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Supply Risk Report

Automotive Sector — Q3 2025

Classification: CONFIDENTIAL — For Internal Procurement Use Only
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> *This is a SAMPLE report demonstrating ChainGuard's methodology and output format. All analysis reflects real market conditions and named public sources as of the report period. Specific client references, proprietary supplier names, and company-specific data have been replaced with sector-representative benchmarks.*

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Overall Portfolio Risk Score: HIGH — 7.4 / 10

The European automotive supply chain faces an elevated multi-vector risk environment in Q3 2025. Three converging pressures — accelerating geopolitical trade fragmentation, structural semiconductor supply constraints, and tightening rare earth export controls from China — create a compound risk profile that exceeds individual signal thresholds. Energy cost volatility and logistics capacity tightening add secondary exposure that could amplify primary disruptions.

ChainGuard's scoring model weighted 47 monitored inputs across five categories for this report period. The portfolio score of **7.4/10** reflects a high-severity classification, meaning at least one input category faces near-term (30–90 day) disruption probability above 40% and management response is warranted within 10 business days.

Top 3 Risks Identified

1	China HREE export licensing — EV magnet supply squeeze	Rare Earth Metals	8.6/10	**Immediate**
2	Automotive-grade chip lead times — TSMC concentration risk	Semiconductors	8.1/10	**30-day action**
3	EU CBAM + US Section 232 tariff interaction on steel	Metals	7.2/10	**60-day action**

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for automotive-grade MCUs and power semiconductors. Both actions require supplier disclosure letters — templates are provided in the Mitigation Roadmap (Section 4).

Single-source dependencies on China for rare earth processing (est. 85% of global capacity, *USGS Mineral Commodity Summaries 2025*) and on TSMC for leading-edge automotive chip fabrication represent the two most concentrated structural vulnerabilities in the EU automotive supply chain. Both require medium-term qualification of alternative sources; qualification timelines of 12–18 months mean action must begin in Q3 2025 to yield resilience before Q1 2027.

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This section covers the five primary input categories for European automotive manufacturing. Each entry includes risk level, key drivers with named sources, the dominant 30-day signal at time of publication, and a recommended mitigation action.

1.1 Steel and Aluminium

Risk Level: HIGH

Key Drivers

EU Carbon Border Adjustment Mechanism (CBAM): The CBAM regulation (EU Regulation 2023/956), fully operational from January 2026 for its definitive phase, is creating cost divergence between EU-origin and imported steel. Automotive-grade flat steel (hot-rolled coil, cold-rolled coil, galvanised coil) sourced from non-EU mills now requires importers to purchase CBAM certificates corresponding to the embedded carbon content. EU ETS carbon prices, used as the CBAM reference price, have ranged from €50–70/tonne CO_2 in 2024–2025 [Indicative range; *Ember Climate ETS price tracker*]. For high-carbon-intensity steel from third countries, this translates to an additional €30–60/tonne landed cost [Indicative], eroding the competitive advantage of non-EU sourcing. *(Source: European Commission Official Journal — EU Regulation 2023/956; Ember Climate)*

US Section 232 Tariffs: US tariffs of 25% on steel and 10% on aluminium, originally imposed under Section 232 of the Trade Expansion Act (1962) and maintained with limited modifications through 2025, continue to fragment the transatlantic steel supply pool. EU producers who historically supplied US customers have redirected tonnage to European markets, creating a mixed supply environment where pricing signals from US markets amplify European spot price volatility. *(Source: US Commerce Department Section 232 proceedings; World Steel Association market report)*

European Smelter Capacity: Several EU primary aluminium smelters curtailed production from 2022 onward due to industrial electricity price spikes following the energy crisis. As of mid-2025, not all curtailed capacity has returned to service. This creates structural tightness in P1020 aluminium, the base alloy used in

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EU Anti-Dumping Measures: The European Commission maintains active anti-dumping and countervailing duty measures on steel imports from multiple origins (China, Russia, Belarus, India, Taiwan — specific duty rates vary by product and origin; *EC DG Trade Trade Defence Instruments database*). These duties, combined with CBAM, mean that steel sourced from the most cost-competitive global origins faces a compounded cost overlay.

30-Day Signal (Q3 2025)

LME steel billet (3M) and P1020 aluminium prices trending [Indicative: flat to slightly elevated] against a backdrop of slower EU automotive production schedules in the summer period. Monitor EU steel mill order book lead times — a contraction to under 6 weeks signals demand softening; extension beyond 14 weeks signals tightening supply.

Mitigation Action

Audit steel and aluminium bill of materials against CBAM-relevant import origins. Prioritise obtaining embedded carbon declarations from non-EU mills in the supply chain. Request updated Section 232 status and duty schedules from US-facing Tier 1 suppliers to avoid unexpected cost passthrough.

1.2 Semiconductor Components (Automotive Grade)

Risk Level: HIGH

Key Drivers

TSMC Concentration: Taiwan Semiconductor Manufacturing Company (TSMC) produces an estimated majority of leading-edge logic and mixed-signal semiconductors used in automotive applications globally. Automotive-specific nodes (28nm, 40nm, and 65nm process nodes dominate current-generation ADAS, powertrain, and body control units) are concentrated at TSMC fabs in Hsinchu and Taichung. A single severe weather event, earthquake, or geopolitical incident affecting Taiwan could interrupt supply across the entire global automotive electronics supply chain within 8–12 weeks. *(Source: SEMI capacity data; TSMC quarterly earnings; European Chips Act Impact Assessment — EC, 2023)*

US CHIPS and Science Act (2022): The US CHIPS Act has incentivised

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come online before 2027–2028 at the earliest. The near-term structural dependency on TSMC therefore does not ease before 2026. *(Source: EU Chips Act — EU Regulation 2023/1781; European Commission)*

Automotive Chip Lead Times: Following the automotive semiconductor shortage of 2021–2022 (estimated global OEM revenue impact: $210 billion [Indicative; *AlixPartners industry estimates*]), OEMs and Tier 1s increased safety stock and multi-source sourcing programs. However, for specialised automotive-qualified ICs (microcontrollers meeting AEC-Q100 reliability standards, specifically automotive-grade), qualification cycles of 12–24 months mean that alternative sources cannot be deployed rapidly. Lead times for certain automotive-grade MCU families remain [Indicative: 26–40 weeks] above pre-shortage norms of 12–16 weeks. *(Source: AlixPartners; SEMI; supplier-reported lead time trackers)*

BIS Export Controls: The US Bureau of Industry and Security (BIS) Entity List and associated Export Administration Regulations (EAR) controls on advanced semiconductor equipment and technology exports to China restrict Chinese foundries from acquiring equipment to manufacture leading-edge chips. This reinforces TSMC dependency for the global supply base but also creates uncertainty for automotive electronics manufactured with Chinese semiconductor content. *(Source: BIS EAR; Federal Register)*

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30-Day Signal (Q3 2025)

Monitor quarterly fab utilisation disclosures from major foundries (TSMC, GlobalFoundries, STMicroelectronics). A utilisation drop below 80% signals near-term pricing softening; a rise above 95% signals lead time pressure. Watch BIS Federal Register for new Entity List additions affecting automotive semiconductor suppliers.

Mitigation Action

Require Tier 1 electronic sub-assembly suppliers to disclose (a) the top 10 semiconductor part numbers by volume; (b) wafer fab of origin; (c) current lead time and safety stock coverage. Flag sole-source TSMC dependencies immediately for escalation.

Key Drivers

China Processing Concentration: China controls an estimated 85% of global rare earth processing and refining capacity, with an even higher concentration for heavy rare earth elements (HREE) including dysprosium and terbium, which are critical for high-coercivity NdFeB permanent magnets used in EV traction motors. *(Source: USGS Mineral Commodity Summaries 2025; UN Comtrade)*

Export Licensing Precedent: In July 2023, China imposed export licensing requirements on gallium and germanium (both critical for semiconductors and military electronics). In October 2023, it restricted graphite exports. These actions demonstrate China's willingness and institutional capability to use critical mineral export controls as geopolitical tools. In Q1 2025, MOFCOM (Ministry of Commerce, China) expanded export licensing requirements to cover additional rare earth compounds; specific HREE compound categories including dysprosium oxide were included in updated licensing schedules. [Indicative scope — refer to MOFCOM official notices for current controlled commodity lists.] *(Source: China MOFCOM official notices; Financial Times reporting on mineral controls)*

EU Critical Raw Materials Act: Dysprosium, neodymium, and terbium are all designated as Strategic Raw Materials under the EU Critical Raw Materials Act (EU Regulation 2024/1252, effective May 2024). The Act sets a target that no more than 65% of EU consumption of any strategic raw material should come from a single third country — a benchmark that is currently far exceeded for HREEs. *(Source: EU Critical Raw Materials Act — EU Regulation 2024/1252)*

EV Demand Growth: Demand for NdFeB magnets is growing in proportion to EV production volume growth. European OEM EV production targets, combined with Chinese EV export volumes, are simultaneously expanding global demand for HREE-containing magnets while the processing supply base remains geographically concentrated.

30-Day Signal (Q3 2025)

Monitor MOFCOM monthly export quota announcements for rare earth elements and compounds. Track spot prices for neodymium oxide and dysprosium oxide on Asian Metal or Metal Bulletin. A month-on-month price increase above 15% for HREE compounds signals active supply constraint.

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qualification engagement with non-Chinese rare earth processors: Lynas Rare Earths (Australia/Malaysia), Neo Performance Materials (Estonia processing facility), and MP Materials (US). Qualification timelines of 12–18 months mean outreach must begin in Q3 2025.

1.4 Energy Costs (EU Industrial)

Risk Level: MEDIUM

Key Drivers

European Gas Prices: European natural gas prices (TTF benchmark) remain structurally elevated relative to pre-2021 levels, though the acute crisis of 2022–2023 has eased. Industrial electricity prices in Germany, France, and the Netherlands — the three largest EU automotive manufacturing economies — reflect gas price inputs, carbon costs, and grid balancing charges. The International Energy Agency (IEA) tracks EU industrial energy costs; as of 2024–2025, EU industrial electricity prices remain approximately 2–4x US industrial electricity prices [Indicative multiplier; *IEA World Energy Outlook; Eurostat energy price statistics*], directly affecting energy-intensive automotive manufacturing processes (aluminium casting, paint shops, press lines).

Eurostat Industrial Electricity Benchmarks: Eurostat publishes semi-annual industrial electricity prices by country and consumption band (Eurostat dataset: nrg_pc_205). Manufacturing facilities above 20 GWh/year annual consumption face different tariff structures from smaller consumers. Heavy industrial consumers in Germany, Spain, and Italy have seen energy cost volatility that creates procurement planning uncertainty for multi-year contracts.

Interplay with Metals: EU aluminium smelter curtailments (referenced in Section 1.1) are a direct consequence of energy cost pressures. As long as industrial electricity prices remain elevated, primary aluminium production in Europe faces a structural cost disadvantage versus Middle East and North American production, creating secondary supply chain implications.

30-Day Signal (Q3 2025)

Monitor TTF natural gas forward curve (1-month, 3-month) and Eurostat industrial

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Mitigation Action

Review energy cost clauses in long-term supplier contracts. For energy-intensive sub-assemblies (castings, forgings, heat-treated components), engage suppliers on energy hedging practices and pass-through risk. Consider energy-indexed pricing structures for new contracts.

1.5 Logistics (Port Congestion, Road Freight)

Risk Level: MEDIUM

Key Drivers

Port Congestion Dynamics: European automotive just-in-time supply chains depend on port reliability at Rotterdam, Antwerp-Bruges, Hamburg, and Valencia. The Baltic Dry Index (BDI) and container freight rate indices (Drewry World Container Index; Freightos Baltic Index) reflect global shipping market conditions. Post-pandemic container rate normalisation through 2023–2024 was followed by renewed disruption from Red Sea shipping diversions in late 2023 through 2024, as vessels rerouted around the Cape of Good Hope, adding 10–14 days to Asia–Europe transit times. *(Source: Drewry Shipping; Freightos Baltic Index; Port of Rotterdam statistics)*

Road Freight Capacity: EU road freight capacity is structurally constrained by driver shortages (estimated EU HGV driver deficit: over 400,000 [Indicative; *IRU World Road Transport Organisation estimates*]) and regulatory pressures including tachograph requirements, driving time regulations, and emissions compliance costs for fleet operators. Seasonal peaks (automotive model changeovers in Q2–Q3) and periods of industrial disruption create spot rate volatility.

Inventory Buffer Adequacy: Industry-standard just-in-time inventory models carry 3–5 days of component buffer for Class A critical parts. Red Sea-related transit time extensions have pushed some automotive manufacturers to rebuild strategic buffers — but this is capital-intensive and not universal. Facilities still operating lean JIT models face disproportionate exposure to single logistics disruption events.

30-Day Signal (Q3 2025)

Monitor the Drewry World Container Index (composite) for Asia–North

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Mitigation Action

Review modal flexibility for critical component lanes: identify which inbound shipments could shift from sea to air freight or rail (Trans-Siberian rail alternatives may be restricted given geopolitical context — verify current sanctions compliance). For sea-dependent components, verify current safety stock coverage against extended transit scenarios.

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This section maps the primary single-source country dependencies in the EU automotive supply chain and summarises recent policy events affecting supply.

Single-Source Country Dependencies

The following input categories carry significant single-country concentration risk for EU automotive manufacturers:

Rare earth processing (HREE)	China	~85%	Export licensing expansion 2023–2025
Automotive semiconductor leading edge	Taiwan (TSMC)	>60%	Taiwan Strait geopolitical risk
Magnesium metal	China	~90%+	EU import dependency (Eurostat)
Palladium (catalytic converters)	Russia / South Africa	~40% Russia	Russia sanctions — supply rerouting
Graphite (battery anode)	China	>95% battery-grade	October 2023 export restrictions

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Sources: USGS Mineral Commodity Summaries 2025; UN Comtrade; Eurostat Comext; European Commission Critical Raw Materials assessment.

Recent Policy Events Affecting Supply

EU Critical Raw Materials Act (EU Regulation 2024/1252 — May 2024)

Designates 34 strategic raw materials including rare earths, magnesium, and graphite, with mandatory supply chain risk assessment obligations for large EU manufacturers. Implementation timelines for the audit and reporting requirements

mechanism subsequently applied to graphite (October 2023) and, in expanded form, to rare earth processing compounds through 2024–2025. *(Source: MOFCOM Announcement No. 23, 2023)*

EU Anti-Dumping on Chinese Steel (ongoing, multiple instruments) The European Commission maintains anti-dumping and countervailing duty measures on steel flat products from China under multiple instruments listed in the EC DG Trade Trade Defence Instruments (TDI) database. These interact with CBAM to create a compounded tariff and carbon cost structure on non-EU steel. *(Source: EC DG Trade TDI database)*

US Section 232 Tariff Continuity US Section 232 tariffs on steel (25%) and aluminium (10%) remain in force as of the Q3 2025 report period, continuing to segment the US and EU steel markets. *(Source: US Federal Register; US Commerce Department)*

EU Chips Act (EU Regulation 2023/1781 — September 2023) Targets 20% EU global semiconductor share by 2030, with associated investment in European fabs. Near-term supply impact is limited; the structural semiconductor dependency on Taiwan is not materially reduced before 2027. *(Source: EU Chips Act — EU Regulation 2023/1781)*

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Recommended Diversification Options

HREE processing	Lynas (AUS/MY), Neo Performance Materials (EST), MP Materials (US)	12–18 months qualification	Medium — limited current capacity
Automotive semiconductors	GlobalFoundries (USA/EU), STMicroelectronics (EU/Maroc), UMC (Taiwan backup)	12–24 months AEC-Q100 qual	Medium — node limitations apply
Magnesium	Magnezit Group alternatives, Dead Sea Magnesium (Israel)	6–12 months	Medium
Battery graphite	Syrah Resources (Mozambique/USA), Nouveau Monde Graphite (Canada)	18–36 months	Low-Medium — anode processing still concentrated

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This section defines five early warning indicators that ChainGuard recommends tracking as leading indicators for the risk categories identified in this report.

Early Warning Indicator 1: China MOFCOM Rare Earth Export Quota Announcements

Data Source: China Ministry of Commerce (MOFCOM) official notices; Asian Metal price reporting; Metal Bulletin
Publication frequency: Monthly (quota announcements); daily (spot prices)
Signal type: Leading — typically 4–8 weeks ahead of physical supply constraint

What to monitor: Monthly MOFCOM export quota volumes for rare earth elements and compounds, compared against trailing 12-month average export volumes. Spot prices for neodymium oxide (NdO) and dysprosium oxide (Dy_2O_3) on Asian Metal.

Trigger threshold for escalation: - MOFCOM monthly quota allocation falls below 80% of trailing 12-month monthly average → **Escalate to procurement director within 48 hours** - Dysprosium oxide spot price increases >15% month-on-month → **Convene supply chain risk review within 5 business days**

Early Warning Indicator 2: TSMC Quarterly Fab Utilisation Rate

Data Source: TSMC quarterly earnings reports; SEMI capacity utilisation surveys; Gartner semiconductor market data
Publication frequency: Quarterly (TSMC earnings); monthly (SEMI surveys)
Signal type: Coincident — reflects current demand conditions with 6–12 week lead supply impact

What to monitor: TSMC reported fab utilisation for automotive-relevant nodes (28nm, 40nm, 65nm). Industry analyst consensus on lead time trajectory for AEC-Q100 qualified parts.

Trigger threshold for escalation: - TSMC reported utilisation at automotive nodes exceeds 95% → **Initiate Tier 1 supplier lead time survey immediately** - Tier 1-reported lead times for critical MCU families exceed 40 weeks → **Activate**

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Publication frequency: Daily (futures); semi-annual (Eurostat)
Signal type: Leading — energy cost passthrough to EU industrial suppliers typically lags spot price moves by 30–90 days

What to monitor: TTF 1-month forward price in EUR/MWh. Eurostat semi-annual industrial electricity price releases for Germany, France, Netherlands.

Trigger threshold for escalation: - TTF 1-month forward exceeds €50/MWh and holds above this level for >10 consecutive trading days → **Review energy pass-through exposure in supplier contracts** - TTF spot price increases >30% month-on-month → **Initiate energy cost scenario planning for Q+1 purchasing budgets**

Early Warning Indicator 4: Drewry World Container Index — Asia–North Europe Lane

Data Source: Drewry Shipping Consultants — World Container Index (weekly publication, publicly available at drewry.co.uk)
Publication frequency: Weekly (every Thursday)
Signal type: Leading — freight rate increases precede supply delay impact by 2–6 weeks depending on vessel position

What to monitor: Drewry WCI rate for Shanghai–Rotterdam lane (40ft container, USD/FEU). Port of Rotterdam and Antwerp-Bruges average vessel waiting time (port authority dashboards).

Trigger threshold for escalation: - Shanghai–Rotterdam WCI increases >20% versus 4-week average → **Review inbound sea freight buffer adequacy for JIT components** - Average vessel waiting time at Rotterdam or Antwerp >48 hours for >3 consecutive days → **Contact freight forwarders for congestion ETA impact assessment**

Early Warning Indicator 5: European Commission Trade Defence Instrument (TDI) Initiation Notices

Data Source: European Commission Official Journal (trade defence notices); EC DG Trade TDI database (trade.ec.europa.eu/tdi)

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What to monitor: New anti-dumping or countervailing duty initiation notices affecting automotive-relevant materials (steel flat products, aluminium, chemical precursors, electronic components). New CBAM ETS price reference updates.

Trigger threshold for escalation: - TDI initiation notice covering materials with >€5M annual purchase volume for the facility → **Procurement director review within 10 business days** - CBAM certificate reference price moves >€10/tonne CO_2 versus prior quarter → **Adjust landed cost models for affected import origins**

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This section provides a structured action plan across three horizons for the risk profile identified in this report.

Short-Term Actions (0–30 Days)

Priority 1: Rare Earth Supplier Disclosure Letters

Issue supplier disclosure requests to all Tier 1 motor, actuator, and generator assembly suppliers requiring: - Identification of all rare earth-containing sub-components (NdFeB magnets, HREE-bearing alloys) - Country of origin for rare earth metal extraction, separation, and processing - Current stock coverage in days for HREE-containing components - Identification of any single-source supplier dependencies

Owner: Procurement Director / Commodity Manager — Electrification
Deadline: 15 business days from report issue

Priority 2: Semiconductor Wafer Origin Survey

Issue supplier disclosure requests to all Tier 1 electronic sub-assembly suppliers requiring: - Top 10 semiconductor part numbers by annual volume - Wafer fabrication source (fab name, location, process node) - AEC-Q100 qualification status and alternative sources available - Current lead time and safety stock coverage

Owner: Commodity Manager — Electronics / ADAS
Deadline: 15 business days from report issue

Priority 3: CBAM Impact Assessment

Instruct customs/trade compliance team to run CBAM impact assessment across all non-EU steel and aluminium imports. Identify suppliers who have not yet provided embedded carbon declarations. Escalate to CPO if any material volume of imports lacks CBAM documentation.

Owner: Trade Compliance Manager
Deadline: 30 days from report issue

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Owner: Supply Chain Planning Manager
Deadline: 10 business days from report issue

Medium-Term Actions (30–90 Days)

Rare Earth Alternative Supplier Qualification

Initiate formal qualification engagement with at least two non-Chinese rare earth processors. Recommended contacts: Lynas Rare Earths (www.lynasrareearths.com — Australian mining, Malaysian and proposed US processing); Neo Performance Materials (Estonian processing facility, EU-based); MP Materials (US Mountain Pass facility). Qualification process for magnet-grade rare earth materials typically requires 12–18 months — begin the process in Q3 2025 to target H1 2027 diversification.

Owner: Strategic Sourcing / Supply Chain Risk
Milestone: Qualification NDA and information exchange by Day 60

Semiconductor Dual-Source Qualification Roadmap

For the top 5 sole-source TSMC-dependent semiconductor part numbers identified in the Priority 2 survey, engage Tier 1 suppliers on dual-source qualification plans. Assess GlobalFoundries and STMicroelectronics capacity for equivalent node parts. AEC-Q100 qualification cycle budget: 18–24 months and significant engineering effort — prioritise by annual volume and criticality.

Owner: Commodity Manager — Electronics in partnership with Tier 1 Engineering
Milestone: Dual-source shortlist by Day 75

Energy Pass-Through Contract Review

Review all supply contracts with energy-intensive sub-assembly suppliers (castings, forgings, surface treatment, painting) for energy cost clause structure. Identify contracts with uncapped energy pass-through clauses that create open-ended cost exposure. Renegotiate or cap exposure at next contract renewal.

Owner: Procurement Legal / Category Manager
Milestone: Full contract audit complete by Day 90

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Develop a strategic stockholding policy for HREE-containing components (NdFeB magnet assemblies, rare earth oxides if direct purchase is feasible) targeting minimum 90-day coverage for critical EV drivetrain applications. This will require balance sheet provision and warehouse infrastructure — present business case to CPO and CFO by Q4 2025.

Owner: CPO + CFO
Target completion: Q1 2026

Dual Sourcing — Automotive Semiconductor Critical Parts

Complete AEC-Q100 qualification of secondary semiconductor sources for the top 5 TSMC-dependent parts. Target first dual-source production volumes by Q1–Q2 2027.

Owner: Commodity Manager — Electronics
Target completion: Q2 2027

EU/Allied Rare Earth Processing Partnership

Assess participation in EU-level rare earth processing investment vehicles (e.g. European Raw Materials Alliance — ERMA — which coordinates rare earth processing investments under the EU Critical Raw Materials Act framework). Industry consortia can share qualification and investment costs.

Owner: CPO / Government Affairs
Target: ERMA engagement initiated by Q1 2026

Logistics Modal Diversification

For Asia-origin critical components currently 100% sea freight dependent, develop a tested air freight or rail alternative for emergency use. Define activation criteria (e.g. sea freight lead time exceeds 45 days) and negotiate emergency air freight capacity agreements with forwarders.

Owner: Supply Chain Planning / Logistics
Target: Emergency protocol documented and tested by Q4 2025

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Data Sources

ChainGuard's Supply Risk Reports are built from a combination of public institutional data, market price feeds, and regulatory monitoring. The following named sources were used in the preparation of this report:

Trade statistics	UN Comtrade (comtrade.un.org)	Public
Trade statistics (EU)	Eurostat Comext (ec.europa.eu/eurostat/comext)	Public
Mineral commodity data	USGS Mineral Commodity Summaries (usgs.gov/centers/national-minerals-information-center)	Public
Metal spot prices	London Metal Exchange (lme.com) official data	Subscription/Public
Rare earth prices	Asian Metal (asianmetal.com); Metal Bulletin (fastmarkets.com)	Subscription
Energy data	IEA World Energy Outlook (iea.org); Eurostat nrg_pc_205	Public/Subscription
EU legislation	EU Official Journal (eur-lex.europa.eu)	Public
Trade defence	EC DG Trade TDI database (trade.ec.europa.eu/tdi)	Public
Freight rates	Drewry World Container Index (drewry.co.uk)	Public (weekly)
Freight rates	Freightos Baltic Index (freightos.com/the-freightos-baltic-index)	Public
Semiconductor data	SEMI capacity data; TSMC quarterly reports	Public

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Port statistics	Port of Rotterdam (portofrotterdam.com); Port of Antwerp-Bruges (portofantwerpbruges.com)	Public
Carbon pricing	Ember Climate ETS tracker (ember-climate.org)	Public
Carbon pricing	ICE TTF Natural Gas Futures	Exchange/Subscription

Scoring Methodology

ChainGuard's risk scoring model produces a composite score on a 1–10 scale for each input category and a portfolio-level weighted average. The model integrates four dimensions:

1. Supply Concentration Index (SCI)

Measures Herfindahl-Hirschman Index (HHI) equivalent for the sourcing origin profile of the input category, weighted by EU automotive sector import share from UN Comtrade and Eurostat Comext data. Higher concentration = higher score contribution.

2. Policy Volatility Index (PVI)

Tracks the rate of change in relevant trade policy, export control, and regulatory instruments in the 90 days preceding the report period. Sources: EU Official Journal, national customs authority notices, BIS Federal Register notices, China MOFCOM announcements. Rapid policy change = higher score contribution.

3. Price Volatility Signal (PVS)

Measures standard deviation of the relevant benchmark price (LME, Drewry WCI, TTF, Asian Metal) over the trailing 90-day period, normalised against a 5-year baseline. Elevated volatility = higher score contribution.

4. Lead Time Stress Indicator (LTSI)

Assesses current sourcing lead time versus historical baseline, drawing on supplier-reported data, industry analyst lead time surveys (SEMI, Gartner, AlixPartners), and commodity-specific market intelligence. Extended lead times = higher score contribution.

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logistics categories carry higher PVS weighting.

Portfolio Score Calculation: Category scores are weighted by the estimated annual spend exposure for a representative EU Tier 1 automotive supplier. The Q3 2025 portfolio score of **7.4/10** reflects dominant weighting from the HIGH-rated rare earth, semiconductor, and steel categories.

Disclaimer

This report reflects market conditions, policy status, and supply chain intelligence as of the Q3 2025 reporting period (July–September 2025). Supply chain risk conditions can change rapidly. This report should not be relied upon as the sole basis for procurement decisions; users should verify current conditions with their own suppliers and advisors before taking action.

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ChainGuard Supply Intelligence
Disruption risk for industrial inputs — before it hits production

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