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Energy

Sulfuric Acid Long-Term Outlook

Quarterly outlook for the international sulfuric acid market

Formerly Fertecon

SAMPLE

Total report size: ~120 pages

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July 2026



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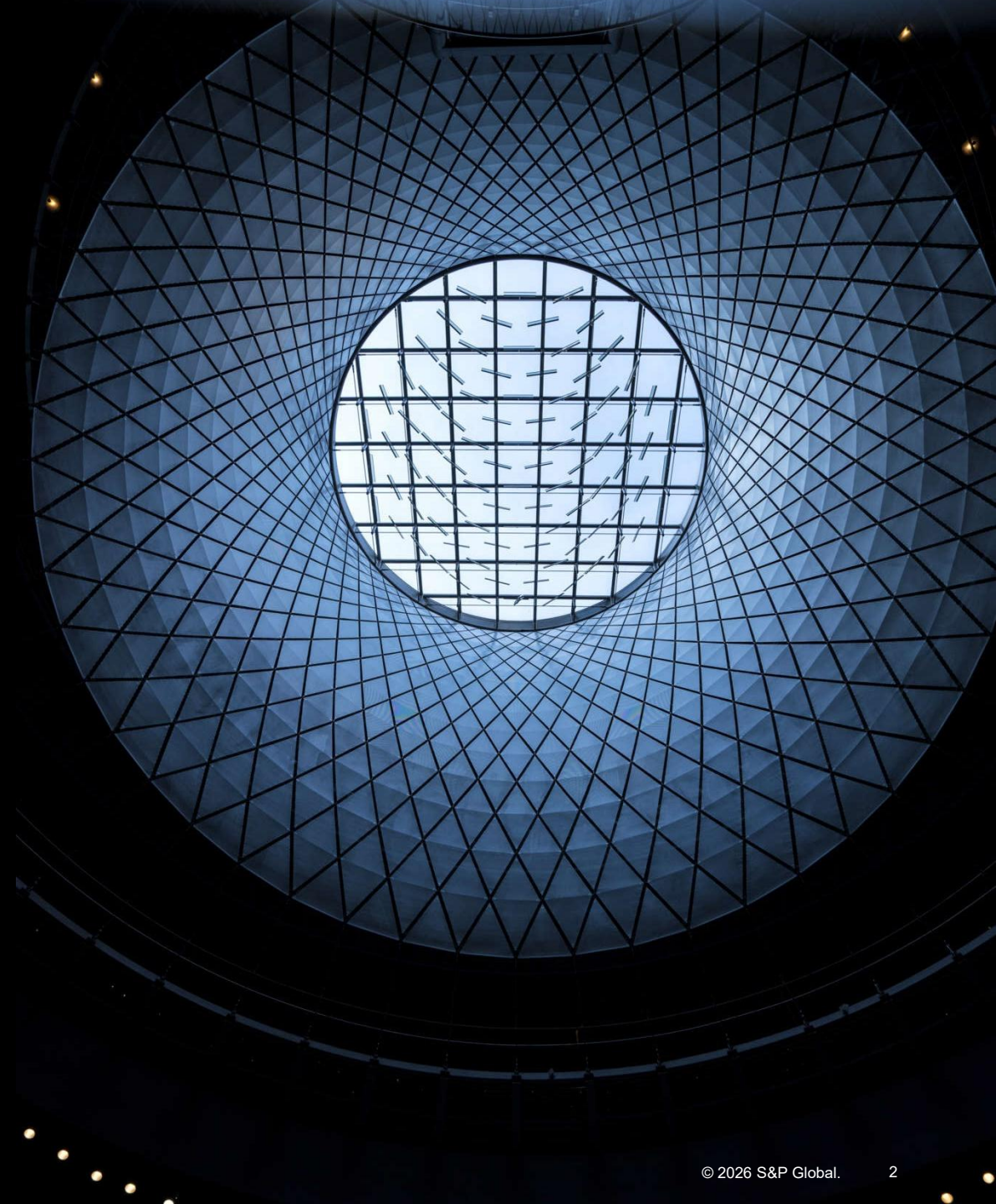


Table of contents

Summary (18 pages)

Special focus (2)

Global demand review (25)

Global supply review (16)

Sustainability issues (4)

Regional markets review (125)

Outlook for trade and market balance (12)

Outlook for costs (10)

Outlook for prices (16)

Short-term market overview

Latest developments

Americas	Europe and North Africa	Middle East and India	Eastern and SE. Asia
▲ In the US Gulf, prices rose from US\$147-155/t CFR in January to US\$200-315/t CFR in April, but with reduced trading activity. ▲ Brazil's sulfuric acid imports rose about 800% in March 2026 (90,594 mt vs. ~10,000 mt a year earlier), led by European suppliers (notably Belgium and Spain). Prices increased from US\$170-175/t CFR in January to US\$280-460/t CFR by April. The most recent tender in Argentina closed at the US\$400s/t range. In late April, Peru opened a purchase tender for two 15kt cargoes for Q3 delivery. ▲ Chile's 2026 annual contracts settled at US\$162-175/t CFR (about US\$15/t higher than 2025). Spot prices rose to US\$380-500/t CFR by April on mining demand and tight Asian supply.	▲ European producers were largely sold out through Q1-Q2 by February, leaving minimal spot availability. FOB West Europe climbed from US\$120/t in January to US\$279-281/t by April (all-time highs) amid market shortages. Sulfur-burnt contract prices increased to €300-310/t FOB in April due to higher sulfur costs, making smelter acid relatively more attractive. Freights to Brazil for a 18-20kt cargo were assessed by Platts at US\$80/t on April 22, while netbacks to Chile are at US\$110/t.	▲ Indian buyers largely waited on the sidelines amid the Middle East conflict and high prices. CFR East Coast India rose from US\$151-\$170/t in January to US\$270-\$320/t by April. Current maximum prices for phosphate fertilizers and high feedstock costs high produce early signs of demand destruction. Meanwhile, new by-product supply from smelters are likely to reach export markets. ▲ Southeast Asian CFR prices climbed from US\$135-160/t in January to US\$280-300/t by April given indications from Viet Nam and Indonesia, driven by higher FOB levels and reduced Chinese availability. Nickel mining demand was subdued at elevated prices.	▲ In China, suppliers prioritized domestic sales due to strong fertilizer demand and the spring application season. FOB China rose from US\$111-150/t in January to US\$200-220/t by April. On April 9, authorities announced export curbs from May to December 2026, cutting projected exports from 4.6Mt in 2025 to 700kt in 2026, driving regional tightness and leaving export offers largely notional by mid-April. ▲ The market should be further pressured by the lack of spot availability from Japan and South Korea, which are committed to contract tonnes while receiving multiple inquiries from across Asia. Prices are expected to continue rallying beyond US\$250/t FOB. Freights from Northeast Asia to Chile jumped to US\$130/t, and US\$50/t to Southeast Asia.

Data compiled April 2026.

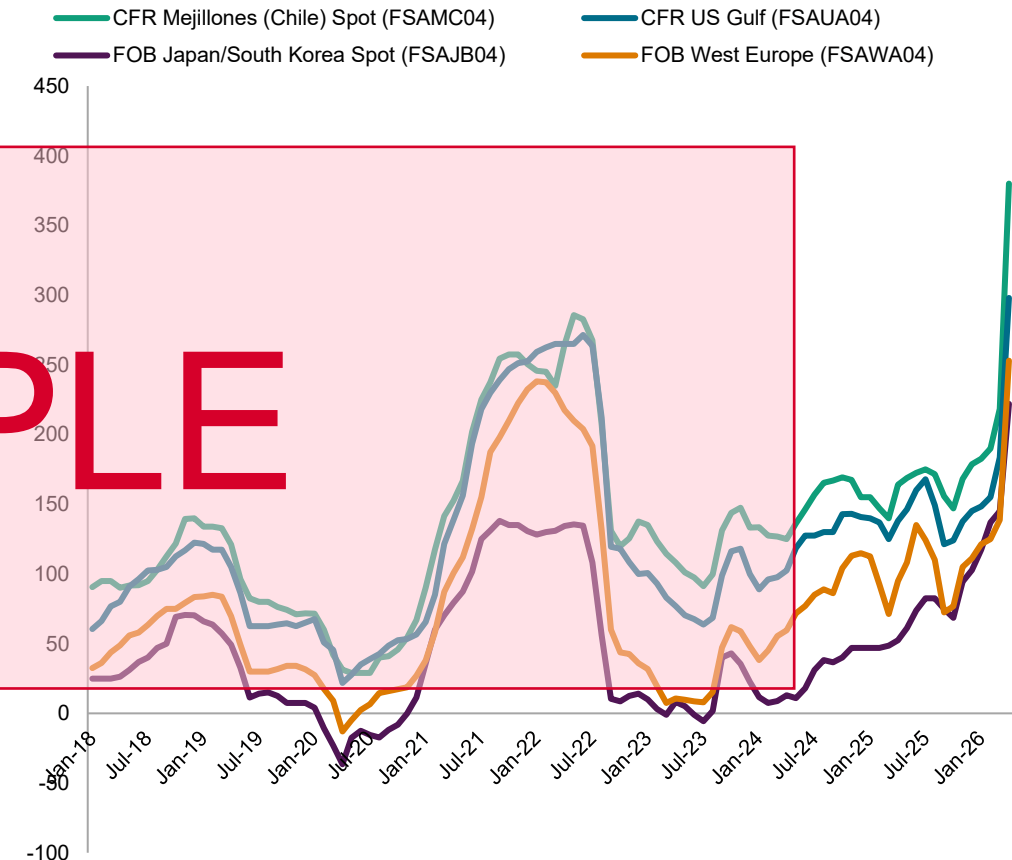
Source: Platts Fertecon Sulfuric Acid Market Report.

Short-term market overview

Sulfur supply crisis leading acid prices to all-time highs in late Q1

- The blockade in the Strait of Hormuz has significant impacts on numerous traded commodities, with sulfur being particularly affected: almost half of sulfur exports passed through the Strait in 2025, according to our Sulfur Futures report. The final blow came from China, the world's largest sulfuric acid exporter, which announced export ban from May until December. This could result in a 4Mt deficit in the trade market, including over 1Mt affecting Chile alone. Prices have reached levels seen in 2022 and continued to hit new highs with the extension of the blockade.
- The majority of European sulfuric acid have largely been sold out by February, with spot availability virtually non-existent through Q1-Q2. FOB West Europe prices reached all-time highs of US\$240-300/t by April, reflecting both supply tightness and cost inflation. The Middle East conflict exacerbated sulfur supply concerns, particularly for "sulfur-heavy" crude, and sharply increased bunker fuel costs, raising West Europe-Brazil freight to US\$70-90/t. The anticipated return of Moroccan fertilizer producer OCP to the sulfuric acid market in March has already pushed up European prices even before the blockade.
- China's export restrictions and prioritization of domestic sales amid strong fertilizer demand led to FOB China prices rising from US\$111-150/t in January to US\$200-220/t by April. Northeast Asia (Japan/South Korea) saw spot cargoes sell out early, with suppliers focusing on term contracts and FOB prices climbing to US\$210-250/t. Nickel mining demand was subdued at these prices, compressing margins for HPAL nickel producers. India's market was cautious, with buyers waiting amid high prices and the Middle East conflict, while CFR East Coast India rose to US\$270-320/t, with tenders under negotiation.
- In the Americas, CFR values surged to US\$350-500/t by late April, a dramatic increase from US\$170-180/t in early January, following indications from Europe. Chile's annual contract negotiations settled at US\$162-175/t CFR, but spot prices rose to US\$380-500/t CFR, driven by mining-sector demand and constrained Asian supply.

Sulfuric acid prices, nominal, monthly average (US\$/t)



Data compiled April 2026.
Source: Platts, S&P Global Energy.

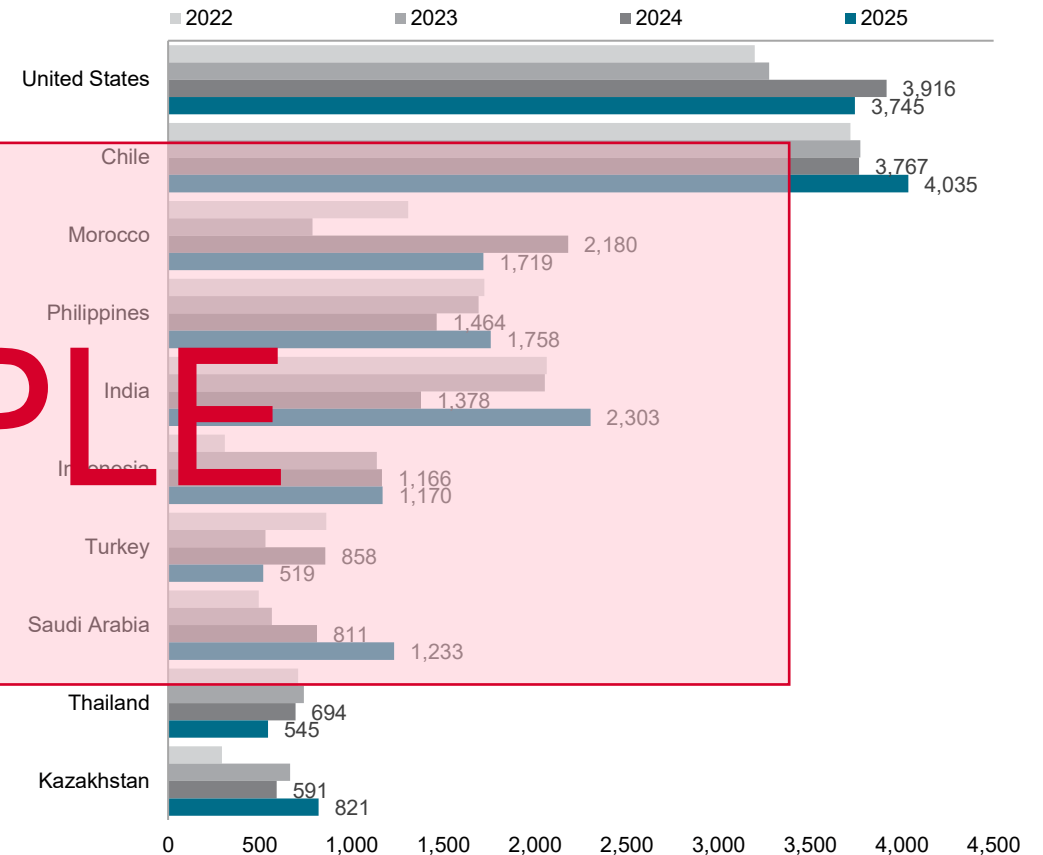
Review of global sulfuric acid trade

Scarce global supply: new trade routes?

- **This edition of the report includes full-year 2025 trade data estimates.** Global sulfuric acid trade reached 24.3Mt in 2025, higher 3% year-over-year. The increase can be partly attributed to China, where exports increased massively to 4.7Mt in 2025. With the 700kt quota implemented in Q1 2026, and the announced export ban from May to December 2026, China's exports should be restricted to just ~500kt, in the event the policy isn't reviewed.
- Chilean imports were assessed at 4Mt, in line with previous expectations. Looking ahead, we expect Chilean imports in 2026 to reflect the dynamics of the copper concentrate market: existing deficits could support mining even at higher operating costs, although high-cost leaching assets are at risk. The country is reportedly prepared to go through Q2, being able to wait for further market developments.
- India's sulfuric acid imports have remained robust in the first half of 2025, despite the anticipated additional supply from Adani Industries. The country is projected to import 2Mt of sulfuric acid in 2025. We have revised India's expectations for 2026, as phosphate fertilizer demand will be constrained by tight margins, and export of sulfuric acid will find export markets.
- Europe's exports to outside the bloc in 2025 decreased 3% year-over-year, largely attributed to lower demand from Morocco. In 2026, Turkish demand is expected to decrease with policy measures aimed at ensuring greater sulfur supply.

From Q2 2026 onwards, we expect new trade routes to be developed due to extremely scarce supply in the global trade market. A competition between the Americas and the Mediterranean for European tonnes could occur, while in Eastern Asia, suppliers will be committed to contract tonnes. Still in Q2, demand will be subdued as some locations are in conditions to wait and see for developments in the Middle East.

Top 10 sulfuric acid importers (kt)



Data compiled April 2026.

Source: S&P Global Energy, S&P Global Market Intelligence's Global Trade Atlas, United Nations' Comtrade.

Short-term demand outlook

Demand to falter as the market navigates the crisis, especially in the West

In 2026, global demand is projected to plunge to 318Mt, a significant 6.7% year-on-year decrease. In 2025, demand from the phosphate fertilizer industry was stronger than previously anticipated, despite weaker affordability. In 2026, skyrocketing elemental sulfur prices and unsupported downstream margins will lead to widespread demand destruction.

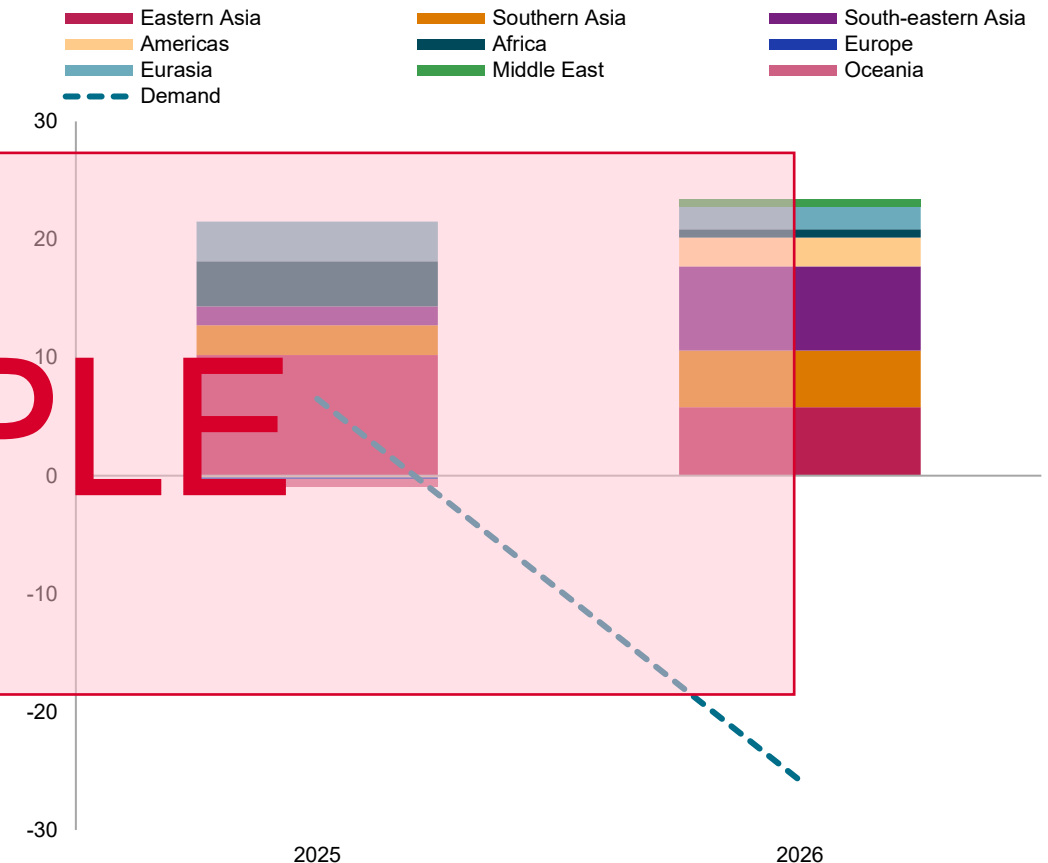
The chart on the right shows expected capacity additions, including speculative and unconfirmed projects. Despite capacity outpacing demand increases into the short-term horizon, not all projects are included in our base case, as final investment decisions are pending.

↓ **East of Suez.** In South-eastern Asia, demand in the metal industry is firm and supportive of further price escalation, as sulfur shortages led consumers to switch to sulfuric acid. Meanwhile, in phosphates, curtailments were reported in India, blaming high sulfur costs. China will continue to be exposed to the international sulfur market, and demand will be sensitive to the margins of downstream products in the fertilizer and chemical space, which are currently compressed. In Indonesia, current payable metals prices indicate that rock HPAL producers higher in the cost curve are facing negative margins, and some companies have already announced curtailments, a negative for sulfur in all forms demand.

↓ **West of Suez.** In Europe, we expect fertilizer and chemical demand to be constrained by rising prices and curtailments by downstream end-users due to petrochemical shortages stemming from the war in the Middle East.

In the Americas, demand in Q1 2026 was relatively firm, prompted by early purchasing triggered by rising global prices, driven by previously higher sulfur prices in late 2025 and the announcement of quotas on Chinese acid exports in January, prior to the ban announced in April. Moving ahead, demand is expected to become subdued, with further potential demand destruction in Latin America from the phosphate industry, while Chile is expected to return to the market meaningfully further in Q2, awaiting further market developments.

Sulfuric acid demand and net capacity additions (Mt)



Data compiled April 2026.

Source: S&P Global Energy, S&P Global PMI.

Long-term demand outlook

Demand is expected to grow at a CAGR of 0.9% to 2055

Agriculture demand for sulfuric acid is expected to increase at a healthy single-digit growth pace. We expect that the decrease in fertilizer demand resulting from precision agriculture will be compensated for by food security objectives and the availability of land for agriculture due to climate change.

↑ Metal leaching will play a pivotal role in industrial demand. Metal leaching is expected to play a pivotal role in driving demand growth. We anticipate a significant increase in the demand for sulfuric acid, particularly for the nickel leaching, over the next two decades. Additionally, the development of LFP batteries is projected to support the demand for tech-grade phosphoric acid in China, which will, in turn, bolster the demand for sulfuric acid. In contrast, the steel pickling sector is unlikely to experience substantial growth, as most steel is already being recycled in developed countries, limiting expansion within the overall steel market. Outside China, there are several planned electric grade phosphoric acid projects, which will pose upside risks to demand for sulfuric acid.

↑ Demand for chemical applications is subject to upside risk. Demand for chemical applications presents upside risks. As economies expand and industrial activities increase, we expect higher sulfuric acid consumption across various chemical sectors. Conversely, during economic downturns, reduced industrial activity may lead to decreased demand for chemical applications. For more details, please refer to the *Forecast Assumptions* file for our base-case scenario.

↓ A supply shortage of elemental sulfur presents a downside risk. Stricter environmental regulations and net-zero goals targeted for 2030-2060 could limit the supply of elemental sulfur, potentially driving investments in alternative processing technologies and decreasing demand for sulfuric acid.

Regional additions to sulfuric acid demand (Mt)

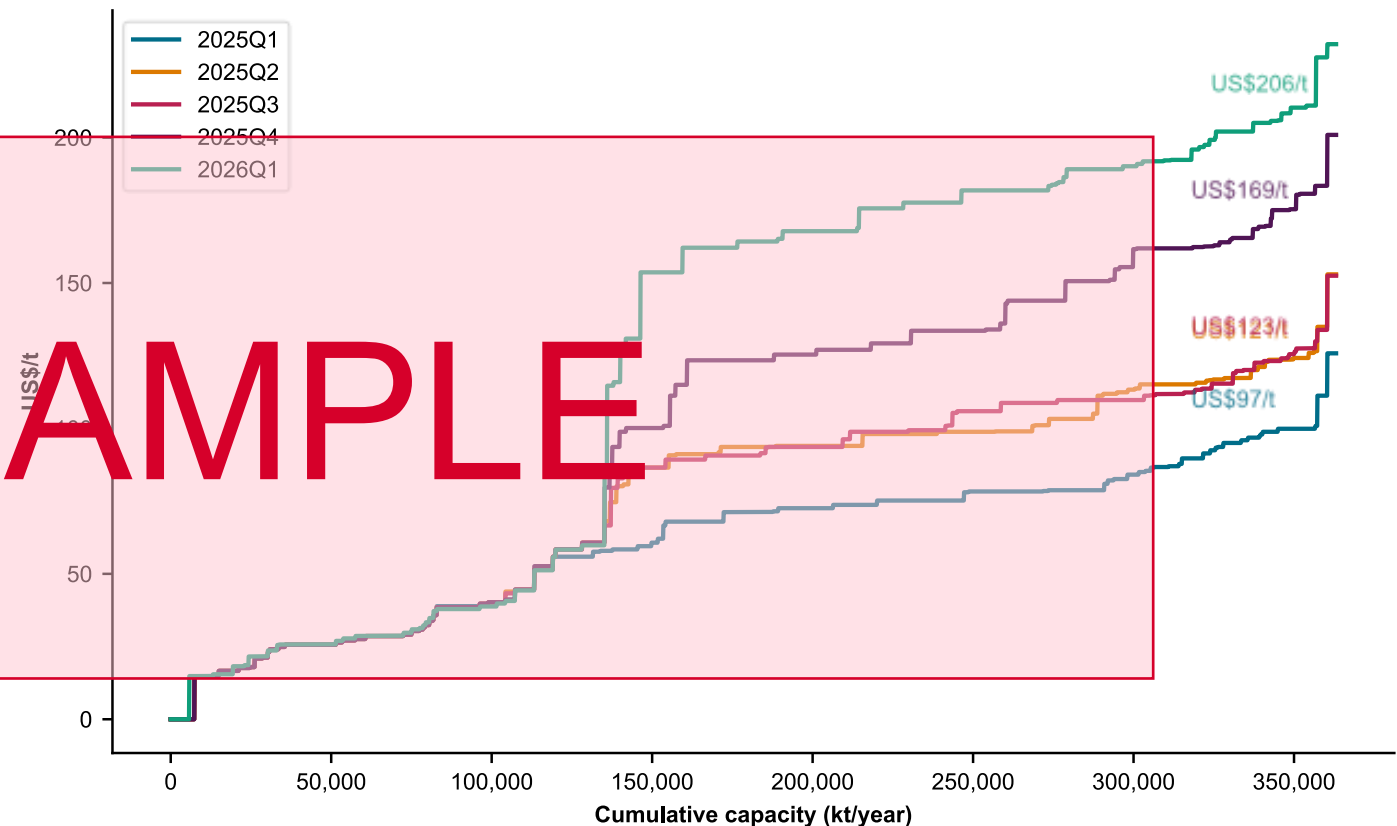
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Cost outlook

Summary of global sulfuric acid costs

- **The marginal cost of production doubled over the last four quarters.** The surge in sulfur prices since late 2025 has dramatically shifted the shape of the global cost curve, as around 60% of global acid supply is produced by burning elemental sulfur. The industry's marginal cost in the first quarter of 2026 reached US\$206/t, according to our estimates, as shown in the chart. Notably, the cost of production from sulfur burning is now far apart from the by-product acid from smelters, even accounting for energy credits.
- With higher solid sulfur prices in international markets, medium and large-sized metal smelters with access to sulfuric acid export infrastructure and higher metals prices moved lower in the cost curve.
- **Production costs over US\$100/t typically enable alternative pathways.** In recent years, we have witnessed both the emergence of significant by-product acid supply from non-ferrous metal smelters and by-product sulfur output from oil and gas refining. The interest in large-scale recovery of sulfuric acid from alternative sources (pyrites, spent acid recycling, other flue gases, phosphogypsum) has been driven by other market and environmental forces. The tightening of sulfur supply means that those alternatives have become largely economical, with remaining issues being the availability of other inputs (such as carbon dioxide for cement production) and the commercialization of other by-products (like iron oxides).

Sulphuric acid cost curve quarterly changes



Data compiled April 2026.
Source: S&P Global Energy.

Key sulfuric acid production processes

Global supply is linked to activities in the metals and mining industry



Burner acid

- Sulfuric acid is produced by the **oxidation** of sulfur dioxide (SO_2) into sulfur trioxide (SO_3), which is then combined with **water** to produce sulfuric acid (H_2SO_4).
- Over the last 50 years, the **contact process** has predominated, where the SO_2 is converted to SO_3 in the presence of a metal **catalyst**, typically vanadium pentoxide (V_2O_5).
- This reaction is **exothermic**, and the heat is captured and, in most cases, exploited to produce **high-pressure steam**, which will frequently be used for downstream processes or power generation.



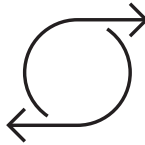
Smelter acid

- Smelting is a process of **applying heat to ore** to extract base metal. In smelting the ore, the sulfur reacts with oxygen to produce sulfur dioxide (SO_2).
- This may be emitted to the atmosphere, but more frequently, it is **captured** in the form of sulfuric acid using the contact processes noted to the left.
- Key metal production frequently exploiting oxide ores include **copper, zinc, nickel, lead, and molybdenum**.



Pyrite acid

- Pyrites (FeS_2), which are often found mixed with pyrrhotite (Fe_7S_8), are **primarily mined for their sulfur content** in locations such as Mainland China, Eastern and Southern Europe, where elemental sulfur is historically scarce.
- The pyrite is **roasted**, with the contained sulfur combined with oxygen in the air to produce SO_2 , which can be isolated. It further reacts with air to form SO_3 and then is mixed with water to produce sulfuric acid.
- The residual **iron oxide** can be blended with other commercial iron ores for iron and steel production.



Other processes

- Sulfuric acid can be produced from the **desulfurization of flue gases**, creating a circular economy within industrial complexes and complying with regulations worldwide. They can often be found in the oil and gas, power generation and pulp and paper industries.
- Virgin acid may also be produced by the **decomposition of spent sulfuric acid** or acid sludge from petroleum refining (e.g., alkylation) and from some sulfonation and petrochemical processes.
- In many cases, spent acids from more than one process are **blended** before dissociation. The sulfur values are recovered by decomposition under heat. The recovery of acid from spent acid requires energy.

Data compiled April 2026.
Source: S&P Global Energy.

New sulfuric acid projects

Country	Operator	Project Name	Capacity (kt/year)	Project Type	Start-up	Remarks
China					2023	
China					2024	
United States					2024	
Brazil					2024	
China					2024	
United States					2024	
DRC					2024	
China					2024	
Saudi Arabia					2024	
Morocco					2024	
Indonesia					2024	
China					2024	
China					2024	
China					2024	
China					2024	

Data compiled April 2026.
Source: S&P Global Energy.

Sustainability issues



Regulatory framework to sulfuric acid producers

- The sulfuric acid industry faces significant environmental challenges due to restrictions on sulfur dioxide emissions from other sectors, notably copper smelting. Smelters are increasingly recovering sulfur dioxide as sulfuric acid, while other industries, including power plants, are also pressured to reduce emissions, often opting for low-sulfur coal or limestone scrubbing systems.
- In the US, the EPA has targeted sulfuric acid manufacturers for compliance with the Clean Air Act, recently settling with three major companies to install pollution control equipment to reduce emissions significantly. Amendments to hazardous air pollutant standards for phosphoric acid manufacturing were finalized in 2015, imposing numeric limits on mercury and fluoride emissions. According to regulations, sulfuric acid is excluded from solid waste definitions and not subject to RCRA Subtitle C when spent acid is reused. While the EPA and the Department of Health & Human Services do not classify sulfuric acid as carcinogenic, the IARC considers occupational exposure to its mist as a potential carcinogen.
- Regeneration of sulfuric acid is becoming more common, and some industries have shifted away from using it due to environmental concerns. For instance, titanium dioxide pigment production has transitioned from the sulfate to the chloride process.
- In terms of recycling, sulfuric acid from lead-acid batteries is largely recycled, although some may end up in landfills, posing ecological risks.
- In Europe, workplace exposure to sulfuric acid mist is regulated by Directive 2009/161/EU, which sets exposure limits. Similarly, in 2010, the Chinese government updated pollutant emission standard number GB 26132-2010 for the sulfuric acid industry to align with international levels, aiming to mitigate pollution from this significant sector of the chemical industry.

Sulfur dioxide emissions standards across the globe, selected geographies

Geography	Standard	Maximum (kg SO ₂ /t H ₂ SO ₄)	In effect since
China	GB 26132	400 µg/m3	2011
European Union	2008/50/EC	350 µg/m3	2008
US	CFR 40 § 60 H	2.0	2017
Chile	DS 22/MMA	80 µg/m3	2009
Brazil	CONAMA 382	2.0	2006

Data compiled April 2026
Source: S&P Global Energy, US Environmental Protection Agency (EPA), Ministry of Ecology and Environment of the People's Republic of China.

Africa

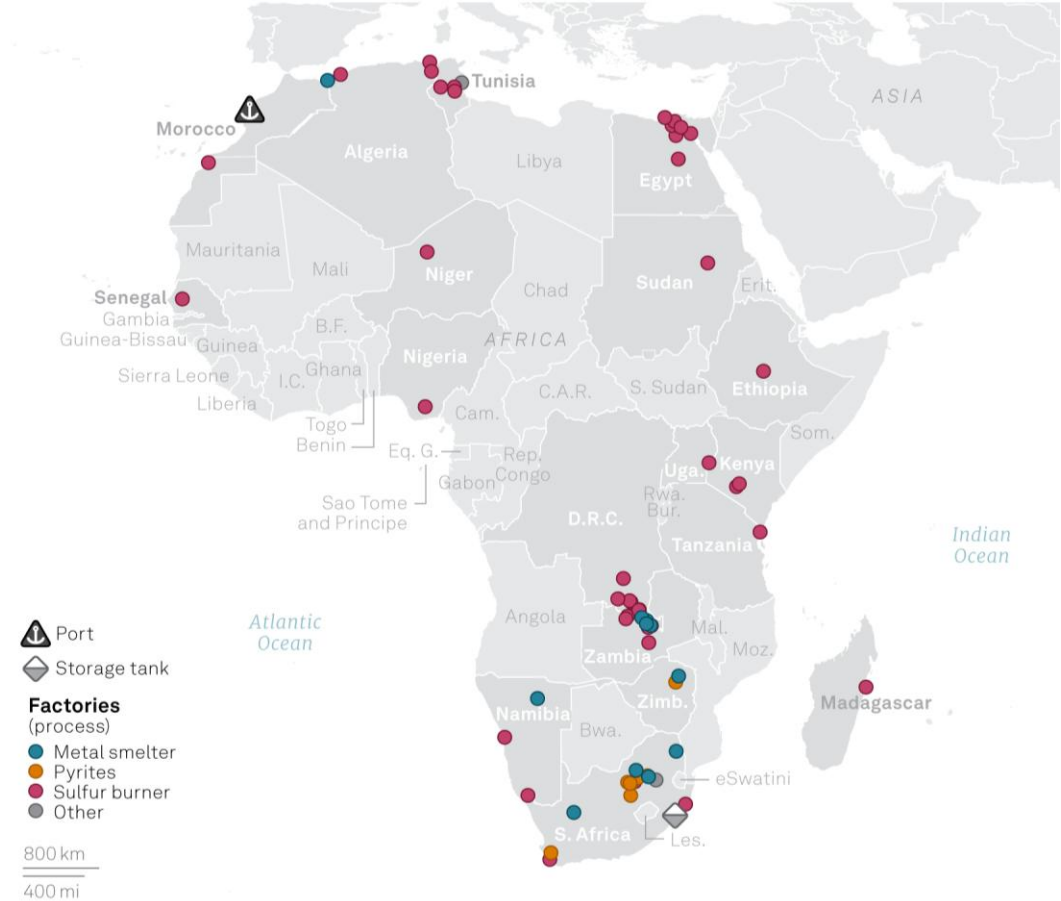
Region overview

Sulfuric acid demand profile, Africa, 2025, Mt



Data compiled April 2026.
Source: S&P Global Energy.

Assets map, Africa, 2025



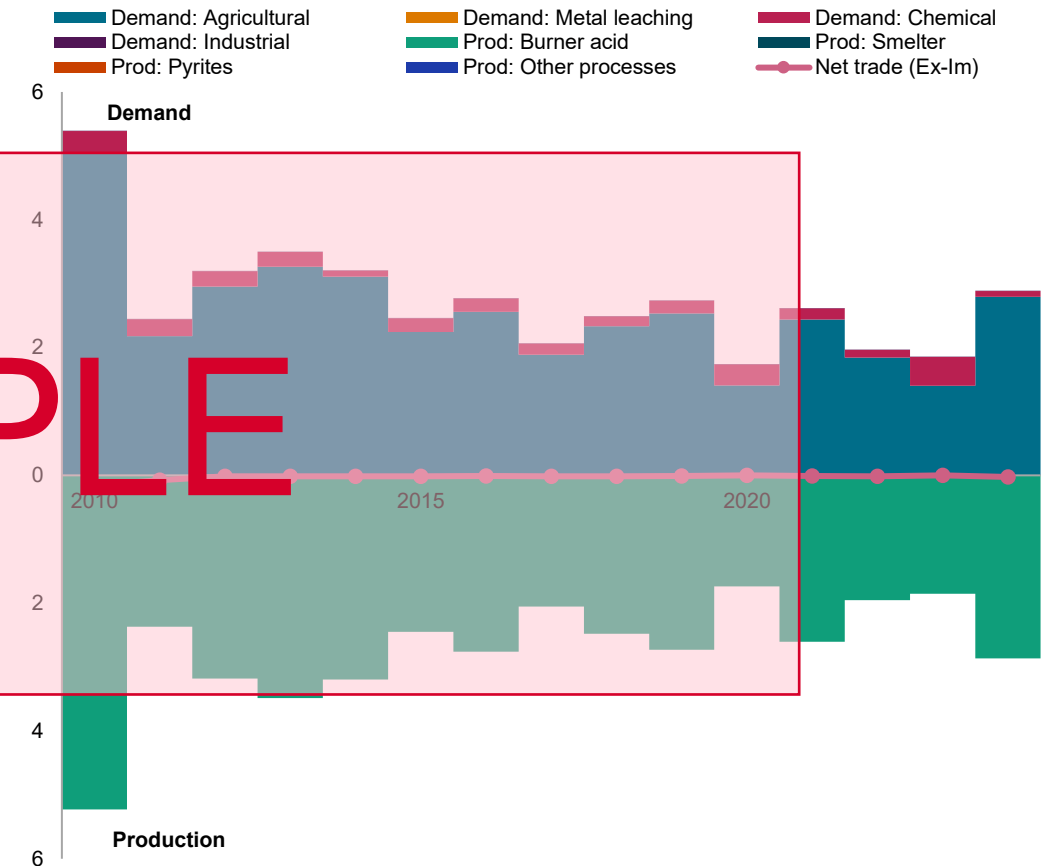
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Northern Africa

Tunisia

- Sulfuric acid production in Tunisia is primarily driven by the needs of the fertilizer sector, with captive plants operated by Groupe Chimique Tunisien (GCT) fulfilling this demand. In 2025, sulfur imports continued to drop against previous years, to reach around 400kt according to preliminary estimates – a pale comparison to over 1Mt imports recorded during the 2010s.
- Several factors have contributed to the decline in sulfur imports and the demand for sulfuric acid:
 - Operational disruptions:** Continued public unrest has led to operational disruptions at phosphate-processing plants, further impacting the demand for sulfuric acid. Recent protests in Gabes, which erupted in mid-October over air pollution from phosphate-processing facilities, have highlighted significant governance and environmental challenges within Tunisia's phosphate sector.
 - Production shift:** Another significant driver behind the reduction in sulfur demand is the transition from DAP to MAP production. MAP production requires less sulfur per unit of output, contributing to the overall decrease in sulfur imports.
- Despite these changes in production practices, Tunisia's phosphate production remains cost-competitive, bolstered by long-standing contractual relationships with international partners, particularly in India. These partnerships are expected to sustain demand for Tunisian phosphoric acid.
- The open-pit phosphate deposits located in the Gafsa region play a crucial role in this supply chain. CPG supplies approximately 80% of its phosphate production to GCT plants for local processing, with the remainder sent to Sfax for export.

Sulphuric acid market balance, Tunisia, Mt



Data compiled April 2026.
Source: S&P Global Energy.

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