
Western Area Power Administration

VendingMiser Introduction

By Ryan Wood

Bayview Technology



- Background on Company
- VendingMiser Technology
- Marketplace Applications
- Energy Savings
- Installation options
- Utility Program Specifics
- Conclusions

Who Is Bayview Technology?

- Founded in 1989 we specialize in plug load control applications
- Provide energy solutions for refrigerated cabinets, vending machines, computer products, modular offices and copiers
- Custom projects included lighting and power supply controls such as: light loggers for Leviton and UNENCO, and point-of-sale miser for Payless Shoe Source
- We have expertise and patents in power measurement and control technologies
- Privately held company

What is the Bayview business focus?

- The VendingMiser is very fast way to save energy locally, regionally or nationally
 - 1600 kWh annual savings per lamped machine
 - Vending Machines use 3500 kwh annually on average
 - 46 % average energy savings
 - Simple to use
 - Very long life
 - Fast paybacks 1 to 2 years
- Vending machine density is about ~1% of population

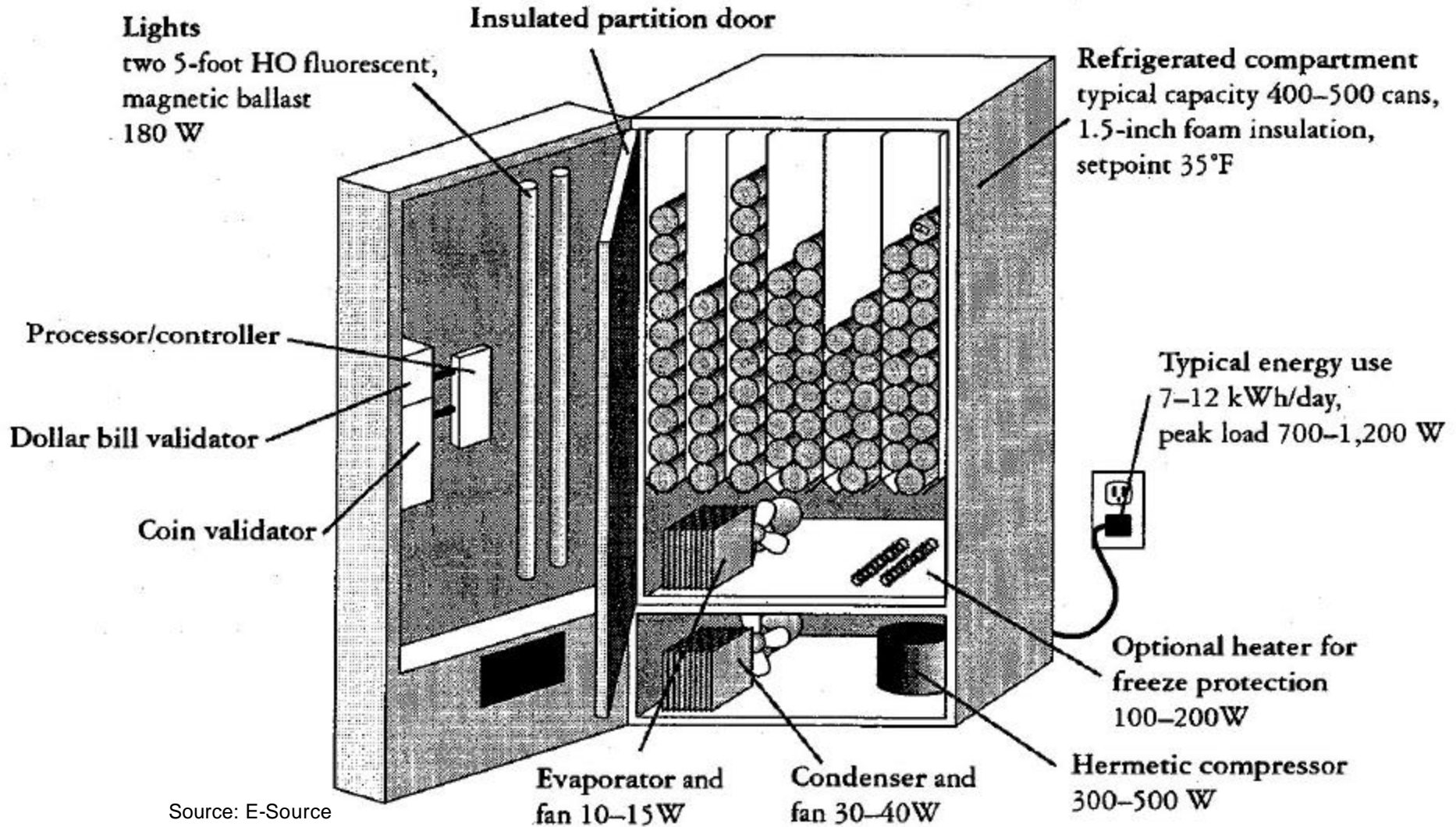
VendingMiser™ – A Retrofit Solution for Vending Machines



VendingMiser™ is:

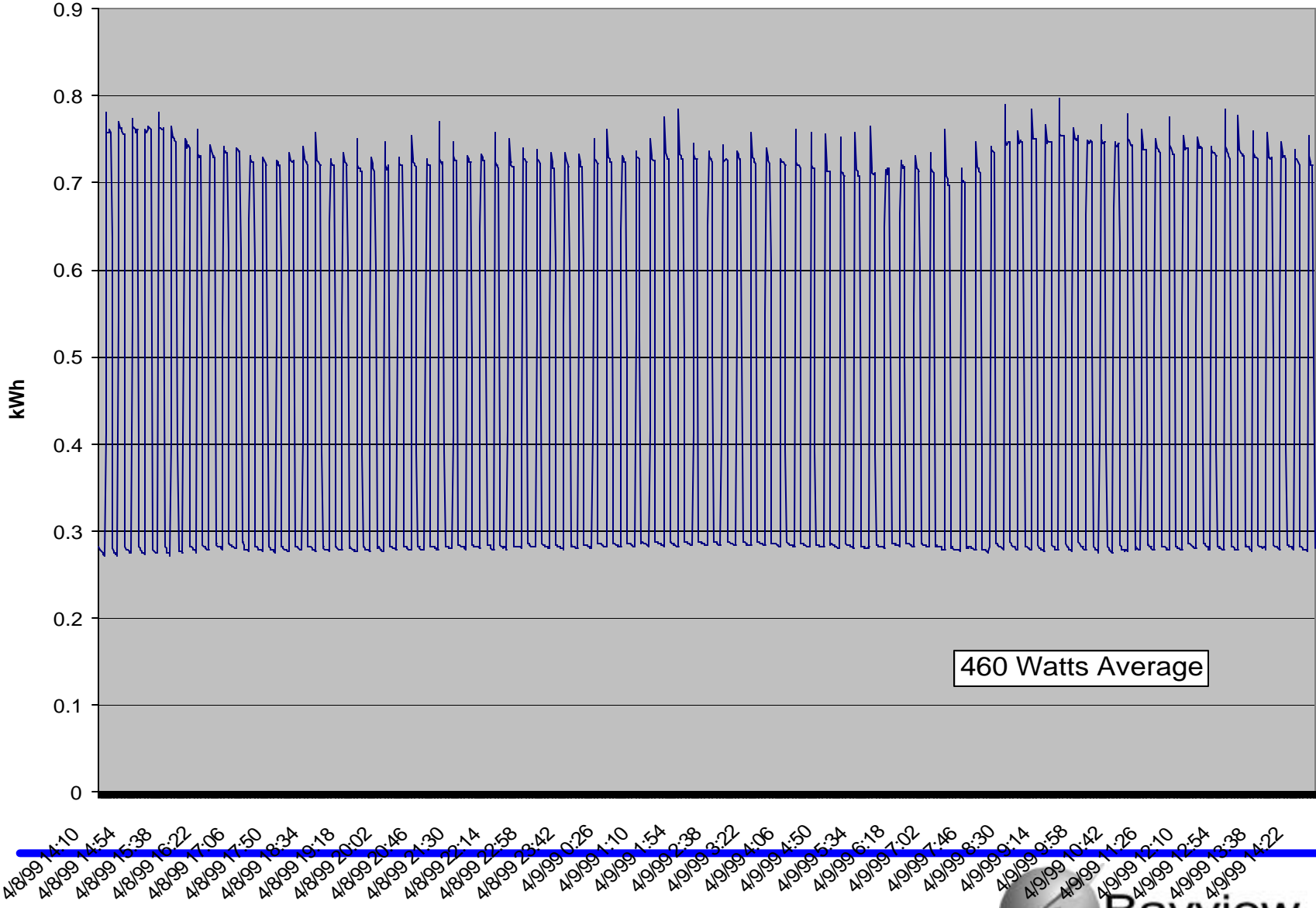
- A low-cost device \$179
- used between any vending machine and its power source
- Automatically shuts down vending machine when its location is vacant - re-powers automatically when occupied - transparent to users
- Monitors vending machine current so power down never occurs while compressor is running (no short cycling of compressor)
- Monitors room temperature and re-powers vending machine *without occupancy* to retain cooled product
- All-weather kit available - \$40

Power Consumption Breakdown For A Vending Machine



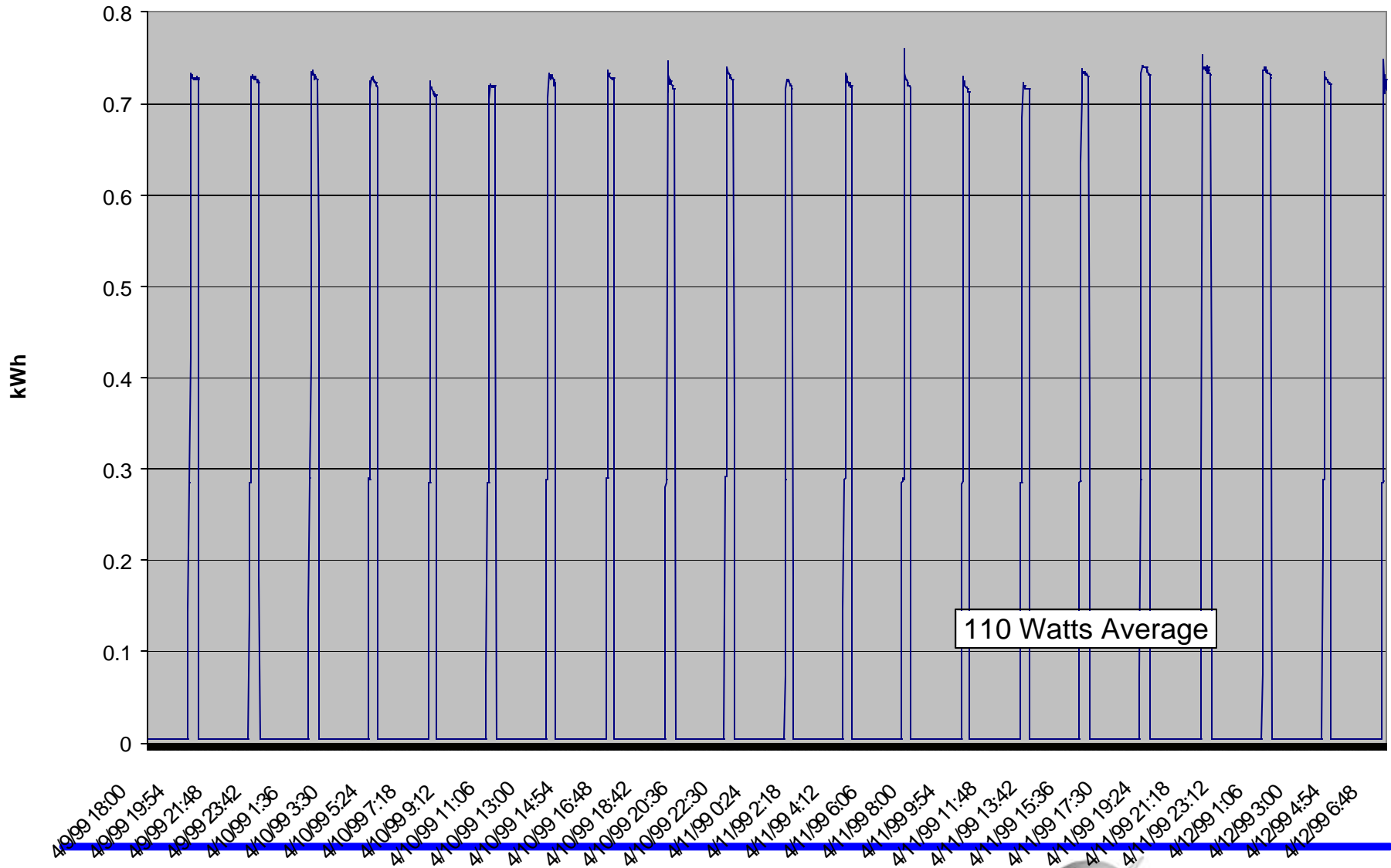
Typical Vending Machine Power Draw

Royal W/O VendingMiser



Basic VendingMiser Operation When Location is Vacant

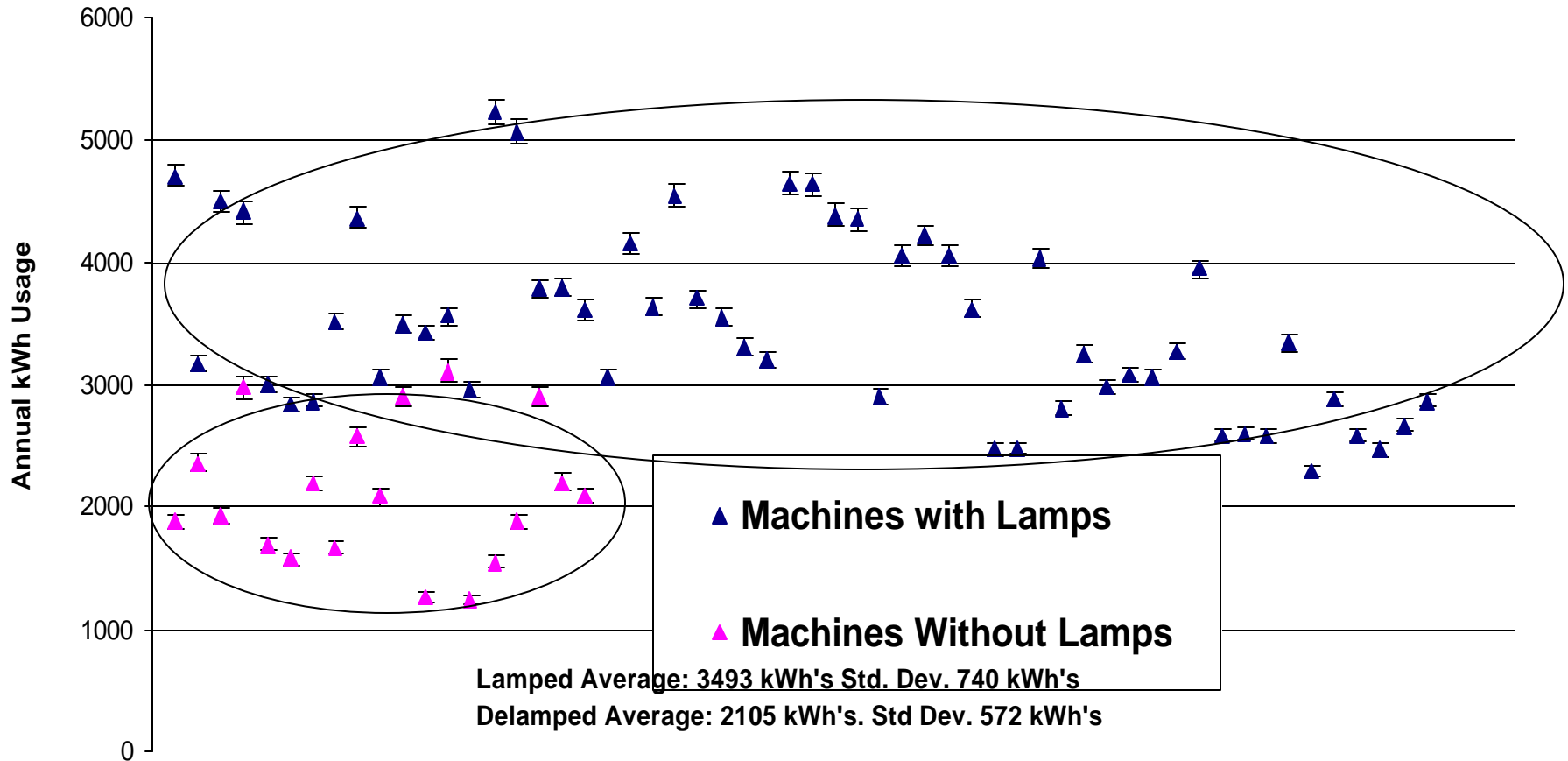
Royal with VendingMiser



Actual Field Measurements of Vending Machine Power

Vending Machine Power Consumption

With 2 % Error bars - 75 Machines

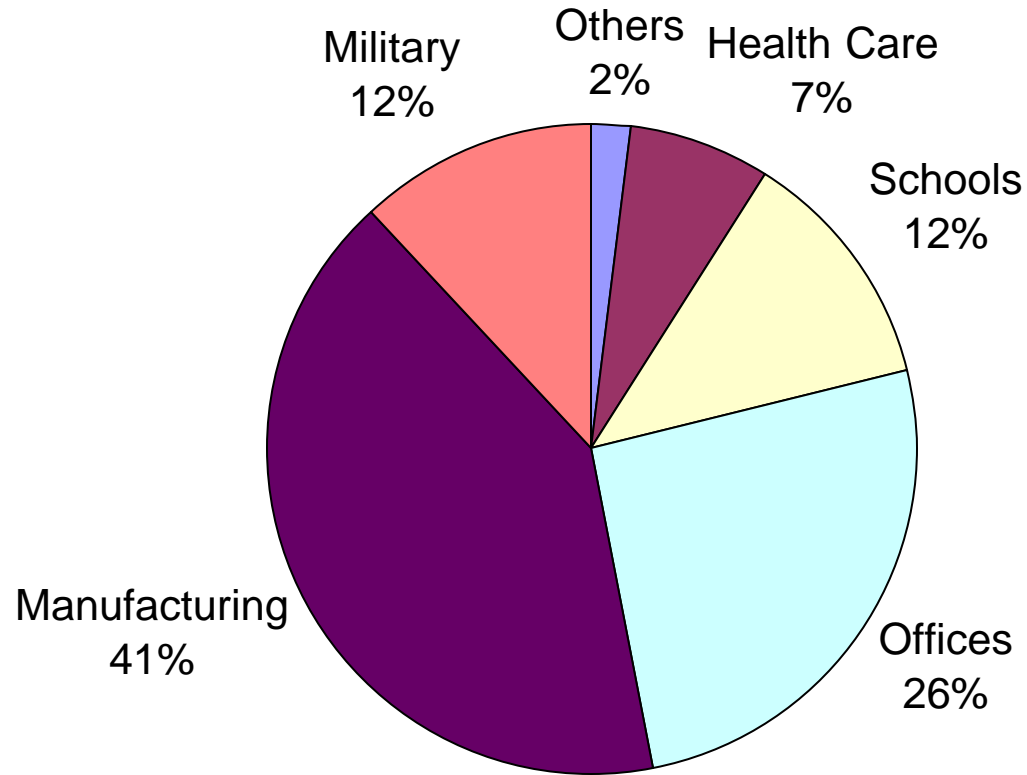


The Vending Machine Marketplace

- Installed Base is estimated at 4 million units nationwide
- Worldwide manufacturing >350,000 units per year
- Low turn-over rate, once the machine is in place it stays - so long as there are people buying.
- Average unit life is >10 years sometimes 20 or more.
- Coke, Pepsi, food service & local distributors control routes & placements.

Where Are The Vending Machines?

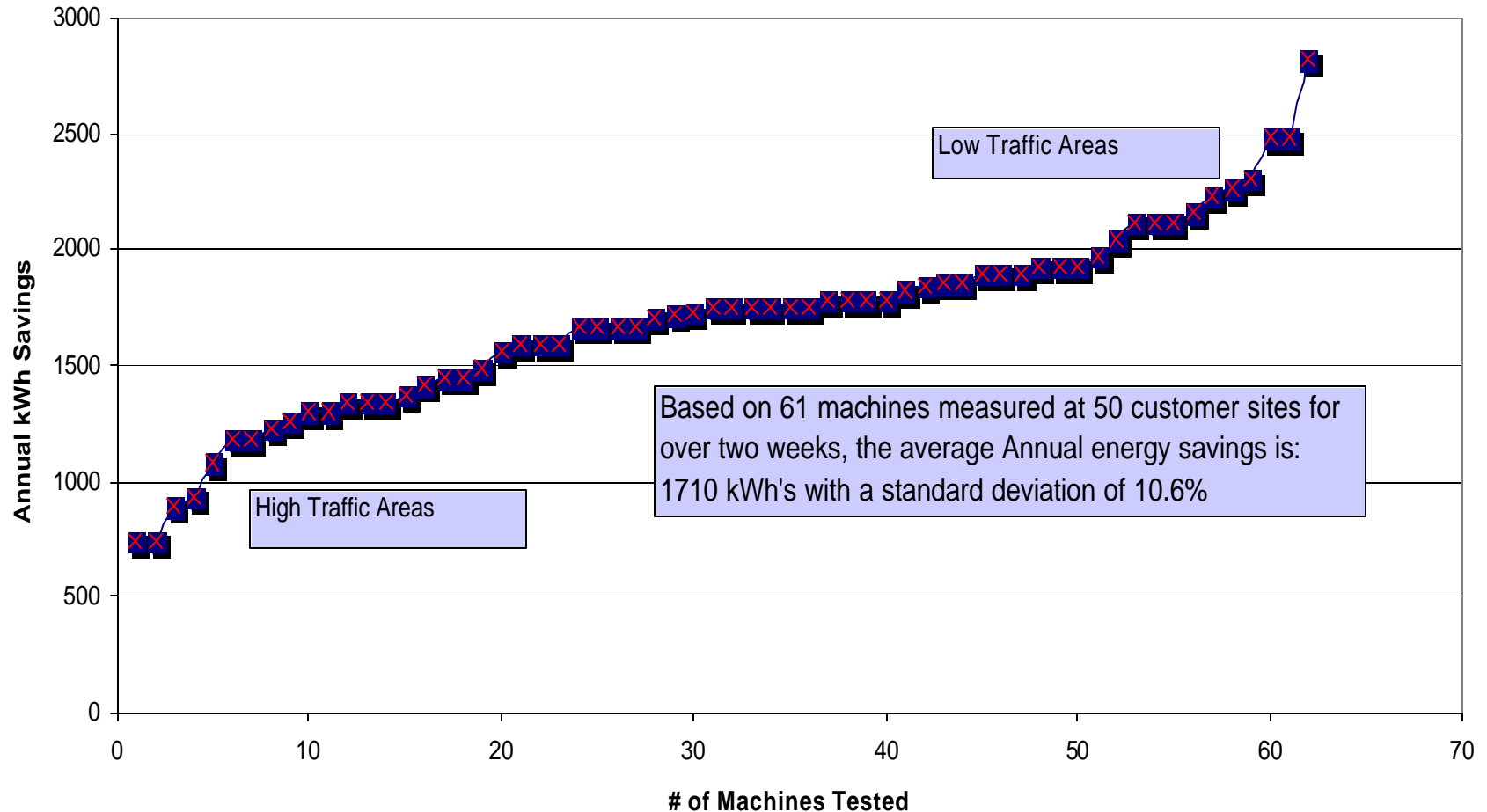
Where Are The Vending Machines?



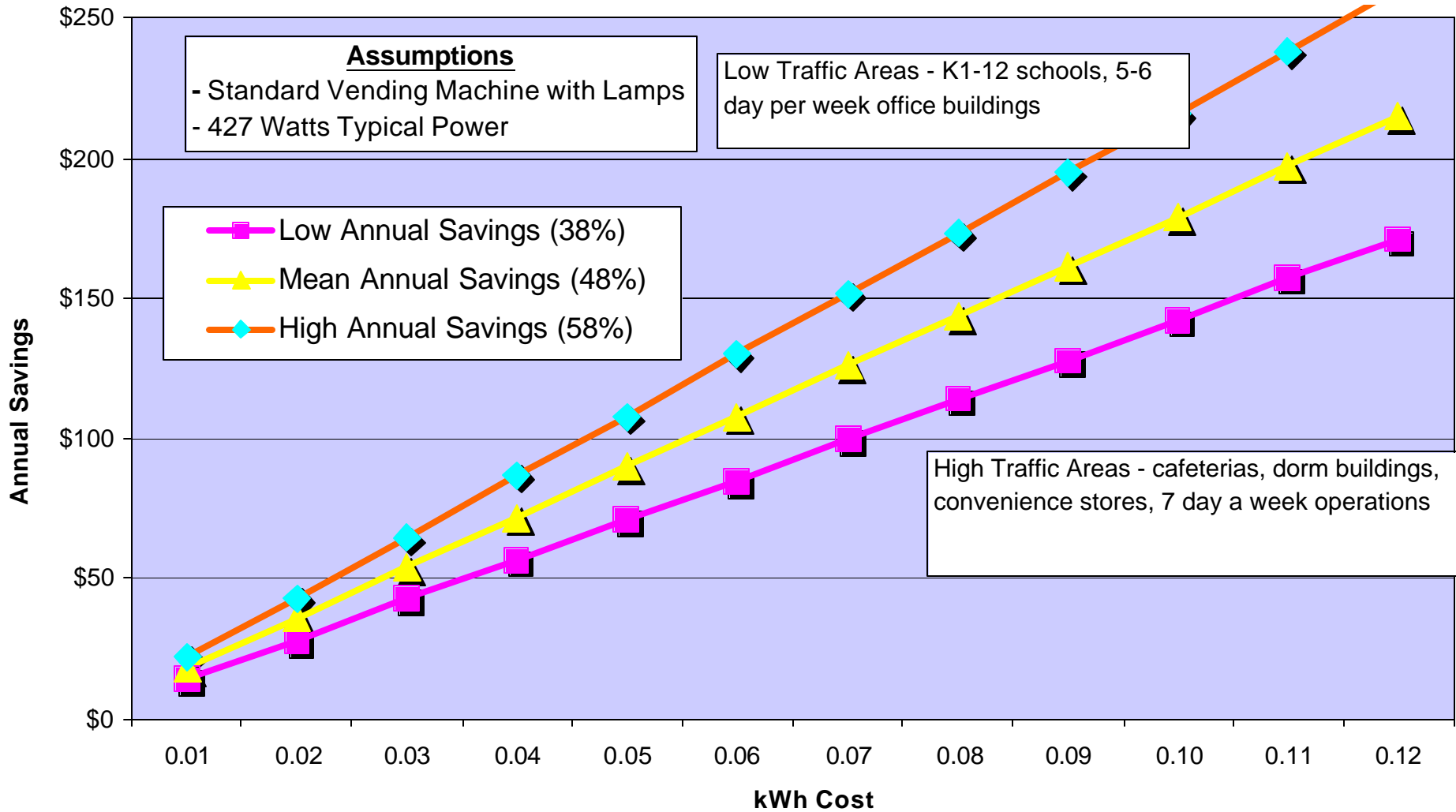
Source: Automatic Merchandiser

VendingMiser Marketplace Energy Savings Results

VendingMiser Marketplace Test Results

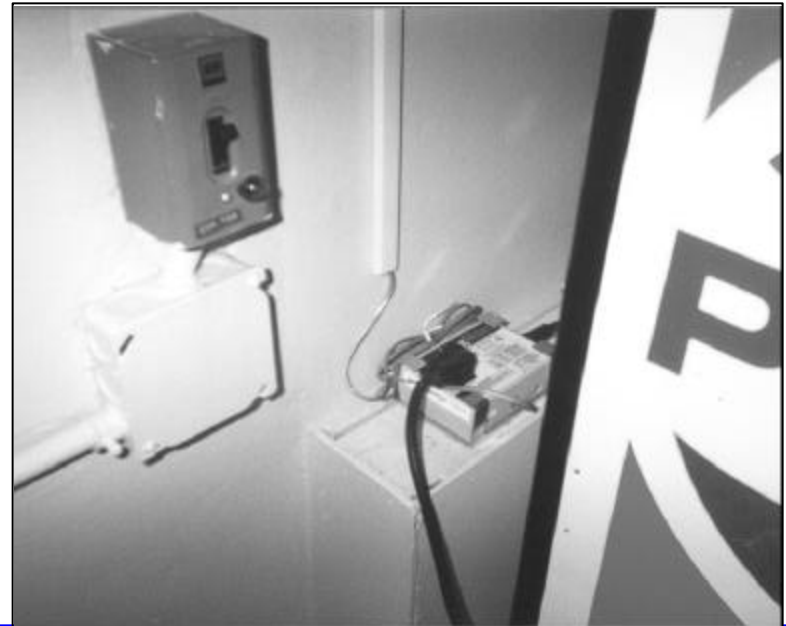
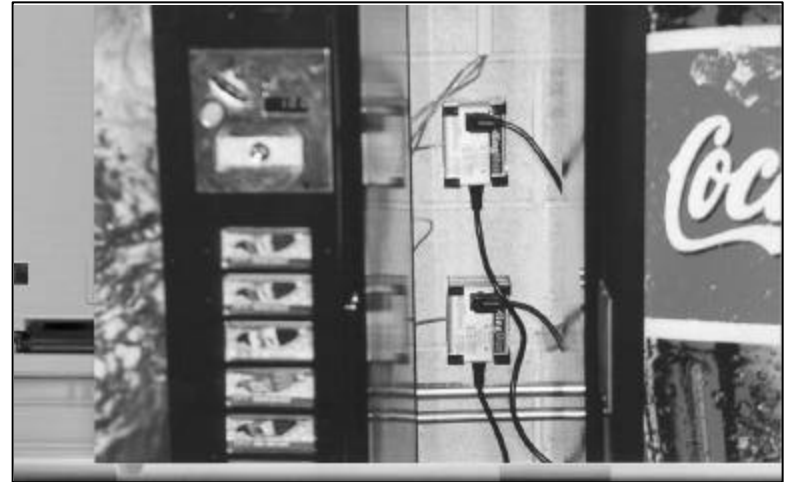


What Are The End-User Economics?



- **How to use a VendingMiser?**
 - Determine if one or more vending machines are present or in a bank
 - Use a sensor for single machines and a sensor & repeater for multiple machines
 - Controller fits in a bracket behind the machine
 - Screw and mount sensor
 - Wire mold used to approve aesthetics

Typical In Process Installations



How Are The End Use Customers Identified?

- The source of installation sites are supplied by Bayview direct marketing efforts, the Utility itself and in some cases vending machine organizations. These all can be tailored to support the Utilities:
 - Budget and conservation goals
 - Key customers, or underserved commercial accounts
 - Markets such as Schools or Government
 - Regional programs such as BPA

What Are The Key Utility Benefits?

- Immediate & effective return on investment
- Good value and use of conservation dollars
- Co-branding opportunity can: Improve name recognition, Support market transformation
- Can target low visibility utility customers

Ideally, A Successful Program Has:

- Commercial customer list of service address
- Zip + 4
- Introductory Utility letter for customer
- Service territory map, electronic and detailed
- Primary interface and responsible party
- A contract or PO

VendingMiser Implementation Pricing?

- Unit Pricing is: \$179 <500 units, \$170 <1K \$151, >5K units
- Installation is extra and depends on the support of program such as:
 - Commercial customer list
 - Advertising and communication support
 - Accounting and verification
 - Reporting requirements
- Now, what is the opportunity in your area?

How Many Vending Machines In Service Territory?

Metric	PGE	Avista
Total Electric Meters	725,000	311,000
Residential Meters	637,000	276,000
Commerical & Industrial Meters	88,000	35,000
Population in Service Territory	1,500,000	760,000
Vending Machines	22,500	4,800
Ratios		
Vending machines by Population	66.67	158.33
Vending machines by Total Meters	32.22	64.79
Vending machines by Commercial	3.91	7.29
Source	Gary Mitchell	Randy Bareither

Utility would agree to:

- Equip each eligible vending machine with VendingMiser at no charge to the customer
- Provide certain information, advertise the program and process invoices for units placed in service

Bayview Technology would be responsible for:

- Product delivery
- Provide an extended warranty – 10 yrs
- Hire and manage installation teams
- Invoicing and accounting reports

What Can Be Concluded?

- Opportunity for highly visible public benefits program for utility customers
- VendingMisers are very cost effective use of energy conservation resources
- Good measure persistence – 10 yrs, transparent measure
- VendingMisers have been tested and approved for use by both Coke and Pepsi.
- All parties Win - the Utility and Customer