

AMG Vanadium



AMG Vanadium’s spent catalyst processing facilities lead the industry in terms of cost structure and environmental performance.

AMG Vanadium (Zanesville, Ohio, USA)

AMG Vanadium’s segmental revenue during 2024 was 11% lower than in 2023 due to the lower average annual sales prices in vanadium versus 2023, partially offset by increased sales volumes in chrome metal. Full year 2024 adjusted gross profit was 5% higher than in 2023, driven by the increased chrome metal volumes during 2024, partially offset by the lower average annual sales prices in vanadium.

AMG Vanadium’s profitability was negatively impacted by the 23% decrease in average market prices for ferrovanadium in 2024 compared to the prior year. This decrease was partially offset by increased cost-offsets from Section 45X, a production credit for domestic manufacturing of critical materials for which AMG Vanadium qualified based on the Inflation Reduction Act, however adjusted EBITDA in 2024 decreased to \$76 million from \$81 million in 2023.

629.6	97.0	76.4
Revenue \$M	Adjusted Gross Profit \$M	Adjusted EBITDA \$M

Construction of the vanadium electrolyte plant at AMG Titanium in Nuremberg, Germany is complete, and we are producing qualification batches for our customers.

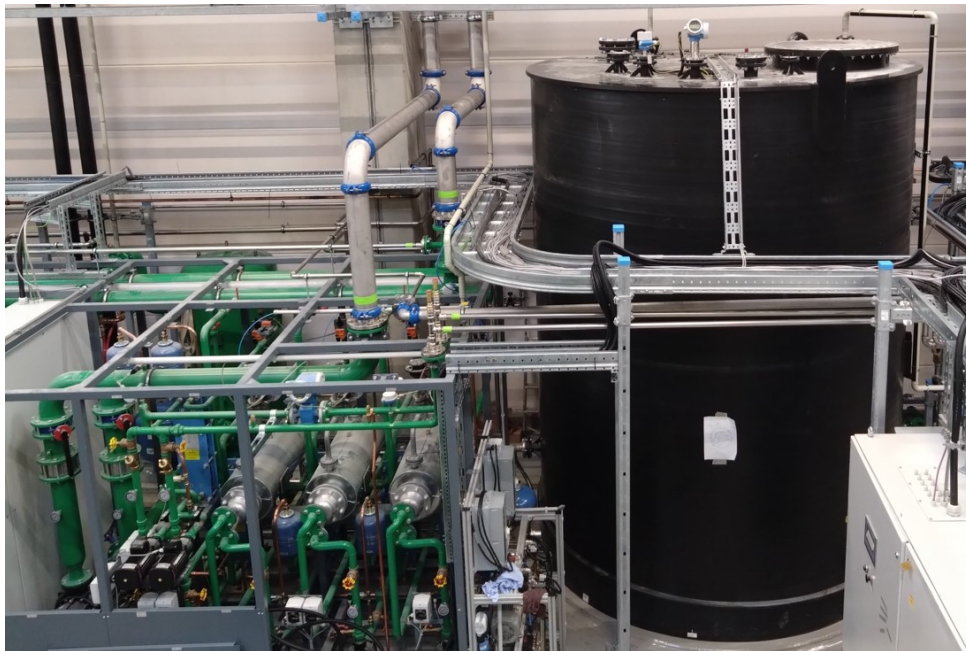
In May 2024, AMG Titanium signed a new multi-year contract extension with SAFRAN to supply titanium aluminides for production of low-pressure turbine blades for the CFM International LEAP engine. The technology and equipment to produce this material was jointly developed with AMG Engineering.

SARBV's "Supercenter" phase 1 project in Saudi Arabia is in detailed engineering with the permit to construct expected by the end of the first quarter 2025. Long lead equipment is being procured, and project financing has been initiated.

AMG Vanadium completed a 5-year contract extension with a key, long-term refinery partner for processing their spent catalyst. AMG Vanadium will continue to provide full metals reclamation on this material, fully eliminating any environmental risks for this refinery.

AMG has completed its major investments in the vanadium segment, including doubling production capacity in Ohio.

In February 2024, AMG Vanadium acquired a suite of processing technologies and IP related activities from TTI. AMG is integrating the TTI technology into its global strategic growth initiatives. AMG and TTI will also cooperate in market development areas where TTI has strong experience in the design and construction of plants using TTI technologies. This acquisition amplifies AMG's leadership position in recycling refinery waste and further improves the value proposition we offer the global oil refining industry. By leveraging the synergies of TTI and AMG's technologies, we can improve both the efficiency and CO₂ footprint in our expanding global recycling operations which are conducted through our Shell & AMG Recycling joint venture.
(ESRS 2 SBM1, 40(a)i, 40 (a)ii)



Vanadium Electrolyte plant at AMG Titanium (Nuremberg, Germany)