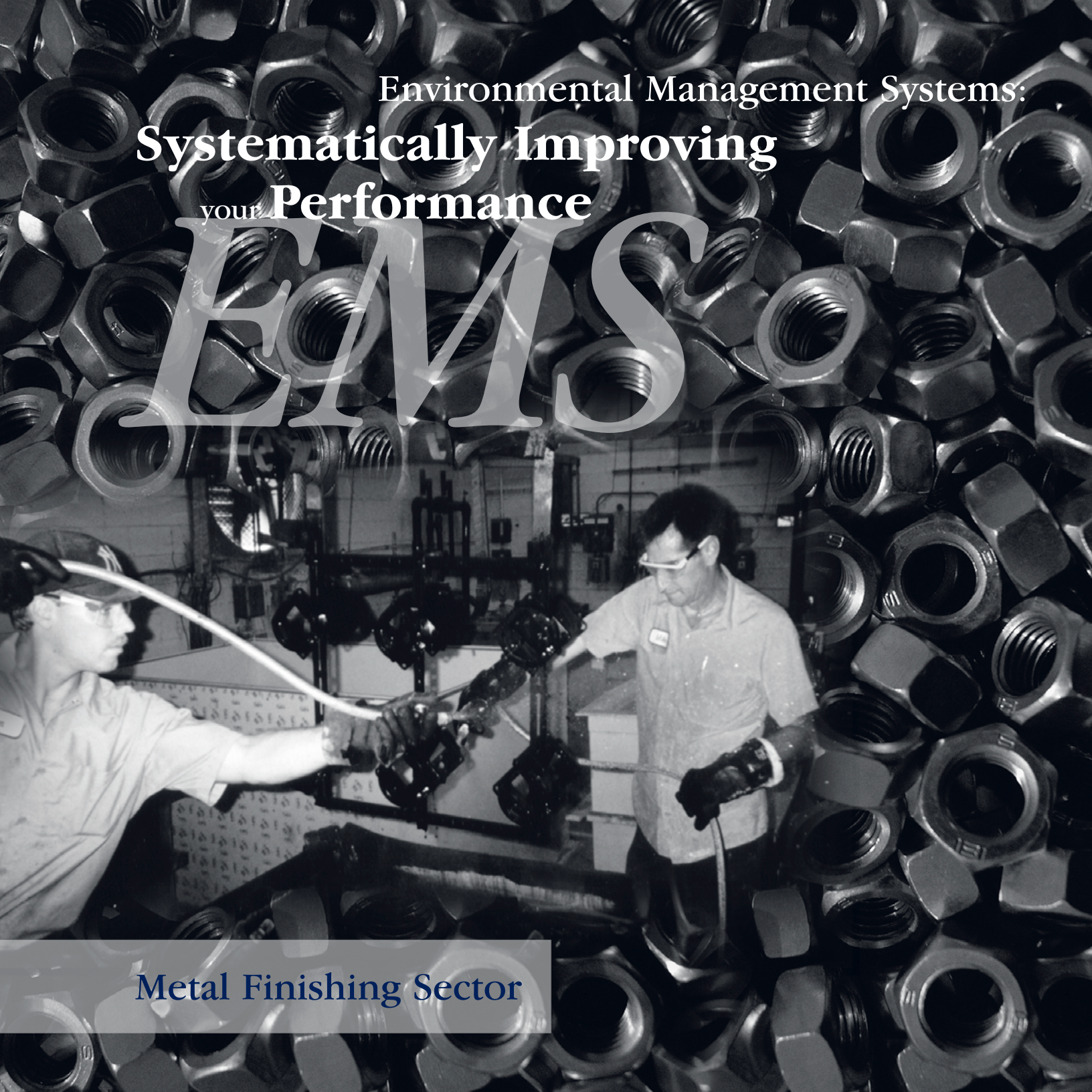
Environmental Management Systems:

Systematically Improving your Performance

EMS



Metal Finishing Sector

Finish First in the **Face** of **Increased Competition**

American metal finishers are facing a period of intense domestic and international competition. As an important manufacturing industry that puts a premium on product quality, metal finishers must find ways to continuously improve their operational efficiency.

Within this highly competitive setting, metal finishing facilities face a wide range of federal, state, and local environmental requirements. Over the past 25 years, the metal finishing industry has made great progress in improving its environmental performance. The most progressive firms have recognized that improved operational efficiency can lead to reduced environmental impacts, better regulatory compliance, and an improved bottom line.

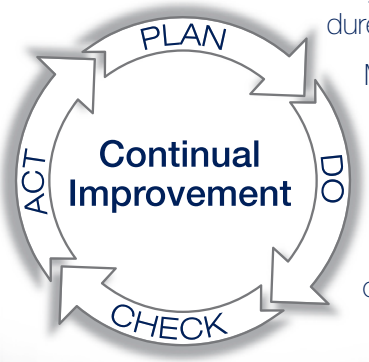
A growing number of metal finishing companies have turned to Environmental Management Systems (EMS) to help achieve continuous performance improvement. These firms have discovered that by using an EMS to improve the efficiency of their everyday operations, they can:

- Reduce costs;
- Improve regulatory compliance;
- Stay competitive;
- Enhance operational decisions; and
- Improve their public image.

If your company is looking for a proven, efficient way to enhance your environmental performance while improving your bottom line, an EMS may be right for you.

Environmental Management System (EMS) Fundamentals

An EMS weaves environmental decision-making into the fabric of a metal finisher's business, facilitating compliance while improving overall performance. Like the Quality Management Systems used at many metal finishing facilities, the systematic approach of an EMS can help metal finishers conserve resources, enhance product quality, and adapt to changes in today's competitive marketplace. Each facility's EMS is unique, but follows a simple Plan-Do-Check-Act model.



A **Plan-Do-Check-Act approach** creates a simple framework to examine the many ways in which your facility can affect the environment. You use this knowledge of your company's environmental 'aspects' to develop, implement, monitor, review, and revise your environmental procedures over time to promote continual improvement.

Many metal finishing facilities already have components of an EMS in place, such as best management practices and safety procedures. Since an EMS is a flexible tool, your facility may want to consider integrating safety, quality, maintenance, public relations, and other facets of your business into one integrated system.

Evaluate Your **Operations** for **Opportunities** to **Reduce Costs**

The metal finishing industry has taken an active role in EMS development, with positive results. Metal finishing facilities that have implemented EMSs have achieved cost savings ranging from $10,000 to more than $100,000. Geoff Blake of All Metals Processing noted that his facility developed an EMS "and saved $55,000 *in the first year!*"

Metal finishers can recover the up-front costs of an EMS through improved process efficiency and resource conservation. Savings can be achieved through:

- Reduced energy and water usage;
- Less waste generation and emissions;
- Fewer raw material inputs; and
- Reduced sludge generation and shipments.

An EMS can help metal finishers achieve long-term cost savings through pollution prevention, beneficial reuse of materials, and installation of high efficiency equipment. Metal finishers can also use their EMSs to reduce future liability costs by managing workplace risks through early detection and action.

"We saved over $72,000, primarily through the identification of high natural gas and electricity use caused by an obsolete gas boiler. Our EMS has kept our heads above water during these tough economic times."

—*Carol McCracken,* **Foss Plating**

"Since [implementing an EMS], Quaker City has experienced remarkable success, starting with a 68% reduction in water usage."

—*Nick Avedissian,* **Quaker City Plating**

"Since the start of the [EMS] in October 2001, Gene's Plating has seen reductions of 62.5% in kilowatt-hours and 70% less process water used. At our new plating shop, the company has realized savings of 33% less kilowatt-hours and 50% less process water usage."

—*Jayne Lecy,* **Gene's Plating Works, Inc.**

Systematically Achieve Environmental Compliance

Metal finishers face a wide array of environmental regulations. Maintaining compliance with these requirements requires significant effort and diligence. The systems approach of an EMS can bring a reassuring sense of order to the environmental compliance process. According to Willie Bell of Metal Surfaces, Inc., an EMS "increases awareness of how to manage our environmental issues."

The Plan-Do-Check-Act framework of an EMS can help ensure that you comply with your environmental requirements in a timely manner, avoiding violations and fines that can damage both your public image and the bottom line. The comprehensive nature of an EMS helps to improve communication and employee understanding of environmental requirements throughout your company.

"[Our EMS includes a] compliance calendar [that] lists all regulatory programs, permits and reports due each month. Another EMS tool is a monthly environmental and safety audit. During the internal audit, all documents required to remain in compliance are reviewed and compliance log sheets and procedures are updated to reflect new rules and regulations. EMS provided motivational tools to remain in compliance with federal, state, and county agencies."

—*Jayne Lecy,* **Gene's Plating Works, Inc.**

"The EMS program helps achieve compliance and improve our bottom line. We set our objectives and targets, and raised our level of awareness and team efforts in areas like pollution prevention. It gave us tools to communicate our progress, successes, and the hurdles to our objectives."

—*Filomena Bundang,* **Crown City Plating**

Stay Ahead of the **Curve** in a **Competitive Marketplace**

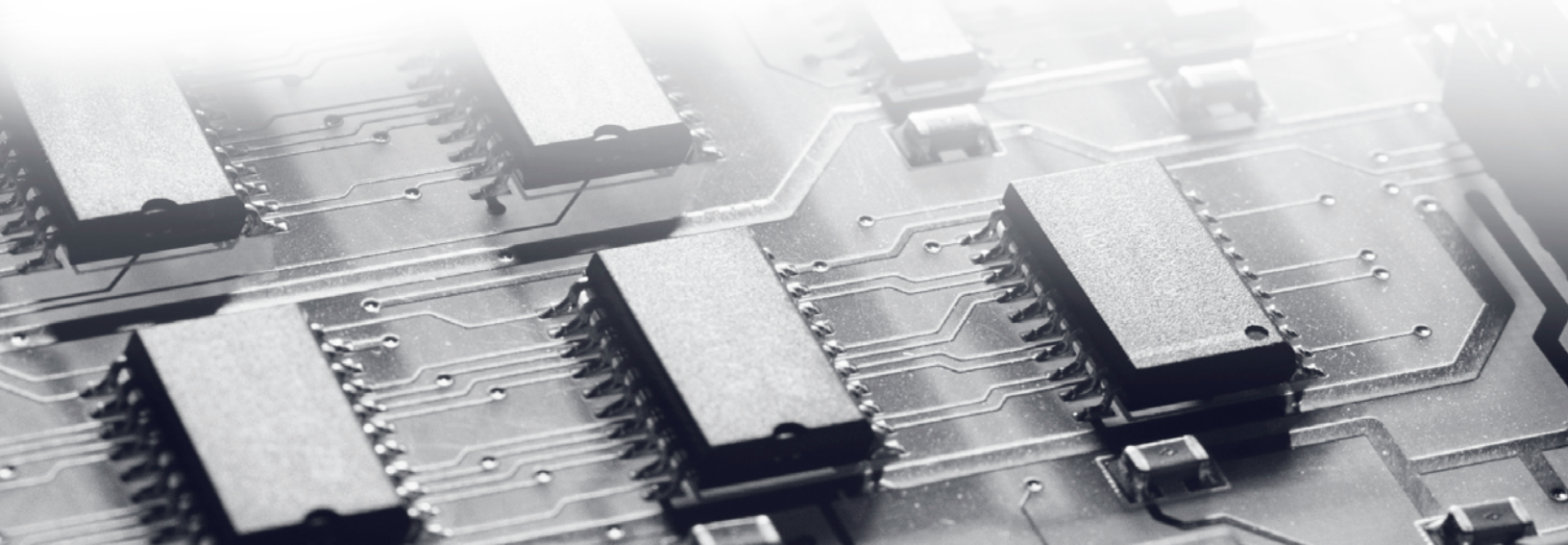
In today's global marketplace, many customers require their suppliers to incorporate an EMS into their operations as a condition of doing business. This trend is becoming common for suppliers to such industries as automobile manufacturing, telecommunications, and aerospace.

By putting an EMS in place, your metal finishing facility can anticipate customer demands for a more systematic approach to environmental management. A flexible EMS can enable you to achieve performance results that are well-measured and easily demonstrated. The voluntary adoption of an EMS can position your company to achieve ISO 14001 certification if your customers require it.

Many metal finishers, especially those that supply the automotive industry, have already implemented an ISO 9000-certified Quality Management System. ISO 9000 shares many elements with effective environmental management systems. Both systems place a strong emphasis on evaluating current processes and thinking strategically about how things can be done better. Companies that already have ISO 9000 certification are well situated to take a 'systems approach' to environmental management.

"Recognizing that our customers were under pressure to improve environmental management throughout their supply chain, we wanted them to further count on us. Developing an EMS was in alignment with our goal to become a world class organization, and it put our firm ahead of the curve. In today's economy, any metal finisher who isn't working toward this environmental system could be left behind in the marketplace and quite possibly go out of business."

—*James Hammer,* **Imagineering Finishing Technologies Worldwide**



Enhance Operational Decisions

The process of developing an EMS for your facility can also contribute to improvements in process line operations and overall product quality. The Plan-Do-Check-Act approach helps company owners and plant managers stay abreast of improvement opportunities. It opens valuable lines of internal communication with employees. It promotes long-term planning that integrates all aspects of a company's operations, from product QA/QC to resource conservation and recovery. According to Geoff Blake of All Metals Processing, "setting up an EMS planted valued seeds. It provides a good matrix [for environmental management]."

"The EMS gave Artistic Plating a better general awareness about the environment. [It] was instrumental in the identification of significant impacts, the setting of objectives to reduce those impacts, and establishing metrics for measuring performance improvements. It helped us look at ways of reducing not only the cost, but the amount of hazardous materials used."

—*Ruben Angel,* **Artistic Plating**

"One of the immediate benefits of [EMS] is the tool aspect/impact analysis. It clarifies to [company management] and our employees how to approach new technologies and even everyday tasks. I am confident that as times goes on we will continue to improve our environmental footprint."

—*Brenda Zemo,* **Polaris Plating**

"I credit [EMS] with sharpening awareness in the plant and providing helpful analytical tools to put new environmental strategies to work. The EMS approach has helped us reduce solvent usage by 50%, recycle 99% of scrap and 98% of paper-related products, and reduce non-production energy consumption by nearly 25%."

—*John Marrs,* **Chrome Craft**

Maintain a Positive Public Image

As citizens take greater interest in the environmental well-being of their communities, factors like public trust and credibility become even more significant to the success of your business. By putting an EMS in place, you demonstrate to regulators and the general public your commitment to a clean environment and a healthy economy.

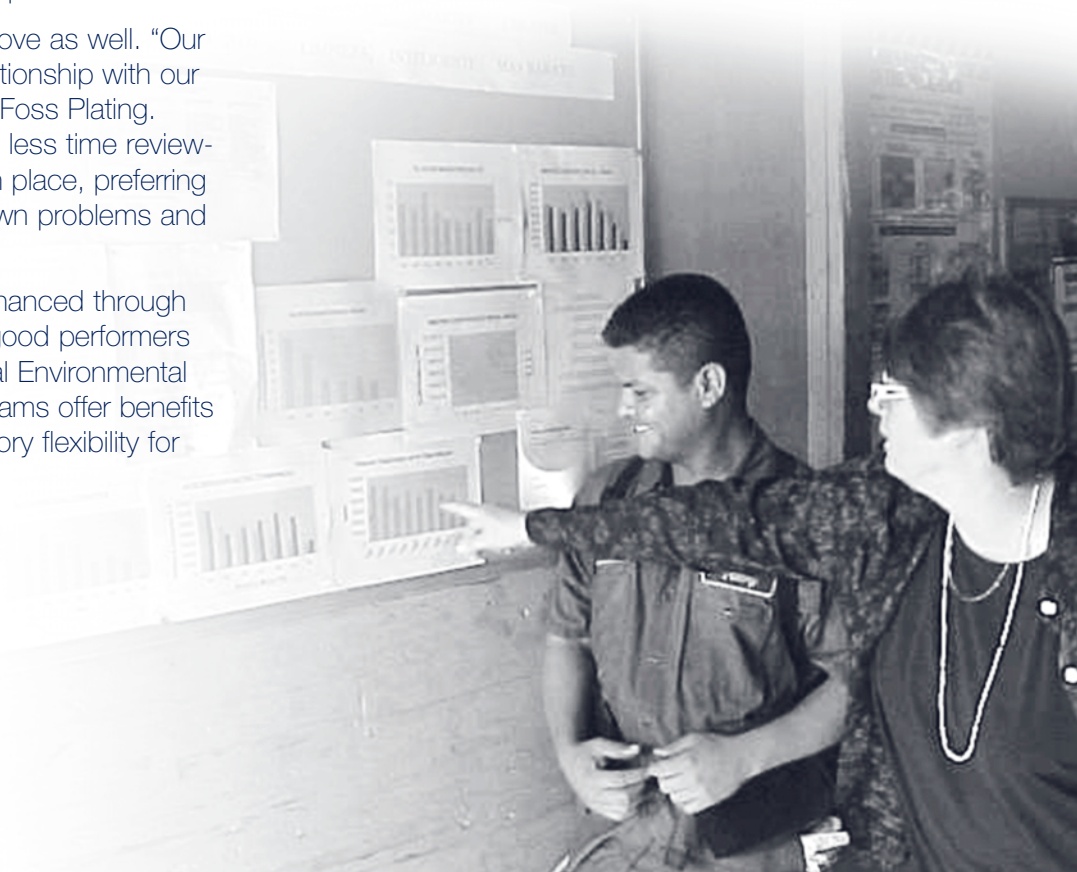
An EMS can help you maintain good lines of communication with those who are directly impacted by your facility's operations, including customers and the surrounding community. The EMS emphasis on performance metrics can put your company in a better position to share information on compliance and environmental stewardship, providing a strong foundation for greater trust and cooperation.

Your relationship with regulators can improve as well. "Our EMS has helped us establish a great relationship with our local POTW," noted Carol McCracken of Foss Plating. Inspectors are likely to spend significantly less time reviewing the records of a facility with an EMS in place, preferring instead to focus on the facilities with known problems and lax management.

Your company's image can be further enhanced through participation in programs that recognize good performers that have an EMS in place. EPA's National Environmental Performance Track and similar state programs offer benefits ranging from public recognition to regulatory flexibility for top performing companies.

"[EMS] has helped Lincoln Plating get a better handle on our processes because we can monitor all the data and see where improvements need to be made. In addition, the company earns recognition for its efforts. Typically, we receive an award every year."

—*Ray Dickey,* **Lincoln Plating**



It's Easy to Get Started with Environmental Management Systems

Once you have made the decision to develop an EMS, there are a number of free tools and resources available to help you get started.

Use the EMS Template, a 'How To' Guide Tailored to Metal Finishing Processes

To begin developing your facility's own customized EMS, visit EPA's Sector Strategies Program Web site at **www.epa.gov/sectors/metalfinishing/**. There you will find a step-by-step EMS guide created specifically for the metal finishing industry. This plain language template focuses on everyday metal finishing operations, and includes many easy-to-use tools and EMS process steps. The Metal Finishing Implementation Guide has been thoroughly pilot-tested by metal finishing companies and conforms with Performance Track requirements.

There are More Resources to Help You Get Started

An expanded EMS business guide produced by the Global Environment and Technology Foundation is also available at **www.epa.gov/sectors/metalfinishing/**. This in-depth guide includes business tools, case studies on EMS best practices, and promotional material for metal finishers.

You can find other resources for EMS development and implementation, including a list of Technical Assistance Providers near you, on EPA's EMS Web site at **www.epa.gov/ems/**.

Start Small and Build Momentum

An EMS is based on common sense and intuitive business decisions. Learn from the tools listed above, then start by taking small, doable steps and build momentum from there. To be effective, you'll need proactive involvement from senior management, front-line workers, and supervisors throughout your facility. Keep the big picture in mind, but define reasonable expectations. Set goals and time frames in line with your expectations, then monitor progress, making corrections where necessary. Capitalize on any elements of an EMS that your facility may already have in place.

The Metal Finishing Industry Endorses EMS Development

The metal finishing industry has taken a proactive role in EMS development, starting with the successful pilot testing of the EMS template by members of the Metal Finishing Association of Southern California, supported by Tetra Tech, Inc. Industry leaders have long recognized the value of EMSs to the continued progress and competitiveness of metal finishers in the United States.

In 2003, the major metal finishing trade associations formed a Metal Finishing EMS Partnership with EPA, the Global Environment and Technology Foundation, several state environmental agencies, technical assistance providers, and other public and private organizations. This partnership reflects the industry's continuing commitment to the voluntary adoption of EMSs by metal finishers nationwide. By 2003, over 100 metal finishing companies had put EMSs in place or were working to do so.

> "I have yet to go to a place [that implemented an EMS] where at the end of the day they didn't save [money]…a place where at the end of the day they didn't find opportunities for greater utilization of human capital."
>
> —*Jim Connaughton,* **Chairman, White House Council on Environmental Quality**

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Photos for this business case were provided by: Patrick Wooliever, Tetra Tech, Inc.; *Plating and Surface Finishing*; and *Finishers' Management*.

Discover what other leading metal finishers across the country are finding—

EMS is a Good Business Decision

"There is a positive trend in cost savings as a result of EMS implementation. When costs and savings are projected over a 10-year period, Artistic will realize over $1,000,000 in savings, after deducting one-time costs."

—*Ruben Angel,* **Artistic Plating**

"Implementing an EMS helped us realize huge cost savings and significant reductions in water use and waste generation. But by far the biggest benefit was the increased sense of control I got from more proactively addressing my company's environmental issues. Bottom line? I slept better at night."

—*Ken Harel,* **Continuous Coating Corp**

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December 2003

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