

# Green: Sustainability

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"Corvallis is the place that changes the world. There are lots of things we've done for decades that have made huge improvements in the world?"

One such business is Trillium FiberFuels, working to make cellulosic ethanol from plant material.

Chris Beatty, a former Hewlett-Packard employee, co-founder and president of Trillium, said the Corvallis company was formed in late 2006 to create fuel from agriculture residue. Trillium uses material left over after the seed is harvested.

Using nonedible parts of plants, Beatty said, will put corn, which has been used to create ethanol, back into the food supply. However, the success of corn ethanol shows the potential to do agri-fuel on an industrial level.

Using what otherwise has to be disposed to allow farmers to grow new crop helps eliminate the field-burning issue in Oregon while creating a necessary product.

"We have a process that works, and that's not really news," Beatty said. "People have known how to make ethanol out of agriculture residues for some time. The real question is whether you can do it and make money."

Three problems must be solved before the ethanol process proceeds without difficulty, and Trillium is focusing on one. A big chunk of the sugar remains is hard to ferment. The firm created an additional process that changes the residue and sends it along with the rest of the process to increase the ethanol yield by 30 percent or more.

"That helps a lot in getting the economics to look good," Beatty said.

The current challenge is

to raise enough money to get the business to where it can sell products. Some money – less than \$500,000 – has come in from grant money and founder funding.

"This isn't very much when you are trying to support several very experienced engineers," Beatty said. "It's quite a challenge."

But the challenge is worth it, he said. Beatty has a passion to work on a sustainable project. He admits this is a risky bet to work on right now, especially with gas prices relatively low. However, working today will make the process ready when the price of oil treks back up.

Trillium has good prospects and is working on future grants. If things come through, the company will be funded for about two years. In that time, the technology will be ready to deploy.

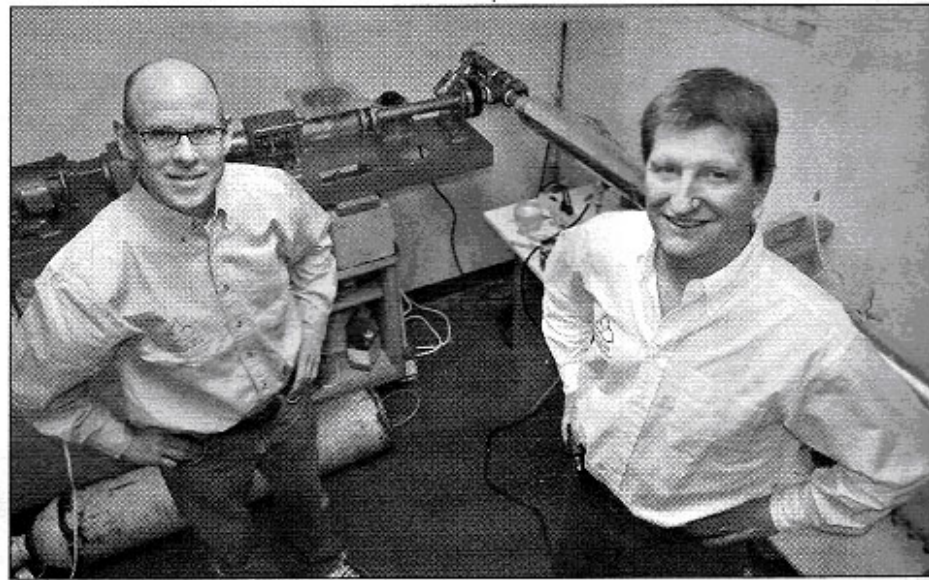
"Then the question is if the world around is ready to take it?" he said.

## Changing to green

It's not just new businesses working toward sustainability.

Imagine removing a carbon footprint on the environment that totals the damage created by 389 SUVs on the road per year. Pacific Cast Technologies Inc. in Albany has done just that. The advanced metalworking company, which has been operating since 1967, has been working green strategies into its business operation.

Part of the equation, said Jerry Artache, the company's vice president of sales and marketing, includes business demands and age of equipment. However, upper management has been looking at how the company, which supplies products to aerospace and industrial manufacturers, can move forward with a green perspective. Combining those ef-



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**Trillium FiberFuels, Inc's Senior Process Engineer Steve Potochnik, left, and President Chris Beatty with the continuous pre-treatment system they designed. The company is working on a more efficient process of generating ethanol from rye straw.**

forts, the company took a look at the equipment that draws the most gas, electricity and water and considered how to use less of those.

Air compressors, heating and ventilation and lighting were the areas of highest usage the business evaluated and made changes on. Replacing and upgrading 20-year-old equipment made sense in long-term returns, while expansion endeavors gave the business an opportunity to start green with 23,000 square feet of new building space.

"It made sense to look green" in building, Artache said.

New systems were purchased with an eye to reduction. And building from the ground up allowed for linkage to existing systems, which would be upgraded. Even motion-sensitive light fixtures were installed that include sensors on each fixture.

The most difficult part of reducing a carbon footprint is making the capital expenditure, Artache said. The business has to be able to wait for long-term payback.

Not all of the returns take time. Immediate benefits can be seen in heating the new building.

"What makes this system the most efficient is we reuse waste heat," said Chris Turner, the project coordinator who oversaw the building expansion. "After we replaced our air compressors, we switched them to be water-cooled and tied our HVAC system in. We are heating our new building just off the waste heat of our air compressors."

Pacific Cast has done the math and calculates it will see

about \$300,000 a year in savings from these efforts. But the efforts won't stop here. The company is continually looking at how it can "get greener," Artache said. Turner said he already is kicking off more energy audits.

This is not just an upper-level management endeavor. Communication with and education of Pacific Cast employees on green efforts has empowered them to take initiative to turn off computer screens and office machines not in use, Artache said.

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