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Daryl W. Ditz

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*by Daryl W. Ditz**

Introduction

At the 1992 Earth Summit in Rio de Janeiro, toxic chemicals were recognized as a serious threat to sustainable development.[1] Governments and civil society responded with an array of international treaties, regional agreements, and diverse national efforts to reduce the impacts on human health and the global environment from dangerous substances. For many years the United States played an important role in furthering these international efforts. Yet in one important respect, the United States still lags behind. After three decades of experience with the federal Toxic Substances Control Act ("TSCA"), the United States lacks effective national legislation to manage industrial chemicals within its own borders. This Article examines the unfortunate stagnation of U.S. chemical policy and the resulting response by many state governments that are acting to protect their citizens from the pervasive dangers of industrial chemicals.[2] This bottom-up pressure, combined with accelerating international progress, sets the stage for a long overdue overhaul of U.S. federal policy on chemicals.

The rise of state activism on toxic chemicals reflects the convergence of three powerful forces. First, scientific evidence is rapidly accumulating that hundreds to thousands of chemicals once deemed safe actually threaten public health. This includes new research examining the subtle biological and ecological consequences of chemicals at low concentrations, as well as a growing awareness of chemical exposures in industrialized countries and in regions far removed from polluting sources. Second, these state actions are a direct reaction to profound legal and political obstacles preventing an effective federal response. Third, these state actions are often inspired and bolstered by parallel international developments, including regulatory actions by other countries, multilateral treaties and other agreements, and corresponding shifts in global markets. Taken together, efforts by the states are driving the eventual reform of U.S. federal policy on chemicals and making an important contribution to sustainable development.

Before examining the nature of these state actions and their relationship to U.S. federal law, it is important to clarify the scope of chemicals policy. In contrast with environmental laws on air pollution, water pollution, and hazardous wastes that preceded or followed enactment of TSCA in 1976, chemical policy aims to influence the basic ingredients of our industrial economy. At least in intent, chemical policy shares a common outlook with laws governing the pre-market approval of new medicines.

While pharmaceutical and agricultural chemicals are explicitly exempted from TSCA, so-called "industrial" chemicals are not confined to industrial uses alone. Indeed, the tens of thousands of chemicals under the purview of TSCA are routine constituents of myriad commercial and consumer products from household cleaners to computers, from cosmetics to construction materials. The authority for implementing TSCA rests with the U.S. Environmental Protection Agency ("EPA") and is not delegable to the states.[3] Generally speaking, states are authorized under TSCA Section 18 to prohibit uses of chemicals that EPA has not regulated.[4]

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The Failings of TSCA

TSCA was launched in 1976 with great expectations. EPA Administrator Russell Train noted that the aim of the new law was "to give public health far more of the weight that it deserves in the decisions by which chemicals are commercially made and marketed, by which they enter and spread throughout the human environment."[5]

Over the years, however, it has become clear the TSCA itself is incapable of meeting this goal.[6] A 2005 report by the Government Accountability Office ("GAO") reiterated the long-recognized defects of TSCA.[7] Among its principal shortcomings is the high burden of proof placed on EPA to demonstrate that a chemical poses unreasonable risks as a precondition for taking regulatory action. This challenge is compounded by the fact that TSCA has proven a slow and cumbersome tool for compelling chemical manufacturers to provide key information. The federal toxics law fails to require even basic screening level data for most chemicals in the marketplace.[8] EPA's abilities are especially constrained for the tens of thousands of existing chemicals that were grandfathered when TSCA entered into force. This

* *Mr. Ditz is Senior Policy Advisor for the Chemicals Program at the Center for International Environmental Law.* *This Article is adapted from "State Action on Toxic Chemicals and the Shape of the Next U.S. Federal Policy," a presentation at the American Bar Association Fall meeting of the Section on Environment, Energy and Natural Resources, Pittsburgh, PA, September 27, 2007.*

statutory distinction has a significant impact on EPA's ability to effectively regulate, because the vast majority of industrial chemicals in commerce today are the very same chemicals that U.S. industry produced in the 1970s. The crowning blow to TSCA's effectiveness is a nearly impossible requirement that any proposed EPA action be the least burdensome of all options.

There is ample evidence that EPA has accomplished little under TSCA, especially with regard to assessing and assuring the safety of tens of thousands of existing chemicals. According to GAO, EPA has issued regulations compelling toxicity testing for less than 200 of the 62,000 substances that existed at the time of TSCA's passage.[9] Similarly, EPA has used the regulatory power of TSCA's Section 6 to prohibit the manufacturing, processing, or distribution of a mere five existing chemicals in thirty years.[10] This crucial regulatory provision has not been used to control even a single chemical since 1991, when the U.S. Fifth Circuit Court of Appeals overturned EPA's asbestos rule.[11]

Today, the law's few enthusiasts tend to be those chemical manufacturers with an interest in minimal regulation.[12] But the static state of current federal regulation has even some customers of the chemical industry worried. Ernie Rosenberg, President and CEO of the Soap and Detergent Association and former head of EPA's new chemicals review in the 1970s, has said: "The toxics law needs to impart confidence and TSCA no longer does."[13]

The Rise of State Laws on Toxic Chemicals

Given EPA's remarkable inability to regulate most industrial chemicals under TSCA, it is unsurprising that state governments have felt pressured to fill the gap, stepping in to protect the health and well-being of their citizens. This trend is vividly illustrated by a series of state bills, executive orders, and legislative enactments to control a class of commercial flame retardants called polybrominated diphenyl ethers ("PBDEs"). These substances have been incorporated in a wide range of products, including electronic equipment, furniture and fabrics to inhibit fire. Unfortunately, PBDEs and other brominated flame retardants persist in the environment and can accumulate in the food chain. PBDEs concentrations have risen sharply in human breast milk and have been detected in people and wildlife, even in the Arctic. Research indicates that PBDEs and closely related compounds are associated with adverse effects on neurodevelopment, reproductive health, and endocrine function in mammals.[14]

In 2003 California passed the first state law to restrict the use of two commercial PBDE mixtures, penta-BDE and octa-BDE. Use of these chemicals in electronic equipment was already the subject to the new Restriction on Hazardous Substances ("RoHS") directive in Europe, a fact that helped bolster the case for controls in California.[15] Over the next two years seven more states followed suit and a total of eleven states enacted comparable laws by 2007.[16] In addition to the speed and geographical expansion of PBDE bans, states have broadened the scope of restrictions. In 2007 Washington and Maine each passed legislation restricting future uses of deca-BDE, a related PBDE compound that can degrade to more hazardous forms but which so far lacks the same clear evidence of harm. Legislation to restrict deca-BDE was proposed in eight other states.[17]

The case of brominated flame retardants is the clearest example of how public demands, international precedents, and market forces have fueled a flurry of state action. But other chemicals have attracted attention as well. A class of plastic softeners called phthalates, bisphenol A used in the manufacture of hard plastic bottles and food can linings, pharmaceutical uses of the pesticide lindane, and perfluorinated chemicals used in nonstick and stain-resistant applications have all been the focus of proposed state regulation, along with more familiar pollutants such as mercury, lead, and other heavy metals. The Safer Alternatives bill in Massachusetts, which builds on the state's long experience under its pioneering Toxics Use Reduction Act, targets ten diverse chemicals including PBDEs, lead, formaldehyde, perchloroethylene, and dioxins.[18]

Some of these bills go beyond chemical-specific limitations to create new policy approaches and programs. Studies of toxic chemicals in people—including health experts, public officials, and ordinary Americans from newborns to grandmothers—provide a potent symbol of the failure to control industrial chemicals.[19] Furthermore, so-called biomonitoring is also a feature of some policy reforms. In 2006 California enacted the nation's first statewide program for sampling chemical contamination in people. Biomonitoring was also part of state bills introduced in New York, Washington, and Indiana.[20] California has also launched one of the most ambitious efforts to explore the environmental and economic benefits of becoming a "world leader in developing, adopting and supplying green chemistry solutions for the 21st century."[21] This builds on an important 2006 report commissioned by the state legislature that concludes that TSCA had directly contributed to gaps in data, safety, and technology—to the disadvantage of California businesses and citizens.[22]

U.S. chemical manufacturers might reasonably conclude that efforts to regulate chemicals at the state and local level will expand, subjecting them to a convoluted patchwork of regulation. In the past session of the California legislature, some fifty bills were introduced relating to chemicals, pollutants, and environmental health.[23] To be sure, lobbyists for the chemical industry and manufacturers of specific chemicals have poured resources into fighting these state bills. They have also launched some unsuccessful efforts in Congress to explicitly preempt states from establishing stricter standards on individual chemicals, mandating tighter security at chemical plants or enacting other measures affecting environmental health and safety.

But these state initiatives are not random attacks on the chemical of the moment. In fact, they only appear surprising in contrast with the status quo of U.S. federal inaction. When viewed in the context of developments taking place in other industrialized countries, the state actions can be viewed as parallel actions guided by similar goals and founded on shared principles.

International Progress on Chemicals

These state policy initiatives on chemicals are clearly necessitated by the conspicuous absence of meaningful federal action. But international developments have also spurred state action.

The coordinated state focus on PBDEs restrictions benefited from the European RoHS Directive and its direct effects on the global electronics industry.[24] Such international precedents provide state campaigners with relevant information on chemical hazards, uses, and potential alternatives. They also demonstrate the political and commercial feasibility of taking action, a powerful counterweight to typical industry predictions of catastrophic impacts.

The 2001 Stockholm Convention on Persistent Organic Pollutants ("POPs"), an international treaty to control certain chemicals, offers another lever for state initiatives.[25] Countries that are party to the treaty commit to reduce or eliminate releases persistent, bioaccumulative, and toxic chemicals ("PBTs") that pose a global threat to human health or the environment. The convention lists twelve POP chemicals and includes a mechanism for adding additional chemicals. As of late 2007, eleven chemicals are under review for possible addition to the Stockholm Convention, including penta-BDE and octa-BDE, lindane and a suite of perfluorinated compounds. Since its entry into force in 2004, the POPs treaty promises to provide a source of data, experience, and inspiration for future policy initiatives, including initiatives by states.[26] While the United States signed the POPs treaty in 2001, Congress has yet to pass the necessary amendments to TSCA and the federal pesticide statute to allow U.S. implementation. The 109th Congress considered but failed to adopt a proposal that would have preempted state rules on new POPs that were stricter than future federal regulations.[27] As a result, the United States remains an observer while 148 nations work to expand this important international environmental agreement.

While the RoHS Directive and the Stockholm POPs Convention target small numbers of chemicals, an expansive new European Union law is beginning to cause sweeping changes in the management of industrial chemicals. The regulation for Registration, Evaluation and Authorization of Chemicals, better known by the acronym "REACH," is the product of an unprecedented political debate to overhaul a series of existing rules on the manufacture, import, and use of chemicals.[28] With the expansion of the European Union to twenty-seven nations, the EU is the world's largest producer and largest market for chemicals, with a major impact on practices worldwide.[29]

In brief, REACH will require basic safety information on chemicals made or imported in the EU above one metric ton per year, a scope that could eventually cover as many as 30,000 industrial chemicals. Industry bears the burden of proof under REACH, with government authorities providing evaluation and enforcement. Chemicals deemed of "very high concern," including carcinogens, mutagens, and PBTs, are subject to authorization, which may lead to use-specific restrictions or bans.[30] As REACH is implemented over the next decade, U.S. states and the federal government can expect a steady influx of new data on chemical hazards, uses, and safer alternatives. U.S. advocates for policy reform are sure to make use of this important resource.

Principles for Reform

These international initiatives bear a striking resemblance to many of the state actions regulating chemicals. This is no coincidence. These actions are driven by common concerns and shared objectives. An understanding of these underlying motivations helps to place recent state bills in perspective and suggest future directions. For example, at the World Summit on Sustainable Development in Johannesburg, South Africa in 2002—ten years after the Rio Earth Summit—world leaders reaffirmed the call to action of Agenda 21 and set a global goal for the sound management of chemicals by the year 2020.[31]

This 2020 Goal figured in the timeline for the implementation of REACH. In the United States, environmental advocates have also adopted 2020 as an important milestone for eliminating dangerous chemicals. The Louisville Charter for Safer Chemicals represents one important public statement about accomplishing federal reform by 2020.[32] The Louisville Charter has been endorsed by dozens of environmental health advocates working at the community, state and federal levels. More importantly, it articulates a set of principles that are informing state and federal thinking on chemical policy: (1) requiring safer substitutes and solutions; (2) phasing out persistent, bioaccumulative, or highly toxic chemicals; (3) giving the public and workers the full right-to-know and participate; (4) acting on early warnings; (5) requiring comprehensive safety data for all chemicals; and (6) taking immediate action to protect communities and workers.

If these principles sound familiar, it may be because the drafters drew heavily on the Copenhagen Charter for Safer Chemicals, a public statement by European environmental and health advocates in the early days of the REACH debate.[33] It is instructive to consider the state actions on chemicals in light of these principles. The state bills targeting PBDEs, lindane, and other PBTs fit squarely with the priority attention that this statement gives to persistent, bioaccumulative toxics. The emphasis on developing safer substitutes and solutions is echoed in several state bills that call for a proactive examination of alternatives to avoid an inadvertent shift from bad to worse, and to facilitate a smooth transition for downstream users of banned substances.

The calls for comprehensive safety data and greater right-to-know speak to the serious legacy problems of inadequate information. Despite many years of the voluntary EPA-industry High Production Volume Challenge program, there is still a dearth of information needed for assessing risk and prioritizing action on chemicals.[34] This lack of information demonstrates the value of biomonitoring programs, which can be instrumental in identifying substances to which humans are intimately exposed rather than relying on hypothetical predictions.

It is also important to note that several of these principles address the process by which decisions about chemicals are made. The references to acting on early warnings and taking prompt measure to protect workers and communities are a reaction against a system that appears mired in a kind of risk analysis paralysis that frequently justifies business as usual. The statement conveys an urgency to provide environmental justice for communities disproportionately burdened by chemicals. In addition to the removing dangerous chemicals, the statement is framed in positive terms, including a stated desire to spur innovation, invest in new technologies, and empower workers and

communities to have a voice in decisions that can affect their health.[35]

Conclusion: Towards a New U.S. Policy on Chemicals

One consequence of state success in enacting stricter controls on chemicals is that it could lead to a patchwork quilt of disparate standards and requirements. But there are many reasons why most advocates for reform of U.S. policy would not be satisfied with scattered state progress alone. For one, such an outcome would not guarantee the same basic protection to all Americans. It would create structural incentives for shifting operations involving hazardous chemical to states with weaker laws. Furthermore, a state-based approach to chemicals management would not be able to employ the legal, technical, and financial resources available to the federal government. States are historically the laboratories of democracy, but it does not follow that the federal government should do nothing.

Indeed, the current upsurge of state laws on chemicals aims not only to protect their own citizens, but also to create a political environment for long overdue national reform. This political tumult in the states will increase pressure on Congress and future presidents to adopt a new outlook on chemicals. The Senate and the House of Representatives has yet to begin a broad debate over the issue, and deep partisan divides make it difficult to begin the process. Given the Bush Administration's lack of interest in TSCA reform—and its open animosity to the EU REACH legislation—the prospects for passing and enacting major chemical legislation is virtually nonexistent in the 110th Congress.

Yet, taking a longer view, there is some cause for optimism.[36] Even in the dark, harshly anti-environmental climate of the 109th Congress, with both houses and the White House in Republican hands, some proposed legislation set out bold goals. The Child, Worker, and Consumer-Safe Chemicals Act ("Kid Safe Chemicals Act"), was introduced by Senator Frank Lautenberg (Dem-NJ) and Jim Jeffords (Ind-VT) and in the House by Representative Henry Waxman (Dem-CA).[37] The Kid Safe Chemicals Act proposed major amendments to the core provisions of TSCA borrowing heavily from policy elements of REACH and U.S. experience with pesticides. In addition, it would have included mandatory biomonitoring and provided dedicated funding for research and development into green chemistry. It also asserted the proper role for federal preemption as a floor, not a ceiling, for state action. Unfortunately, the majority never allowed for a hearing on the bill and it expired at the end of the term.

With the switch in political control in the 110th Congress, new committee chairs and new leadership created opportunities for debating a host of environmental, health, and economic issues that were not on the agenda for the past several years. This is particularly notable in connection with energy policy and climate change. In February 2007 Senator Lautenberg announced his intention to reintroduce the Kid-Safe Chemicals Act, although this has yet to happen. In any case, Congress has begun to consider some narrowly targeted chemical issues including perchlorate, phthalates, asbestos, and a few broader initiatives to strengthen environmental justice protection and public right-to-know.

If anything, this is further justification of the crucial importance of continued state action on chemicals. It could still take years to raise public and political awareness of the need for change, and even longer to undertake the hard work of negotiating policy solutions. In the meantime, effective state action provides a means for addressing specific chemical threats and for broadening the constituency for reform. As workers, health professionals, faith communities, businesses, and others come to see the sense of comprehensive reform, Congress will have no choice to but to confront the challenge. By then, thanks to steady progress on the international and local levels, federal lawmakers will be able to fashion a policy framework that puts the United States on a more sustainable path for the sound management of chemicals.

Endnotes: The States and the World

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[4] 15 U.S.C. § 2617.

[5] Press Release, U.S. Environmental Protection Agency, Train Sees New Toxic Substances Law as "Preventative Medicine," (Oct. 21, 1976), *available at* http://www.epa.gov/history/topics/tsca/03.htm (last visited Oct. 9, 2007).

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[8] 15 U.S.C. § 2601(b) ("It is the policy of the United States that—(1) adequate data should be developed with respect to the effect of chemical substances and mixtures on health and the environment and that the development of such data should be the responsibility of those who manufacture and those who process such chemical substances and mixtures.")

[9] GAO, Chemical Regulation, *supra* note 7.

[10] *See* GAO, Chemical Regulation, *supra* note 7 (stating that the five chemical substances include polychlorinated biphenyls (PCBs), fully halogenated chlorofluoroalkanes (CFCs), dioxins, asbestos, and hexavalent chromium).

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[17] NCEL, *id.* (showing that in 2007 legislation to restrict deca-BDE was introduced in California, Connecticut, Hawaii, Illinois, Michigan, Minnesota, Montana, and New York).

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