California faces costly health and environmental problems that will put it at a disadvantage in the global economy unless it regulates the use of toxic chemicals, according to a report being released today to the state Legislature.

The report, by University of California, Berkeley researchers, is the first in the nation to recommend a state framework for "green chemistry" — policies designed to motivate industry to reduce toxic chemicals in manufacturing.

"We don't need to shut down the chemical industry and go back to the Stone Age; we can design greener chemicals," said the report's lead author, Michael Wilson, assistant research scientist at the Center for Occupational and Environmental Health at UC Berkeley's School of Public Health.

The report was commissioned in 2004 by the state Senate Environmental Quality Committee and the Assembly Committee on Environmental Safety and Toxic Materials.

The state's burgeoning population — expected to grow by 50 percent to 55 million residents by 2050 — will experience more environmental and health problems unless immediate steps are taken, the report authors warn.

"What this report is trying to say is we can link economic growth in the state to improved health and environment," Wilson said.

Scientists are sounding the alarm about the adverse effects of hundreds of everyday chemicals to humans. They are especially concerned about exposure to toxic chemicals during fetal and child development.

Chemical exposures contribute to pervasive childhood diseases such as asthma, neurological disorders and some cancers. Asthma is the No. 1 reason for children's hospital visits in the state.

About 23,000 California workers each year are diagnosed with chronic disease attributable to chemical exposures in the workplace, and another 5,600 die from diseases tied to workplace chemical exposure, according to the report.

Federal laws governing the use of chemicals in industry are weak compared to European laws, the report authors said. For instance, the U.S. Toxic Substances Control Act does not require
chemical producers to generate toxicity and exposure information for 99 percent of synthetic chemicals in commercial use.

The European Union is clamping down on toxic chemicals in industry with laws, including one that bars the use of hazardous substances such as lead and mercury in electrical and electronic equipment sold in EU countries.

John Ulrich, senior consultant for the Chemical Industry Council of California, said the industry is more heavily regulated in California than anywhere else in the nation.

The report does not say how much it would cost the state to adopt greener chemicals.

The industry does not have any cost estimates either, but Ulrich said "the burden of the costs would extend way beyond California."

Wilson said that bills introduced in recent years seeking to ban specific chemicals or regulate certain products, such as children's toys, are missing the target.

"These are tiny nicks, symptoms of a regulatory system on chemical policy that is not working in the U.S.," he said. "What California actually needs is a comprehensive, modernized chemical policy."

Ulrich agreed that a better approach would be to look at the overall industry but that greener chemistry is not a panacea.

"Whether or not green chemistry alone can solve the problems, I'm not sure that's the case," he said.

The report authors are urging the Legislature to convene a task force to review the report and come up with concrete legislative proposals by 2007.

Among the recommendations: Require chemical producers to provide information on chemical toxicity, strengthen the state's ability to identify and prioritize chemical hazards and support research and development of green chemistry, similar to support of green energy sources.

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