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Napa Valley
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Powered up to power down

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At New Technology High School in Napa, computers outnumber pencils. Across the ceilings and down the walls of nearly every room in the alternative school on Yount Street, purple conduits carry thick bundles of cable connecting seven hulking servers to more than 420 computers campus-wide.

Jessie Williamson, 17, wants to turn them all off.

"We could save an incredible amount of watts," if students and teachers got into the habit of powering down their PCs at the end of each day, the junior said.

Right now, "we keep them running from Monday morning to Friday afternoon, when we shut them down," Williamson said.

With plans to study organic chemistry in college, Williamson is not hostile to modern conveniences. She and classmate Sonya Hernandez, 16, represent an increasing number of young people concerned about global climate change and energy consumption.

"Our goal is to make New Tech 100 percent solar-powered," said Hernandez, who is working with Williamson and other New Tech students on an ambitious, extracurricular effort to transform their aging school building into a model of energy sustainability.

At an estimated half-million dollars — after rebates — a solar-power retrofit may be an unattainable goal for New Tech. But with the help of a PG&E consultant, the teenagers are discovering potential energy savings both inside and outside the classroom — from replacing older light fixtures to installing power-miser technology on soft-drink machines.

The Napa Valley Unified School District has to sign off on any changes that will cost it money up front; but the New Tech initiative has the attention of district operations manager Don Evans, who's attended two meetings with the student group.

"The young people took it on their initiative to show me the potential," said Evans.

Michael McDowell, who teaches the school's popular environmental science elective, is faculty advisor for the energy program, which he said is "completely student-led."

"The students came to me at the beginning of the year and said they wanted to reduce carbon emissions," McDowell said.

In keeping with the New Tech philosophy that a teacher is "a guide, a facilitator," McDowell said, he encouraged the students to do their own research into ways the school could save energy to reduce its carbon output.



New Technology High School student Jessie Williamson speaks with fellow environmental studies students about turning the high school into a fully solar powered campus. Greg Hess/Register

Local architect David Horobin, a New Tech parent, and solar-power consultant Gopal Shanker, who serves on the school's foundation board, steered the group toward a PG&E program aimed at increasing energy efficiency in schools.

A PG&E subcontractor, Resource Solutions Group of Half Moon Bay, worked with the students on a schoolwide energy audit: Some teens measured the roof for solar panels, while others counted "every light fixture, every computer all around the school, along with every appliance, microwave, refrigerator ... it took quite a while," Hernandez said.

At a meeting last month, Evans joined the New Tech students to hear the audit report from RSG.

Some of the recommendations were expensive: \$38,000 to replace hundreds of outmoded, power-intensive cathode-ray-tube monitors with newer flat-panel displays, an outlay that would take more than six years to pay for itself.

Others, such as "Vending Miser" technology that powers down cold-drink machines when campuses are empty, would cost less than \$100 per machine and pay for itself in savings many times over each year, an RSG employee said.

Evans said he's planning to pursue that option, as well as the recommendation to replace New Tech's older lighting fixtures with more energy-efficient models.

If the school realizes the savings estimated in RSG's report, Evans said, "the likelihood is very good that we'll take some of those things and carry them forward as a district."

As juniors, Hernandez and Williamson have another year to push their New Tech initiative — which includes the design of the school's future building, slated for construction with Measure G bond funds.

"Imagine a beautiful, two-story building that's green, with solar panels," Williamson said, gesturing toward the parking lot at Yount and Yajome. "That's the future of New Tech."

Hernandez sees a green future as well: After college, she wants to work in the environmental science field, focusing on sustainable energy.

New Tech principal Monica Tipton couldn't be prouder of her activist students, or more optimistic about their futures.

"This is probably the first generation of students that has been raised completely with the concept of ecology, and being aware of the impact that human action has," Tipton said.

"Isn't it going to be a wonderful thing to see what they do with this as they go on into their adult professional lives?" she continued. "I think the world's going to be a better place."