



Setting the Stage: Why NEMA Is Here at the Digital Manufacturing Crossroads

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Electroindustry Impact By the Numbers

\$334B

U.S. Electroindustry
Total Economic
Impact

\$428B

U.S. Electroindustry
Market Size



580,000

Skilled American Jobs



\$4.2B

U.S. Electroindustry Investment in
Buildings and Equipment as of 2021



\$105.3B

Value Added



12,500+

Establishments Across All 50 States



\$68B

Labor Income Support

\$109.1B

Electroindustry
Exports



\$211.7B

Electroindustry
Imports



The Hidden Bottleneck: Equipment Data Is Holding Back Digital Transformation

The Problem: Industrial equipment data formats are fragmented and non-standard

Impact: Broken digital thread limits Model-Based Enterprise (MBE) and AI integration

Need: Common data standards to unlock full smart manufacturing potential

Model-Based Enterprise + AI: The Future of Manufacturing Intelligence

MBE Ideal State: Digital models are the single source of truth (design to decommission)

Digital Thread: Continuous data flow linking design, production, QA, and maintenance

AI Amp: AI leverages standardized data for predictive insights, efficiency, and innovation



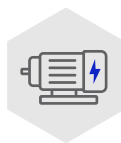
NEMA's Roadmap: Building the Standards for Smart, Interoperable Factories

Strategic Roadmap: NEMA's Advanced Manufacturing Standards Roadmap identified gaps in smart manufacturing standards

Key Gaps: Robotics integration, IIoT sensor data, and cybersecurity for digital factories

Action: Mobilizing industry & government to develop interoperable data standards

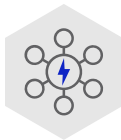
From Nameplates to Digital Twins: Making Equipment AI-Ready



Digital Nameplate: Standard data attributes for equipment performance & lifecycle (e.g., motors, drives, sensors)



From PDFs to Data: Converting manuals/specs into machine-readable digital models



Interoperability: Aligning with OPC UA and QIF for seamless data exchange

Why It Matters: The ROI of Standardized Data in Smart Manufacturing

Efficiency & Cost Savings

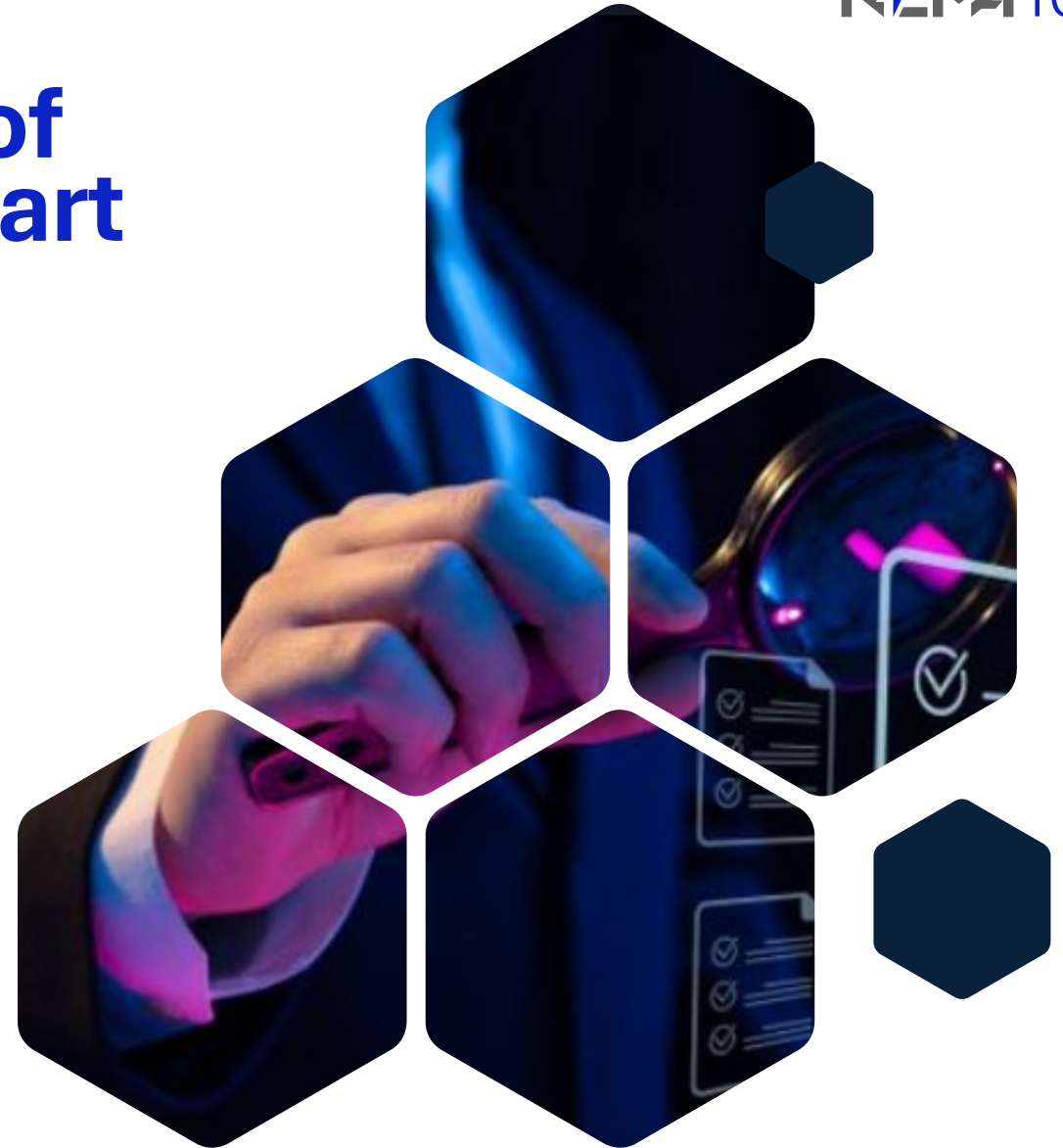
Less manual data wrangling, smoother integration of new tech on the factory floor

Quality & Traceability

Unified data for better analytics, defect reduction, and lifecycle tracking

Stronger Business Case

Demonstrated ROI from digital threads (e.g., less downtime, faster production cycles)





Connecting the Dots: NEMA's Role in the Standards Ecosystem

Aligning Standards

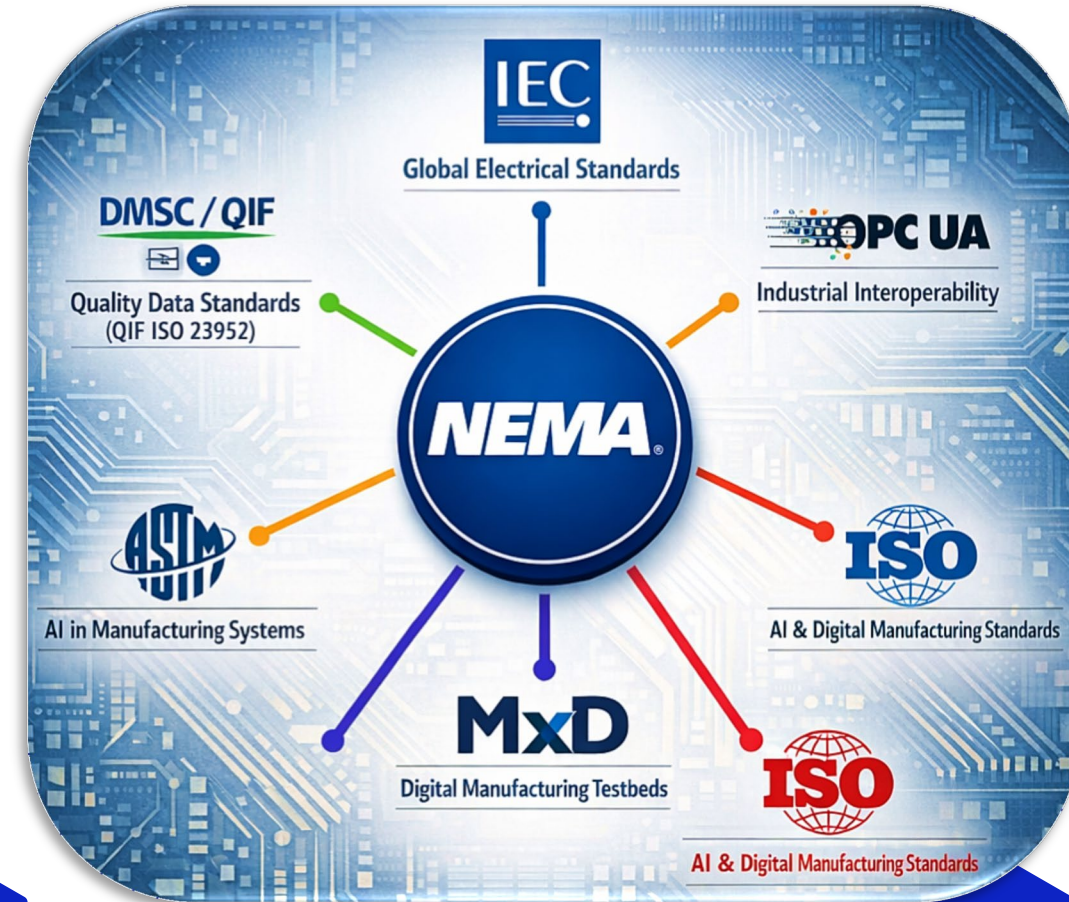
NEMA's work complements QIF, OPC UA, ISO/IEC committees for quality; communication and reach

Cross-Sector Collaboration

Engaging with consortia to integrate electrical equipment data into broader frameworks

Avoiding Silos

NEMA as a bridge between manufacturing domains, ensuring AI standards aren't developed in isolation





What's Next: Pilots, Partnerships, and Scaling the Vision

From Plan to Action

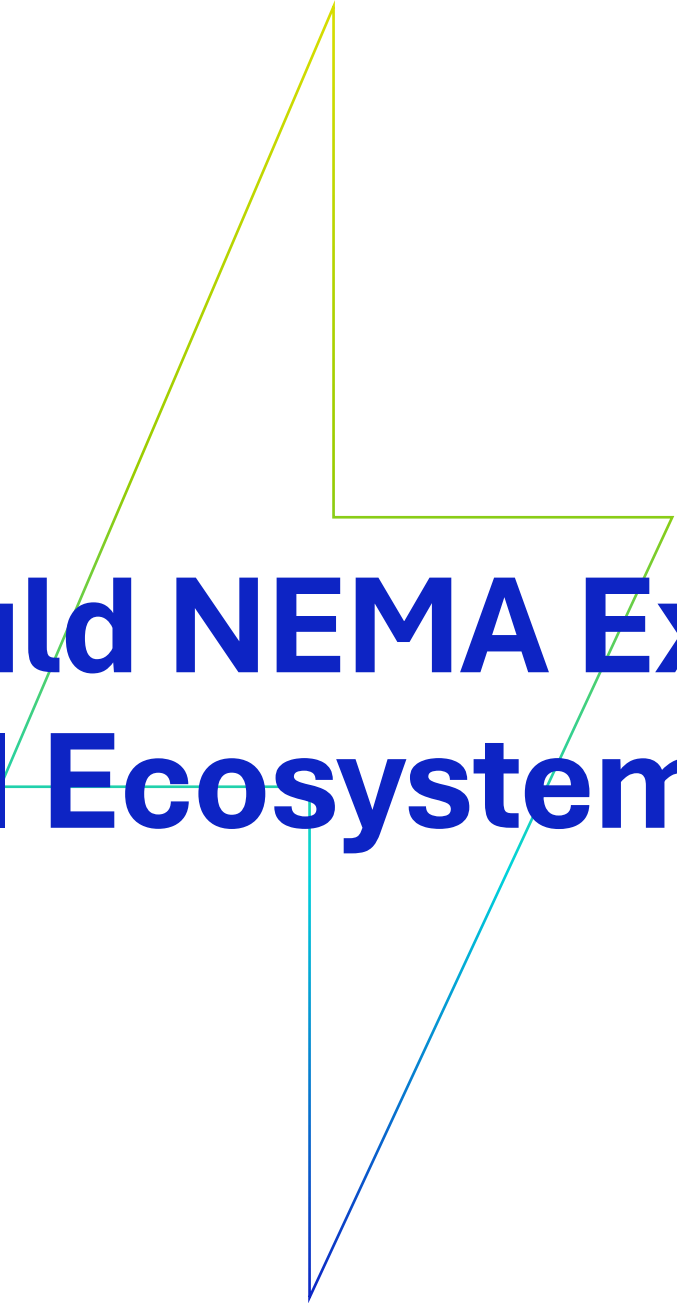
Launch pilot projects to test and refine equipment data standards in real factories

Broaden Engagement

Involve diverse sectors (incl. defense, small manufacturers) in NEMA's smart manufacturing efforts

Share Success

Publish case studies & ROI data to build the business case for adoption



Where Should NEMA Expand in the AI Ecosystem?

Make it ⚡ Electric