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**PERSPECTIVE****KENNETH MARKOWITZ & CHARLES FRANKLIN**

## Climate change rules matter to the industry

**C**limate change leapt to the forefront of the domestic policy agenda during 2007, fueled by lawsuits and legislative proposals to regulate carbon emissions and other greenhouse gases. This increased legal and policy activity, at the federal and state level, should serve as a wake-up call for the plastics industry, which relies heavily on hydrocarbons for fuel and feedstock needs. Industry leaders need to develop strategies for managing the regulatory costs of climate change while positioning themselves to capitalize on opportunities to provide the next generation of climate-friendly materials and products.

The plastics industry has a unique interest in regulatory policies that increase the costs of energy and hydrocarbon inputs, or decrease the demand for its products.

Plastic and resin manufacturing accounts for 15 percent of all nonfuel use of combustible energy (e.g., oil and natural-gas feedstocks) in U.S. manufacturing each year. Plastic manufacturing also consumes more than 8 percent of the electricity (largely generated using coal and other hydrocarbons) and natural gas used in the manufacturing sector to fuel operations. With crude oil trading above \$100 a barrel and average electricity prices up 30 percent from 2000, the prospect of increased prices, not to mention another layer of regulatory costs, may be daunting. In Europe, where cap-and-trade regulations are already in place, companies pay more than \$30 per metric ton of carbon-dioxide emissions. Manufacturers will have to build such costs into the prices for downstream products.

Increased regulatory and public pressures also will affect the downstream demand for plastic materials and product lines. In a market where customers assess a product's "carbon footprint" along with its price, some long-established plastic products may see significant changes in their perceived value. (Consider the frequent media campaigns to reduce consumption of plastic-bottled water.)

Adding insult to injury, U.S. manufacturers with suppliers or customers in the European Union will need to manage these costs and market changes at the same time that they brace for implementation of the EU's sweeping new chemical regulation governing the Registration, Evaluation, Authorization and Restriction of Chemicals laws in December 2008. Although REACH contains certain exemptions for polymer materials,



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key provisions of the regulation still have direct impact on plastics manufacturing operations through, among others, potential restrictions on the use of certain feedstocks and increased likelihood of supply-chain interruptions.

### Finding opportunity

A constrained carbon-economy will create new opportunities in the plastics industry as well. The U.S. Department of Energy estimates that of the 327 trillion BTUs of energy used in rubber product manufacturers each year, one-third goes to waste due to plant inefficiencies.

As energy costs rise, companies that make investments to increase the efficiency of their facilities may find that they can reduce their carbon footprint while increasing their bottom line.

Indeed, Dow Chemical Co. has reportedly realized more than \$4 billion in savings on energy costs during a 10-year effort to increase the energy efficiency of key facilities by 20 percent.

The industry also has an opportunity to develop a new generation of polymer materials and products responsive to the growing demand for low-impact alternatives. Companies already are exploring the potential to use carbon dioxide and plant materials as feedstock in plastic manufacturing, reducing the need for oil, gas, and other hydrocarbon inputs. Others are developing insulations, building materials, and other polymer products that can reduce the energy demands for buildings and other businesses.

The bottom line for the plastics industry is that climate change regulation is coming. Industry's challenge is to encourage Congress and the Environmental Protection Agency to develop policies that minimize adverse economic impacts for existing plastic products while expanding opportunities for innovative solutions from the plastics industry.

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