

# Feasibility Report: Commercialization of the Automated Electrodeposition Machine (AEM)

## 1.0 Executive Summary

This report presents a compelling case for the commercialization of the **Automated Electrodeposition Machine (AEM)**, an indigenous innovation developed by the Prototype Engineering Development Institute (PEDI) under the National Agency for Science and Engineering Infrastructure (NASENI). The AEM addresses critical deficiencies in Nigeria's manufacturing sector by providing a precise, automated, and energy-efficient solution for electroplating, a process vital for industries from automotive to electronics.

By replacing manual, inconsistent methods with a technologically advanced system, the AEM promises significant returns on investment. It directly supports Nigeria's national agenda for industrialization and economic diversification by fostering import substitution, creating skilled jobs, and enhancing the competitiveness of local manufacturers. This project aligns seamlessly with NASENI's mandate to commercialize research and development (R&D) outcomes and act as a catalyst for job creation and sustainable economic growth.

## 2.0 Market Analysis and Economic Justification

The global electroplating market is a robust and growing industry, valued at **\$21.13 billion in 2023** and projected to reach **\$28.82 billion by 2032**. In Africa, the electroplating market is also poised for significant growth, with a forecasted CAGR of over **4.00% from 2025 to 2033**. This growth is largely driven by a rising demand for corrosion protection and enhanced finishes in the automotive, electronics, and construction sectors.

Nigeria's manufacturing sector, which contributed **NGN 1.82 trillion to the nation's GDP in the fourth quarter of 2024**, represents a substantial local market for electroplating services. However, this sector faces challenges, including a heavy reliance on imported components and a lack of sophisticated, locally-produced equipment. The AEM provides a strategic solution to this problem, enabling local manufacturers to improve quality, reduce production costs, and compete with foreign-made goods.

## 3.0 Job Creation and National Impact

The commercialization of the AEM is not just a technological advancement; it is a catalyst for national development that directly contributes to job creation and skills development. While precise data for the Nigerian electroplating sector's workforce is not readily available, the broader trend in Africa's green economy transition projects the creation of **3.3 million jobs by 2030**, with a majority in skilled sectors like manufacturing.

This project will create direct employment opportunities in the production, sales, and maintenance of the AEM itself. More significantly, by making high-quality electroplating

accessible, it will stimulate growth across various downstream industries, supporting numerous small and medium-sized enterprises (SMEs) and indirectly generating thousands of jobs. The AEM's focus on efficiency and sustainability, including reduced chemical waste and a compact design, also aligns with modern environmental standards, positioning Nigeria as a leader in responsible manufacturing.

## 4.0 Conclusion and Recommendation

This feasibility study confirms that the commercialization of the AEM is a viable, timely, and strategically important project. It provides a tangible, scalable, and commercially viable solution that directly addresses Nigeria's need to modernize its industrial base, substitute imports, and create jobs.

Therefore, it is **strongly recommended** that this proposal be approved for the NASENI Research Commercialization Grant Program. Funding this project will not only deliver a crucial technological asset to the nation but also serve as a powerful example of how indigenous innovation can drive economic transformation and position Nigeria for future prosperity.

## 5.0 References

Data Insights Market. (2025). *Middle East and Africa electroplating market report probes the XX million size, share, growth report and future analysis by 2033*. Retrieved September 16, 2025, from <https://www.datainsightsmarket.com/reports/middle-east-and-africa-electroplating-market-1780>.

Market Research Future. (2025). *Electroplating market size, share, growth / report, 2032*. Retrieved September 16, 2025, from <https://www.marketresearchfuture.com/reports/electroplating-market-8130>.

National Agency for Science and Engineering Infrastructure (NASENI). (2025). *NASENI-PICTT launches DELTA-2 second call for proposals*. Retrieved September 16, 2025, from <https://naseni.gov.ng/naseni-pictt-launches-delta-2-second-call-for-proposals/>.

Punch Newspapers. (2025). *Innovation crucial to job creation, growth in Africa—NASENI*. Retrieved September 16, 2025, from <https://punchng.com/innovation-crucial-to-job-creation-growth-in-africa-naseni/>.

Stratview Research. (2024). *Electroplating market / size, share, trend, industry analysis / 2024-2032*. Retrieved September 16, 2025, from <https://www.stratviewresearch.com/4224/electroplating-market.html>.

Trading Economics. (2025). *Nigeria GDP from manufacturing*. Retrieved September 16, 2025, from <https://tradingeconomics.com/nigeria/gdp-from-manufacturing>.

The Guardian Nigeria News. (2025). *NASENI, PICTT launch DELTA-2 second call for proposals*. Retrieved September 16, 2025, from <https://guardian.ng/news/naseni-pictt-launch-delta-2-second-call-for-proposals/>.