

# Getting Silicon Valley Behind a Green Chip

*Environmentalists are pushing high-tech industry to create nontoxic computer chip*

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MOUNTAIN VIEW, CALIF.

**O**n a sunny day in Silicon Valley, Lenny Siegel drives past the venerable names of high-tech America — Intel, National Semiconductor, Fairchild — and into a parking lot. A chain-link fence topped with barbed wire stands at the edge of the lot; beyond it, a plot of uneven land with low plants. It's a toxic-waste site, the flip-side of Silicon Valley's success.

For years, environmentalists like Mr. Siegel have fought to clean up these sites caused by toxic chemicals used by electronics companies. Now environmental groups here in California and elsewhere are pushing Congress to take a preventive approach.

"The idea is to make chips with fewer toxics," says Siegel, director of the Pacific Studies Center here in Mountain View, Calif. "It's not that the industry is against the idea of pollution prevention. It's just that it's not structured to do it."

The environmentalists' solution is Sematech, the government-funded consortium of US chipmakers researching better ways to make silicon chips. The five-year-old Sematech must have its funding reauthorized by Congress this year. Environmentalists hope to convince lawmakers to push the consortium to build a "greener" chip.

Officials at Sematech are noncommittal about the idea. "We really haven't made a decision on that yet," says Buddy Price, a spokesman for the consortium, based in Austin, Texas. "We feel we're doing a tremendous amount of work in this area" already.

For example, Sematech has demonstrated acid-reprocessing technology, which improves chemical purity even as it reuses the chemicals and reduces waste. Sematech has also been able to replace some hazardous gases, such as gaseous arsine, with solid arsenic. "That's certainly an important achievement," says Rand Wilson, coordinator of the Campaign for Responsible Technology (CRT). But, he says, "they don't quite get it. Creating the all-vegetable chip [i.e., a nontoxic chip] is in fact the thing that's going to make the US competitive."

CRT, an initiative by community, labor, and environmental groups, is urging Congress to make the environment an explicit goal and budget item for Sematech. Next month, the group will brief members of the House Science, Space, and Technology Committee on their idea.

There's a lot that Sematech could accomplish in the environment, argues Ted Smith, executive director of the Silicon Valley Toxics Coalition, a grass-roots community group focusing on the electronics industry. The semiconductor industry uses many dangerous gases to make and enhance silicon wafers, such as phosphine, diborane, and silane. It also uses many toxic solvents, which have been shown to have serious reproductive effects on workers within the industry. Sematech could not only conduct research in this arena, it could demonstrate and spread to the industry the more benign technologies developed by others.

Sematech's response to the initiative has been inconsistent. After a meeting with Sematech officials last August, for example, CRT asked for details of what dangerous substances Sematech used and what specific plans it had for their elimination. It got no response. In September, after a local organizer affiliated with CRT criticized Sematech in the press, the consortium wrote saying it wouldn't continue the dialogue. But in November, on the same day CRT made public its letters to two key US congressmen about its environmental concerns, Sematech wrote the group saying it remained "open to constructive dialogue." It still has not responded to a renewed CRT request for a list of hazardous substances, however.

Environmentalists concede their political clout in Congress is not very big on this issue. But Sematech's image has been tarnished somewhat with the announced departure of LSI Logic from the consortium and rumors that two of the other 14 members might pull out as well. Should Sematech face a tough reauthorization fight in Congress, environmentalists' support might prove important.