

## When a Biomass Project's "Champions" Are Teenagers

**School Woodchip Heating System**

**Heating Capacity (output): 1.8 MW (6 MMBtu/hr)**

**Annual Woodchip Use: 900 tons**

**Emissions Reduction Equipment: Multi-cyclone**

**Year Installed: 2006**

**Thermal Output: Hot water**

Vermont wood-energy consultant Jeff Forward has been involved in community-scale biomass projects since 1992. “The common thread in all of the projects that I’ve worked on is that there has been a strong community champion,” he says. “In just about every case, somebody plays the role of keeping the idea in front of community decision-makers—and keeps saying, ‘Let’s think about this.’”

When a \$1.5 million system went online at Mount Abraham Union High School in Bristol, Vermont in 2006, the technology wasn’t new—it was the 29th installed in a Vermont public school—but its champions were. Two Mount Abe 9th graders persuaded their school board to move forward, then served on the project committee, then helped convince local voters to approve the bond that provided key funding. One of the two students has gone on to help lead a new youth-driven project, the Vermont Sustainable Heating Initiative, that is promoting residential pellet stoves, along with the growing use of local grass crops for heat.

“As you get older, you gain an idea of what sustainability is,” reflects that student, Jessie-Ruth Corkins, who last year was among six environmental leaders selected by the Earth Island Institute for the 2008 Brower Youth Award. “Ninth grade was just the tip of the iceberg.”

Corkins and Christi Kroll were in Tom Tailer’s Earth Science class when the teacher challenged his students. “If they could get the school board to agree to an energy-saving option in the school, I would offer them \$100,” Tailer recounts. “As a teacher, my role is to use real-world problem-solving to facilitate education.”

Corkins and Kroll teamed up. Tailer suggested they work on alternate ways to heat the school, which was then burning 47,000 gallons of fuel oil through the school year. The two began to learn about biomass.

“Within a month and a half,” Tailer says, “they were communicating with engineers and several different providers of biomass technology.”



### ‘You Present Decisions to Them’

With help from their teacher and from Forward, who was then interim director for the Vermont Superintendents Association’s School Energy Management Program, the students prepared an analysis for their school board. They met with the board several times. In 10th grade they put together a formal proposal. Forward’s program had provided a free, preliminary feasibility study. The students were now set to argue that the school board should go forward on a biomass heating project.

“What you need to do with community decision makers is to present decisions to them: yes or no,” Forward advises. “If you just present information, they’ll say, ‘Yes, this is very interesting’—but that decision point forces them to make a decision.”

At the time, the State of Vermont was offering 90 percent aid for school renewable energy construction projects. At a well-attended school board meeting, the students made their presentation and offered a decision point: move forward with a renewable energy project, or not? The school board voted that night to go forward.

Corkins and Kroll were named voting members of the project committee, with their teacher and the head custodian. The group oversaw a feasibility study and selected a system vendor—the one, says Tailer, who “talked directly to everyone on the panel, including the young women.”



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**Pictured on front: Newspaper photo of students Christi Kroll and Jessie-Ruth Corkins with teacher Tom Tailer in the months before helping to secure a yes vote from the town to install a woodchip system at their school. Right: The woodchip plant at Mount Abe.**

When the Mount Abe school board put a bond issue before voters to cover its share of the project's cost, Corkins made a brochure and prepared a speech.

"Jessie-Ruth stood in front of a very hostile audience from the town," Tailer says. "You know, 'Why should we spend our tax dollars on this? Oil is cheap.'"

On polling day, "she spoke to hundreds of people," the teacher recalls. "She went out and did the politics, and convinced enough people that it passed."

"Kids do not know how powerful they can be," Jeff Forward reflects. "If they become empowered, if they're passionate and they're accurate, it's an amazing thing to see."

If they were to win the teacher's \$100 prize, Corkin and Kroll's original plan was to buy \$100 worth of penny candy. They did win. They wound up purchasing a house in Rwanda for HIV-positive children there, through an organization with which Kroll had a contact.

### **Keys for a Convincing Presentation**

During the 2008-09 heating season, the school's Messersmith Manufacturing wood boiler used almost 900 tons of woodchips, provided by a local supplier. "I'm paying \$36 a ton," says District Business Manager Greg Burdick. "If I go back to the last major oil year," when Mount Abe was heating entirely with fuel oil, "we used 47,000 gallons. In today's dollars, that usage would have cost \$141,000."

The district's total bill for heat in 2008-09, including 900 tons of woodchips and about 9,000 gallons of oil, was \$53,750. Mount Abe used its backup oil boiler mainly during the fall and spring "shoulder seasons," when the biomass system would not burn at peak efficiency.

Overall, Burdick says, the chip system has been virtually trouble free.

Corkins has meanwhile joined her former teacher and a core group of about 20 other young Vermonters in creating the Vermont Sustainable Heating Initiative. The group "wrote a persuasive statewide plan to develop Vermont's 100,000 acres of under-utilized land to grow prairie grass that could be pelletized and provide all of Vermont's home heating needs," said the Earth Island Institute in citing Jessie-Ruth for the Brower Youth Award.

As its pilot project, the Vermont Sustainable Heating Initiative is currently working with a \$20,000 state grant, plus other fundraising, to install pellet-burning stoves into selected low-income households. The group's goal is to do 15 installations; by June 2009, it had completed nine.

In making presentations for these sustainable-energy projects, Corkins said she and Kroll followed a few key guidelines. One was preparation. "We worked hard to practice the main elements, and to have them in good organization." Another was candor. "At the end a lot of questions would be thrown at us. If we didn't know the answer, we said we didn't have that information."

There are people today in Bristol who remember what Corkins and Kroll did.

"Last summer, one man walked up to me," Corkins says. "I didn't know who he was. He said, 'When I look at you, I think about all the money you're saving me.'"



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