

Garbage plant vote delayed by concerns about experts

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A key vote on a controversial plan to vaporize Sacramento's garbage and turn it into energy was postponed Thursday after perturbed City Council members questioned whether experts who have vouched for the technology were truly independent.

At times angry, the council directed Jim Rinehart, the city's economic development manager, to contact other scientists and work out a more palatable agreement with the Sacramento company proposing the deal. The matter will be heard Nov. 18.

A story published in today's Bee detailed how U.S. Science & Technology - the company proposing the waste-to-energy plant - had handpicked and paid for two people to travel to Sacramento to speak to the council. And, it described how U.S. Science & Technology's CEO said he was discussing future research employment and other financial deals with those experts.

City Councilwoman Lauren Hammond, who has championed the proposal, said new voices were needed. "The only nagging concern I have is independent analysis," Hammond said. "Then the mayor and council will feel better about entering into an agreement."

Councilman Kevin McCarty agreed. "As policy makers, we want to know the people who have a stake in the game." A chastened Rinehart, who allowed U.S. Science & Technology to choose two of four men who appeared before the council at an April workshop, promised to be more diligent.

"My intent was honorable," Rinehart said. "If the implementation didn't come through, I apologize." One of the experts selected by U.S. Science & Technology was Lou Circeo who helped develop the so-called "plasma arc gasification." Circeo is on contract with a company, Geoplasma, through Georgia Tech University, campus officials said. Also, Circeo told The Bee he is being paid by Geoplasma as a spokesman and advisor.

Geoplasma was described in U.S. Science & Technology's original proposal to the city as corporate partner and the company is a sometimes-partner of Alter NRG Corp., currently slated to design the Sacramento facility.

Circeo also is CEO of a company called "Plasma Arc Consultants, Inc." according to Georgia Secretary of State documents.

William Ludwig, the CEO of U.S. Science & Technology, told The Bee earlier this week that he has discussed offering Circeo research work at the Sacramento plant, but that nothing has been made official. Ludwig said he believed his company had been transparent and had done nothing wrong.

Before the council on Thursday, however, Ludwig said Circeo was not affiliated with U.S. Science & Technology or Geoplasma. He said his company had been "totally transparent" with city officials.

But under questioning by McCarty, he acknowledged that Circeo may have had agreements with other companies, including Geoplasma. McCarty then asked Ludwig if that wasn't something that the council, and the public, should know.

Testimony on proposed trash-vaporizer wasn't wholly independent?

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As the Sacramento City Council began weighing a private company's plan to vaporize the city's garbage and turn it into energy, testimony of four experts at an April workshop was instrumental in the concept gaining traction.

A review by The Bee of those panelists, however, raises questions about whether all were the independent experts that Jim Rinehart, the city's economic development manager, promised the council.

The council today will be asked to approve a waste-to-energy agreement with U.S. Science & Technology, the Sacramento-based company heading the partnership behind the idea.

Among the four men who testified in April, Louis Circeo, an architect who helped develop "plasma arc gasification" technology, told The Bee recently that he is on the payroll of Geoplasma. That company was described in the original proposal and again last February as a partner in the Sacramento deal and also is a sometimes partner of Alter NRG Corp., currently slated to design the Sacramento facility.

Circeo's financial tie never was revealed to the council, nor was the fact that U.S. Science & Technology paid for his trip. Circeo did not return calls from The Bee this week seeking further clarification.

Gary Young, an Iowa engineer who told the council about the economics of the plan, said U.S. Science & Technology – not city staff members – handpicked him to speak at the workshop. The firm paid his travel expenses as well, he said.

Both Circeo and Young said the payments did not influence their comments to the council and both stressed their belief in the viability of plasma arc gasification, where garbage is burned at super high temperatures.

"No question, it's the way to go," Young said. "I wouldn't have said it otherwise." Young said he also is a good friend of Circeo, but that the relationship did not bias his view on the technology, either.

William Ludwig, chief executive officer of U.S. Science & Technology, said his company seeks to be as transparent as possible but doesn't believe the lack of disclosure about the experts is important.

"I don't think anything whatsoever is done in an inappropriate manner here," Ludwig said. "When you get to fine-tuning these agreements, there's all sorts of financial motivation on

everything we do. Everyone comes through the door wanting some sort of association with the project so they can launch their own business, or what have you."

Responding to the disclosures, City Councilwoman Lauren Hammond, who has championed the waste-to-energy concept, said earlier this week that the council and the public should have been told of the speakers' payments.

"It would be nice for this city to be on the leading edge of this technology, but the process must be fair and aboveboard," she said. "Our analysis has to be independent. If that isn't true, it's troubling."

The third speaker at the April council workshop was Dan Pellissier from the California Environmental Protection Agency, who did not return calls from The Bee.

The fourth speaker was Emir Macari, dean of engineering and computer science at Sacramento State. About a month after that workshop, Macari said U.S. Science & Technology representatives approached him, said they wanted to work with him, and offered to provide scholarship money to the school and to hire students. Macari said he didn't accept.

"I did not want to compromise in any way our credibility and our independence," he said.

Ludwig said he knew nothing about offers of scholarships or student jobs. He did say that U.S. Science & Technology was letting academics know that the company would like their help on the project, including perhaps paid positions on an advisory board.

The city's Rinehart said he wasn't aware of Circeo's employment with Geoplasma or of any U.S. Science & Technology offer to Macari. He said he still feels comfortable with his decision to let the firm choose experts for the workshop.

"I told them to find someone reputable," Rinehart said.

Asked if he thought the city had done its due diligence about who was involved in the workshop and the waste-to-energy deal, Rinehart had a terse reply: "Absolutely."

With plasma arc technology, superheated electrified gas, or plasma, along with coke (a derivative of coal) vaporizes organic wastes, producing a synthetic fuel that can be sold to energy companies. Molten glass and metals form a glassy slag, which can be sold for construction materials.

The Sacramento plant would be built and operated privately. Sacramento's primary obligation would be to guarantee a steady stream of garbage for 25 years. The city would pay for the trash to be hauled and also pay a fee if that waste stream were interrupted, an amount that has yet to be negotiated.

Last year, the city manager's office solicited "request for qualifications" – seeking companies interested in providing waste-to-energy projects.

U.S. Science & Technology submitted its proposal in October 2007 and the city manager recommended entering into exclusive negotiations with the firm. The council approved that idea in February.

But there was still some unease on the council, both with the way the deal was done and with the science, leading to the request for the April "waste-to-energy 101" workshop.

Two of the speakers, Young and Circeo, were solely experts in plasma arc technology. Rinehart introduced Circeo as the director of Georgia Tech University's plasma applications research – which he called the largest such research program in the country.

However, Circeo actually had retired from the university's research institute in 2001 and the university dismantled its plasma torch in 2007 to make space for another research program, said spokesman Kirk Englehardt.

Circeo still is considered the university's foremost plasma expert and works for the university on an "as-needed basis," Englehardt said.

The university also has an ongoing research contract – which currently has no funding – with Geoplasma, an Atlanta-based company that develops plasma arc gasification waste-to-energy projects.

Circeo told The Bee he is being paid by Geoplasma as a spokesman and adviser. "I am getting some money, I have a contract with Geoplasma," he said.

Geoplasma was listed as a partner in the Sacramento project in U.S. Science & Technology's request for proposal. Bill Haynes, a Geoplasma vice president, at a February City Council meeting also said his company was a partner in the Sacramento venture.

But the city's Rinehart said he'd never heard of Geoplasma.

U.S. Science & Technology's Ludwig said the company once was a partner in the Sacramento project but that corporate reshuffling led him to sign an engineering agreement with Alter NRG.

Relationships among the various groups do not stop there, however.

In 2007, Alter NRG and Geoplasma's parent company announced they were embarking on joint ventures in waste-to-energy projects. Representatives from the two companies referred The Bee to Ludwig for comment.

Ludwig said he's also talked to Circeo about performing research at the Sacramento facility, but they have reached no formal agreement. In addition, Ludwig said the engineer who spoke to the

council, Young, has contacted U.S. Science & Technology about the possibility of using technology he has patented.

Macari said he once worked at Georgia Tech and also knows Circeo. He said Circeo is an undisputed expert in plasma arc gasification but should not have been considered an independent voice.

U.S. Science & Technology mentioned to Macari that Circeo "was their consultant from the very beginning," Macari said. "To me, it was evident he was there to represent the company."

Call The Bee's Terri Hardy, (916) 321-1073.

Worried about trash-burning plant

I have serious scientific concerns about the proposed Sacramento garbage gasification plant. The information I have seen indicates that the process will have the same hazards as those we saw in the World Trade Center collapse piles, namely the liberation of toxic metals from the chlorine-rich waste stream. These toxic compounds, especially gaseous forms of lead, vanadium and nickel, will come out without being captured by particulate traps and mix in the gas output. When the gases are burned, they will convert to dangerous ultrafine metal particles efficiently captured deep in people's lungs. This could occur merely by cooking on a gas stove.

I would reject any proposal that cannot prove that such processes do not happen in a full-size plant using a typical urban waste stream.

– Thomas A. Cahill, Davis

<http://www.sacbee.com/110/story/1217316.html>

Sacramento Bee Editorial: No reason to rush into plasma future

Published 12:00 am PDT Monday, September 8, 2008

Here's a word of advice to members of the Sacramento City Council who are infatuated with the idea of the city getting on the cutting edge of trash disposal.

WHOA!

Maybe a plasma arc gasification plant, which would turn garbage into a usable slag and generate electricity for sale to utilities, is indeed in the city's future. But a little reality check is in order before council members let their enthusiasm get the better of their judgment.

The first bit of reality: No plasma gasification plant comparable to the one being talked about for Sacramento exists anywhere, and no plasma gasification plant of any size is currently operating in the United States. That means no data are available on operating costs and other performance issues. Nor are any data available on emissions and other environmental concerns.

The second bit of reality: The financing ideas being put forward for this plant seem somewhat, um, gassy. U.S. Science and Technology, the company pushing the idea in Sacramento, says the plant will be financed in part by selling electricity that the plant generates. But the most likely customer, the Sacramento Municipal Utility District, has doubts about that and is not supporting the project.

The third bit of reality: If the city were to embark on this plan, it would be moving from a decidedly low-tech approach to handling waste to an approach on the cutting edge of technology. At the moment, Sacramento trucks its trash over the Sierra to a landfill in Nevada. It's one thing to say that the city needs to stop doing that. It's quite another to say that Sacramento's ready to lead the world in the technology of trash.

Yes, plasma gasification is a technology worth considering. Cities cannot continue to just bury their waste. But it remains to be seen whether this technology will work as its advocates say it will. And it surely remains to be seen whether it's a good idea for a city government that has trouble counting water meters to cast itself as a global leader in technological innovation.

Hope, uncertainty both high for Sacramento high-tech garbage plant

By Terri Hardy - thardy@sacbee.com

Published 12:00 am PDT Thursday, September 4, 2008

As Sacramento officials consider a proposal to vaporize the city's garbage and turn it into energy, some people are finding it hard to contain their enthusiasm.

"I know this is schmaltzy, but I think we're on the side of the angels on this one," said Jim Rinehart, Sacramento's economic development director. "In a decade we're going to see these all over the United States. It will reduce our dependence on fossil fuels and is really worthwhile."

While the team promoting the concept is promising a remarkable upside – creating renewable energy while lessening the impact on landfills at no cost to the city – a Bee review of the proposal found a lack of data on key issues and conflicting operating information.

No commercial plant the size of the one proposed in Sacramento exists in the world. The city was unable to provide The Bee with detailed performance and emissions data. "Because there is no operating facility in the U.S., there are no data," Rinehart said.

Earlier this year, the City Council approved the waste-to-energy plan in concept and authorized nonbinding negotiations with Sacramento-based U.S. Science & Technology. Those talks have been extended twice, most recently on Aug. 26, when the council unanimously agreed to 90 more days of negotiations and vetting.

Before the plant can operate, it must go through environmental reviews and monitoring. City Councilman Rob Fong told Rinehart that performance standards, including emissions levels, should be included in the company's contract with the city.

Even with those assurances, environmental groups voice strong reservations.

"The only thing proven about this technology is that it's problem-plagued," said Bradley Angel, of the San Francisco environmental group Greenaction. "The City Council has been given a series of incorrect claims and straight out false claims."

The only two commercial plasma arc plants in the United States – in Hawaii and Richland, Wash. – have had problems and neither has processed garbage, Angel said.

The plant in Washington, which processed mixed radioactive and other hazardous waste, experienced breakdowns and went bankrupt within a year.

The Hawaii plant, which processes medical waste, still operates but has been cited for stockpiling infectious waste.

Rinehart said he has faith in the plasma arc technology. But when pressed, he said he couldn't say with certainty that efforts to filter potentially hazardous and invisible toxins out of the Sacramento plant's emissions will work as expected.

"I can't use the word 'convinced' until it's up and operating," Rinehart said. "When we have it built and emissions come out and if they exceed (standards) it will be shut down."

Lee Shull, a toxicologist from Environmental Resources Management, a partner firm in the waste-to-energy project, said the technology is "incredibly clean." Shull, who also is on the advisory board for U.S. Science & Technology Corporation, stressed there will be plenty of public discussion at a later date about emissions.

In its pitch to Sacramento last year, U.S. Science & Technology said other cities are looking to build their own plants, including St. Lucie County, Florida.

However Cristina Llorens, spokeswoman for the Florida Department of Environmental Protection, said the agency has not received a permit application for the project. St. Lucie County officials said paperwork should be submitted to the state in a few weeks.

Sacramento last year began to study plasma arc gasification as a cost efficient and green option to trucking garbage daily to a Nevada landfill.

Superheated electrified gas, or plasma, along with coke (a derivative of coal) vaporizes organic wastes, producing a synthetic fuel that can be sold for a profit to energy companies. Molten glass and metals form a glassy slag, which can be sold for construction materials.

U.S. Science & Technology has said the proposed Sacramento plant will be financed in part by selling electricity, another untried aspect of the plan. Officials from the Sacramento Municipal Utility District have questioned its energy efficiency and are not supporting the proposal.

The Hitachi Metals plant in Utashinai, Japan, is viewed as the model for Sacramento's proposal. But that operation has had to burn auto shavings along with trash to adequately power its operation and hasn't sold any excess energy, said William Ludwig, CEO for U.S. Science & Technology.

Sacramento paid upfront for 12 city officials to travel to Japan to let them view the small-scale plant. U.S. Science & Technology will reimburse the city. Receipts are still being compiled, city officials said, so the trip's total cost is unavailable. An initial six-day trip made by City Councilwoman Lauren Hammond and a staffer cost about \$14,500, according to city documents.

The Sacramento plant would be built and operated privately. Sacramento's primary obligation would be to guarantee a steady stream of garbage. The city would pay for trash to be hauled to the plasma plant, but no more than it currently spends.

It's unclear how much trash the city is promising to U.S. Science & Technology, as amounts stated in interviews and documents differ. And the door is left open for the plant to accept more than garbage, including medical and hazardous waste.

Rinehart, the economic development director, told The Bee he did not know how much the plant would cost or how it would be financed. Ludwig said the company had shared that information with the city and pegged the price tag at \$200 million.

Ludwig said the company has a number of financing options and investors. He would not provide names, saying that was confidential.

Hammond, who chaired a working group on the plant, said the city would "do everything we can" to review the environmental impact, but that concerns being voiced now shouldn't kill the project.

"Just because we're in new waters doesn't mean we should abandon this," Hammond said.
