

California Green Chemistry Policy

Country: USA

Partner Institute: Institute for Global Health (IGH), University of California Berkeley/San Francisco

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Health Policy Issues: Public Health, Others

Current Process Stages



1. Abstract

In February 2007, a package of bills designed to establish a "green chemistry" policy for California was introduced in the state Senate, the first such attempt in the U.S. The proposed bills would, if passed, prohibit and reduce the use of many hazardous chemicals, establish a state toxics inventory to monitor chemicals use, disseminate information on chemical toxicity and safe alternatives, and begin to shift the burden of proving chemical safety from regulators to manufacturers.

2. Purpose of health policy or idea

"Green chemistry" to reduce harmful effects on human health

Eighty-thousand chemicals are registered for use in the U.S., and 15,000 of these are in regular use. For the vast majority of these chemicals, information on human health effects is largely lacking. And yet in recent decades, studies have shown that chemical exposures-in the workplace, the outdoor environment and the home-contribute to asthma, birth defects, neurological disease and several types of cancer, among other diseases.

"Green chemistry" includes the design and use of chemicals that are less toxic to humans, don't accumulate in the body or persist in the environment, require less energy to produce, and generate fewer harmful byproducts and hazardous waste. A package of bills currently under consideration by the California legislation would, if passed, make California the first state to adopt a comprehensive, statewide policy in support of green chemistry. The bills, introduced mainly by Democratic State Senator Joe Simitian, chair of the Senate Environmental Quality Committee, range from very narrow in focus to far-reaching.

Health impact assessment of federal policies

In addition to banning a handful of harmful chemicals outright, the bills would take more measured steps to address shortcomings in federal regulation of the chemicals industry, which is guided by the 1976 Toxic Substances Control Act (TSCA). According to a University of California report drafted at the request of the state legislature, chemicals already in use when TSCA was passed are fully exempt from its few provisions designed to safeguard human health. When new chemicals are registered for the U.S. market, TSCA does not require that manufacturers disclose information on their health and environmental safety; the act also limits the Environmental Protection Agency's (EPA) ability to regulate the sale of harmful chemicals. Finally, TSCA provides little incentive for manufacturers to develop safer chemicals. As a result, the vast majority of chemicals in the U.S. are made using technologies that are decades old. Meanwhile, several Asian countries and the European Union have taken steps to amend chemical regulation in

favor of green chemistry, a move that could mean U.S.-and California-businesses soon won't be able to meet the demands of a shifting global market. In response, several leading California businesses (including Kaiser Permanente, Catholic Healthcare West and Intel) are already in the process of adopting in-house policies to reduce hazardous chemical use and exposure.

The bills currently under consideration would address the gaps in chemical industry regulation left by TSCA by establishing initiatives to monitor and reduce toxic chemical use in California; motivate industry to use safer chemical alternatives to current toxic standbys; and compel industry to disclose health and safety information on commonly used chemicals. The proposed legislation would also make it easier for the public and businesses to access information on chemical toxicity and safer chemical technologies.

Main objectives

Each year in California, roughly 20,000 people are diagnosed with chronic diseases attributed to exposure to harmful chemicals on the job; an additional 540 die as a result of such exposures. The current legislative package aims to equip California businesses with information on safe alternatives to toxic chemicals and require producers of certain chemicals to submit to the state information on the chemicals' use, disposal, toxicity and potential for human exposure. **The objectives of each bill in the package are as follows:**

- **Assembly Bill (AB) 558**, introduced by Assemblyman Mike Feuer, would (as originally introduced) enact the Toxic Use Reduction Act of 2007 to reduce the use of toxic chemicals in manufacturing and the generation of toxic byproducts. Under the act, manufacturers would be required to submit information on toxic chemical use to the state and pay fees based on the types and amounts of chemicals used. Fees would fund research on safer chemical alternatives.
- **Senate Bill (SB) 291** would establish the California Design for the Environment Program. The program, based on a similar program administered by the EPA, would educate industry and the public about safe chemicals and identify gaps in information on hazardous chemicals and safe alternatives.
- **SB 973** would require the state to compile and make public a list of "chemicals of concern." Manufacturers and distributors using the chemicals listed would have to provide the state with information on the sale and use of the chemicals.
- **SB 578** would require manufacturers of high production volume chemicals to provide the state with information on the chemical's toxicity; industries purchasing more than 5% of the volume; and the likelihood of human exposure to the chemical. Manufacturers failing to comply would be prohibited from manufacturing or using the chemical in California.
- **SB 456** would prohibit the manufacture and use of products containing diacetyl, an artificial butter-like flavoring. Exposure to diacetyl vapors during manufacture has been linked to severe lung disease.
- **SB 509** would restrict the use of formaldehyde, a known carcinogen, in the manufacture and importation of composite wood products (such as plywood, cabinets, and furniture items).

Several related bills would expand the scope of current California state law regulating the disposal of electronic waste, which can contaminate soil and water with heavy metals and other toxics.

A separate Assembly bill (**AB 1193**) would instate a financial incentive of \$5 or more for the return of mercury-containing thermostats to authorized collection sites. Two separate bills (**AB 13** and **SB 973**) would, respectively, restrict the use of the toxic flame retardant Deca-PBDE and perfluorinated compounds (PFCs) and their precursors, widely used in electronics. Another bill (**AB 656**) would commission a study on the environmental ramifications of alkaline battery disposal.

Type of incentives

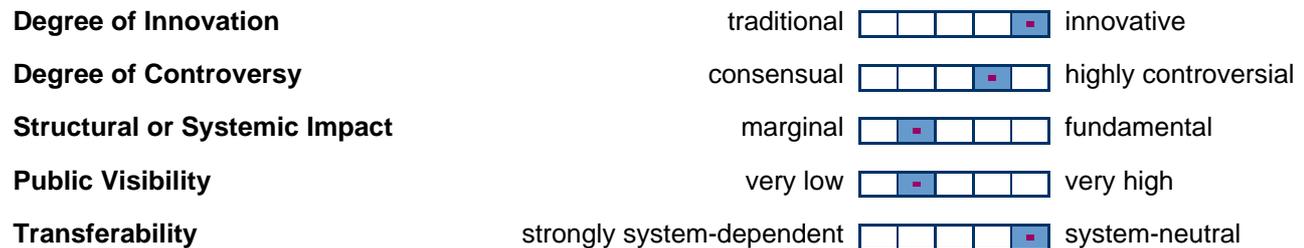
The legislative package offers few incentives for manufacturers, distributors and other businesses that could have to comply with its provisions-with one notable exception. AB 558 would make it very costly for California businesses to continue using those chemicals deemed most harmful to humans and the environment. Businesses opting to use chemicals deemed safe will face no fees, whereas those continuing to use the most toxic chemicals in the greatest amounts will face the heaviest fees until or unless they adopt new protocols. Ultimately, this could prove to be an incentive to businesses using "expensive" toxic chemicals to develop safer alternatives or demand them from their suppliers.

A financial incentive is also built in to AB 1193, which would offer cash rewards to promote mercury recycling and decrease illegal mercury dumping and harmful human exposure to the chemical.

Groups affected

Chemical industry, manufacturers, overnment agencies, California consumers

3. Characteristics of this policy



The initiative is a good step in the right direction, but it is likely to lack the "teeth" needed to have a major impact in the way that the California chemicals industry currently conducts its business.

4. Political and economic background

California has a history of passing landmark environmental legislation. The state was the first to regulate car emissions, in 1965, and in 1967 it became the first to set standards for particulate matter, ozone, sulfur dioxide and nitrogen dioxide in outdoor air. In the past few years, California legislators have tried to address hazardous chemical exposures and environmental impacts, but most of these efforts were defeated in the legislature. What was missing, according to UC Berkeley research scientist Michael Wilson, was a comprehensive approach to chemicals policy. Wilson is the lead author of Green Chemistry in California: A Framework for Leadership in Chemicals Policy and Innovation. The report, released in 2006, was commissioned in 2004 from the University of California's California Policy Research Center by the State Senate's Environmental Quality Committee and the Assembly's Committee on Environmental Safety and Toxic Materials in 2004.

As requested by the legislature, the report identified key chemical challenges facing the state, their causes, and possible legislative responses. The authors found that there was insufficient information in the marketplace for

businesses to make informed decisions about chemical use and that the federal government was highly restricted in its ability to protect the public and the environment from chemical hazards. They also concluded that there is a great need for incentives to motivate adoption of green chemistry. The report led to formation of a task force, led by Senator Simitian, in 2006. In 2007, several bills inspired by the report were introduced in the Senate by Simitian as well as one in the Assembly by Feuer.

5. Purpose and process analysis



Origins of health policy idea

The UC report concluded that previous attempts to pass green chemistry policies in California had proceeded in a piecemeal fashion, consisting largely of isolated chemical bans and restrictions on the generation of hazardous waste. According to the report, which garnered national publicity, the time had come for the state to develop a comprehensive sustainable chemicals policy, ideally one that would pick up where federal regulation under TSCA falls off.

Wilson's report identified three policy goals for California's state legislature: ensure that chemical makers generate and make public important information, such as toxicity data; strengthen governmental means of identifying and addressing chemical hazards; and support research, development and education in the area of green chemistry. The resulting green chemistry policy, embodied in the several bills currently under consideration, would meet those goals. It takes its inspiration from the UC report; some of the individual bills are also modeled in part on existing programs in the U.S., Canada, and the E.U. The E.U. in particular has passed seminal legislation in this area. The E.U.'s Restriction of Hazardous Substances in Electrical and Electronic Equipment directive prohibits the use of heavy metals and flame retardants in equipment sold in the E.U. The Waste Electrical and Electronic Equipment directive ensures that electronics return to their makers for proper disposal and recycling at the end of their consumer life. And the new Registration, Evaluation and Authorization of Chemicals (REACH) directive will, for the first time, require the submission of toxicological data on and restrict the use of thousands of chemicals of concern.

Initiators of idea/main actors

- Government
- Scientific Community
- Private Sector or Industry

Approach of idea

The approach of the idea is described as: new:

Innovation or pilot project

Stakeholder positions

California is one of a handful of states that have taken measures to promote green chemistry in the absence of stricter federal regulation of toxic chemicals. However, if the current package of legislation passes, particularly AB 558, SB 291, SB 578 and SB 973, California would be the first state to take a comprehensive approach toward reducing toxic chemical use and exposure.

Stakeholder positions

Supporters:

- Environmentalists. Many environmentalists argue that the U.S. could become a dumping ground for chemicals that are being banned and phased out elsewhere, compounding existing problems spawned by toxic chemical use in the U.S. Health advocacy groups.
- The American Lung Association and the Breast Cancer Fund have endorsed SB 509's ban on formaldehyde.
- State Senator Joe Simitian
- Assemblyman Mike Feuer

Opponents:

- California business associations argue that businesses may leave the state in the face of tightened restrictions.
- The chemical industry has expressed concern that chemical production could be moved overseas, and that entire classes of widely used chemicals-for which there are no alternatives-could be banned.
- The American Chemistry Council believes federal laws provide for adequate regulation of chemical use.

Actors and positions

Description of actors and their positions

Government

Senator Simitian	very supportive		strongly opposed
Assemblyman Feuer	very supportive		strongly opposed

Scientific Community

University of California researchers	very supportive		strongly opposed
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Private Sector or Industry

Chemical industry	very supportive		strongly opposed
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Influences in policy making and legislation

The commissioned UC report was extremely influential in shaping the proposed legislation. The report indicated that chemical production is predicted to double in the next 25 years, and that health and environmental consequences of exposure to under-regulated chemicals are constantly becoming ever more apparent. At the same time, the report concluded, California businesses may fail to compete in the global marketplace unless they face incentives now, at home, to begin investing in green chemistry.

Legislative outcome

pending

Actors and influence

Description of actors and their influence

Government

Senator Simitian very strong none

Assemblyman Feuer very strong none

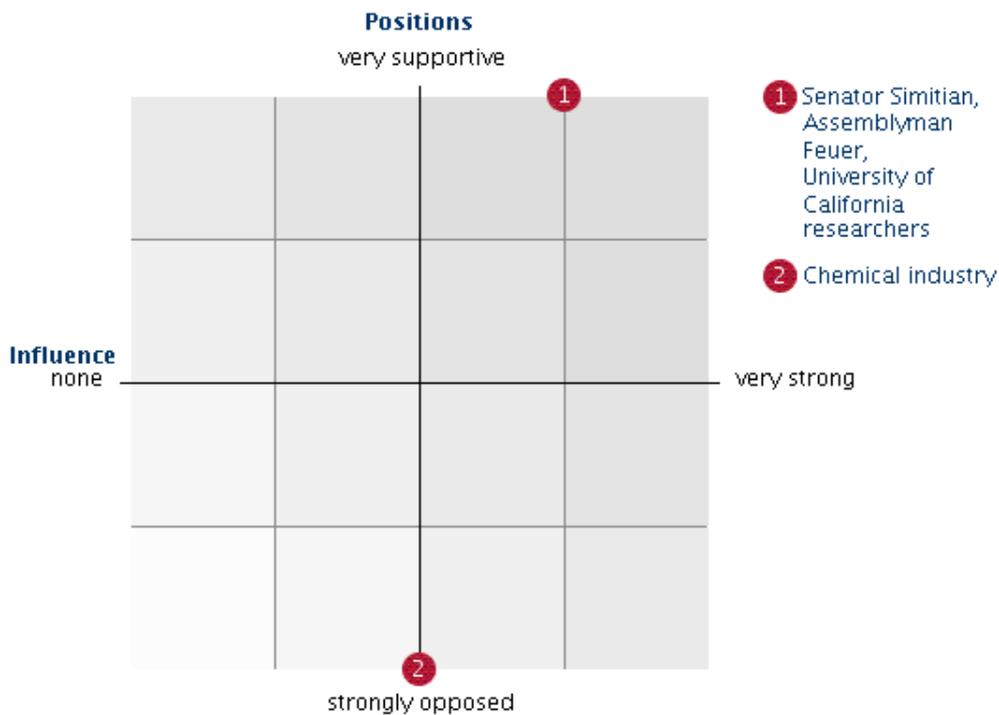
Scientific Community

University of California researchers very strong none

Private Sector or Industry

Chemical industry very strong none

Positions and Influences at a glance



Adoption and implementation

Simitian, a former member of the State Assembly, was elected to the State Senate in 2004 and has introduced several packages of environmental bills. Past bills include one promoting alternatives to toxic pesticides, and another establishing provisions for the recycling of hazardous household waste; these and several others were signed into law. Feuer, elected in 2006, is a member of the Assembly's Environmental Safety and Toxic Materials committee and positions himself as a strong advocate for environmental issues.

6. Expected outcome

Of the green chemistry bills, the one most widely expected to pass is SB 291, which will be heard later this month, and which is modeled after a well-regarded federal program (EPA's Design for the Environment Program). The bill would promote the dissemination of information and does not place any restrictions on chemical manufacturers, distributors or buyers. The most ambitious bill to result from the UC report, AB 558, was amended in assembly on April 9, 2007; the bill no longer calls for fees to be assessed based on toxic chemical use, and would not enact the Toxic Use Reduction Act of 2007. The bill now calls for the establishment of a state toxics inventory to track chemical use. This bill and the others will be heard later this spring.

Quality of Health Care Services

marginal  fundamental

Level of Equity

system less equitable  system more equitable

Cost Efficiency

very low  very high

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