



# GLOBAL MECHANICAL INTELLIGENCE

Q3 2025

JULY - SEPTEMBER

**JABIL**

MADE POSSIBLE.  
MADE BETTER.

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# EXECUTIVE SUMMARY

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Welcome to the Q3 edition of the Global Mechanicals and Subassembly report.

As we enter the second half of the year, we are witnessing a rapidly evolving global supply chain ecosystem, characterized by shifting tariffs, accelerating electrification and digitalization, and intensifying sustainability mandates. While demand remains resilient in key sectors, including electric vehicles (Evs), electronics, and healthcare, supply dynamics and pricing trends vary significantly by category and geography.

## KEY MARKET TRENDS

### TARIFF REALIGNMENT

U.S.–China and U.S.–Mexico trade policies are reshaping sourcing strategies, with Mexico, Southeast Asia, and India emerging as key manufacturing regions.

### ELECTRIFICATION & DIGITALIZATION

AI data centers, EVs, renewable energy, and smart devices are driving demand for high-performance components—especially in batteries, displays, and die-cut.

### SUSTAINABILITY

Regulatory pressure in Europe and North America is accelerating the shift to recyclable, bio-based, and solvent-free materials across packaging, resins, and die-cut components.

## SECTOR HIGHLIGHTS

### BATTERIES

Global demand is surging, led by EVs and energy storage. Solid-state and LFP chemistries are gaining traction. Cobalt prices are up significantly, while lithium prices have softened.

### DISPLAYS

OLED and Micro LED technologies are advancing rapidly. China dominates production, but tariffs and glass substrate shortages are influencing pricing.

### CABLES

AI and automation are fueling demand for high-speed and industrial cables. Supply is tight due to raw material constraints and tariff-driven shifts.

# EXECUTIVE SUMMARY (CONT.)

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## POWER SUPPLIES

Stable pricing and lead times. Demand is strong from data centers and EV infrastructure. Southeast Asia is gaining as a production base.

## OPTICAL LENSES

Mobile and automotive sectors are driving growth. Supply is stable, but geopolitical risks are prompting diversification.

## METALS

- **Aluminum:** Prices stabilizing post-tariff suspension. The U.S. and India are expanding capacity.
- **Copper:** Bullish outlook due to growing green energy demand; prices are currently high.
- **Nickel:** Oversupply from Indonesia; battery demand is slowing.
- **Steel:** Prices rising in the U.S., stable in the EU, and softening in Asia. EV and infrastructure sectors are key demand drivers.

## PACKAGING

- **PE:** North America sees structural growth, while China faces oversupply.
- **PET:** Demand is strong in the beverage industry; India faces shortages, while the EU is focused on rPET.
- **Paper & Linerboard:** Prices are rising in the Americas, stable in the EU, and easing in Asia.

## ENGINEERING RESINS

Ranges from stable to oversupplied, with generally soft pricing, but sensitive to additives like flame-retardants, and tariffs.

## DIE-CUT

Demand is strong across EVs, electronics, and medical devices. Specialty materials command premium pricing. Sustainability and innovation are key differentiators.

# EXECUTIVE SUMMARY (CONT.)

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## STRATEGIC IMPLICATIONS

Jabil remains committed to diversifying its sourcing strategies to minimize exposure to geopolitical, regulatory, and supply chain disruptions. Through continuous monitoring of raw material pricing and regulatory developments, we manage cost fluctuations and reduce the risk associated with trading in a volatile market. We are also investing in sustainable, high-performance materials to meet the evolving requirements of our customers and to comply with global standards. Our ongoing focus remains on anticipating potential disruptions, mitigating risk and ensuring continuity across our global value chain. If you require further information or support, please do not hesitate to contact us directly.

Yours sincerely,

Keith Lapinski & Andy Van Putte

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# BATTERIES

## HEATMAP

### MARKET DYNAMICS

Primary Battery (Lithium Metal)  
 Primary Battery (Dry)  
 Rechargeable (Lithium-ion)  
 Rechargeable (Lithium-Polymer)  
 Rechargeable (Others)

Q3'25      Q4'25      Q1'26      Q2'26


### SUPPLY ANALYSIS

Primary Battery (Lithium Metal)  
 Primary Battery (Dry)  
 Rechargeable (Lithium-ion)  
 Rechargeable (Lithium-Polymer)  
 Rechargeable (Others)


### PRICING SITUATION

Primary Battery (Lithium Metal)  
 Primary Battery (Dry)  
 Rechargeable (Lithium-ion)  
 Rechargeable (Lithium-Polymer)  
 Rechargeable (Others)


Market Dynamics:

Stable Supply Chain Risk;

Potential Supply Chain Risk;

High Supply Chain Risk

Pricing Situation:

Decreasing Pricing;

Stable Pricing;

Increasing Pricing

Supply Analysis:

Increasing Capacity/Supply;

Stable Capacity/Supply;

Decreasing Capacity/Supply

# MARKET DYNAMICS

## EXPLOSIVE DEMAND GROWTH

- The global battery market, valued at over \$100 billion in 2024, is projected to grow at a 15–20% CAGR through 2025
- Electric Vehicles (EVs): Expected to account for 60–70% of total lithium-ion battery demand, with China leading global EV adoption
- Energy Storage Systems (ESS): The global ESS market is forecast to reach \$13.13 billion by 2025, fuelled by solar and wind integration
- Consumer Electronics: Steady but slower growth, with continued reliance on lithium-polymer batteries

## RECENT DEVELOPMENTS (JULY 2024 – JUNE 2025)

Date	Battery Supplier/Manufacturer	End User (Company 2)	Development Type	Description	Deal Value
May-25	BYD (China) -		Product Development & Launch	BYD Energy Storage has launched its new fourth-generation home battery system the Battery-Box HVB (high voltage Blade). This residential storage solution incorporates BYD's Blade Battery technology, previously utilized in its electric vehicles, to offer higher energy density. The modular system, presented in a stacked cabinet format similar to previous HVS and HVM models, ranges from 5.9 kWh (two modules) to 29.6 kWh (ten modules) per stack, and can be expanded up to 89.07 kWh by using three systems in parallel	-











Category	Market Segment	Product Type	Key Features	Target Applications	Market Share (%)	Revenue (\$B)	YTD Growth (%)
Automotive	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	25	12.5	+10%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	15	6.0	+8%
Consumer Electronics	Smartphones	High-capacity batteries, fast charging, long battery life	Smartphones, wearables	Smartphones, wearables	40	15.0	+5%
		Power Banks	Compact, portable, high capacity	Smartphones, wearables	10	3.0	+3%
Industrial	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	10	4.0	+12%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	5	2.0	+10%
Transportation	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	15	6.0	+10%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	10	4.0	+8%
Grid Storage	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	5	2.0	+15%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	3	1.2	+10%
Commercial	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	10	4.0	+10%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	5	2.0	+8%
Residential	EV Components	EV Battery Cells	High energy density, fast charging, long range	EV vehicles, grid storage	5	2.0	+12%
		EV Battery Modules	Modular design, compact, integrated management	EV vehicles, grid storage	3	1.2	+10%

Source: Press releases & company websites

## DEMAND/SUPPLY OVERVIEW

### Market Dynamics

The global battery market is rapidly expanding driven by the continuing adoption of electric vehicles and the integration of renewable energy and storage across the globe. Total battery demand is projected to surpass 2.5 GWh with a CAGR of 12% from 2023-2028. The demand from accounting for over 90% of battery consumption, with grid storage making up the rest.

- EVs remain the dominant driver accounting for over 90% of battery consumption, with global demand reaching 2.2 GWh.
- Energy Storage Systems (ESS) are seeing healthy growth with 10% of new capacity added during the year-over-year growth.
- Industrial and residential sectors continue to fuel the market through wind and solar energy. Technologies are seeing traction as next-generation solutions.

Global Mechanical Intelligence is a strategic initiative focused on developing a deep understanding of global mechanical engineering trends, market dynamics, and technological advancements. The team is composed of experts from various disciplines, including mechanical engineering, materials science, and manufacturing processes. The primary goal is to provide timely and accurate insights that support Jabil's product development and manufacturing operations.

## Global Mechanical Trends

- Advanced materials: The trend towards lighter, stronger, and more sustainable materials is driving innovation in various industries.
- Additive manufacturing: 3D printing is becoming more widespread, offering new design possibilities and manufacturing efficiencies.
- Electrification: The shift towards electric powertrains and systems is a significant trend, particularly in the automotive and aerospace sectors.

## Global Market Analysis

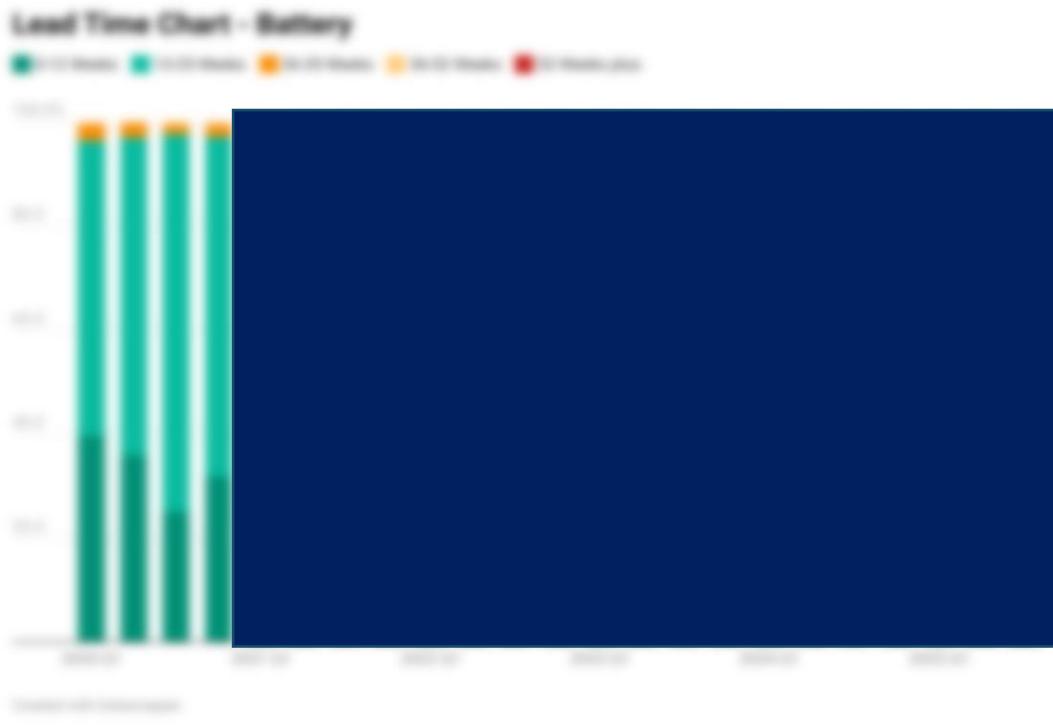
The global mechanical engineering market is experiencing significant growth, driven by increasing demand for automation, robotics, and industrial equipment. The market is highly competitive, with major players investing in research and development to maintain their competitive edge.

## Global Mechanical Trends by Region

Geographically, North America and Europe are leading markets for mechanical engineering.

- North America and Europe are facing increasing scrutiny due to concerns over climate change and environmental impact.
- Asia is experiencing the fastest growth in demand for advanced and complex mechanical components, driven by rapid industrialization and urbanization.

## LEAD TIME CHART



## PRICING SITUATION

### Global Market Trends

Global average prices have declined below \$1000 per kWh, marking a four-year low. This also reflects a consistent shift towards an increasing adoption of batteries. In China, new energy vehicle (NEV) sales showed a 40% year-over-year increase, representing a deceleration in what was once the world's fastest-growing EV market.

- Top EV battery producers: China, China, Australia, Argentina
- Major importers: China, Japan, South Korea, United States

### China's Impact

Global prices have dropped 20-30% year-to-date, reaching over \$2,700 per kWh by the end of June 2025. This is attributed to China's high battery output and growing sales, contributing to the dominant share of China's total exports for over 80% of global EV production. Other notable producers include Russia, Australia, the Philippines, and India.

### EV Adoption and Market Penetration

Global adoption of EVs is on the rise, accounting for over 10% of the total vehicle sales. However, currently, electric vehicles make up only 10% of the total global vehicle sales. The market is likely to experience further growth, with projections for over 100 million

## END MARKET OVERVIEW

Industry	Battery Type(s)	Applications	Expected Demand	Supply Commentary
Automotive	Lithium-Ion (Li-ion) (NMC, LFP, NCA, LMO)	Main traction batteries for Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs),	The automotive Lithium-ion battery cell market is projected to be worth about \$130 billion in 2025. Strong growth is driven by EV market expansion.	Raw material supply (lithium, cobalt, nickel) and cost volatility remain key challenges, alongside potential overcapacity in battery manufacturing in 2024, possibly leading to price pressures in 2025.
	Lithium Polymer (Li-Po)	Hybrid Electric Vehicles (HEVs). Specific chemistries like LFP are gaining traction for cost and safety.		
	Lead-Acid	Starting, Lighting, Ignition (SLI) in Internal Combustion Engine (ICE) vehicles; auxiliary power in some EVs.	Mature market, demand influenced by ICE vehicle sales and aftermarket replacements.	Mature and stable supply chain with high recycling rates
	Lithium Metal (Emerging/Developmental)	Potential for next-generation EV batteries (higher energy density).	Early commercialization phase, demand for 2025 is small but expected to grow significantly in the long term as technology matures for EV applications.	Supply chain is still developing; reliant on scaling new anode technologies and, in some cases, solid-state electrolytes. Availability of high-purity lithium metal is a factor.





Category	Impact	Mitigation Strategy	Conclusion
Raw Materials	Supply chain disruption due to increased costs and availability issues.	Local sourcing, diversify suppliers, and explore alternative materials.	Challenging but manageable.
Manufacturing	Increased costs and potential production delays.	Optimize processes, invest in automation, and explore cost-effective manufacturing locations.	Significant impact, requires careful planning.
Transportation	Higher shipping costs and longer delivery times.	Optimize routes, use multimodal shipping, and explore local manufacturing hubs.	Impact varies by route and mode.
Final Product	Higher final product costs and potential market entry challenges.	Pass on costs to customers, focus on value-add services, and explore market segments.	Long-term impact, requires strategic planning.

## IMPACT OF TARIFFS

### IMPACT ON BATTERY SUPPLY CHAIN

With the recent trade disputes between the United States and China, tariffs have surged, ranging from 25% to as high as 300%. The tax impacts are felt across the entire supply chain, from raw materials to finished battery systems. U.S. and other battery manufacturers are adapting to these challenges.

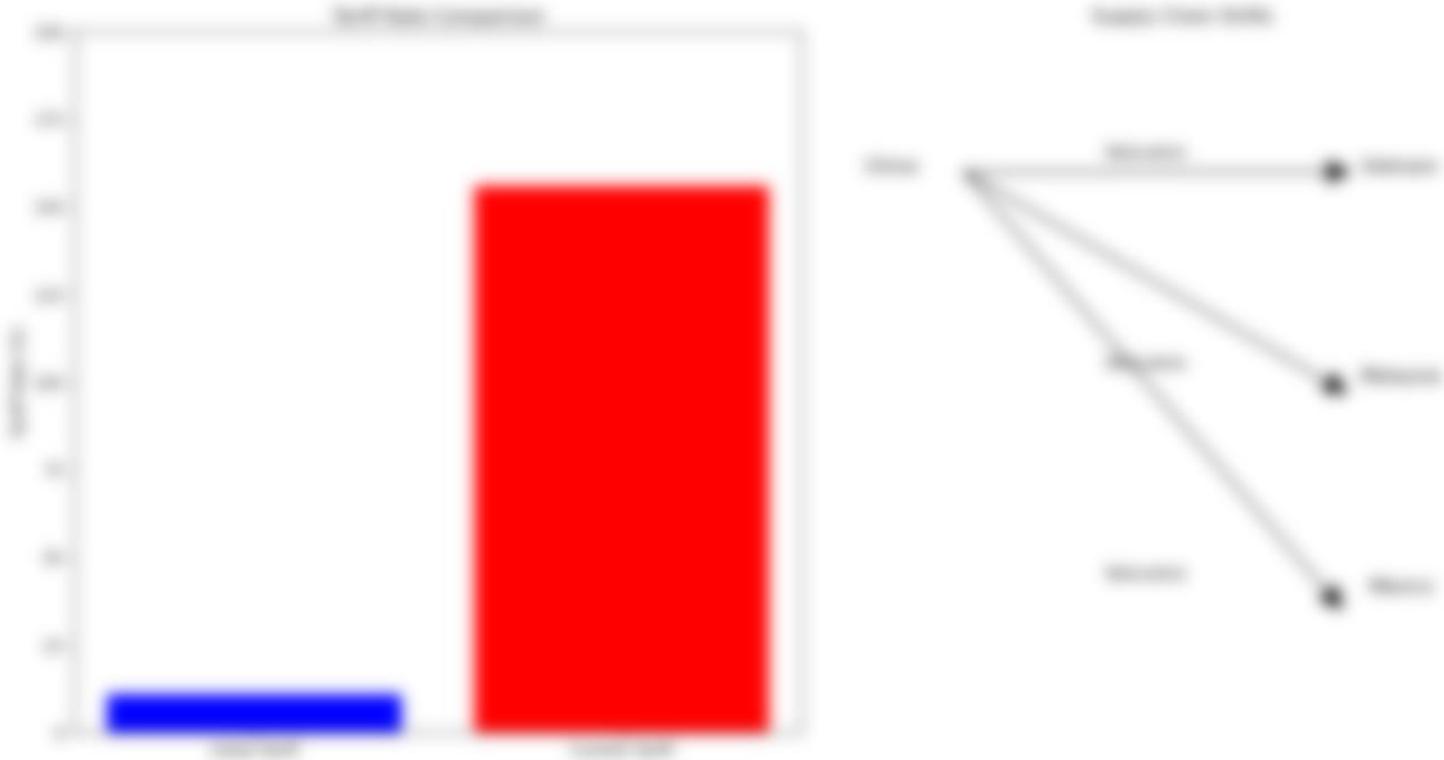
### IMPACT ON BATTERY SUPPLY CHAIN

- Increasing tariff impacts, companies are:
- Shifting certain imported cells
- Shifting production to countries like Vietnam, Mexico, and Mexico
- Shifting inventory in anticipation of further tariff hikes

### IMPACT ON BATTERY USE IN U.S. MARKET

The U.S. battery sector faces mounting challenges in manufacturing and consumption. Rising tariffs are driving domestic manufacturers and importers, particularly in:

- EV production, where battery costs constitute a significant component
- Grid-scale storage, where project economics are extremely sensitive to component pricing



## KEY TAKEAWAYS

- **EU Battery Regulation:** Since February 2023, the regulation has mandated a Battery Passport for all EV and industrial batteries by 2026. It aims to enhance transparency, environmental sustainability, and cost efficiency.
- **Global Demand for Technologies:** Manufacturers are investing heavily in solid-state batteries and alternative chemistries to reduce reliance on lithium and cobalt while improving energy density, safety, and cycle performance.
- **Sustainability and Circular Economy:** Battery recycling initiatives are growing. Governments are providing incentives for collection and closed-loop systems to reduce waste and support cleaner energy storage.
- **Geopolitical Factors:** Global battery demand creates stress, production bottlenecks, geopolitical tensions, and trade barriers may impact pricing stability and the outcome of the market shift.

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Q2 2025 | APRIL - JUNE

# CABLES

## HEATMAP

	Q3'25	Q4'25	Q1'26	Q2'26
<b>MARKET DYNAMICS</b>				
Harness	Low complexity			
	High complexity			
Molded cables				
RF-Coaxial				
LVDS				
High Speed				
FFC-Ribbon				
Power cord				
<b>SUPPLY ANALYSIS</b>				
Harness	Low complexity			
	High complexity			
Molded cables				
RF-Coaxial				
LVDS				
High Speed				
FFC-Ribbon				
Power cord				
<b>PRICING SITUATION</b>				
Harness	Low complexity			
	High complexity			
Molded cables				
RF-Coaxial				
LVDS				
High Speed				
FFC-Ribbon				
Power cord				

**Market Dynamics:** █ Stable Supply Chain Risk; █ Potential Supply Chain Risk; █ High Supply Chain Risk  
**Pricing Situation:** █ Decreasing Pricing; █ Stable Pricing; █ Increasing Pricing  
**Supply Analysis:** █ Increasing Capacity/Supply; █ Stable Capacity/Supply; █ Decreasing Capacity/Supply

## MARKET DYNAMICS

### CABLE MARKET ESTIMATES:

- The global wire and cable market is valued at USD 309.07 billion in 2025. It is projected to grow to approximately USD 395.07 billion by 2030, achieving an average annual growth rate (CAGR) of 4.20% during the forecast period, published by Prudential Research in April 2025.
- Artificial Intelligence and Machine Learning are driving the demand for cables in data centers. Adopting advanced techniques, real-time data processing, and improving network access has driven demand for data center cables. Increasing AI and ML further enhances efficiency, making these technologies essential for businesses, especially in emerging economies.
- The growing reliance on digital tools, AI devices, and mobile technologies has accelerated market expansion. Businesses are increasingly relying on connected solutions, contributing to the growing demand for robust data infrastructure.

Wires & Cables Market (USD Billion)



## RECENT DEVELOPMENTS (JULY 2024 – JUNE 2025)

Category	Sub-Category	Development	Impact	Timeline
Product Innovation	Electronics	Introduction of a new high-performance component for mobile devices.	Significant performance improvements and cost reductions.	Q3 2024 - Q1 2025
Process Optimization	Manufacturing	Implementation of a new robotic assembly line for high-volume production.	Increased efficiency and reduced lead times.	Q4 2024 - Q2 2025
Supply Chain	Logistics	Establishment of a new distribution center in Asia.	Improved global delivery times and cost efficiency.	Q1 2025 - Q3 2025

Category	Sub-Category	Product Type	Description	Unit	Quantity	Unit Price	Total Value
Electronics	PC Components	Processor	Intel Core i9-13900K	Unit	1	\$1,200.00	\$1,200.00
Electronics	PC Components	GPU	NVIDIA RTX 4090	Unit	1	\$1,500.00	\$1,500.00
Electronics	Peripherals	Keyboard	Razer BlackWidow V3 Pro	Unit	1	\$100.00	\$100.00

Year	Estimated Population of U.S.	Estimated Population of U.S.	Year	Population of U.S.	Population of U.S.
1790	3.9	4.3	1800	5.3	5.5
1810	7.2	7.9	1820	10.0	10.5
1830	12.0	13.0	1840	16.0	17.0
1850	23.0	23.0	1860	31.0	31.0
1870	38.0	38.0	1880	50.0	50.0
1890	63.0	63.0	1900	76.0	76.0
1910	92.0	92.0	1920	106.0	106.0
1930	123.0	123.0	1940	132.0	132.0
1950	151.0	151.0	1960	179.0	179.0
1970	204.0	204.0	1980	227.0	227.0
1990	251.0	251.0	2000	281.0	281.0
2010	308.0	308.0	2020	328.0	328.0

*Source: Press releases & company websites*

## DEMAND/SUPPLY OVERVIEW

### DEMAND COMMENTARY

### SUPPLY ANALYSIS

## Key Supply Chain Challenges

### Raw Material Constraints

- Copper & Aluminum supply volatility due to mining disruptions, export restrictions, and increasing demand from green initiatives.
- Polymers & Plastics used for insulation and shielding facing supply tightness due to inflation and geopolitical stability issues.

### Production Bottlenecks

- Limited capacity expansion in recent years, especially for specialized niche components.
- High lead times for raw materials and finished goods due to supply chain inefficiencies.

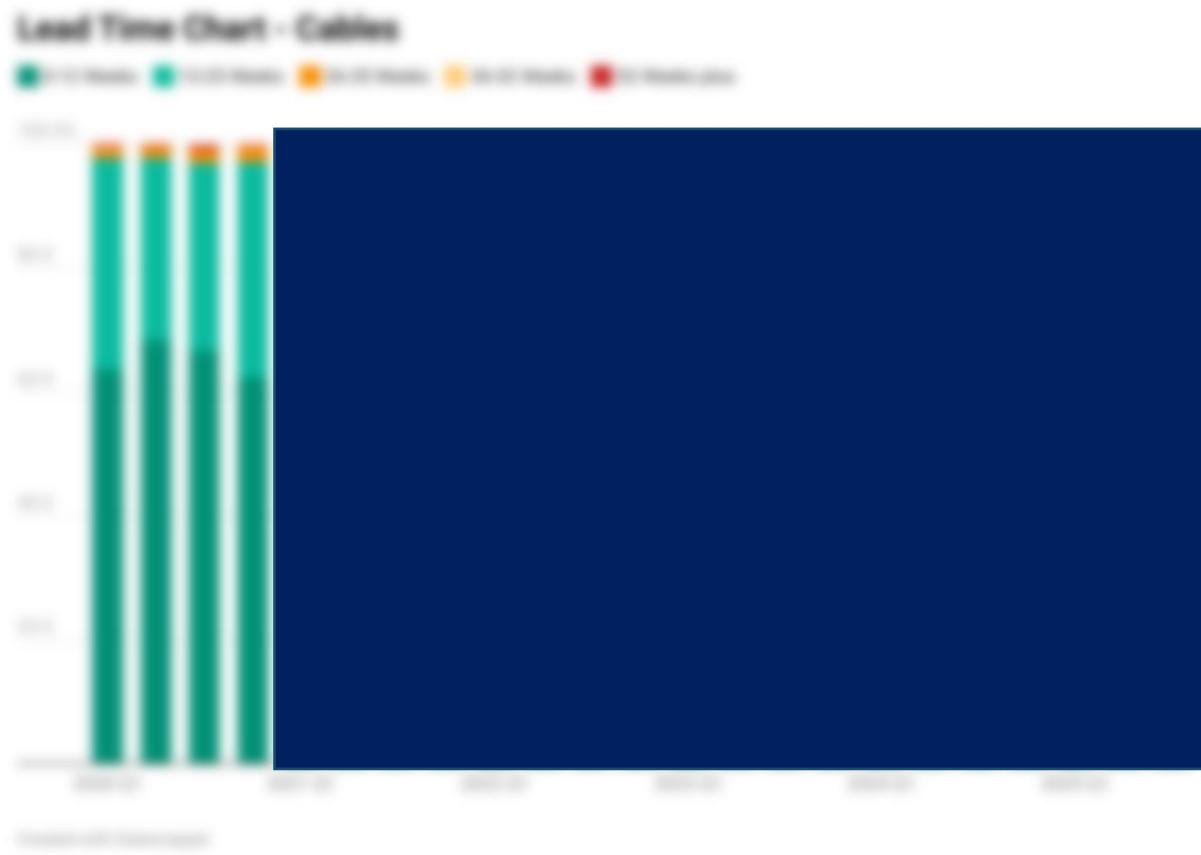
### Logistics & Distribution Issues

- Port congestion and freight rate volatility continue to impact delivery timelines.
- Increasing supply chain complexity requires synchronized communication, adding complexity.

## Regional Supply Trends

- Asia-Pacific: Continues to dominate production but faces export slowdown due to trade tensions and growing domestic consumption.
- Europe: Focusing on domestic production for strategic autonomy, especially in energy and defense sectors.
- North America: Focusing on本土 manufacturing to support grid modernization, data center growth, and EV infrastructure.
- Middle East & Africa: Emerging as a strategic production and export hub, particularly for aluminum-based sectors.

## LEAD TIME CHART



## PRICING SITUATION

- Asia-Pacific: Continue to dominate production but faces export slowdown due to trade tensions and growing domestic consumption.
- Europe: Slowing as domestic production for strategic autonomy especially in energy and defense sectors.
- North America: Focusing on value manufacturing to support grid modernization, data center growth, and EV infrastructure.
- Middle East & Africa: Emerging as a strategic production and export hub, particularly for downstream device sectors.

### Logistics & Distribution Trends

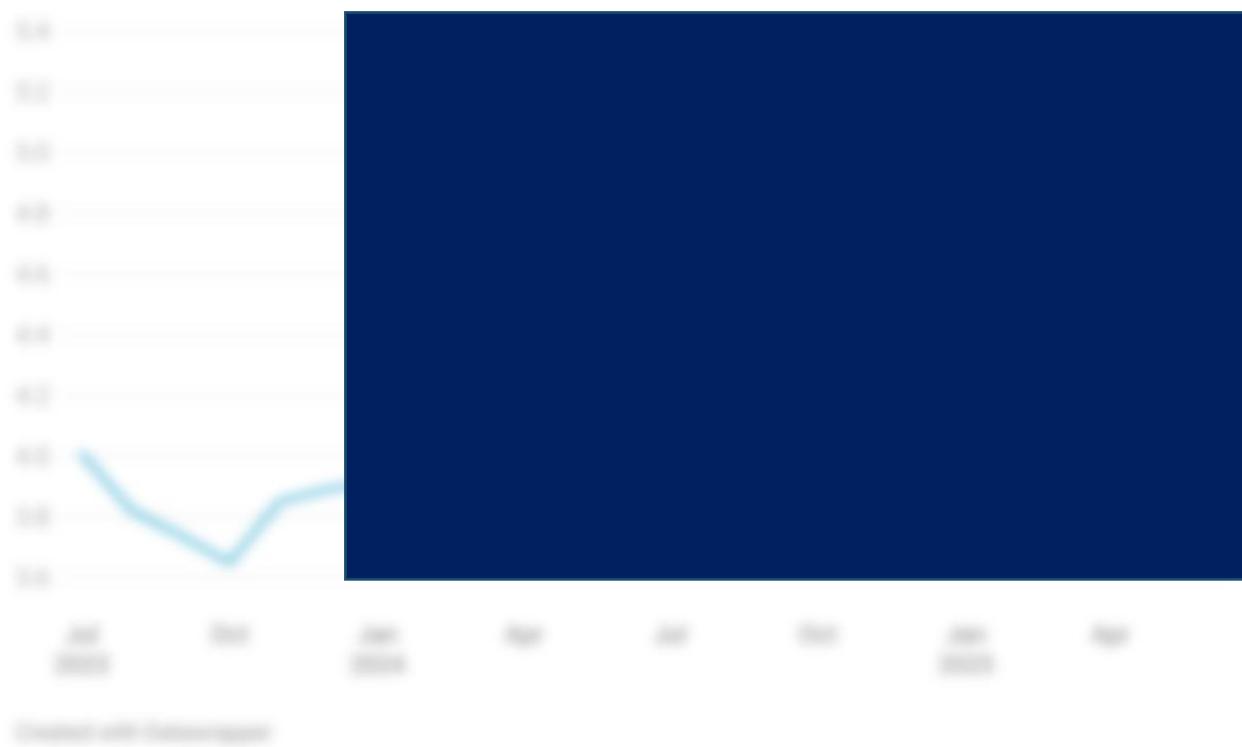
- Port congestion and freight rate volatility continue to impact delivery timelines.
- Many facilities utilize multi-modal transportation, adding complexity.

### Regional Supply Trends

- Asia Pacific: Continue to dominate production but faces export challenges due to trade tensions and growing domestic consumption.
- Europe: Slowing in domestic production due to strong activity, especially in energy and defense sectors.
- North America: Focusing on cable manufacturing to support grid modernization, EV sector growth, and 5G infrastructure.
- Middle East & Africa: Emerging as a strong production and export hub, particularly for aluminum-based cables.

Monthly Copper Price Trend (2020-2024)

Price (USD/lb)



## END MARKET OVERVIEW





## IMPACT OF TARIFFS

## KEY TAKEAWAYS

- The global wire and cable market, valued at USD 200 billion in 2023, is expected to reach USD 300.57 billion by 2028, driven by rapid R&D, cost, and automation adoption.
- Demand is surging for high-performance cables such as Industrial Ethernet, power cables, fiber optic, and high-speed data cables, particularly in data centers and smart manufacturing. However, supply challenges are becoming more pronounced, production bottlenecks, and logistics challenges.
- Smart cable manufacturing remains concentrated in Asia, but geographical shifts are prompting regional distribution. Supply chain disruptions costs and supply challenges, encouraging companies to enhance their existing strategies and consider localized production, which may lead to increased short-term costs and market volatility.
- Prices have risen sharply due to higher and fluctuating volatility energy costs, and freight disruptions, with elevated pricing expected through 2028 before gradually declining as capacity expands.