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Green Manufacturing: An Inconvenient Reality

Are you turning green at the thought of going green? Like it or not more environmental regulations are on the way, and manufacturers who don't jump on the green bandwagon may be left behind.

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By Jonathan Katz

For every unseasonably warm day this year, the noose around manufacturers' necks to produce environmentally friendly products gets tighter and tighter.

Need evidence? Consider this: In 2004 the business sector shouldered 65% of environmental regulatory costs, with manufacturers paying an average of \$4,850 per employee, according to a 2005 U.S. Small Business Administration report.

Those figures were before the Restriction on Hazardous Substances directive in Europe and China took effect, before the European Union's Registration, Evaluation and Authorization of Chemicals initiative was enforced, and about three years ahead of more stringent EPA emissions standards for diesel and heavy-duty engines.

And that's just the tip of the iceberg. In his Jan. 23 State of the Union address, President Bush called for tighter fuel economy standards, while the auto industry already is embroiled in a legal battle with California, Vermont and other states over scheduled emissions limits. So, yes, environmental regulations are a costly reality that manufacturers must contend with, which means the question now turns from "How do we prevent new standards?" to "How can we mitigate the cost of environmental compliance?"

One way manufacturers can soften the regulatory blow, say industry experts, is by being more proactive in developing products with a minimal environmental impact. "If you're chasing after compliance, you're probably not going to be effective in managing the process," says Nabil Nasr, director of the Center for Integrated Manufacturing Studies at the Rochester Institute of Technology. Manufacturers should continually be conducting their own research and testing on products before regulations are even proposed, Nasr adds.

Part of this beat-them-to-the-punch approach includes embracing green technology as a marketing advantage. Manufacturing giants General Electric, DuPont and Toyota have been at the forefront of selling green. In doing so, many of these companies also work with the government to help develop policy. For instance, earlier in the year a group of manufacturers and big business, which includes GE and DuPont, formed an organization that calls for a cap on carbon dioxide emissions.

"Sometimes manufacturers are in an especially advantageous position where they can take the lead and push for more regulations and stricter standards, and they can take advantage of that," says Terry Tremwel, research director for the Supply Chain Management Research Center at the University of Arkansas' Sam M. Walton College of Business.

A Step Ahead

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Last December, Nissan Motor Co. Ltd. rolled out its green marketing campaign, Nissan Green Program 2010. Primary program goals include CO2 reductions to meet upcoming U.S. and European emissions standards and the development of various alternative-power technologies. The company is exploring several types of technologies because cost isn't the only challenge regulations present. Manufacturers also must gain customer acceptance, according to Larry Dominique, vice president of product planning for Nissan North America.

"As part of our Nissan Green Program, we don't want to spread our resources so thin we can't develop anything, but at the same time, we're trying to keep our doors open so that we can choose technology that we can react to," he says. For example, if diesel fuel catches on, Nissan can react quickly by promoting its diesel-based systems. Similarly, if the company's hybrid utility vehicles -- the so-called HUVs -- increase in popularity, Nissan can push its HUV systems.

"We're being nimble and flexible, and because there's so much uncertainty in the regulatory world, it's important for us to have that kind of flexibility," Dominique notes.

And for the auto industry, market demand is a major issue when it comes to fuel economy, notes David Cole, chairman of the Center for Automotive Research. In the United States, where fuel prices are still much lower than in other countries, it's much more difficult to sell fuel economy, according to Cole. "Like the CAFE (corporate average fuel economy) legislation, which is a fuel-economy regulation, there is no market pull on it. It's all push," he explains. "So how do you get customers to buy fuel-efficient vehicles if they don't want to?"

Staying In Touch

Louis Pasteur, noted chemist and biologist, is reported to have once said, "Fortune favors the prepared mind." Indeed, manufacturers who have foresight of environmental regulations improve their chances of producing compliant, cost-effective products that meet customer demands. This includes sniffing out regulatory talk as it's bubbling up by attending trade association meetings and staying in touch with local and national policymakers.

Danfoss A/S, a \$3 billion Denmark-based manufacturer of valves and fluid handling components for HVAC and industrial applications, is active in the Air-Conditioning and Refrigeration Institute (ARI), which helped the company set its own environmental standards, says John Galyen, president of Danfoss' North American refrigeration and air conditioning division. "You have a choice to be regulated or regulate yourselves, and in a lot of cases [manufacturers] have woken up to say, 'We have to get involved.' We have to start aligning on industry-related standards and moving forward toward a broad acceptance of the standard," he says.

Danfoss, for instance, created a forum at a 2005 trade show that featured representatives from public utilities departments, the California Energy Commission and some of its customers for an information-sharing session on environmental regulations.

Danfoss customer Manitowoc Foodservice Group is working with ARI and The Alliance for Responsible Atmospheric Policy to reduce direct and indirect greenhouse gas emissions from its products, says Daryl Erbs, Manitowoc's director of innovation. The company is preparing for a California bill that will reduce greenhouse gas emissions 25% by 2020.

Likewise, staff from lift truck maker Toyota Material Handling U.S.A. Inc. attend meetings and workshops presented by the Industrial Truck Association to stay apprised of legislative issues in its industry, says Martin Boyd, national product planning manager.

The strategy seems to have paid off for Toyota Material Handling. In October 2006 the company introduced a new line of lift trucks that not only surpasses 2007 federal emissions standards but also meet California's stricter 2010 standards.

"As CARB (California Air Resources Board) began discussing their ideas of enacting more stringent emission limits for manufacturers in 2010, Toyota quickly reacted by first studying whether or not meeting these levels was technologically feasible, then evaluated the cost/value impact of meeting such levels three years early," Boyd says. "As an organization fully committed to environmentally friendly products and processes, the decision to certifiably meet California's 2010 emission levels did not meet much resistance within Toyota's executive-level management."

Despite their damage-control efforts, manufacturers still face the stark reality that environmental compliance won't be painless. At Nissan a short timetable to improve fuel economy could force the company to increase production of a more fuel-efficient vehicle. "Those are always the very short-term undesirable things because then you're not optimizing your marketplace opportunity," Dominique says.

For Toyota Material Handling, short-notice standards might mean reassigning engineers who are on set five-year assignments, according to Boyd.

Regulations also mean manufacturers will be pressed to find alternative manufacturing processes, which may not be as reliable as the old ways and may require additional employee training, Nasr says.

In the end -- at least for the Manitowoc Foodservice group -- environmental regulations may simply need to be accepted as a cost of doing business, Erbs says. That being said, Erbs says his company looks at the current regulatory wave as an opportunity to grow its brand by attracting new customers who are seeking environmentally friendly products. "And hopefully that offsets the additional investment," Erbs says.

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