

## Profitable Sustainability in the Chemicals Industry



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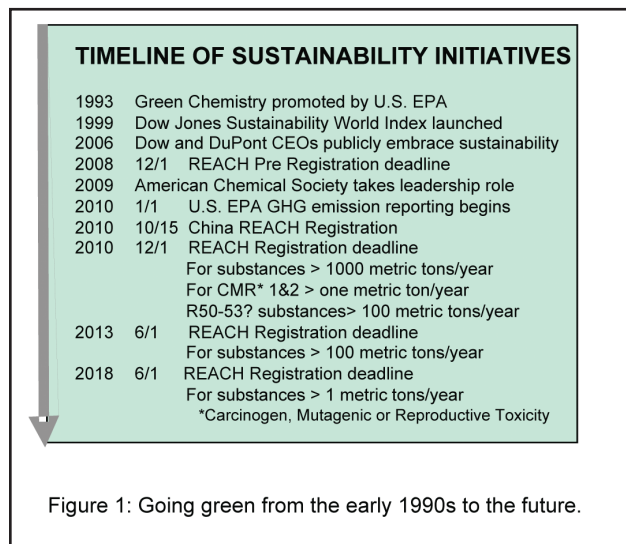
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## Green Sustainability Tops the Industry's Agenda

The chemicals industry is becoming a leader in green and sustainability—accelerated by a tough economy and regulatory compliance requirements. Five years ago, there was not a single reference to sustainability at the American Chemical Society's (ACS) annual conference. This year, ecological improvement and green chemistry dominate the agenda.



Influential chemical companies started focusing in this area a few years ago. The concept of “green chemistry” was introduced in the early 1990s to reduce hazardous substances from chemical processes and development procedures. Although not driven by industry regulations, many of the top-tier bulk and specialty chemical companies have been environmental advocates and reporting on their own sustainability benchmarks for years. See Figure 1 for a chemical industry sustainability timeline.

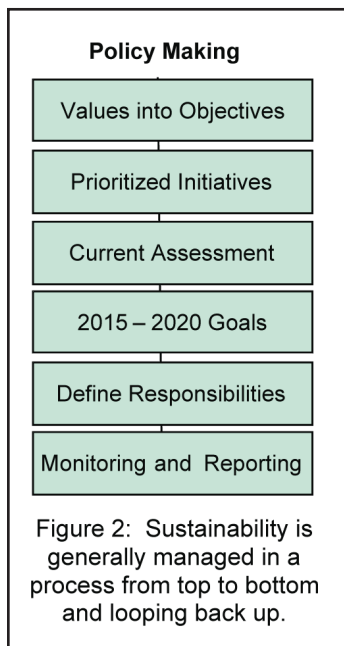
The global recession has driven the entire sector—down to the smallest of players—to focus more attention on environmental practices to achieve drastic cost savings. Companies are also finding market opportunities in developing ecologically friendly technologies.

Those in the chemical industry are in a prime position to have great impact on improving the environment. Chemical processes can be applied to reverse the damage from hazardous substances, reducing the carbon footprint, creating environmentally safe products, and addressing climate change.

This about-face in the industry has created an unprecedented relationship with environmental organizations, which are now working with the industry to help accelerate sustainable changes. It is also setting the foundation for highly profitable opportunities across the value chain for those companies that have strategically developed eco-sustainability policies and companywide practices to implement them.

## Industry Leaders are Accelerating Sustainability Policies

The call for corporate change started in 2006 when the CEOs of Dow Chemical and DuPont made separate yet equally impassioned public comments about the need for sustainability as a top priority for their own and all chemical companies. These and other executives' involvement is driving a significant realignment on sustainability across the industry.



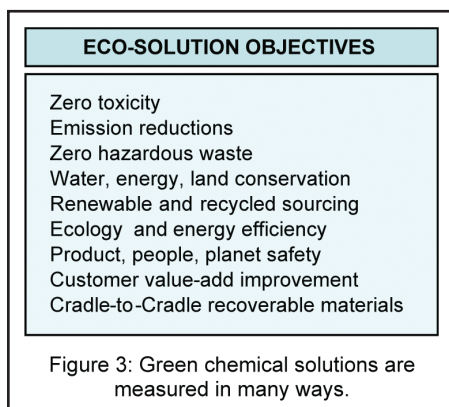
Today, environmental sustainability is becoming entrenched in how chemical companies are run. Corporate policies have been established, as outlined in Figure 2, and put into place that specifically target reduction amounts and dates for GHG emissions, hazardous substances, waste, and the use of water, fuel, energy, and other nonrenewable resource use. Companies are also setting policy goals to develop chemicals from renewable raw materials or nondepletable resources, such as corn sugar, and to develop products that create energy efficiency and eco-efficiency, contribute to climate protection, save resources, significantly reduce the carbon footprint, and benefit the ecology. And they are committed to tracking and reporting on their sustainability performance with verifiable data and transparency.

To date, the strategic policies of the top-tier leaders are already generating impressive results. They are being recognized by the U.S. and Chinese governments, the Dow Jones Sustainability Index, and the Calvert Social Index. Smaller companies are also making an impact.

## Sustainability Solutions will Drive Top-Line Growth

As passionate as the CEOs are to save the earth, sustainability is a business opportunity with undeniable potential for greater sales and profits. As the green marketplace continues to heat up and the economy bounces back, the opportunity will only grow.

Chemical producers are in a prime position to develop the next generation of green processes and technologies used in or for nearly every conceivable industry sector, from consumer goods to industrial, construction, and automotive products. These technologies represent a small yet growing percentage of sales for many of the larger companies. By 2015, as outlined in corporate Sustainability Reports, companies including DuPont, AkzoNobel, and Rhodia Group expect green solutions to be nearly a third of their revenues.

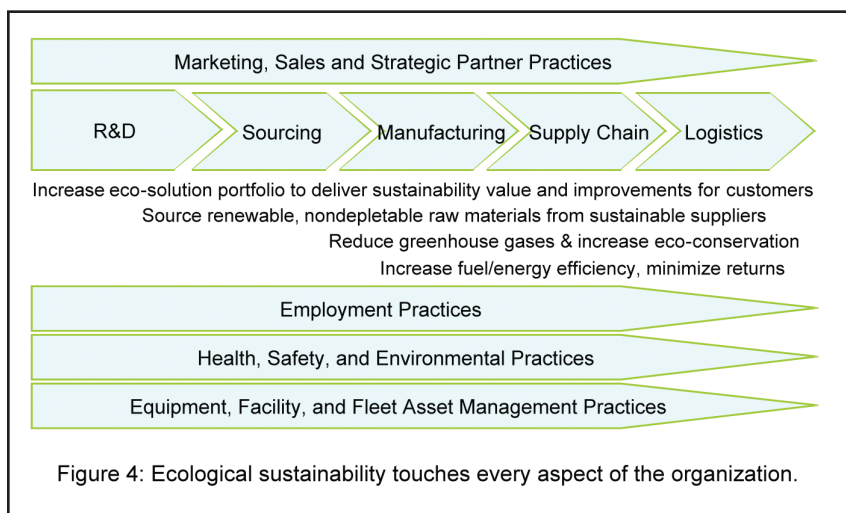


The sustainability criteria being used to analyze new ecological product developments or reformulate existing product portfolios are both quantitative and qualitative in assessing how well they reduce greenhouse emissions, are derived from nondepletable resources and protect the safety of the environment. Figure 3 shows some of those metrics.

For the chemical industry, the New Economy is everything green, and the future holds plenty of opportunity. The revenue opportunity, however, is still on the horizon for most specialty chemical makers. Those waiting to see a resurgence in business from the hard-hit automotive, industrial and consumer sectors are likely to have a challenging year. Those supplying the cosmetic and personal care sectors, which were least impacted by the downturn, are first to benefit. Others are still primarily in cost saving mode and focusing their sustainability efforts on efficiencies and compliance.

## Companywide Policy Execution is the Weak Link

What could stall the potential growth in green chemistry technologies or limit a company's ability to reach its sustainability targets is not the marketplace, but internal systems. Top management needs to communicate strategic policies effectively. Then the team must turn them into tactical plans and budgets, assign them to departments with appropriate incentives, and incorporate them into programs, procedures, and systems across the organization and supply chain. To be held accountable, each area of the business needs to have specific objectives and reporting requirements. Crafting these metrics is no small undertaking.



Consider all the places in the organization that play a role, even if very small, in improving a company's environmental performance. The gamut, as shown in Figure 4, runs from employment practices and health, safety, and environment management to R&D, sourcing, manufacturing, asset and facilities management, and beyond into sales and marketing, supply chain management, logistics, and strategic partnerships. Nothing is untouched. Yet, not all of these areas require immediate attention.

What does demand immediate action is the upcoming European Union (EU) registration deadline for the Regulation, Evaluation, Authorization, and Restriction of Chemical substances (REACH). REACH requires companies to test and register all chemical substances manufactured in or imported into the EU, as well as all the ways each substance is used in its lifecycle and its risks to the environment or human health.

There is currently concern that many mid-sized chemical companies will fail to meet the EU deadlines. The end of 2010 is the deadline for substances of greatest hazard or that are produced, used, or shipped in volumes that exceed 1000 metric tons a year. The deadline for smaller quantities or less hazardous substances is the end of 2013.

The ramifications of missing the REACH deadline—were that to happen—would snowball quickly. Not only would the substances be banned in the EU, any customers outside the EU would have to turn to other suppliers with compliant materials, upending their own formulations, supply chains, and customer agreements. Already, Wal-Mart and IBM have developed sustainability scorecard indexing for their suppliers to force them to demonstrate monitoring and improvements in energy use, GHG emissions, hazardous waste, and other ecological practices. Suppliers with poor performance or an inability to comply with the requirements will be off the approved supplier list.

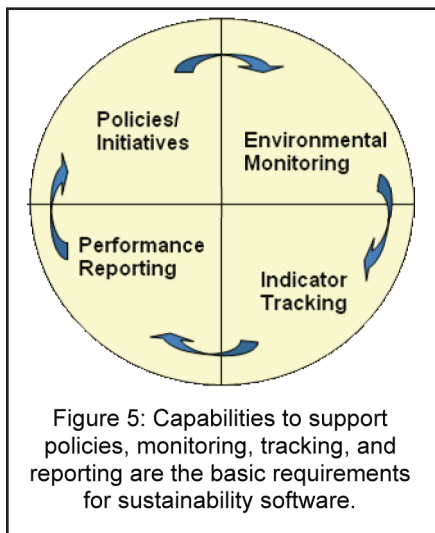
Even the small and mid-sized chemical companies that do avert such a regulatory or customer compliance disaster will have to contend with the many variations of REACH as stipulated by the U.S., China, and other industrialized nations. Compliance doesn't end there. New environmental regulations are forthcoming, such as the recently announced U.S. EPA requirement for reporting GHG emissions, including carbon dioxide.

The challenge for these smaller businesses is multifaceted. They must develop a sustainability strategy across the organization, gear up to meet all government and customer deadlines, integrate companywide sustainable practices, and accurately report on their performance.

## Driving and Monitoring Green Policies

To address this challenge, companies are turning to sustainability software systems and services. As shown in Figure 5, this software is designed specifically to:

- o Define strategic policies and target initiatives.
- o Perform regulatory carbon and environmental monitoring.
- o Track energy usage and other strategic sustainability indicators.
- o Automate reporting of performance improvements.
- o Populate a Global Reporting Initiative (GRI) reporting framework, which is now becoming a reporting standard.



Ideally this is all a tightly integrated part of the enterprise platform. This allows it to draw on current business data from every area and map to a company's business processes. These data and processes in financial, manufacturing, distribution, sales, and customer relationship areas are key to enabling a full view for analysis, traceability for REACH compliance, and boosting customer confidence.

Without an integrated data-driven infrastructure that spans the business, it is not possible to provide credible and traceable environmental improvements. Business systems with sustainability functions can also help drive a CEO's policies across the organization and achieve compliance quickly enough to stay in the game.

## Conclusion

Smaller companies must also embrace the responsibility—and the opportunity—that sustainability presents. While regulations and customer demands may appear to be a burden, they can actually help companies understand how to run more efficiently and conserve cash.

The opportunity is tremendous. Chemistry is going to be at the heart of the green movement. Specialty chemicals will be used to improve product and process performance across all industries. As the ACS has proclaimed, chemicals is the go-to sector to solve the environmental challenges and climate concerns facing the world today. For market leaders and any chemical company able and ready to fully participate, eco-sustainability will be a boon to innovation and profits.

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### About Cambashi

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