

## MAGNET Launches New “eco-SMART Manufacturing Program”

Designed to Meet the Growing Worldwide Consumer and Regulatory Demand for Sustainable Products

The Manufacturing Advocacy & Growth Network (MAGNET), has announced the launch of a new comprehensive set of services designed to help manufacturers meet the growing worldwide consumer and regulatory demand for products that are made which respect environmental, conservation and safety concerns.

Titled the “eco-SMART Manufacturing Program,” the services have been designed to meet the U.S. Department of Commerce’s definition for sustainable manufacturing as, ...the creation of manufactured products that:

- ◆ use processes that minimize negative environmental impacts
- ◆ conserve energy and natural resources
- ◆ are safe for employees, communities and consumers
- ◆ are economically sound.

“Companies that adopt our sustainable manufacturing approach will see their top line increase through greater market share, enhanced reputation and customer satisfaction, and process efficiencies they will experience. They will also see reduced waste disposal, packaging and raw materials costs as well as substantially lower electricity and water use which will impact their bottom line,” said Ed Nolan, Vice President of Consulting Delivery for MAGNET.

MAGNET has partnered with Affinity Consultants of Canal Fulton and The Marketing Insider of Columbus to create The eco-SMART Manufacturing Program. Affinity specializes in the development of innovative, sustainable solutions that improve a customer’s environmental, health and safety systems and add value to their organization. They integrate technical expertise and organizational development methodology to established customized

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**ecoSMART**  
MANUFACTURING PROGRAM

[www.ecosmartmanufacturing.org](http://www.ecosmartmanufacturing.org)

processes that meet and exceed the needs of their customers. Affinity recently conducted the City of Akron’s sustainability program. As part of the MAGNET sustainable manufacturing team, Affinity will assist in conducting the assessments that determine the needed actions to be taken so a company can be called a sustainable manufacturer. They will also be providing business consulting services on air, water, waste, energy and safety as they relate to sustainable manufacturing.

The Marketing Insider’s Collette Chandler is a nationally-known expert in helping companies better understand environmental and health trends and the consumers driving them. Research she has conducted has helped companies take advantage of the attitudes, behaviors and purchasing decisions of consumers as it relates to the environment, natural health and wellness. As part of MAGNET’s sustainable manufacturing team, The Marketing Insider will also assist in conducting assessments from a sustainable marketing perspective. They will also provide internal training, marketing message development, sales and marketing consulting and brand positioning to clients as they relate to sustainable or green market space.

MAGNET’s product design and development division, which will be honored as one of the recipients of *Managing Automation Media* magazine’s Progressive Manufacturing Awards in June, will play a key role in helping with the design, or redesign, of a company’s products with environ-

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# Is Lean Turning “Green”?

Lean manufacturing, a procedure of continuous elimination of activities, processes, and materials that do not add significant value to the manufacturing process, has helped countless facilities become more efficient, allowing for opportunities to increase production, reduce costs, and save money. Incorporating many of the same principles as lean manufacturing, green Gearsmanufacturing takes lean a step further, taking the environmental impact of chemicals and processes used into consideration.

Despite the notion that it is expensive to go green, there is a strong correlation between companies that implement lean, efficient manufacturing processes and environmental stewardship.

*Environmental sustainability is far from a fad, and has actually been established as a core entity in the business realm, as more companies begin to implement environmentally sound practices.*

A green manufacturing facility strives to incorporate processes and equipment that maximize energy efficiency, minimize waste from pollution, and help ensure compliance with the requirements of environmental regulations. The cost of retrofitting equipment and changing processes to become more energy efficient and reduce emissions has caused some manufacturers to delay implementing a green policy. However, the money spent on such changes is quickly regained in savings from increased energy efficiency of equipment, a significant decrease in time spent completing processes, and less money spent for waste management, due to the elimination of much of the waste through recycling and other waste reduction efforts. Depending on the manufacturing industry, funds can also be retrieved through government programs and initiatives, which were created to promote green manufacturing.

The first step in green manufacturing is to make note of what green means for the manufacturer's specific industry. Using the Commission for Environmental Cooperation's (CEC) North American Pollutant Release and Transfer Register, manufacturers can determine the



emission rates and toxicity levels of chemicals used and find information on handling laws pertaining to these chemicals. After the chemicals and products used are carefully analyzed for eco-friendliness and levels of toxic emissions, it will be easier to assess which products can stay, which products should be avoided, and which products and chemicals can be reused.

According to a Fujitsu sustainability report, reusing waste is one of the simplest and most cost-effective ways to reduce manufacturing environmental impact. Some common manufacturing wastes, along with alternative uses, are listed below:

- ◆ **Sludge**—Raw material for cement, copper recovery.
- ◆ **Plastic**—Raw material for plastic or solid fuel.
- ◆ **Acid/Alkali**—Neutralizer.
- ◆ **Paper**—Thermal recycling.
- ◆ **Oily substances**—Reused in combustion improvers.
- ◆ **Metallic substances**—Raw material for smelting.
- ◆ **Animal/vegetable waste**—Fertilizer.

Green manufacturing may mean recreating manufacturing systems for an entire site, but that is not the only way environmental impacts can be reduced. Incorporating energy-efficient equipment can also be a less expensive way to help the environment and save time and

money in the long run. For example, a Regenerative Thermal Oxidizer (RTO) destroys toxins and Volatile Organic Compounds (VOC) in the air, allowing some VOC-emitting equipment to remain in use, due to the fact that the RTO would remove the equipment's emissions. Buying products made from recycled materials and manufacturing products with reused materials can substantially reduce the facility's carbon footprint (the level of environmental impact from human activity).

The responsibility of green manufacturing does not rest solely with the company; employee participation is an essential part of the process as well.

## KEY POINTS

- ◆ Just by altering processes, green manufacturing can be practiced without purchasing new equipment.
- ◆ A public awareness campaign is critical for the success of any long-term green manufacturing project.
- ◆ Consumer and partner loyalty can increase as environmental stewardship becomes a main focus for the company.

# Ask the Expert

## Government Grants

Here is the most popular question northern Ohio manufacturers sent to MAGNET's "Ask the Expert" service available through Questline last month:

*"How can a small manufacturer obtain a government grant in order to purchase equipment to produce alternative fuel and recycling services?"*

Searching for and obtaining grants is a difficult and time-consuming process. According to Business.gov, the federal government does not provide grants for starting or expanding a business.

Some business grants are available through state and local programs, non-profit organizations, and other groups. For example, some states provide grants for creating energy-efficient technologies.

If you are not one of these specialized businesses, both federal and state government agencies provide financial assistance programs that help small business owners obtain low-interest loans and venture capital financing from commercial lenders. See the US Small Business Administration's Financial Assistance Web site for more information.

Other resources available to locate potential funding sources include the following:

- ◆ Grants.gov is a search engine for grants available from the various agencies of the U.S. Government. Use the "Advanced Search" function to search by keyword, agency, eligibility type, etc.
- ◆ The Catalog of Federal Domestic Assistance is another source for locating programs available from the federal government.
- ◆ DSIRE, the Database of State Incentives for Renewables and Efficiency, is a good reference for locating state and local funding sources.

### Ohio Resources

The Market Development Grant Program from the Ohio Department of Natural Resources offers funds to Ohio businesses that propose to create the infrastructure necessary for successful markets of recyclable materials and related products.

The Ohio Energy Office's Advanced Energy Program provides grant funding for distributed energy, energy-efficiency, and renewable energy projects.

The Ohio Energy Office's Transportation program offers grant funding for alternative fuel refueling facilities. Research and development grants are available through the Ohio Department of Development's Third Frontier program. Use their Search Grants Web site to look for available funding. Contact the Ohio Energy Office at 614-466-6797 or the Office of Strategic Business Investment at 614-466-4551 for more information about grants or any other available funding. ■

*DISCLAIMER: The content of this answer, including pricing information and reference to governing laws and regulations, was current and accurate at the time the answer was written. The content of this answer is being provided as an example of questions posed to and responses provided by the Ask an Expert service. In addition, the use of trade, firm, or corporation names or products is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by Questline—A division of Tech Resources, Inc. or our clients of any product or service to the exclusion of others that may be suitable.*

Employees can be involved in every aspect of the greening process, from designing the latest efficient production system to recycling. Simple recycling programs can be implemented to encourage employees to reduce consumption and recycle renewable material. Creating incentive programs and in-house training sessions can help increase employee participation in conservation and recycling efforts.

Upper-level management and supervisors should regularly reiterate the importance of reducing consumption and recycling to employees. Visibility is also an effective way to encourage employee participation in conservation efforts. Posting signs and emails promoting the initiative, increasing the number of recycling containers, and strategically placing containers at common points of disposal, such as a break room or by a printer, can significantly increase participation.

Incorporating the Japanese "Five S" system can also help simplify the transition to lean and green. Each S in the Five S system—Seiri, Seiton, Seiso, Seiketsu, and Shitsuke—can be loosely translated into the following:

- ◆ **Sort**—Separating the useful from the useless can help simplify manufacturing processes, saving time and money spent on the unnecessary items.
- ◆ **Store**—Finding a convenient location for recycling bins and other conservation efforts can mean the difference between significant employee participation and no participation at all.
- ◆ **Shine**—Keeping the workplace clean and organized.
- ◆ **Standardize**—Applying the most cost-effective, energy-efficient practices.
- ◆ **Sustain**—Benefiting from the chosen practice and continuously making improvements.

According to the Grocery Manufacturers Association, there are four key aspects that contribute to a successful green operation: strategic collaborative alignment, governance, continued process improvement, and operational effectiveness and efficiency. Collaborating with partners on green initiatives can help save money, because companies can receive a higher return when the entire operational supply chain joins efforts to

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increase efficiency and save money, according to the Green Suppliers Network, an organization that promotes and teaches green, lean manufacturing. A comprehensive approach must be taken to optimize results.

During the early stages of the initiative, it may be wise to create an awareness campaign to alert partners and consumers of new changes. Becoming more energy efficient may mean using smaller packaging for concentrated products, or even a slight increase in price. Informing consumers of the reason why these changes are taking place will let the customers know that they are still receiving the same value as they support the green initiative. If consumers will not be directly affected, it is still a good idea to inform them of the changes, because environmental stewardship can have a powerful impact on the manufacturer’s public perception.

***Green manufacturing can also increase a company’s competitive edge, as the initiative may help form new partnerships with other companies wanting to collaborate with eco-friendly manufacturers, or wishing to implement the same technology or techniques.***

Once initiative goals have been met, continued assessments and improvements should be made to ensure that equipment maintains maximum efficiency levels, waste levels remain low, and government and organization standards are met or surpassed. ■

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mental concerns in mind. Recently MAGNET’s product design and development team was heavily involved in the design and development of a new environmentally-friendly product, the Siphon Flush from American Innovative Products, that can conserve millions of gallons of fresh water every day while saving consumers money on their water bills because of greatly reduced consumption.

Overall, a 4-D approach (define, discover, develop and deploy) will be used to examine five critical areas within a company: products, operations, facilities, culture and marketing. Information gained through this comprehensive process will lead to recommendations and action steps. Once an action plan has been approved, the company will move forward with the implementation of a customized program that will lead to top and bottom line growth and place the company in an elite group of manufacturers with a true competitive edge in the marketplace.

“We’ve called our program eco-SMART for a reason. Manufacturers who use our program will not just be making a few technical production or material changes, they will be repositioning their company into a new strategy that is ready and able to take advantage of the growing worldwide consumer and regulatory demand for products that respect the environment, conversation and safety concerns,” said Nolan. ■

**To learn more about what MAGNET’s sustainable manufacturing program can do for your company, contact Ed Nolan at 216.391.7513 or [ed.nolan@magnetnetwork.org](mailto:ed.nolan@magnetnetwork.org) or visit [www.ecosmartmanufacturing.org](http://www.ecosmartmanufacturing.org).**

MAGNET is a provider of Manufacturing Extension Partnership (MEP) services through the National Institute of Standards and Technology (NIST), an agency of the U.S. Department of Commerce. MAGNET is also one of the Ohio Department of Development’s seven Edison Technology Centers and a Third Frontier Center of Excellence in Product Innovation.

For more information on MAGNET, visit [www.magnetnetwork.org](http://www.magnetnetwork.org).

To see our Product Design & Development capabilities, visit [www.magnetpdd.org](http://www.magnetpdd.org)

To speak with MAGNET, call 1-800-GROW-MFG and ask for Linda Barita or Bob Sichau.

Email us a question at [info@magnetnetwork.org](mailto:info@magnetnetwork.org)

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**MAGNET**  
Manufacturing Advocacy & Growth Network  
4600 Prospect Avenue  
Cleveland, Ohio 44103-4314

