Sustainable Chemistry and Brand Positioning

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The business of sustainability

What is "green" or sustainable chemistry, anyway?

We've all seen it: product greenwashing[1] that shatters credibility in the marketplace. How can greener chemistry achieve real sustainability goals and also serve to position a brand in the marketplace? This white paper explores that question and provides benchmarking perspective on implementing a successful program.

Neither scientists nor the marketplace offer a consistent definition for sustainable chemistry. That lack of common definition and the corresponding lack of standard protocols for implementing or measuring a sustainable chemistry program can cause confusion and make it difficult to know where to start in designing a sustainable chemistry program. However, this also provides an opportunity to design a program that pertains directly to a company's goals and products.

A brief look at two definitions provides the vocabulary and context for this white paper. One useful definition comes from the Organisation for Economic Cooperation and Development (OECD)[2]: "Sustainable chemistry is a scientific concept that seeks to improve the efficiency with which natural resources are used to meet human needs for chemical products and services. Sustainable chemistry encompasses the design, manufacture and use of efficient, effective, safe and more environmentally benign chemical products and processes." The American Chemical Society offers another perspective, defining twelve principles of Green Chemistry. These principles itemize three essential features: lower resource use, less toxic chemicals, and less waste and pollution.

In practice, however, the working definition of sustainable chemistry depends in part on a company's business goals. Look more closely, and the definition of green chemistry that supports a company's business goals depends on the position of a product within the supply chain, and the aspects of sustainability that are important to stakeholders as a result. Analysis of these factors as described below will lead to the development of a right-sized sustainable chemistry program.

For simplicity, this white paper uses the term "sustainable chemistry" in the sense of the OECD definition. We to refer to decisions made about the composition of products based upon the potential toxicity of the chemicals they comprise, and / or the potential use of resources or waste generation.

The 12 Principles of Green Chemistry

1. Prevent waste
2. Atom economy
3. Less hazardous synthesis
4. Design benign chemicals
5. Benign solvents & auxiliaries
6. Design for energy efficiency
7. Use of renewable feedstocks
8. Reduce derivatives
9. Catalysis (vs. Stoichiometric)
10. Design for degradation
11. Real-time analysis for pollution prevention
12. Inherently benign chemistry for accident prevention

https://www.acs.org/content/acs/en/greenchemistry/what-is-green-chemistry/principles/12-principles-of-green-chemistry.html

1. "Greenwashing" refers to the dissemination of false information to give the appearance of an environmentally responsible public image.
2. See: http://www.oecd.org/env/ehs/risk-management/sustainablechemistry.htm

Where is your product in the supply chain?

Companies making a variety of products around the globe find themselves grappling with the need to "green" their products as a part of market positioning. Some find the issue vital to their business. Others find that brand positioning may not yet motivate an examination of chemical sustainability.

It's a truism in the world of product sustainability that – informally put – the closer a product comes to our children, the more likely it is that sustainable chemistry goals beyond simple regulatory compliance will drive the product's customer appeal.

58% of respondents in a recent survey said that they would pay more for a product from a brand known as environmentally friendly.

72% of those between 15 and 20 were willing to pay more for products that come from companies committed to positive social and environmental impact.

http://www.nielsen.com/us/en/insights/reports/2015/the-sustainability-imperative.html

Consider these recent conversations ERM has had with companies in diverse sectors, which illustrate why some companies focus on sustainable chemistry and others may not:

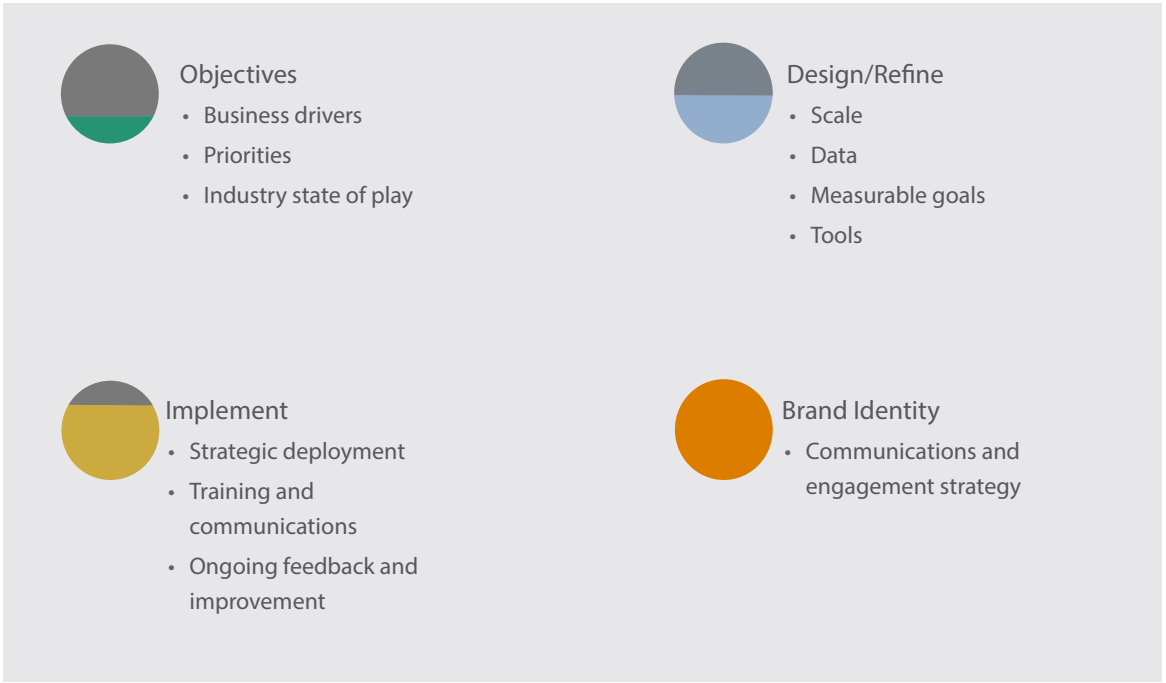
- A boutique manufacturer of on-trend beauty products sold largely in the North America chose to re-examine their chemical management strategy when the manufacturer realized the extent to which their chemical usage and sustainability metrics affected their shelf space at key retail outlets. In addition, their customer service department heard a steady stream of inquiries that added to the company's motivation. Buying decisions by customers in the Millennial age group, crucial to the company's bottom line, were clearly influenced by perceptions about the "greenness" of the company's products.
- A chemical company based in Asia Pacific heard from two crucial stakeholder groups that sustainable chemistry was increasingly important. The company's customers making personal care products demanded less toxic chemicals that could replace the functionality of certain chemicals of concern. And some investors increasingly demanded that the company improve its sustainability metrics.
- Britain's National Health Service (NHS) didn't like what it found when it analyzed its carbon footprint. NHS set a target for carbon reduction and told its suppliers that this target would influence its supply chain decisions. This drove some pharmaceutical companies to assess sustainability measures in their operations and supply chains, and motivated them to reduce greenhouse gas intensity to retain profit-critical sales.
- While an Executive Order favors contractors for the U.S. government whose products are more sustainable, the Department of Defense has not incorporated that order into certain Military Specifications. As a result, defense contractors working in those areas currently have no brand-positioning motivation to invest in the use of more sustainable chemistry.

These anecdotes illustrate the range of business value that a sustainable chemistry program can provide. Often, evidence of the potential value is indirect and awareness of such evidence is scattered throughout an organization. The value may surface through customer surveys or scoring systems directed to the Sales Department; Customer Service inquiries from the public; or annual reporting to a Board or private equity firm routed through the Environmental Health and Safety or Sustainability group. If one of the anecdotes above carries a ring of truth, it may be worth a methodical assessment of the potential value of sustainable chemistry to your product line.

What do best practices look like?

With a topic this broad and poorly defined, how does a company begin to optimize their brand positioning relative to sustainable chemistry? ERM often applies a four-step process to help companies develop an approach to sustainable chemistry. We adapt the general process illustrated in Figure 1 to a company's operations and products, providing benchmarking perspective in each step along the way.

Figure 1. Brand Positioning using Sustainable Chemistry



Step 1: Set Objectives

The first and most crucial step is to set objectives that are aligned with the company's business goals and image in the marketplace. Those objectives can be highly individual and driven by both internal and external factors. For example, some pharmaceutical companies set goals to reduce the levels of toxic substances in their operations; those commitments reflect each company's self-defined identity rather than an externally-defined metric or regulatory requirement. Other companies factor standard indices or scoring systems into their objectives, sometimes dictated by investors or customers. Table 1 lists some of the frameworks in common use.

Table 1. Frameworks for Assessing Sustainability

Dow Jones Sustainability Index (DJSI)	Provides investors with company ranking by sustainability metrics
Global Reporting Initiative (GRI)	Scoring system used to report company impacts that includes a broad range of economic, environmental, and social criteria
Carbon Disclosure Project (CDP)	Disclosure and reporting system focused on climate change, forests, and water programs
Ecovadis	Global supplier of Corporate Social Responsibility (CSR) ratings to support sustainable procurement; scoring system incorporates elements of other frameworks
Responsible Care	The Product Safety Code includes, among other factors, that chemical companies consider impacts on public health, the environment, and overall sustainability as they improve their products or develop new ones
Retailer Supplier Rankings	Companies such as Walmart and Target rank suppliers based on sustainability measures

Step 2: Design and Refine

The second step is to design and test a sustainable chemistry program that can meet those objectives. Here, practicality must trump idealism. Practical considerations include:

Scale: Grand plans can collapse under their own weight. A more successful approach may be to define a limited focus for the sustainable chemistry program in line with the company's business strategy. Some choose to focus first on a product line that generates high interest or is crucial to the company's profits. Others work initially on building sustainable chemistry into new product development. Or a chemical sustainability program may be phased in over time, with implementation goals tied to target time periods. Focus in one area of a business can allow a team to test ideas and show initial successes that will build buzz and momentum.

Available data: Sustainable chemistry decisions require data. And those data – whether on resource usage, supplier formulations, waste generation, or myriad other factors – can be surprisingly difficult to collect and can vary widely in their precision and accuracy. Collecting and managing those data takes time and adds to program costs, which is a practical limitation on the design of a chemical sustainability program.

Measurable goals: How will the success of a program be measured: reduced production costs, increased framework scores, increased sales, or some other factors? Over what time period will the company achieve those gains? Setting measurable goals with realistic timeframes enables the team driving the initiative to measure progress and optimize the program over time. Meaningful metrics can have a powerful effect on stakeholders' perceptions of a company's commitment and dispel any hint of greenwashing.

Available tools: Dozens of tools are available to identify "watch list" chemicals in products, screen for the hazard or risk of substitute chemicals, and measure or report various sustainable chemistry parameters. Each commercially-available tool has advantages and disadvantages. Some companies chose to design their own tools for implementing a sustainable chemistry program. When the customer or retailer does not specify the type of tool that must be used, the choice deserves careful thought to support the company's objectives and goals.

Reformulation challenges: Reformulating a product to incorporate more sustainable chemistry isn't always easy. It can require creative resourcing, new process designs, capital investment, and – particularly with respect to highly regulated fields such as food, drugs, and cosmetics – require lengthy regulatory approvals. While these challenges come into play during Step 3, Implementation, it is never too early to anticipate and seek to address reformulation challenges.

With these practical considerations sorted, a company can define its chemical sustainability program in a way that fits the program objectives and company operations. Pilot-testing the approach can help to resolve the practicalities of implementation. And, perhaps more important than those practical considerations, early engagement with internal decision makers and creative thinkers can help to build momentum toward the kind of commitment needed to drive a successful program.

Step 3: Implement Program

Implementing a chemical sustainability program requires commitment throughout an organization. ERM often works with multifunctional company teams that include representatives from Environmental Health and Safety, Product Stewardship / Regulatory Affairs, Purchasing, Customer Service, Marketing and Communications, Research and Development, Manufacturing / Operations, and Supply Chain Management. The number of people engaged in a sustainable chemistry initiative can multiply quickly for a multi-national company comprising many business units. At this point in the process, the success of the program depends not on environmental idealism or innovation so much as it does on human factors: communication, training, and a willingness to change, best supported by the visible commitment of senior management. Participation can build when stakeholders recognize the benefits: that sustainable chemistry can reduce production costs; reduce certain compliance costs; decrease some liabilities; and enhance product sales.

Step 4: Integrate into Brand Identity

As a sustainable chemistry program matures, it becomes part of the brand identity. That image doesn't form overnight and often requires a multifaceted communication strategy. It takes cold, hard numbers recorded in standardized scoring systems to quantify gains for retailers and investors; presentations at scientific conferences increase technical credibility for the initiative; relatable stories crafted by the Marketing and Communications team make achievements accessible to consumers. Taken together, and with a steady and perceptible corporate commitment to sustainable chemistry, these measures can help position a brand with shareholders, retailers, and key customers.

Conclusion

Making sustainable chemistry a part of a successful business strategy requires a thoughtful approach and steady top-down commitment. The lack of universal frameworks for sustainability programs can make the thought of initiating a program daunting; however, this also allows for flexibility in tailoring the scope and scale of a sustainable chemistry program to a product line and its target markets. A program that is custom built step-by-step to meet company-specific objectives can have a substantial payoff. As part of a brand image, sustainable chemistry can appeal to customers and investors. Done well, a sustainable chemistry program can also position a company ahead of regulatory restrictions. Wise chemical substitution puts process and cost control in the hands of the company, in contrast to situations where a company must react quickly to a new regulatory ban. Real gains in sustainable chemistry – not just greenwashing – can position a brand for business success.

How to Learn More

Questions or comments? Email the author Kate Sellers at kate.sellers@erm.com.

Kate, a Technical Director at ERM, helps a wide range of clients develop and execute effective product stewardship strategies. Writing offers Kate the opportunity to explore technical issues from multiple vantage points; Kate's most recent book Product Stewardship: Life Cycle Analysis and the Environment (CRC Press, 2015) explores the mechanisms for and consequences of global chemical controls. Kate is the President Elect of the Product Stewardship Society.

About ERM

Environmental Resources Management (ERM) is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services.We have more than 160 offices in over 40 countries and territories employing more than 4,500 people who work on projects around the world. ERM is committed to providing a service that is consistent, professional and of the highest quality to create value for our clients. We have worked with many of the Global Fortune 500 companies delivering innovative solutions for business and selected government clients helping them understand and manage the sustainability challenges that the world is increasingly facing.

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