

Audio Transcript:

The Overlooked Energy Guzzler—Vending Machines

**Western Area Power Administration
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PLATE: This is Peggy Plate, from Western Area Power Administration. I want to welcome you to Western's and the Pacific Northwest's partner in this teleconference, the Energy Ideas Clearinghouse.

This is our first teleworkshop we've ever done, and it's called "The Overlooked Energy-Guzzler Vending Machines." We will be presenting a new program and a new technology. This will be a one-hour, one-way workshop, because of the amount of information to be shared. The agenda and list of speakers (also above), as well as handout materials are on our Web site, at www.es.wapa.gov.

You may e-mail your questions or comments to our speakers, and we will try to answer them individually, or post the questions on a FAQ-format on the Web site. If you have ideas to share, please also send them to me or to our speakers.

We will be recording this teleworkshop, as well as having it transcribed, and will put both on the Web site in the next week or so. Feel free to pass our Web site information on to others, such as your key account customers, as appropriate. There will also be an evaluation form on the Web site, below the links at the end of this workshop. Please fill it out. We all appreciate your feedback and comments.

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Western and the Energy Ideas Clearinghouse do not endorse specific products, but try to make new technologies and energy-efficiency opportunities available to our utility customers and others. We are pleased to have Ryan Wood, of Bayview Technologies; Rick Miller, of Bonneville Power Administration; and Dave Bisbee, of the Sacramento Municipal Utility District as our speakers, today, and we thank them for their willingness to share their expertise and experience.

Next, Greg Vaselaar will be the next voice you hear. He is Western's Field Representative from our South Dakota Maintenance Office, in Huron, South Dakota. He will be introducing each speaker. Greg.

VASELAAR: Thank you, Peggy, and, I'd like to welcome all the participants to this event. And as was mentioning earlier, this, is obviously, my first time to embark on anything like this, and I guess I'm excited to learn more about this concept, and how it can be applied, and I've had some calls from some customers, and so I know there's some ears out there.

But, so at this time, with no further ado, it's my indeed pleasure to introduce our first speaker, this afternoon, and his name is Mr. Ryan Wood. He's spent the last five years working with utilities and ESCo's and other large users, at the Bayview Technology Group, which is a leading supplier of intelligent, power-control solutions for energy suppliers. Ryan has degrees in Mathematics and Computer Science, he's a Board member of the San Francisco chapter of AEE.

Ryan is the National Sales Manager for the Bayview Technology Group, and he's going to take us through the VendingMi\$er overheads that, again, are available at our Web site. So if you're listening, and you want to follow along, please check our Web site. And I'll just make one more plug. There are some interesting links about the VendingMi\$er that is included at that Web site, so – but at this time I'll turn it over to Ryan, and he can take it from there.

WOOD: Well, thank you, Greg. It's great to have this opportunity to present the VendingMi\$er to everyone. To just give you an overview of what we're going to talk about for the next 25 minutes, I'll give a little company background of where Bayview Technologies came from and where our direction is. The VendingMi\$er Technology, describe that in detail – how it works, and so forth. We'll talk about marketplace applications – where the vending machines and the VendingMi\$er is applied in various hotels or motels, or offices, or in the government sector.

And then we'll talk specifically about the energy savings. I mean, how many kilowatt-hours are we going to save, what's the nature of the power problem that we're solving. Some discussion of the installation options – how to go about installing these and getting them implemented across a service territory. Then, some specific utility program subtleties about how you'd go about implementing or sizing the opportunity for a utility program, and then give some quick conclusions.

WOOD: The next slide is, "Who is Bayview Technology?" We've been around since 1989, and we really started doing custom power control and so forth, for a variety of specific end-users. We did some exotic power supplies for some Las Vegas hotels and shows, but our President, David Schanin, who's the patent-holder of the VendingMi\$er, really has a great deal of expertise in control technology and in power

control. He did some theatrical lighting work, as well. But all that leads up to the development of the VendingMi\$er, about three years ago.

We're currently a privately held company, and we're marching along to equip every vending machine in the country with a VendingMi\$er, if we can pull that off.

Our key focus for the next slide shows basically, what vending machines are – what we can deliver. A quick summary: A typical vending machine has 3,500 kilowatt hours of average use, and we save 46 percent of that on average, about 1,600 kilowatt hours. Some people have deemed lower savings, or changed that number. It depends upon what you want. But the best data that I have to date based on all the studies, which we'll talk more about in a little bit, is the 46-percent average energy savings.

It's simple to use. It's a plug-and-play device. You just mount it behind the machine. We'll describe how that works. Very long life -- 10 to 20 years. Vending machines are in place and vending product for that timeframe, uninterrupted, as long as the building is still an office building, and there are people in it buying sodas. And then, that yields fast paybacks. Typical, one- to two-year paybacks, but depending upon your electric rate, naturally.

And then, the overall density of the vending machines is about one percent of population, and we'll talk more about that later. It may depend on rural and urban, and other parameters, but we'll give you a tool to estimate that.

The next slide is a picture of the VendingMi\$er attached to a Coke machine. And I draw your attention to the little occupancy sensor that's above the vending machine, and this is the primary way that the VendingMi\$er works. It looks for occupancy. If it sees somebody, it's always on and ready to go, and if it hasn't seen anyone for 15 minutes, it turns the vending machine off.

And then, to keep the product cold, we re-power it every couple of hours, to make sure it is, in fact, cold. It's all tested and approved by Coke and Pepsi, and they did extensive instrumentation and testing of every single can, and temperature profile and so forth. But that's the rough outline of how the technology works. When people are around, it's always on, it's ready to vend. When no one's around, on nights and weekends, it'll shut the machine off, and then re-power it every couple of hours to make sure the product is cold.

We do have an all-weather kit available, and the price is \$179. So that's some quick numbers, and we'll talk more about the specific pricing a little later.

VASELAAR: Ryan, that re-powering every few hours. Now, does that – according to the slide, that's dependent on the room temperature?

WOOD: Yeah, it's smart. It has an ambient temperature sensor inside the VendingMi\$er control box itself. So it's designed to solve the problem of, it's 105 degrees in Phoenix, Arizona, I want cold soda. So it re-powers every hour and a half, and if it's, freezing outside in Minnesota in the winter, and it doesn't need to re-power at all.

VASELAAR: OK.

WOOD: And that's – it's sort of fuzzy logic, but it's really just a look-up table.

VASELAAR: OK. But – another – just another side note. I guess, in my research on this, I can see that it's not recommended – I mean, it's recommended for conditioned-space use. And not necessarily outdoor use.

WOOD: No, that's not true. I mean, underneath the eaves of a typical school, outside is fine. But we have, if you wanted, stick it in the middle of a football field in full snow and weather, we have a weatherized kit for that.

VASELAAR: Oh, OK.

WOOD: So, it's – it can definitely go outside, without a problem.

WOOD: Yeah, I mean – and that's a good segue, Greg, for the next slide, in that one of the little notes in this exploded diagram is "optional heater for freeze protection." So that if, in fact, you have a vending machine outside, and it's freezing outside, the vending machine will actually heat itself to prevent freezing.

But the basic loads of a vending machine are a couple of high-output fluorescent lights, the evaporator and condenser fans, the compressor, and then the electronics. And they consume seven-to-12 kilowatt-hours a day. We've seen it a little higher, more like eight-to-14. But this is from E-Source, and it's about three years old. And they may not have thought about some of the placement problems that occur.

The next graph shows the typical power traces when a vending machine is on. It has a base level, and then it goes up to the compressor turns on, and then back and forth, back and forth, and it cycles across the graph that you see, there. And that's its normal operation, day-in, day-out, 24/7. There's probably some seasonal variation, but it's very small.

This particular machine had a 460-watt average. And what happens when you apply the VendingMi\$er is in the next graph, where you see two-hour peaks, you take it all the way down to zero, and then the compressor comes on and goes for one compressor cycle and then turns off. It has a 110-watt average. So that difference in power is what we're saving, and if you did the math on that, it's probably a little higher than 46 percent, but those are what the power traces look like.

The next graph is a scatter graph of about 75 machines that were measured by a variety of customers – utilities, E-Source's, end-users. They all put on either very sophisticated meters, or simple, plug-load logging meters, and tested the power consumption, before and after, of the VendingMi\$er on the vending machine. And they're – the one large oval, there, shows lamped machines, with an average of 3,493 kilowatt-hours, yearly. And then, with de-lamped machines at 2,105 kilowatt-hours

But you just get the flavor. These variations occur due to sighting, and whether or not there's good circulation behind the machine, things like that. Whether or not it's in a alcove, or exposed to hot sun. But those are the rough averages.

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VASELAAR: You bet you find vending machines in every way, shape and sizes. I mean – and environments, too.

WOOD: Yeah, absolutely. You really do. Some have been well maintained, and the dust and lint is cleaned off, and others haven't seen a – any sort of care in 10 years. It's really pretty amazing.

VASELAAR: That's one of the questions I had from one of the customers, is – on maintenance, is, if this reduces the maintenance for the machine, has the vending machine manufacturers recognized it, and are they providing for that?

WOOD: Well, you bring up a great point, Greg, and that is that it does decrease the maintenance requirement for the vending machine. The light bulbs last longer, the compressors last longer, the thermostats last longer, everything lasts longer. And that equates to anywhere from a 45 to an \$80 a year annual maintenance saving. And some of the more visionary people are recognizing that. So it is to the benefit of the bottler or the vending operator, but it's also to the benefit of the customer, to save the electricity. And the primary benefit goes to the person saving the electricity.

VASELAAR: You bet.

WOOD: And then, secondarily – it hasn't quite been economic to allow, people like Coke or Pepsi, or bottling companies to say, "This is so exciting, I'm going to buy it for my customers, and give it to them." The force has been primarily with the energy use.

The next slide describes the vending machine marketplace. We have an installed base of roughly four million cold-drink vending machines in the United States. There's probably another two million in the rest of the world. The current manufacturing is about 350,000 units per year, and part of that's for export, part of it's for replacement of dead and dying units that are truly thrashed after 20 years. And then, marketplace growth.

The units are very stable. Once it's in place, it stays there, as I mentioned earlier, and that Coke and Pepsi and food service and local distributors control and own all of the routes and placements of these machines. You can buy them at Costco or Wal-Mart, or on your own, but the vast majority of public institutions or private corporations simply call up Coke or Pepsi and say, "I'd like a vending machine," and they deliver it the next day, and you sign a piece of paper.

To give you an idea of where these machines are located, in the next slide there's a pie chart that shows military, health care, schools, offices, and manufacturing with rough percentages. This data's about three years old, and I think there's another wedge that I'd like to add, and that is hotels and motels, which is, I think, a fairly strong component that might eat into manufacturing, into offices in this pie. But they're out there in all sorts of shapes and sizes. They're ubiquitous across every utility service territory.

The next chart shows the annual savings in a different way, really. This is one of our earlier charts. I only used 61 machines, instead of the earlier chart that had 75 machines. And you can see that very high energy savings in what we call low-traffic

areas – elementary school, teacher’s lounges, places where there’s not many people around.

And then the very high-traffic areas are, a busy breezeway of a city, or the library that’s open, nearly 24/7 in a college university. But the majority of it is right here in this, sort of, middle band of, between 1,500 kilowatt hours savings and 2,000 kilowatt hours in annual savings.

So, most people ask, “Well, how do you understand the economics of this from a customer point of view?” and the next graph describes that, where you can literally pick your electricity rate. I think the national average is currently running about seven-and-a-half cents a kilowatt hour, and if you pick that and slide up to the middle yellow line, which is a mean annual savings of 48 percent, you save roughly 125, \$130 a year in electricity.

In California it’s much worse. San Diego county is 15 cents a kilowatt hour. But the Midwest may be much lower, and you may be operating more in the three- to seven-cent range.

VASELAAR: Well, yeah, it’s in the average range here in South Dakota.

WOOD: We have a spreadsheet that allows people to be more specific, here.

How do you use a VendingMi\$er is the next slide. We have this little device called the sensor repeater, which allows you to, if you have a bank of machines, to have one occupancy sensor for the first machine, and then a repeater which is behind the machine that repeats the sensor signal to the next VendingMi\$. When you walk into the room the first one comes on, then the second one comes on a second-and-a-half later; then the third one comes on a second-and-a-half later after that. This improves installation. It improves the aesthetics of the installation and eliminates the chance of blowing a circuit breaker. The codes typically state you have to have a dedicated circuit breaker for each vending machine.

The next picture shows a typical installation where you have there an Aquafina vending machine and a little white sensor at the top and that's all that it looks like. It's unobtrusive and it may look like an alarm sensor. I might also draw your attention to this little triangular corner snipe. It says win instantly. It's kind of hard to read. It's orange in the upper corner of the face of the vending machine. That's what's called a corner snipe or it's corner advertisement which can be customized with utilities, logos or words and to the right you see a couple of in process installations where you see the control boxes mounted behind the vending machine before it's all put back together.

UNIDENTIFIED PARTICIPANT: On that installation you have a VendingMi\$er on each machine there.

WOOD: Right. Yeah, one for the one side and one for the other.

The next slide talks about how the end customers are identified and primarily we want to identify them through our direct marketing efforts. Utilities can definitely help us. In some cases we can work directly with the vending machine organizations to get the list of the vending machines. These all can be modified depending upon

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the scope of the budget and conservation goals or whether or not you want to target just K through 12 or just government buildings or some particular markets or giving it to their major account reps and this is the tool that you can use to alleviate the rate increases that may occur in gas or electricity and other areas.

So it depends upon what the customer wants to do or the utility wants to do as to how they structure the scope of the program. In the past we've done complete programs of the entire service territory, but a couple utilities I'm working with now want to do just targeted efforts in certain key areas.

What this leads to for the utility is an immediate and effective return on investment and it can be very good life cycle levelized cost which is a typical major for utilities and it's good use of conservation dollars. The other thing that it can allow as I mentioned, that corner snipe or corner sticker is a co-branding opportunity that all these people that come to the front of the vending machine can actually be reminded that "xyz" utility is thinking about you, caring about you.

We're trying to do a good job for the environment and for the customers and be energy conscientious. And in targeting commercial customers which often, if they're small, may be under served or under nurtured from an energy conservation point of view although it depends upon the situation.

WOOD: The key to a successful program, which is the next slide, from our perspective, is getting a commercial customer list with service address from the customer including a zip-plus-four territory map. This zip-plus-four allows us to surgically know the boundaries between one utility and the next utility so that we don't install on the other person's utility district which has been a challenge for us at times.

Also an introductory letter of some sort helps and then a primary person like Dave Bisbee at SMUD and then the contractor to do the installation.

The pricing of the VendingMi\$er is \$179 up to 500 units and then 170 for up to 1,000 units, less than 1,000, and then 151 greater than 5,000 units. Pricing has been stable for the past three years but we actually raised it in February. The installation really is an extra fee that depends upon how sophisticated we want to do this. It ranges typically from 30 to \$40 but it depends upon how much work we need to do to find the target customers, how much accounting and verification need to be done, advertising and communication. There's a lot of parameters that you can look at to fine tune or adjust the implementation.

PLATE: But an installation program--obviously that's for a large scale program and installing by a person with a little bit of training could do it.

WOOD: Yeah, absolutely. I mean a typical - we have installation videotape and we have installation instructions and there's no great challenge in the installation at all and we're happy to let people self install and that can be done very easily.

WOOD: Well often utilities ask the question, "Well this all sounds interesting but how the heck do I figure out what my budget is or what my opportunity in my area is?" And I mentioned that one percent of population before which is not a bad first cut edit. The next slide gives you another way of looking at it where we see a summary

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of Portland General Electric's service territory at 725,000 electric meters and Avista's service territory at 311,000 meters. Avista's in Spokane, Washington and Portland, Oregon for PGE.

I'm very confident of the number of vending machine in Avista's territory at 4800. I'm a little less confident at the PGE number. That may be a little lower because we fully installed all of Avista's territory. So using a ratio of seven-to-one to 10-to-one conservatively for your commercial meters may give you a rough idea of the potential number of vending machines that could be in a service territory. That would allow you to do some quick budgeting and look at the return on investment and so forth.

The next slide really talks about a typical agreement. Ideally we want the utility to agree to equip every eligible vending machine in the entire service territory at no charge to the customer. We find that's very effective in full penetration and great cooperation and high visibility. A rebate approach is much less effective by an order of 10-to-one in penetration and speed. If you want it done in any sort of reasonable time, a dedicated program to install things and really get it done is the way to do it.

Often we ask the utility to work with us on an advertising program to promote it and naturally process all the invoices for the territory and what Bayview does is we do product delivery. We provide an extended warranty. Our standard warranty is three years but for utilities we offer an extended warranty of 10 years. We would typically hire and manage the installation teams and provide invoicing and accounting reports based on your requirements and prove to you that you really installed a vending machine in a certain location.

And then if you want to talk about measurement and verification, I have the strategies to do that as well, doing some spot checks and so forth.

I see that there's sort of one minute left and we're on the last slide so the big conclusions are this is a clean, simple opportunity for a highly visible public benefits program. It's cost effective and it's as good as any other energy conservation measure. It is definitely a low hanging fruit. It's very persistent, 10 years or more. It's transparent. There's not a lot of challenge or difficulty with the end users in this. It's sort of just done quickly and easily and not disruptive to someone's business. The technology's been thoroughly tested by Coke and Pepsi and tested by some 30,000 users. There's 30,000 installs completed in a variety of utilities and everybody wins. I mean the bottler wins, the utility wins, the customer wins, the environment wins and so it's really a nice package.

I guess with that I'll turn it back over to you, Greg and ...

VASELAAR: Well thank you very much Ryan. That's an excellent explanation of what the product is and it's interesting as you talked about the surgical installation of these devices. Well you know the population density isn't quite that high in the Upper Great Plains so it's always not quite the need for a surgical installation but anyway we're going to shift gears. We're going to talk with Rick Miller. He's from the Bonneville Power Administration. I refer to him as our big sister, Bonneville.

They do a lot of different things than Western does but Rick is the energy efficiency representative for Bonneville and he's a program manager for the VendingMi\$er program that they're implementing up in their neck of the woods.

So with that, I'll turn it over to Rick to talk about his program.

MILLER: Thanks Greg.

First let me say that we are very similar to Western. We develop and deliver programs and products to our customer utilities. We are a federal power marketing agency just as Western is and we market power from 29 dams located on the Columbia River system. We've got about 130 utility customers.

A couple of years ago one of our direct serve customers was looking for ways to reduce energy consumption and I had just returned from an energy forum that year. I picked up the VendingMi\$er brochure and put it in my bag and got to looking at it after I got back to the office and realized that this direct serve customer which happen to be an air force base could probably use this product. So what we ended up doing was installing 63 VendingMi\$ers on vending machines on that base. The economics looked good and it served the base's needs to reduce energy consumption and cost.

At the time Ryan Wood and I, bantered around with the idea of maybe we could do a regional program for our utility customers. I prepared a point paper on that and presented it to our management and at that time wholesale prices were low. It just really didn't fly at that time. Then last year when we all suffered from the energy crunch, the crisis, the shortage, the high volatile wholesale market prices, I dusted off the point paper and re-presented it and it was embraced by our management to make this a region wide turnkey program. So we put together a program description. We sent letters to our utilities and we attached the letter, basically a sign up form.

What Bonneville's interest was specifically here was to reduce our exposure to the volatile wholesale market. We wanted to shed load. When we had subscribed our power contracts to our utilities we had over-subscribed by about 3,000 megawatts. Part of that was met with wholesale purchases and another part of that was through conservation augmentation to our resources. So this program became part of what we call conservation augmentation. Con aug. We sent the letters out and we were very surprised at the response. Over 97 utilities have signed up for the program, 97 out of about 130 customers, which is pretty extraordinary.

We then developed and designed the program so that it would be turnkey. Now unlike Western, Bonneville's principle concern was to shed load and some of our contracts with our utilities call for us to provide all of their power and plus any load growth. So if we could reduce consumption for those what we call load following utilities, then that would reduce our exposure to the high priced market.

So we offered to pay for these units for those utilities and for those utilities that were diversified and the investor owned utilities and the direct service industries, if they wanted to do it they could contract directly with Bayview for however many devices they wanted to have installed. So it was a fairly simple program, no contract involved at all except between Bonneville and Bayview. We did not require a contract between Bonneville and our customer utilities. We just wanted to know if they wanted it. So it was a full turnkey program.

Basically our program is designed to make it real simple for the customer utility. As Ryan said in his presentation, the utility provides certain information and then they assemble installation teams to go out and do the installs and then they report that information back to Bonneville and invoice us for those load following utilities and then we have a running total by utility and regionally of how many installs are occurring and how much energy is being saved.

On the Web site there's a lot of detail there about our program. We estimate that in our load following utility service territories there's about 30,000 machines, which is a fairly significant amount of savings. I think region wide, Ryan correct me if I'm wrong, there's been somewhat over 10,000 installations thus far.

WOOD: Yes. That's correct Rick.

MILLER: The program and the product seem to work very well. As Ryan said before, Coke and Pepsi have approved the device to be plugged into their machines and in many cases the bottlers themselves will do the installations as they go out on the service route. For those that can't or won't then separate individual installation teams would go out and with the utility's help, identify the commercial accounts for the machines most likely going to be cited.

We got the extended warranty, 10 year warranty and we allowed our utilities to do the co-branding that they wanted – you know, if they wanted their name on the sticker or as Ryan calls it, the snipe on the corner of the machine. That's specially tailored for the utility. It's put on the machine. It tells the consumer that their utility is being energy conservation conscious and is contributing to helping lower costs, especially for the end user that pays for the electricity.

We have what we call a regional technical forum. It's made up of private businesses, special interest groups, environmental groups and government agencies. These are people that evaluate programs and measures and they evaluated the VendingMiser and being somewhat conservative as they are and as Ryan explained, you can find many different kinds of machines and many different kinds of environments. So the savings can vary greatly depending on where the machine is located.

So we – rather than doing a measurement and verification program which would have been more costly, we simply deemed the savings at 1292 kilowatt hours-per-year for an illuminated machine and 861 kilowatt hours for a non-illuminated machine and we did ascribe a 10 year measure life for the measure.

UNIDENTIFIED PARTICIPANT: Roughly Rick, what's the payback on that considering your cost of power right now?

MILLER: Well before it was great. Wholesale power prices have come down significantly but I don't have that number in front of me.

UNIDENTIFIED PARTICIPANT: OK.

MILLER: I think the payback on it was something like three years. I'm not sure. I'd have to look into my records on that.

In working with Bayview we did look at some program restrictions, where it would not be wise to install a VendingMi\$er--on 24 hour facilities is one of those. Machines located outside that are near streets where there's traffic going by which would effect the motion sensor was not a good idea. Vending machines that contain perishable goods, you don't want to put a VendingMi\$er on those. And then there's going to be some instances where you have vending machines that are located on the back wall made of glass something like that. I mean that can probably be worked around but some back walls may not be suitable for mounting the VendingMi\$er and then you're going to have a few proprietors who own their own machines and stock them may not want to have it.

The other good thing about our program from a Bonneville perspective and from a specific utility perspective is that we get a good report as to where the machines were cited in a particular utility service territory. We know whether the machine is illuminated or not and then we got a rolling count by utility and by region. So we're able with that information and that data to evaluate the effectiveness of the program.

Basically ownership of the product resides with whoever pays for it. There are provisions in our program description that discusses quality control and what to do in case you have a failure . As I remember, Ryan correct me if I'm wrong, there was only one failure so far with a VendingMi\$er and that was due to damage in shipment. So it's a very reliable, very quick delivery of energy savings at a very reasonable cost and so that's why we've gone forward with this program.

It's a two-year program with an option to extend in one-year intervals thereafter.

That's about the size of what our program is. It's a huge undertaking. It's a very complex undertaking because it's a four state area, Washington, Idaho, Oregon, and Montana, and so there's a lot of people to work with, a lot of utilities to work with and a lot of bottlers. And installation teams.

UNIDENTIFIED PARTICIPANT: You talked about reducing load and I was wondering, was there any thought of implementing this or incorporating this with some type of active load management because this is more like a passive load management system?

MILLER: Yeah. We have – we have separate programs for that. We have what we call a demand exchange. We actually go out to large energy users and we will purchase power from them if they will curtail load. That is a whole separate program. This is just a quick, easy region wide program. Vending machines run 24 hours a day just like exit lights. And it's a good way to save money. And power.

VASELAAR: now switching another gear to one of Western's customers in California. our next speaker is Dave Bisbee. he's in a little bit of a transition I hear, he has with him, David Mark a certified energy manager for the Sacramento Municipal Utility District who will be taking over the program. And for you folks that are looking on your screens at his slides that he's going to be using, you've got this awesome view, I think it's by the Sierra Nevada Mountains and the trees out there covered with snow. So anyway, we could use some of that snow in the upper reaches of our reservoir system so if you have any extra, send it our way.

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But anyway, with no further ado I'll turn it over to Dave Bisbee to talk about SMUD's approach to the VendingMiser program.

BISBEE: Thank you very much.

First of all the picture there is what we hope is our hydro output for the next year. A little bit about SMUD, we're a municipal utility. SMUD has approximately 570,000 customers and a service territory of about 900 square miles. Obviously our program is a lot smaller territory than either BPA or WAPA.

Our program objective was to install 8,500 controllers for SMUD customers by December 31st, 2002. We got this program in place and up and running in August of last year. So our timeframe was about a year and a half. This program was funded through the California Energy Commission (CEC) under what's known as SB5X, which is actually some legislation that came down following the energy crisis.

The VendingMiser program was one of several programs that we submitted to the CEC and received funding for. An essential component of the program is that the CEC required third party measurement verification that is currently in progress and I may be able to share some of that information six months or rather Dave Mark may be able to share some of that information in the future.

We assigned our program to be almost completely contractor driven and we'll talk a little bit more about that in a moment. We decided to track our installations working with the Monitoring and Verification contractor through the use of an Access database. Our primary approach was to have Bayview Technologies work with the local bottling and vending companies to obtain customer contact information, to contact the customers, to make installation appointments and of course, to install the controllers.

SMUD has a long-standing history with programs over the past 20 plus years. We've had energy efficiency programs and out of that we've got some long-standing relationships with many of our school districts and larger customers. So we developed a second method to be able to request direct installations. That consisted primarily of a simple installation request form that our customers or our energy specialist would fill out with basic information, contact information as well as an address, site list and contact by the individual sites. This allowed our SMUD energy specialist and key account representatives to market the program directly through direct interaction and also e-mail.

My presentation is going to be very brief today but I wanted to mainly press upon the lesson that we learned from this experience. The most poignant lesson would be that the local bottlers can be quite conservative and it's extremely important to get them on board. One of the things we learned is, even though this is a good deal and it's been tested by Coca Cola Incorporated and Pepsi and a lot of reputable firms, a lot of the local bottlers kind of view it is as, "That's fine for them but in our service territory these are our machines," and they had a lot of concerns about the VendingMiser.

Consequently we had reluctant participation on the part of the bottlers and the vending companies at first and the secondary method, the in-house method, was

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responsible for the majority of our installations. To date we've installed approximately 2,000 and we've readjusted our program goal to about 5,000.

Another lesson that we learned is that the Access database is an extremely effective way to track installations, generate reports, and to share the program information internally within SMUD. One of the things we did is post the database with instructions to a network drive. It would allow virtually anybody who has access to the drive to generate their own reports for their customers in terms of savings and number of installations and they could kind of track on behalf of their customers.

The advertising aspect we chose initially because this was designed to be primarily driven by Bayview, was not to advertise because it was difficult to reach the target sector specifically. If I had to do it all over again what I would have done is have had a half-day seminar. I would have invited the bottlers, of course Bayview, the vending companies, the major customers, school district, government agencies just to talk about the product, the program. I think it would have facilitated a much better communication and participation levels rather. It would have given the bottlers a chance to know, to hear from the customers that they want this. It would have given the bottlers a chance to air their concerns and have them addressed.

One of the things that we also learned is that following the installation, if the installation or maintenance service technician is not comfortable or is unaware of the program they can tend to blame the VendingMiser for problems. The vending machine problems are not caused by the VendingMiser at all. So we have worked – Dave Mark in particular has worked very hard to communicate. We've had several meetings with some of the bottlers and we're now on track and we feel they're on board. And in fact they are working with Bayview to actually do some of the installations. So that has turned out much better now.

As Ryan alluded to earlier, service territory can be an issue. We accidentally approached one of our neighboring utility customers. A lot of times if you have a commercial customer who's on the fringe of a service territory, at home they may be a SMUD customer but where they work half a mile away is a different utility and the installation crews would show up and ask "are you a SMUD customer?" and because they're at home they would assume that the store was too. So we had a little bit of a lesson there too.

VASELAAR: Yeah. I guess in those instances you bet. You have to be very careful where you're at and where you're installing that device.

BISBEE: And it was – this particular boundary of our service territory is jagged. – there's not a river or a main street or anything like that that separates this particular boundary. What you have is literally businesses that are across the street from each other on different utilities and we actually had provided Bayview with zip codes and service territory maps and that worked most of the time. The only thing I could suggest is that when in doubt contact your utility and double check because I talked to some of the store managers where this occurred and they indeed thought that they were SMUD customers and they weren't but they were at home..

I'd just like to close with a comment that I believe this is a very good product in terms of satisfying a need that's very, very overlooked. The customers seem to really love it. It's easy to do. The hardest thing believe it or not is to – is to find a way to

get the word out and get everybody on board without generating 100,000 calls from people who don't have vending machines.

We had considered using radio advertisements, newspapers, If anybody is considering launching one of these programs, I would use a radio spot to advertise some sort of seminar where you can allow everybody to get together and just work together as a team to get this done. Otherwise, I'd think it's going to be very difficult for you to reach your targets in a timely manner. You really do need to get the bottlers and the vending companies on board and aware of the program and working with you.

WOOD: Dave, this is Ryan Wood. I think your idea is excellent and I'm going to advocate that approach with everybody that I talk to. I think you know I wish we had done it earlier but I think that's a great recommendation.

BISBEE: Well thanks Ryan.

PLATE: Could I ask is there any kind of national organization where these bottler groups get together that this product could be presented?

BISBEE: Yes. Peggy there is. It's called the National Automatic Merchandisers' Association. It's called NAMA and there's a trade show coming up actually next week. Bayview is exhibiting at it in Las Vegas and so we're dedicated to going to the biggest appropriate trade shows to do infrastructure education and really try to get more the word out to the bottler community so they're less surprised. I think the biggest challenge is that, is they haven't heard of this and wow, it must be not real. They haven't heard of it.

PEGGY: Maybe we need to get the folks that are using the product such as SMUD or a Bonneville customer to kind of do some product review or you may want to use this conference call.

VASELAAR: Peggy, you mentioned that and there are links on our Web site at www.es.wapa.gov we have Bayview's technology link, Portland vending machine test report, and the Energy Solutions questions and answers. You know all three of those Web sites are there and I know it provided me a baseline of knowledge on the product and the concept.

BISBEE: Well I'd like to close with one final comment and I'm going to pass the baton onto Dave Mark. We chose another Dave to keep it simple for everybody to be able to remember the name and Dave is very knowledgeable and he will be fielding any of the future questions. We've put Dave's contact information on the Web site.

And so, at this point, I'll just await questions via e-mail. And I appreciate the opportunity to speak today.

VASELAAR: Well, thank you, Dave. Thank you very much for participating in this. This is the first time that Western's been involved, at least I've been involved in a forum like this. And we're hoping it's a good way to transfer information out to our many customers because we have almost 700 customers, spread it throughout 15 states. So you see what the big territory that we cover.

PLATE: I just want to reiterate that our Web site will continue to stay up. So if you have people interested in this program or you want to use it in any way, it'll be available. We will put the transcript of the presentations on the Web site probably in a week. And we'll also have the audio portion on. So you can revisit this Web teleworkshop. It's like a rerun.

As soon as we hang up in the next couple of minutes, there's going to be an evaluation form that will turn up below the related links section. And we'd sure appreciate your comments on the content and also the media that we used. We've never done a teleworkshop like this and we want to get your comments.

We appreciate all of you that are out there. And if there's anything else we can do Greg's and my e-mail addresses are also there. And we appreciate your time. And let us know what happens. If anybody decides to put up a program, maybe we can share your approach with the rest of the group later on.

With that, I thank you all for attending. And I thank our speakers very heartily. I hope they weren't too intimidated by this forum. But I think it went really well. And we hope to talk to you again in this medium.