMPLICATION: Heavy-equipment and generator fuel at $5.50 to $6.00-plus per gallon is the Q2 and Q3 planning baseline, not a transient spike. A site running 50 pieces of equipment at 500 gal/day faces a fuel premium of roughly $1,800 to $2,200 per day versus the pre-war norm. Pre-position 45 to 60-day fuel supply contracts; revise diesel-intensive unit-cost models (earthmoving, paving, concrete) with a $5.50 floor.
ALTERNATIVE HYPOTHESIS: A signed memorandum produces Brent decline toward $90 over the fourth quarter (Goldman base case). Plausibility: roughly even chance. Energy relief is plausible on a multi-month horizon but is NOT imminent and is NOT a Q2 planning assumption.

⚡ FLASH — CYBER / ICS | CISA AA26-097a Iranian PLC Exploitation + Stryker Destructive-Wiper Attack | CIRCIA Final Rule Targeted May 2026

(1) CISA AA26-097a (07-APR-2026): CISA, with the FBI, NSA, DOE and EPA, warns that an Iranian-affiliated APT has, since at least March 2026, disrupted internet-facing programmable logic controllers across US critical infrastructure, including energy, water, government and manufacturing. Targeted devices include Rockwell Automation / Allen-Bradley controllers. Some victims reported operational disruption and financial loss. [CISA AA26-097a]
(2) STRYKER DESTRUCTIVE ATTACK: Medical-technology manufacturer Stryker suffered a March 2026 attack, claimed by the pro-Iran group Handala, that deployed destructive malware wiping more than 200,000 devices across 79 countries. Rather than ransom, the goal was disruption — idling manufacturing, logistics and healthcare delivery. The episode shows Iranian-aligned actors will target manufacturers directly, not only utilities. Threat researchers also track diversifying Iranian OT groups including PYROXENE and BAUXITE. [CSIS — Iranian Cyber Threat]
(3) CIRCIA FINAL RULE: The Cyber Incident Reporting for Critical Infrastructure Act final rule is targeted for May 2026, introducing 72-hour incident reporting and 24-hour ransomware-payment reporting for covered entities. Construction and manufacturing firms in covered sectors should stress-test incident-response plans now.
CONSTRUCTION & MANUFACTURING EXPOSURE: Data center and industrial construction installs Rockwell / Allen-Bradley PLCs for power management (UPS, generator control, switchgear). Verify no PLC is internet-facing at commissioning handoff; require an OT-security attestation as a contractual deliverable before occupancy. Plant operators: review System Security Plans for OT-disruption (not just data-loss) scenarios. Cyber posture is independent of diplomatic status — maintain full hardening.

⚡ FLASH — SECTION 232 TARIFFS | Restructured 02-APR: Full-Customs-Value Duty up to 50% on Steel, Aluminum, Copper Articles — Effective 06-APR

WHAT CHANGED (Proclamation of 02-APR-2026, effective 06-APR): Section 232 duties on steel, aluminum and copper — including derivative articles — now apply to the FULL customs value of the imported article, not the metal-content portion. The prior content-splitting methodology is eliminated. Rates are tiered by annex: 50 percent full-value treatment for covered aluminum, steel and most copper articles and specified derivatives; 25 percent for certain other derivatives and copper articles; a 15 percent transitional rate for metal-intensive industrial and electrical-grid equipment through 31-DEC-2027. [White & Case 07-APR] [Perkins Coie]
CORRECTION TO PRIOR EDITION: The 08-APR edition described the derivative rule as 25 percent. The governing structure is the four-annex tiered system above; most fabricated steel, aluminum and copper articles fall in the 50 percent full-value band. CBP issued technical corrections to Annex IV on 06-MAY, applied retroactively to entries on or after 06-APR. Re-verify HTS classification and metal-content documentation for every affected line.
CONSTRUCTION DIRECT IMPACT: Structural steel framing and rebar, aluminum curtainwall and cladding, copper wiring, busway and plumbing — all in scope. A fabricated structural-steel package previously taxed on metal content only can now carry up to 50 percent on full invoiced value. Tariff treatment now depends on documented metal percentages, making supplier composition records as important as the HTS code. Review ALL upstream contracts for pass-through clauses; fixed-price contracts signed before 06-APR are exposed to supplier escalation claims.
ALTERNATIVE HYPOTHESIS: The administration grants a construction-industry exemption or further softens the derivative rule. Plausibility: low. USTR testimony has noted some derivatives were excluded and compliance simplified, but no broad construction carve-out has been signaled. Section 232 remains the primary trade tool. Treat the full-value regime as durable.

⚡ FLASH — ISM APRIL PMI | Prices Index 84.6 — Highest Since April 2022 — War + Tariffs the Dominant Inflation Drivers

April 2026 (released 01-MAY): Manufacturing PMI 52.7, unchanged from March; the overall economy expanded for an 18th consecutive month. New Orders 54.1 (up 0.6); Production 53.4 (down 1.7). The Prices Index registered 84.6 — a 6.3-point jump from March and the highest level since April 2022, up 25.6 points over three months. Employment remained soft. [ISM April 2026 PMI Report]
CONSTRUCTION CORRELATION: The ISM Prices Index at 84.6 is a leading indicator for construction input-cost inflation — steel, aluminum, copper, energy and freight are shared cost structures across manufacturing and construction. A Prices reading this high, this fast, signals continued escalation pressure on every active estimate. TD Economics characterizes the picture as a still-fragile expansion with soaring input costs and supply-side strain as the prominent warning signs.
ALTERNATIVE HYPOTHESIS: The May PMI release shows rapid Prices normalization. Plausibility: low. Physical supply-chain normalization takes weeks and depends on a Hormuz resolution that has not occurred. Expect the Prices Index to stay elevated near term.

COMMODITY PRICE TRACKER — PRE-WAR vs. 20 MAY 2026

Pre-war benchmark: 28 February 2026. Prices are mid-May spot or most-recent published. Construction and manufacturing implications noted per line.

ENERGY & FUELS

Commodity	Pre-War 28-Feb	20-May 2026	$ Δ	% Δ	Construction / Operator Implication
Brent Crude	~$61/bbl	~$110/bbl	+$49	+80%	Ceasefire collapsed; Hormuz largely shut. Generator and equipment fuel pricing follows. No imminent relief; plan Q2-Q3 on elevated energy.
Diesel (US retail avg)	~$3.74/gal	~$5.60/gal	+$1.86	+50%	Midwest states (MI, IL, IN) at or above $6.00 record territory. $1.50-plus/gal premium on all heavy equipment, trucking and generator runtime. Hold $5.50 floor.
Jet Fuel	~$90/bbl	~$180-195/bbl	+$95	+105%	Air freight for time-critical components remains prohibitive. Shift to surface freight where project schedule allows.
Natural Gas (Henry Hub)	~$3.80/MMBtu	~$3.80-4.00/MMBtu	Roughly flat	Flat	Domestic industrial relatively insulated. Material for kiln-fired sectors (cement, refractories, glass) and gas-fired temporary heat. Watch interruptible-contract terms.

CONSTRUCTION & STEELMAKING METALS — DIRECT MATERIAL COST IMPACT

Metal	Pre-War 28-Feb	20-May 2026	$ Δ	% Δ	Implication (incl. Section 232 full-value duty)
Steel HRC (US)	~$680/ton	~$950-980/ton	+$290	+43%	Nucor raised HRC list for nine consecutive weeks into the period. Section 232 now up to 50% on full fabricated-article value. Review framing and rebar contracts for escalation exposure.
Copper (COMEX)	~$4.25/lb	~$6.18-6.42/lb	+$2.00	+47%	Intraday all-time high $6.71/lb on 13-MAY. AI/data-center copper density is 30-50 tons per MW of IT load. Section 232 stacks on top. A material cost-escalation event for every DC electrical budget.
Aluminum (LME)	~$2,650/ton	~$3,200-3,400/ton	+$650	+23%	Curtainwall, cladding, window systems, HVAC enclosures. Section 232 full-value duty applies. Target 60-day component inventory depth on envelope packages.
Rebar / Reinforcing	Elevated with HRC	Further elevated	+30-40%	Material	Domestic EAF production partially insulated, but Hormuz disruption removed import pressure-relief. Secure 60-day rebar inventory for active pours.
Nickel (LME)	~$14,000/ton	~$16,000-17,000/ton	+$2,500	+18%	Stainless for industrial and DC applications (cladding, piping, equipment). Double pressure: nickel price plus Section 232 on fabricated stainless components.

Metal	Pre-War 28-Feb	20-May 2026	$ Δ	% Δ	Implication (incl. Section 232 full-value duty)
Gold (XAU)	~$2,880/oz	~$4,400-4,700/oz	+$1,700	+58%	DC electrical connectors and bonding wire. Gold-bearing connector cost materially higher. Evaluate silver substitution where spec allows.

REFRACTORY & CRITICAL-MINERAL INPUTS — HIGH-TEMPERATURE PROCESS INDUSTRIES

Input	Status Jan 2026	20-May 2026	$ Δ	% Δ	High-Temperature Industry Implication
Graphite (flake / spherical)	Controls suspended	Suspension window open	Stable	Window	China suspended graphite export controls to the US through 27-NOV-2026 (MOFCOM Announcement 72). Pricing is stabilized inside the window; structural China dependence is unchanged. Refractory and battery-anode buyers should lock supply before the expiry.
Magnesite / Fused Magnesia	China-dominated	Tight, policy-sensitive	+10-20%	Material	Liaoning province magnesite consolidation has cut mine counts sharply (smaller mines closed). The principal raw material for basic refractories used in steel, cement and non-ferrous furnaces. China supply policy is the dominant price variable.
Calcined / Fused Bauxite	Elevated	Elevated	+10-15%	Material	High-alumina refractory feedstock. Energy-intensive to calcine; firing-fuel costs pass through. Bauxite and alumina are core to high-alumina brick and castable formulations.
Zirconia	Tight	Tight	Material	Material	Engineered refractories for glass tank furnaces and the most extreme service. Premium-priced; competition is on performance and longevity, not price-per-ton.
Rare Earths (Nd, Dy)	Controls suspended	Suspension window open	Stable	Window	China suspended the October 2025 rare-earth controls through 10-NOV-2026. Permanent magnets in equipment motors, servo drives, HVAC fans. Window-limited relief; treat the expiry as a material risk date.
Tungsten Carbide Tooling	Elevated	Elevated	+15-25%	Material	Carbide drill bits, cutting and masonry tooling. China controls the bulk of supply; covered by the same suspension window. Build 90-day tooling inventory before November.

ANALYST ASSESSMENT — COMMODITY PRICE TRACKER

PRIMARY ASSESSMENT: Operators face a four-tier cost structure, and only one tier is war-driven. Tier 1 (Iran-war energy and freight): reversible on a genuine ceasefire-plus-normalization horizon, which has not arrived. Tier 2 (Section 232 metals): policy-driven, now assessed on full customs value at up to 50 percent, durable absent a policy reversal. Tier 3 (China critical minerals: graphite, rare earths, tungsten): currently in a suspension window that expires November 2026, after which controls can snap back. Tier 4 (structural copper demand): AI, data center, EV and grid demand against a tight supply base — a multi-year condition independent of any of the above. A ceasefire touches only Tier 1. Procurement strategy must address all four separately.

OPERATOR ACTION: Treat November 2026 as a hard procurement deadline for any China-sourced graphite, rare-earth or tungsten input — secure coverage inside the window. Re-verify Section 232 metal-content documentation on every affected HTS line following the 06-MAY Annex IV corrections. Hold a $5.50 diesel floor through Q3.

SECTOR: CONSTRUCTION — MATERIALS, LABOR, REGULATORY & PROJECT RISK

The US construction sector remains in the most complex simultaneous cost, regulatory and operational risk environment in at least a decade. The Iran war — with the April ceasefire now collapsed — continues to drive energy and freight escalation that feeds directly into project economics. The restructured Section 232 derivative regime (effective 06-APR) has reset the cost of fabricated steel, aluminum and copper used on every commercial and industrial project, now assessed on full customs value. The data center vertical, the highest-growth segment of commercial construction, faces a widening overhang: copper-intensive material exposure, diesel-dependent site operations, confirmed Iranian OT targeting of the PLC systems that will run these facilities, grid-interconnection bottlenecks, and a fast-moving state legislative environment that could pause projects already in permitting.

Construction Materials Cost Conditions — 20 May 2026

Material Category	Current Status	Project Cost Impact
Structural Steel	~$950-980/ton HRC. Section 232: up to 50% on full fabricated-article value (06-APR).	Structural-steel packages: significant cost increase on full package value under the full-value methodology. Contracts signed before 06-APR: review force majeure and material-escalation clauses now. Bonding exposure elevated on fixed-price work.
Copper — Wiring, Plumbing, Busway	~$6.18-6.42/lb COMEX; intraday record $6.71 on 13-MAY. Section 232 full-value duty applies.	Data center construction is the highest-copper-intensity segment: 30-50 tons/MW of IT load. Hyperscale DC electrical budgets face a material per-MW cost increase. Review all electrical subcontractor budgets and escalation clauses immediately.
Aluminum — Curtainwall, Cladding, HVAC	~$3,200-3,400/ton LME. Section 232 full-value duty applies.	Facade systems, window wall, equipment enclosures, roof systems. 60-day inventory depth target for aluminum-intensive envelope packages.
Rebar & Reinforcing Steel	Elevated with HRC; Hormuz disruption removed import pressure-relief.	Foundational and structural concrete. Domestic EAF production partially insulated. Secure 60-day rebar inventory for active pours.
Diesel / Equipment Fuel	~$5.60/gal national; $6.00+ in MI, IL, IN.	All site operations: earthmoving, concrete, craning, trucking, temporary generators. Pre-position 45-60-day fuel supply contracts. Hold a $5.50 floor in unit-cost models.
Ocean Freight / Cape Rerouting	+18-27% cost premium; +10-20 day transit on affected lanes.	Imported fixtures, MEP equipment and specialty systems: account for extended lead times in project schedules. Drayage and chassis availability constrained at affected ports.
Cement & Aggregates	Domestic production; relatively insulated from Hormuz.	Kiln-fuel energy elevated. Watch for regional cement price increases as the Q2-Q3 construction season ramps. Aggregate transport costs elevated with diesel.

Data Center Construction Vertical — Elevated Risk Profile 20 May 2026

Data center construction concentrates every cross-sector risk driver in this report: copper-intensive material exposure, diesel-dependent site operations, OT/PLC systems that are confirmed Iranian APT targets, grid-interconnection constraints, and an unusually active state and local legislative environment. The 2026 legislative wave has shifted decisively from incentives to restriction.

Risk Area	Current Status	Action Required
Iranian PLC Targeting — OT Security	CISA AA26-097a: Iranian APT disrupting internet-facing Rockwell/Allen-Bradley PLCs. DC power-management systems (UPS, generator control, switchgear) in scope.	Update commissioning checklists: verify no PLC is internet-facing at handoff. Require an OT-security attestation from the commissioning team as a contractual deliverable before occupancy.

Risk Area	Current Status	Action Required
State Moratorium Wave	In 2026, 12-plus states filed data center moratorium bills; 300-plus DC bills across 30-plus states. Maine passed the first statewide moratorium (LD 307, facilities over 20 MW) before a gubernatorial veto. NY, OK, SD, VT, GA among active proposals.	Audit pipeline exposure by state. Projects in permitting in moratorium-active states face timing risk even where a bill fails — local freezes and zoning battles continue. Build schedule contingency for permitting delays.
Grid Interconnection	NY large-load interconnection queue grew from ~6,800 MW (Sep 2025) to ~12,000 MW (Jan 2026). FERC large-load rulemaking advancing toward a 100% participant-funding model — large loads pay full network-upgrade cost.	Interconnection timing is the dominant schedule risk and is largely outside federal permitting reform. Confirm interconnection status before committing long-lead electrical procurement. Model full network-upgrade cost recovery.
Copper Material Cost	30-50 tons/MW of IT load. COMEX copper ~$6.18-6.42/lb plus Section 232 full-value duty on fabricated copper articles.	Audit all DC copper budgets against post-tariff pricing. Review and update escalation clauses in electrical subcontracts. Re-bid or add escalation protection to owner-procured copper packages.
Tax Incentive Rollback	VA, GA, OK advancing bills to reduce or eliminate DC tax credits. The incentive era is giving way to cost-recovery and ratepayer-protection frameworks (TX SB 6, OR POWER Act models).	Re-underwrite project pro formas where tax incentives were assumed. Site-selection economics are shifting toward permitting-friendly markets (TX, AZ) and integrated generation-plus-DC models.

Construction Labor Conditions — 20 May 2026

Skilled-trade labor remains tight, particularly for electrical and mechanical trades concentrated in data center and industrial construction. ISM Manufacturing Employment readings have been soft, but construction trade demand is driven by the project pipeline rather than the manufacturing cycle. Wage pressure compounds the material-cost escalation: estimators should treat labor and material inflation as concurrent, not sequential.

- Electrical and mechanical trades: tightest segment; data center electrical scope competes directly with industrial and grid work for the same labor pool.
- Diesel-driven site logistics raise the all-in cost of every labor hour on diesel-dependent activities (earthmoving, craning, haul).
- Permitting-delay risk in moratorium-active states creates start-stop labor scheduling — budget for remobilization cost on at-risk projects.

SECTOR: REFRACTORIES & HIGH-TEMPERATURE INDUSTRIAL INPUTS

Refractories — the high-grade ceramic linings, bricks and monolithics that withstand service above 1,200 degrees C — are the enabling material for steelmaking, cement, glass, non-ferrous metals and a widening set of energy-transition processes. Refractory cost and availability are upstream of, and therefore a leading indicator for, output in every one of those industries. The global market is estimated at roughly USD 40 to 45 billion and is moderately consolidated, led by RHI Magnesita, Vesuvius, Imerys and Shinagawa, with a deep tier of regional and specialist producers competing on technical performance. The defining structural feature is raw-material concentration: magnesite, graphite, bauxite, alumina and zirconia supply is geographically concentrated and politically sensitive, with China dominant in magnesite and graphite. This makes the refractory supply chain unusually exposed to the same critical-minerals policy cycle that drives the rare-earth and battery-material markets.

Refractory Demand Conditions by End Market — 20 May 2026

End Market	Demand Signal	Assessment
Steel (primary demand driver)	Soft globally; North America comparatively resilient.	Steel is the largest single refractory end market and sits near cyclical lows globally, pressured by record Chinese steel exports displacing regional production. RHI Magnesita reported Q1 2026 steel refractory volumes roughly in line with the prior year and up around 6% in constant currency, supported by pricing discipline. North America is the standout region. India is the main volume-growth engine but margin-pressured by local overcapacity.
Cement	Stable; kiln-reline cycle-driven.	Cement refractory demand tracks kiln campaigns and reline schedules more than short-cycle output. Domestically produced cement is relatively insulated from Hormuz disruption; kiln-fuel energy cost is the main inflation channel.
Glass	Weak; no clear rebound before late 2026.	Glass-furnace project work (high-margin, zirconia-intensive) reached historic lows in 2025 and industry guidance does not see a rebound before late 2026. A drag on the higher-margin industrial-projects mix.
Non-Ferrous Metals (Al, Cu)	Modest improvement.	Aluminum and copper smelting and refining furnaces. Modest improvement noted; structurally supported by copper-demand growth tied to AI, grid and EV build-out.
Energy-Transition / Li-ion & Advanced Materials	Emerging growth frontier.	Refractories for hydrogen-based direct-reduced-iron (H-DRI) plants, advanced waste incineration, and ceramic components for next-generation energy and battery-materials processing. Smaller in volume today but a strategic growth vector as steelmaking decarbonizes.

North American Steelmaking — The EAF Conversion and Why It Matters for Refractories

US raw steel production reached roughly 82 million metric tons in 2025 (USGS), with combined capacity near 105 million tons and capacity utilization in the mid-70s percent. Electric arc furnaces now account for roughly 70-plus percent of US output, produced by some 47 companies across about 102 minimills, with two companies operating the remaining integrated (blast-furnace / basic-oxygen) capacity. New EAF capacity continues to come online — Hyundai Steel's ~2.7 Mt automotive-steel mill in Louisiana is targeted for 2029 commercial production. The EAF transition is the central structural fact for North American refractory demand: EAF, ladle-furnace and tundish service consumes a different refractory mix than integrated BF/BOF practice, and continued EAF additions sustain a reline-and-consumables demand stream even when crude-steel output is flat. RHI Magnesita has explicitly tied its North American organic growth to EAF-related solutions and its 4PRO performance-based service offering, and is moving toward 80 percent local-for-local US production by 2028 (up from roughly 65 percent) to insulate against tariff complexity.

- EAF share of US steel is roughly 70-plus percent and rising; this shifts refractory demand toward EAF roof/delta, ladle and tundish products and away from blast-furnace linings.
- Flat crude-steel output does not mean flat refractory demand: relines, ladle turnover and tundish consumables are campaign-driven and continue through soft-output periods.
- Local-for-local production is a tariff hedge and a service differentiator — it shortens lead times for relines and positions suppliers closer to EAF customers.

Refractory Raw-Material Supply Risk — The November 2026 Window

The refractory raw-material base overlaps directly with the China critical-minerals architecture. Graphite — a component of magnesia-carbon and other refractory formulations as well as battery anodes — is under a Chinese export-control suspension that runs only through 27-NOV-2026 (MOFCOM Announcement 72). The broader October 2025 rare-earth and dual-use controls are suspended through 10-NOV-2026 (MOFCOM Announcement 70). China's 31-MAR-2026 State Council Order No. 834 (Provisions on the Security of Industrial and Supply Chains) integrates export controls, countermeasures and investment screening under one national-security framework — the legal machinery for re-tightening is fully built and intact. Magnesite supply is separately constrained by multi-year consolidation of Liaoning province mining. The net assessment: the current period is a planning window, not a resolution.

Action	Detail
Lock supply before November	Treat 10-NOV / 27-NOV-2026 as hard procurement deadlines for any China-sourced graphite, magnesia-carbon input, rare-earth component or tungsten tooling. Secure multi-quarter coverage inside the suspension window.
Map Chinese-origin content	Inventory Chinese-origin content across the refractory and equipment supply chain now; State Council Order 834 creates whole-of-firm compliance obligations and extraterritorial reach for firms operating in or sourcing from China.
Diversify and qualify alternatives	Qualify non-Chinese magnesia, graphite and bauxite sources and evaluate recycled-refractory and alternative-mineral formulations. Backward integration and recycling are the structural hedges; second-source qualification takes months and should start now.
Shift to cost-per-cycle contracting	Performance-based and total-lining-solution contracts (the 4PRO model) move the basis of competition from price-per-ton to cost-per-ton-of-output, transferring some raw-material volatility into a managed service relationship.

ANALYST ASSESSMENT — REFRACTORIES

PRIMARY ASSESSMENT: Refractory demand is a cleaner forward signal for heavy industry than spot output figures, because it is reline-and-consumables driven. The current picture is soft global steel and weak industrial-projects demand — led down by glass — partially offset by a resilient North America where the EAF conversion sustains a structural demand floor and local-for-local production provides tariff insulation. The dominant risk is not demand; it is the raw-material supply chain. The China minerals suspension expiring November 2026 is the single most important date on the high-temperature-industry calendar, and procurement planning should be built around it now rather than after the window closes.

ALTERNATIVE HYPOTHESIS: A durable US-China trade settlement makes the suspension permanent and removes the November cliff. Plausibility: low to moderate. Beijing has consistently framed the suspension as a temporary, reviewable adjustment and has preserved the full legal architecture to re-tighten. Treat permanence as upside, not a base case.

SECTOR: ENERGY & FEEDSTOCKS

Petroleum & Energy Conditions — 20 May 2026

With the ceasefire collapsed and the Strait of Hormuz largely closed, energy cost is a sustained input-cost driver across construction and manufacturing rather than a passing spike. Brent has held in a roughly $108-111 band through mid-May; the IEA reports rapid global inventory draws. Goldman Sachs lifted its Q4 Brent forecast to $90 and WTI to $83; Citi has flagged a $130-150 path if flows stay disrupted through end-June. Henry Hub natural gas is roughly flat, leaving domestic gas-fired industrial process load relatively insulated, though kiln-fired sectors (cement, refractories, glass) still carry elevated firing-fuel cost.

- Diesel is the single most important operator number: about $5.60/gal national, $6.00-plus in Michigan, Illinois and Indiana. Hold a $5.50 floor in Q2-Q3 cost models.
- Jet fuel near $180-195/bbl keeps air freight prohibitive for time-critical components; shift to surface freight where schedule allows.
- Petrochemical and refining operators face feedstock-cost volatility plus the cyber/ICS exposure below — a compound risk on high-value continuous-process assets.

SECTOR: SUPPLY CHAIN & LOGISTICS

The supply-chain picture is defined by the closed strait. No Western carrier (Maersk, MSC, CMA CGM) has announced Gulf-route resumption. Cape-of-Good-Hope rerouting on affected lanes adds roughly 10-20 days transit and an 18-27 percent cost premium. The ISM April data corroborates the strain: Supplier Deliveries remain slow and the Prices Index at 84.6 reflects energy and freight pass-through. For construction, the practical effect is longer and less certain lead times on imported fixtures, MEP equipment and specialty systems.

- Build extended import lead times into every project schedule; treat the closed strait as the planning baseline through at least Q3.

- Drayage and chassis availability are constrained at ports absorbing rerouted volume — confirm inland logistics capacity, not just ocean booking.
- Maintain buffer inventory on long-lead and single-source items; do not draw down on ceasefire-headline optimism.

SECTOR: CYBER — INDUSTRIAL CONTROL SYSTEMS (ICS/OT)

Confirmed Threat Activity — Construction & Manufacturing Relevant

Threat	Detail & Exposure
CISA AA26-097a (07-APR)	Iranian-affiliated APT disrupting internet-facing Rockwell/Allen-Bradley PLCs across energy, water, government and manufacturing since at least March 2026. Direct exposure for DC and industrial construction installing PLC-based power-management systems, and for plant operators running OT.
Stryker destructive-wiper attack (March)	Pro-Iran group Handala deployed destructive malware wiping 200,000-plus devices across 79 countries at a major medical-technology manufacturer. Confirms manufacturers, not only utilities, are direct targets, and that the intent is disruption rather than ransom.
Diversifying Iranian OT groups	Threat researchers track PYROXENE (IRGC-backed, OT/ICS-focused) and BAUXITE (Stage 2 ICS kill-chain, PLC compromise and custom OT backdoors). Rockwell CVE-2021-22681 is in CISA Known Exploited Vulnerabilities catalog.
CIRCIA final rule (targeted May 2026)	72-hour incident reporting and 24-hour ransomware-payment reporting for covered critical-infrastructure entities. Construction and manufacturing firms in covered sectors must stress-test incident-response plans now.

Priority Control Actions — Construction & Manufacturing

- Verify no Rockwell/Allen-Bradley PLC is internet-facing at commissioning handoff; require an OT-security attestation as a contractual deliverable before occupancy.
- Review System Security Plans for OT-disruption scenarios (loss of process control), not only data-loss scenarios.
- Hunt for Iranian-APT TTPs and IOCs from AA26-097a; prioritize default-credential remediation and removal of internet-facing OT management interfaces.
- Maintain full cyber hardening regardless of diplomatic status — Iranian operations run on their own timeline, independent of any ceasefire.

SECTOR: FOOD & AGRICULTURAL PROCESSING

Food and agricultural processing operators face the same energy and freight escalation plus elevated diesel for farm and haul operations. Fertilizer input costs remain elevated and diesel-linked. Processing facilities running PLC-based controls share the ICS exposure above. The key watch item is whether sustained diesel above $5.50 and continued freight premiums feed a second leg of food-input cost inflation through the summer harvest and processing season.

- Diesel at $5.60-plus raises the all-in cost of every diesel-dependent step from field to processing plant to distribution.
- Cold-chain and process refrigeration: monitor energy-contract terms; gas-fired and electric process load cost trajectories diverge.
- PLC-controlled processing lines: apply the ICS control actions above; food processors are within CISA critical-infrastructure scope.

SECTOR: DEFENSE INDUSTRIAL BASE (DIB)

The defense industrial base operates against the same metals-cost and critical-minerals backdrop, with additional exposure: the China minerals architecture explicitly retains a prohibition on dual-use exports to US military end users even inside the general suspension window. DIB manufacturers and their construction partners face Section 232 full-value metals costs on fabricated components, rare-earth and tungsten dependence for magnets and tooling, and the Iranian cyber threat to OT. The sustained Iran conflict raises DIB throughput demand even as input costs rise — a margin-squeeze and capacity-planning problem rather than a demand problem.

- Rare-earth and tungsten supply for DIB applications: the suspension window does NOT cover military end use — verify sourcing compliance and qualify allied or domestic alternatives.
- DIB facility construction and expansion carries the full Section 232 fabricated-metals cost load; build escalation protection into expansion contracts.
- Treat OT security on DIB production lines as a priority — the Stryker precedent shows destructive intent against manufacturers.

LEGISLATIVE & REGULATORY LANDSCAPE — CONSTRUCTION & MANUFACTURING IMPACT

Item	Status	Construction / Manufacturing Impact
Section 232 Steel/Aluminum/Copper	Effective 06-APR-2026; Annex IV corrections 06-MAY.	Full-customs-value duty up to 50% on fabricated metal articles and derivatives. Re-verify HTS classification and metal-content documentation on every affected line. The largest controllable cost variable on metals-intensive projects.
China Critical-Minerals Suspension	Suspended through 10-NOV / 27-NOV-2026.	Graphite, rare earths, tungsten, gallium, germanium, antimony exports to the US run under general licenses inside the window. Snap-back risk after November. A hard procurement-planning deadline.
Data Center Moratorium Bills	12-plus states; Maine first to pass then vetoed; NY/OK/SD/VT/GA active.	Project-timing risk for DC builds in permitting. Local freezes and zoning battles persist even where state bills fail. Build schedule contingency.
FERC Large-Load Rulemaking	Advancing; 100% participant-funding model under review.	Large loads (data centers) would pay full grid network-upgrade cost. Re-underwrite DC interconnection budgets. Capital-intensive manufacturers with large loads may struggle to absorb up-front interconnection cost.
CIRCIA Final Rule	Targeted May 2026.	72-hour incident and 24-hour ransomware-payment reporting for covered entities. Update incident-response plans and reporting workflows.
Section 122 Global 10% Tariff	In effect to 24-JUL-2026.	Applies to products NOT covered by Section 232; can stack with other duties. Factor into landed-cost models for non-metal imported goods.

BLOCKADE CASCADE — SECOND THROUGH SIXTH ORDER IMPACTS

The cost pressures itemized throughout this edition are the early links of a longer chain. FFTP's companion Special Impact Analysis traces the Hormuz blockade through eight orders of downstream effect on the US household and economy. The summary below carries the second through sixth orders at the level a construction or manufacturing decision-maker needs for planning; the full analysis, with dollar-cost bands, alternate hypotheses, and sourcing, is linked at the end of this section.

Order	What It Is	Business / Operator Read
2nd	Wholesale commodity and freight repricing.	Already arrived. Brent near $112, retail diesel leading every delivered-goods cost, container capacity pulled off transpacific lanes into Atlantic and African service. This is the layer the commodity tracker and Energy section quantify. Procurement effect: elevated landed cost on essentially every input, here now, not transient.
3rd	Input substitution and inventory depletion.	Arriving over the next 30 to 90 days. Pharmaceutical API, semiconductor specialty gas (helium), and fertilizer chains tighten. For construction and manufacturing: the semiconductor and helium constraint feeds the electronics and automation-component pricing and lead times that touch data center fit-out, controls and instrumentation procurement.
4th	Consumer-visible retail repricing.	D+90 to D+365. Durable goods, vehicles, electronics and the November heating-season natural-gas wave reprice. Operator read: a fleet, equipment and facility-energy cost layer, plus softening end-market demand for consumer-facing construction (retail, residential) as households compress discretionary spending.

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Order	**What It Is**	**Business / Operator Read**
5th	Behavioral and political-economic response.	Household financial stress, slower consumer spending growth (0.4 to 1.2 points), SPR drawdown and Defense Production Act invocations for APIs, fertilizer feedstocks, helium and semiconductor inputs. DPA activity is the signal worth watching — it reshapes which domestic capacity gets built and where.
6th	Structural and durable baseline shifts.	Marine war-risk insurance resets to a permanently higher floor; reshoring capital commitments lock in at a 15 to 40 percent cost premium over displaced imports. The practical takeaway already embedded in this edition's BLUF: plan against a new, higher baseline for energy, freight, metals and minerals — not against pre-blockade pricing.

ANALYST NOTE: The cascade does not unwind symmetrically. Effects that took 30 days to start take 18 to 36 months to clear, and the FFTP analysis assesses that the pre-blockade baseline does not fully return even under a rapid-resolution scenario. For construction and manufacturing operators this reinforces the central guidance of this edition: treat elevated energy, freight, metals and refractory-input costs as the durable planning environment, and time procurement and contract decisions accordingly.

FULL ANALYSIS: FFTP Special Impact Analysis — [Iranian Blockade: US Consumer Impact Analysis, 2nd through 8th Order Effects (19-MAY-2026)]. Includes dollar-cost bands, duration scenarios, the post-resolution pulse phase, and 7th and 8th order generational and civilizational assessments.

CROSS-SECTOR RISK HEAT MAP — 20 MAY 2026

Risk rated for likelihood and operational impact over the next 30-60 days. The three end-market columns flag where each driver bites hardest.

Risk Driver	Rating	Construction	Manufacturing	Refractories
Energy / diesel escalation	HIGH	Severe - site ops, haul	High - process + freight	Moderate - kiln fuel
Section 232 full-value metals	HIGH	Severe - all metals scope	High - fabricated inputs	Low - indirect
Iranian ICS / OT cyberattack	ELEVATED	Moderate - PLC handoff	Severe - OT disruption	High - plant OT
Hormuz / supply-chain lead time	ELEVATED	High - imported MEP	Moderate - components	High - imported minerals
China minerals Nov-2026 snap-back	ELEVATED	Low - indirect	Moderate - magnets/tooling	Severe - graphite/RM base
DC moratorium / interconnection	ELEVATED	High - DC pipeline	Low - indirect	Low - indirect
Severe weather (Mid-Atlantic, SW TX)	MODERATE	Moderate - site days lost	Low - localized	Low - localized
Steel demand softness (global)	MODERATE	Low - demand-side	Moderate - mixed	Moderate - refractory pull

72-HOUR OPERATIONAL OUTLOOK (20 MAY – 23 MAY 2026)

- Energy: Brent likely to stay in the $105-115 band absent a confirmed deal or a new strike. Diesel stays elevated; no relief expected in the window. Maintain fuel pre-positioning.
- Diplomacy: Watch for any signed memorandum or, conversely, new strike reporting. The reliable confirmation signal is a Western carrier announcing Gulf-route resumption — not a headline.
- Weather: SPC Day 1 carries a Slight Risk of severe storms from West Virginia through the Mid-Atlantic into southern New England, and over west/south-central Texas — damaging winds and isolated to large hail. Mid-Atlantic project sites should plan for possible afternoon/evening lost-time and secure materials and lifts.
- Cyber: No change to posture. Treat Iranian ICS targeting as active and ongoing; maintain hardening and IOC hunting.
- Tariffs: Watch for further CBP guidance following the 06-MAY Annex IV corrections; re-verify any entries filed since 06-APR.

WATCH LIST — INDICATORS TO MONITOR NEXT 7–14 DAYS

- CEASEFIRE CONFIRMATION: A signed US-Iran memorandum AND a Western carrier Gulf-route announcement — both required before treating normalization as real.
- DIESEL RECORDS: Whether the national average breaches its all-time high and how many additional states set records — a direct read on Q3 site-cost budgets.
- SECTION 232: Further CBP / Commerce guidance on Annex classifications; any signal of a construction or industrial carve-out (assessed unlikely).
- NOVEMBER 2026 MINERALS CLIFF: Any indication MOFCOM will extend, make permanent, or reinstate the suspended controls — the key refractory and DIB supply-planning variable.
- DATA CENTER LEGISLATION: New state moratorium movement and FERC large-load rulemaking milestones — timing risk for the DC construction pipeline.
- ISM MAY PMI (early June release): Whether the Prices Index holds near 84.6 or begins to ease — the leading indicator for construction input-cost inflation.
- SEVERE WEATHER: SPC Day 1/Day 2 outlooks for the Mid-Atlantic and Texas through the week — site-schedule and freight impact.
- STEEL PRICING: Whether Nucor extends its HRC list-price increase streak — a read on domestic steel cost direction.

COLLECTION INTELLIGENCE LOG — 20 MAY 2026

Primary sources consulted for this edition. Operator-supplied authoritative sources take precedence over web sweep per SOP 0.92.

Source	Use in This Edition
SPC Day 1 Convective Outlook (operator-supplied, 1101 AM CDT 20-MAY)	Authoritative for the severe-weather entries in the 72-Hour Outlook and Watch List: Slight Risk WV/Mid-Atlantic/southern New England and west/south-central Texas.
ISM April 2026 Manufacturing PMI Report (01-MAY)	PMI 52.7, Prices Index 84.6, New Orders 54.1, Production 53.4 — BLUF, FLASH, commodity assessment.
CISA AA26-097a; CSIS Iranian cyber analysis	Iranian PLC exploitation, Stryker wiper attack, PYROXENE/BAUXITE, CIRCIA timeline — Cyber/ICS section and FLASH.
White & Case / Perkins Coie / CBP guidance on Section 232	Full-customs-value methodology, tiered annex rates, 06-MAY Annex IV corrections — FLASH and Legislative section.
Trading Economics, CNBC, AgWeb, EIA	Brent ~$110, WTI ~$95, diesel ~$5.60 national / $6+ Midwest — Energy section and commodity tracker.
INN / Discovery Alert / Trading Economics (metals)	COMEX copper $6.18-6.42, intraday record $6.71 on 13-MAY; HRC ~$950-980/ton — commodity tracker.
RHI Magnesita FY2025 / Q1 2026 results and earnings calls	Refractory demand by end market, EAF-linked North America growth, local-for-local strategy — Refractories section.
MOFCOM Announcements 70/72; Pillsbury, Clark Hill, Andersen analyses	China critical-minerals suspension windows (10-NOV / 27-NOV-2026), State Council Order 834 — Refractories and Legislative sections.
USGS Mineral Commodity Summaries 2026; AISI	US raw steel ~82 Mt, capacity ~105 Mt, EAF share ~70%+ — Refractories / steelmaking subsection.
MultiState, ArentFox Schiff, McGuireWoods, ENR	Data center moratorium wave, FERC large-load rulemaking, NY interconnection queue — Construction and Legislative sections.
FFTP Special Impact Analysis — Iranian Blockade	Second through sixth order cascade framework and household-cost bands — Blockade Cascade section; full report linked for subscribers.

Source	Use in This Edition
US Consumer Impact (19-MAY-2026)	

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