



## **The Critical Role of Sulfur in Global Food Security, Mining, and the Energy Transition**

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Sulfur rarely gets the attention given to crude oil, natural gas, copper, lithium, or grain.

But it should.

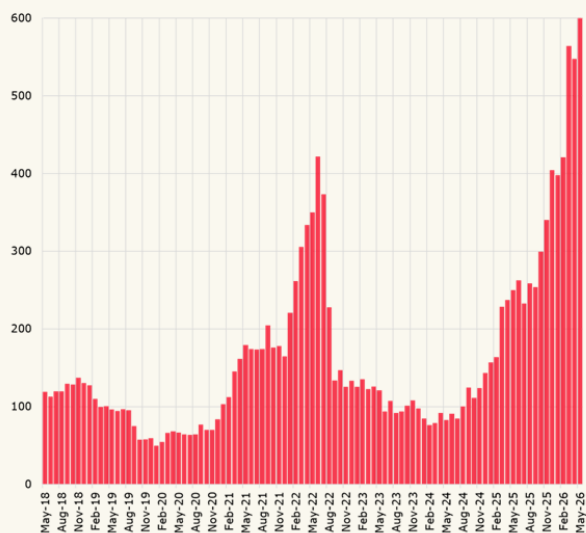
Sulfur is one of the world's most important industrial commodities — and the largest-volume chemical. It sits quietly behind several of the systems that sustain modern life: fertilizer production, mineral processing, clean fuels, battery materials, industrial chemicals, and global food supply.

Recent volatility in sulfur markets made that reality impossible to ignore.

Concerns over a disruption to shipping through the Strait of Hormuz sent sulfur prices sharply higher, rising more than 60% from February to May 2026 and approaching nearly \$700/mt – and that after more than a 300% rise from February 2025 to February 2026. The same chokepoint that threatens crude oil flows also affects sulfur supply from the Middle East.

## Strait of Hormuz closure cut off crude oil & sulfur supply; also inhibiting Asia sulfur production

**Sulfur prices**  
North America sulfur export prices, USD/kmt



W1-MPR-25062026-R00

Source: Worley Insights analysis of GTT data; HS 2503, sulphur of all kinds (excl. sublimed sulphur, precipitated sulphur and colloidal sulphur)

**Change in sulfur supply**  
Sulfur exports by country, kmt

|                        | YTD May 2025  |                      | YTD May 2026 | 2026 top country's change |
|------------------------|---------------|----------------------|--------------|---------------------------|
| 1 United Arab Emirates | 2,802         | Canada               | 2,421        | 44%                       |
| 2 Kazakhstan           | 1,928         | United Arab Emirates | 1,473        | (47%)                     |
| 3 Saudi Arabia         | 1,836         | Saudi Arabia         | 1,338        | (27%)                     |
| 4 Canada               | 1,682         | United States        | 1,188        | 94%                       |
| 5 Qatar                | 1,365         | Kazakhstan           | 1,154        | (40%)                     |
| 6 Oman                 | 1,071         | Oman                 | 532          | (50%)                     |
| 7 Kuwait               | 709           | South Korea          | 523          | (15%)                     |
| 8 South Korea          | 613           | Qatar                | 503          | (63%)                     |
| 9 United States        | 611           | India                | 355          | (26%)                     |
| 10 Iran                | 520           | Japan                | 324          | (16%)                     |
| Rest                   | 1,908         | Rest                 | 81           | (96%)                     |
| <b>Total</b>           | <b>15,045</b> | <b>Total</b>         | <b>9,891</b> | <b>(34%)</b>              |

During this period, North America stepped up.

As sulfur availability from other regions tightened, the United States and Canada increased their importance as flexible, reliable suppliers to world markets. The export data show North American sulfur moving into key consuming regions at a time when geopolitical risk was reshaping global trade flows.

### Sulfur Is Not Just a Byproduct — It Is Strategic Infrastructure

Most sulfur is not mined directly.

It is recovered from oil refining (55-60%), natural gas processing (25-35%), and other industrial operations. Environmental regulations requiring sulfur removal from fuels transformed what was once treated as a pollutant into a globally essential raw material.

That makes sulfur one of the great underappreciated environmental success stories.

North American refiners and gas processors built the infrastructure to capture sulfur that would otherwise contribute to air pollution and acid rain. In doing so, they not only improved environmental performance — they created a supply chain that now supports agriculture, mining, and industrial production across the world.

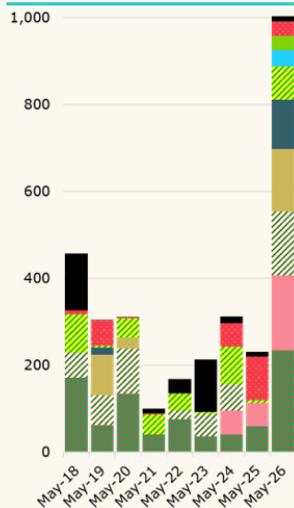
In practical terms, North American hydrocarbon processing does more than produce gasoline, diesel, jet fuel, natural gas, and petrochemical feedstocks. It also generates sulfur needed to make fertilizer, process minerals, and support materials used in electrification and advanced manufacturing.

## The Hidden Link Between North American Energy and Global Food Supply

The importance of North American sulfur becomes clearer when looking at where it goes.

### How North American oil/gas processing saved the planet; sulfur destinations and critical uses

US & Canada sulfur extra regional exports  
by destination  
YTD May each year, kmt



Major uses at export destinations

|              |                                                 |
|--------------|-------------------------------------------------|
| Rest         |                                                 |
| China        | Phosphate fertilizers and industrial chemicals  |
| South Africa | Fertilizers and mining/metallurgical processing |
| Tanzania     | Gold processing and fertilizer production       |
| Brazil       | Phosphate fertilizers and industrial chemicals  |
| Namibia      | Uranium and base metals processing              |
| Morocco      | Phosphate fertilizer production                 |
| Australia    | Copper, nickel, and uranium processing          |
| Indonesia    | Nickel processing and phosphate fertilizers     |
| Mexico       | Phosphate fertilizers and copper processing     |

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Source: Worley Insights analysis of GTT data; HS 2503, sulphur of all kinds (excl. sublimed sulphur, precipitated sulphur and colloidal sulphur); excludes US-Canada intra-regional trade

US and Canadian sulfur exports flow into countries where the material is used for phosphate fertilizers, copper processing, nickel production, uranium processing, gold recovery, base metals, and industrial chemicals. The chart highlights major destinations including Mexico, Indonesia, Australia, Morocco, Namibia, Tanzania, South Africa, Brazil, and China.

These are not marginal uses.

They are central to food supply, mining, manufacturing, and the energy transition.

- **Mexico** uses sulfur for phosphate fertilizer production and copper processing
- **Indonesia** relies on sulfur for nickel processing and phosphate fertilizers — connecting sulfur directly to battery materials
- **Australia** uses sulfur in copper, nickel, and uranium processing
- **Morocco** converts imported sulfur into sulfuric acid for phosphate fertilizers
- **Brazil** depends on sulfur for phosphate fertilizers and industrial chemicals, supporting one of the world's largest agricultural sectors
- **China** uses sulfur across fertilizer, industrial chemical, and manufacturing value chains

- **Namibia, Tanzania, and South Africa** use sulfur in uranium, base metals, gold processing, fertilizer, and metallurgical applications

In other words, sulfur recovered from a refinery or gas plant in North America can end up supporting crop yields in Brazil, copper processing in Mexico, nickel production in Indonesia, phosphate fertilizer in Morocco, or uranium and base metals processing in Africa and Australia.

That is a remarkable global footprint for a commodity still commonly described as a byproduct.

### Why the Strait of Hormuz Matters to Sulfur Buyers

Most market discussion around the Strait of Hormuz focuses on oil.

Sulfur buyers need to pay attention as well.

The Strait is a critical shipping route for both crude oil and sulfur exports from the Middle East. When maritime traffic through the region is threatened, sulfur availability can tighten quickly. At the same time, energy price volatility can change refinery economics, crude runs, sulfur recovery volumes, and trade flows.

The result is a sulfur market that can move rapidly from balanced to stressed.

The 2026 price move demonstrated that sulfur is not simply a regional procurement issue. It is a global supply-chain risk.

### Strategic Implications for Sulfur Market Players

The lesson for buyers is clear: sulfur procurement can no longer be treated as routine purchasing. For suppliers: There is a strategic opportunity. Sulfur and high-quality petroleum coke (petcoke) are no longer merely byproducts to clear. Both are tied to growth markets, including agriculture, critical minerals, energy transition materials, and industrial development.

Like the supply-chain shocks that followed Covid, recent sulfur volatility is forcing industrial consumers and producers to rethink resilience, optionality, and market intelligence.

Some key strategic considerations:

- **Maintaining stronger inventory buffers** to absorb short-term disruptions
- **Developing alternative supply sources**, especially from reliable North American supply points
- **Tracking US Gulf Coast refinery crude slates**, including shale oil, heavy crude, Venezuelan crude, refinery utilization, and capacity changes
- **Monitoring US Gulf Coast terminal inventories**, which can shift materially depending on producer, trader, and export decisions
- **Understanding West Coast market dynamics**, including California and Vancouver supply patterns
- **Building long-term contracts with high-sulfur-producing refiners**, including those with trading arms or flexible sourcing capabilities

- **Investing in business intelligence**, including vessel tracking, inventory monitoring, geopolitical risk, and trade-flow analysis
- **Planning for natural disasters**, including hurricanes, earthquakes, and port disruptions
- **Maintaining strong relationships** with global sulfur traders
- **Dropping “that is not our part of the world” thinking** when evaluating supply options.
- **Keeping dialogue open across the supply chain**, from refiners and gas processors to traders, terminal operators, fertilizer producers, and mining companies.
- **Exploring technology and feed** options to produce more sulfur

### The Bigger Point

Energy infrastructure creates value far beyond fuels.

North American refining and gas processing have helped reduce sulfur emissions, improve air quality, and convert a former pollutant into an essential global commodity. That sulfur now supports fertilizer production, food security, mineral processing, battery materials, and industrial growth across multiple continents.

What appears to be a simple byproduct is, in reality, one of the foundational commodities of modern civilization.

The world may not notice sulfur when supply chains are functioning.

But it notices very quickly when they are not.

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Paul leads Worley Insights’ market analysis across energy, chemicals, and materials, helping clients understand structural shifts, investment risks, and supply-chain implications through data-driven models and industry research.

