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'Changing with the times'

Utility to stop burning coal Dec. 31, negotiates deal to make energy from trash

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If everything goes according to plan, Richmond citizens in a little over two years will be flipping on lights, powering up computers and basking in the cool of air conditioning, knowing that their homes are powered by trash.

That is Richmond's future if a new public-private partnership comes to fruition.

And long before that, in fact before the end of this year, Richmond will end its long local dependence on coal to generate power, according to Steve Saum, general manager at Richmond Power & Light (RP&L).

The municipal utility is apparently a short time away from forming a partnership with

Cate Street Capital, a Delaware firm which plans to finance the formation of a new company and the conversion of RP&L from coal-fired electric producer to one that

uses only municipal solid waste, or trash.

But no matter what happens with this project, RP&L's days of burning coal in



An employee removes feed stock from the ICM gasifier in suburban Wichita, Kan. / Photo supplied by ICM



Richmond to produce electric power will be over by year's end, Sam said.

"We will stop burning coal as of Dec. 31," Saum said. "We will not be generating (electric power). The EPA won't allow it. In the interim, we will continue to buy (electric power for Richmond) from (the Indiana Municipal Power Agency)."

RP&L will buy electric power off the national power grid. Saum said there would be little change in service or rates since the local utility only generated power about 25 percent of days this year.

The change also would not affect employees.

The 33 employees who work in the generating station will do maintenance projects and, when the Cate Street contract is signed, will begin training on the new technology.

Saum said the rising price of coal, coupled with the stricter emission standards coming in 2012, will make it impossible to profitably generate electricity using coal. He said a recent Environmental Protection Agency legislation, the Cross State Air Pollution Rule, CSAPAR, (called CASPAR) takes effect in January 2012 and becomes more stringent in 2014.

"We decided to stop coal use a month ago when they passed CASPAR," Saum said. "It

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really restricts the sulfur dioxide emissions. With those restrictions we're not looking to buy coal anymore."

Negotiations continue

Attorneys for the two companies are currently working on the agreement and both sides seem sure the project will move forward.

"I'd say we're 80 to 90 percent sure that it will happen," said Saum. "There's always the possibility of something regulatory that might make it not happen, but there's nothing we know yet."

"We're spending a lot of time and effort and money to make this happen," said Bob Payne, managing director of Cate Street Capital. "It's a very complex agreement but we're very close. We're not concerned about getting the agreement finalized."

Saum calls it a one-of-a-kind, first-of-its-kind project that is expected to move Richmond out of the coal-fired power era and into a future as a national leader in green energy.

"It's the beginning and we may be the first one in the country," Saum said. "We've been around here for over 100 years, but things change, times change. And RP&L is changing with the times. We've become more energy conscious and with this project we will become more environmentally conscious."

With the partnership RP&L and Cate Street will form a new company, Life Cycle Energy, LLC. Thirty-three RP&L employees will work for the new company and use RP&L's power generation equipment to produce electric power from trash.

Ten to 15 new jobs would be created. Cate Street would finance the project, investing more than \$100 million on engineering and construction, and would bear all financial risks.

"We don't yet know the total cost, but Cate Street will bear 100 percent of the debt," Payne said. "We'll make it work."

Federal grant

Payne said Cate Street has applied for a Section 1603 Treasury Grant, part of the 2009 American Recovery & Reinvestment Tax Act, which could fund up to 30 percent of the qualified expenditures for the project.

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In order to get that grant, however, Cate Street must commit at least 5 percent of the capital cost to the project by the end of this year.

The law allows that investment can include the purchase of existing equipment, which would qualify Cate Street's "purchase" of RP&L's power generating equipment.

But that purchase would only be on paper for this specific project. If the project fails to carry through, according to the agreement being finalized, the equipment would revert back to RP&L.

The plan to date is that Life Cycle Energy would break ground on a new production building in April 2012 and the project would be operational by Jan. 1, 2013.

End of coal

RP&L officials saw the storm clouds of regulation on the horizon several years ago. Today, those clouds are at hand.

"We're between a rock and another rock," said RP&L board member Phil Quinn. "The EPA is throwing out these regulations that will cause us and all coal-fired power plants to have a very, very difficult time operating. We don't have a lot of choice."

"If this plan doesn't work, we're in big trouble," said board member Jack Elstro. "We'd lose these jobs. We'd have RP&L but we wouldn't be generating. I'm behind this 100 percent."

In 2010 RP&L officials began talks with Cate Street to explore the energy-from-waste technology, at that time being developed by Recycling Solutions Technology (RST), a small Kentucky company.

Local officials visited the Kentucky plant and studied the technology.

In February, they abandoned plans to use RST technology and made the switch to ICM, Inc. of suburban Wichita, Kan.

"As we began working with the engineering and other aspects we realized that the RST technology was not ideal for the RP&L project," Payne said. "The ultimate answer is that for a number of technical reasons ICM was more likely to be financeable."

"The two technologies are almost identical," said Harry Phillips, RP&L energy services director. "It's just that the technology in Kansas is more sophisticated."

"The Kentucky technology dealt specifically with raw (municipal solid waste)," Phillips said. "The technology in Kansas actually separated, segregated and recycled the material. It's shredded, baled and sent to us."

The process

The process calls for the slow burn, or gasification, of bundled trash to create steam to power turbines and produce electricity.

Emissions would be greatly reduced, as would the byproduct at the end of the process.

Trash would be baled and prepared at its source and brought by rail to RP&L where it could be stacked until ready for use.

Payne said Life Cycle Energy will make money through the sale of electric power, the sale of recycled material separated out prior to baling and through shared tipping fees.

Payne said the company will build stations near landfills and will accept trash and split fees with the landfill operators.

The trash will come to Life Cycle Energy on up to 40 train cars per day.

"We are very close to securing letters of intent on that supply (of trash)," Payne said. "We'll need about 1,600 tons a day of (trash). To get that we need about 2,500 tons a day of raw bags of trash."

Payne said he is looking at markets for the trash along the East Coast of the U.S. and the South.

Payne said preliminary emissions tests have been very positive. He said additional tests next week are expected to confirm emission reductions.

"This will definitely be much cleaner than coal," he said.

Stephanie Hays-Mussoni, executive director at the Cope Environmental Center near Centerville, said she supports the project.

"We're really enthusiastic about it," she said. "We're pleased to know that they are working really hard to do the due diligence to make sure it works very well and will be a positive thing for our community."

The technology

The technology that will allow for the gasification and conversion of trash to power is not new.

Jon Orr, capital sales manager in the gasification business unit at ICM, said it has been around since the late 1970s but was shelved when the price of oil dropped in the 1980s.

He said ICM began using it when "we were looking to improve the energy efficiency of our plants."

"We've run all kinds of materials and found that municipal solid waste is excellent for this," Orr said. "It's a great source of energy and it eliminates the space it would fill up in landfills. This allows that material to be

harnessed."

ICM, Inc. a Colwich, Kan. company, provides technology and services essential to production in agricultural industries, especially the production of ethanol. The company has also been involved in advancements in renewable energies. Earlier this year, ICM partnered with Eisenmann Corporation to improve and deliver cleaner waste-to-energy technology.

"We're very excited to be involved in this project," Orr said. "We're looking forward to helping bring it through to completion. This is a way to provide energy in a carbon neutral way."

Adds Quinn, "We're moving ahead. It's a totally exciting project. It's the first plant of this type in the United States. It's something that's going to move Richmond to where we

want to be; a community that's thriving on engineering and technology."

Many pluses

The project has huge pluses:

- The new company would become a customer of RP&L's and the building and the entire Life Cycle Energy property would go on the property tax rolls;
- Officials expect a drastic reduction in emissions and almost minimal production of byproducts from the gasification

process;

- No impact on local electric rates is expected;
- Ten to 15 new jobs would be created.

"This will not affect the reliability of electric service and our studies indicate there will be no rate increases due to energy from waste," Phillips said. "This process is going to be seamless to the public. It's going to be business as usual except coal will not be part of the equation."

RP&L routinely spends between \$9 million and \$12 million per year on coal. Saum said that unspent money will offset revenue lost when RP&L stops generating electric power.

Quinn and others are hoping that trash from the Richmond Landfill can be used in the process, but Saum said "right now there's no plan to do that."

"We're looking at different options but initially there won't be an avenue for that to happen," he said.

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