

Business and Consumer Electronics

The Road To Efficiency

Contents

- 1. Program Background and Results to Date**
- 2. Implementation**
- 3. Future Planning**

Business and Consumer Electronics Alliance

Background Information

	PG&E	SMUD	NEEA
Who we are	Regulated Utility <ul style="list-style-type: none"> •15 million customers •Shareholders 	Municipal Utility <ul style="list-style-type: none"> •590,000 customers •Customer owners 	Alliance of Utilities <ul style="list-style-type: none"> •11.5 million customers •130 utilities in the Northwest
Why start an electronics program	<ul style="list-style-type: none"> •Energy Savings Potential •Portfolio Diversification 	<ul style="list-style-type: none"> •Energy Savings potential •Market Transformation •Customer Service 	<ul style="list-style-type: none"> •Energy Savings Potential •Opportunity to accelerate market transformation
Background Work required for Program Start-up	<ul style="list-style-type: none"> •Conducted market & technology potential studies 2005-2008 •Developed workpapers •Pulled internal resources to run program 	<ul style="list-style-type: none"> •Initial advertising campaign •Budget / staff dedication for 2009 program 	<ul style="list-style-type: none"> •Conducted market and technology potential studies •Pulled internal resources to run program
Challenges to start-up	<ul style="list-style-type: none"> •Program design •Regulatory requirements •Evaluation for up/mid stream 	<ul style="list-style-type: none"> •Program design •Understanding of marketplace •Internal operations adjustments 	<ul style="list-style-type: none"> •Program design •Funding •Technical Specifications •Contracts

Business and Consumer Electronics Alliance

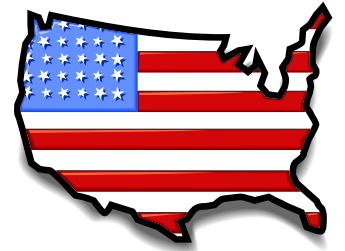
Background Information

	PG&E	SMUD	NEEA
Benefits to working with Alliance Program	<ul style="list-style-type: none"> •Cost-sharing opportunities •Increase market share potential 	<ul style="list-style-type: none"> •Marketplace influence •Leverage combined funds •Shared successes •Effective, able team to address shared issues 	<ul style="list-style-type: none"> •Effectiveness with retailers •Cost Sharing •Opportunity to influence CE Roadmap
Internal Resource Requirements	<ul style="list-style-type: none"> •4.25 FTE, split across 10 employees 	<ul style="list-style-type: none"> •1 - 1.5 FTE across 4 employees 	<ul style="list-style-type: none"> •1-2 FTE
External Resources	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions (data verification and invoice payment) •Opinion Dynamics Corporation

Program Background

Electronics account for more than 11% of consumer and almost 8% of non-residential U.S. electricity use

Electronics load is growing at 6% per year vs. 1.8%



If left unabated U.S. consumer load may reach 18% by 2015

Sources: CEA, CEE, Energy Solutions

International Energy Agency - Paris, France

Consumer electronics is "the fastest growing area and it's the area with the least amount of policies in place"

Existing technologies could slash consumption by 30% - 50% at a small cost.

Program Rational

- Millions of high priced products + low per unit energy savings = a mid / upstream program **yielding significant shares**
- Impact on mid and upstream participants has to be significant to move the market
 - Multi-product strategy
 - Multiple utilities

U.S. Utilities have an opportunity to transform the BCE market through thought-leadership and social and financial incentives

Program Strategy – Change the Mix On the Store Shelves & Offered to Retailers

Need to have a program that is consistent with the market's timing

2008

2008 Pilot introduced specifications for 2009 in Fall 2008

2009

2009 Assortments decided by Feb/2009

Major Assortment Impact

Manufacturers React with > Efficiency TVs

- To demands from retailers
- To ENERGY STAR specifications
- To utility program specifications

2010

2010 Assortments decided by Feb/2010

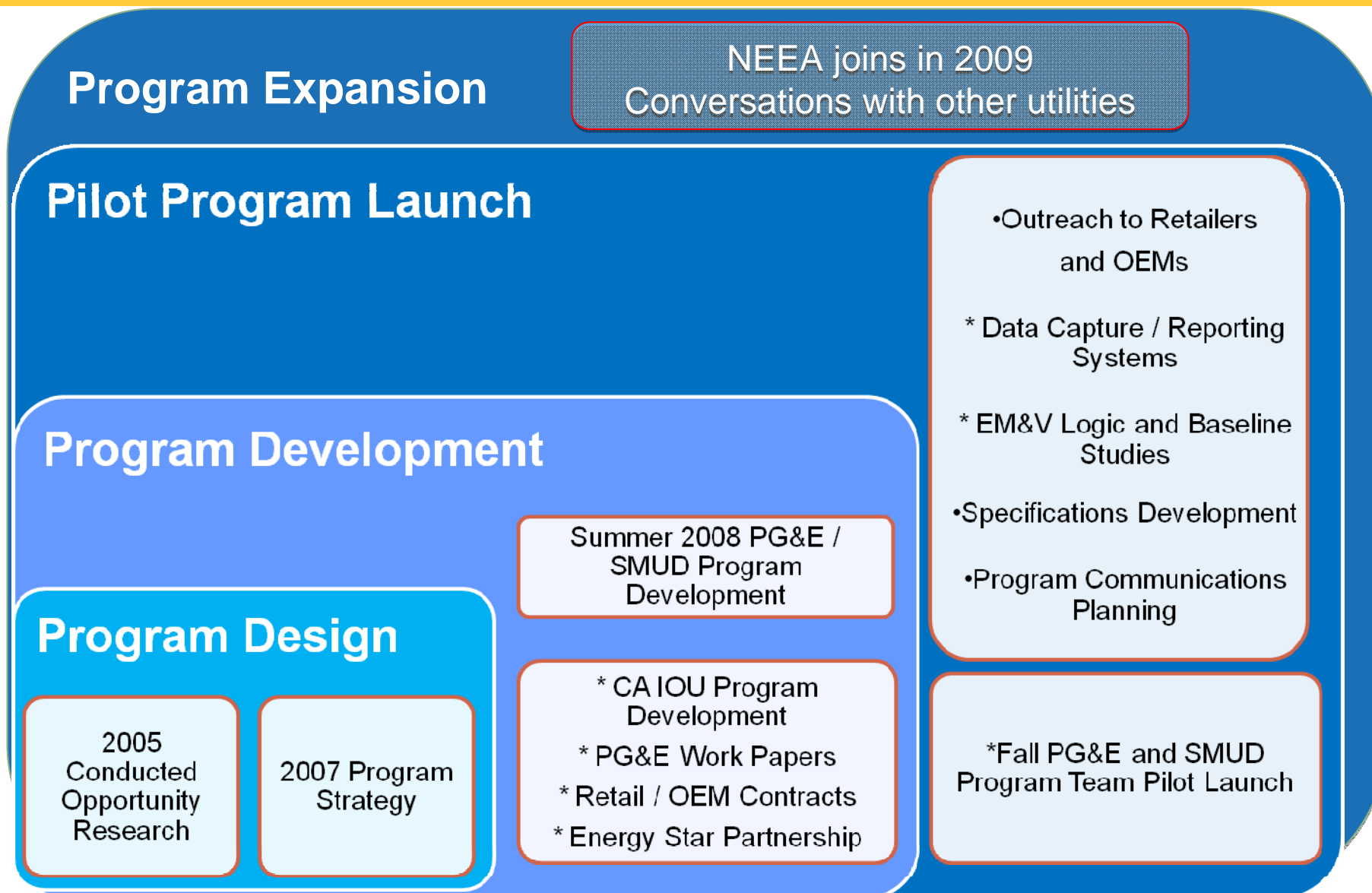
Major Assortment Impact

Program timing in synch to impact retailers' 2010 assortment

2009 Program introduces specifications for 2010 in fall of 2009

Ongoing outreach to retailers and OEMs
Program specifications and agreements presented to retailers started Oct. '08

Program Foundation and Expansion



Results to date: Agreements

Under Agreement



In Discussion



Results to Date - Market Impact

➤ Retailers

- Private Brand changed TV supplier to eco panel
- Added ES 4.0 Desktops to assortment
- Added ES+15% and ES+30% TV's to assortments

➤ Manufacturers

- Added specifications to new product development
- Supported model number translation efforts
- Sent models to CEE
- Creating energy efficiency landing pages

➤ CEA

- Arranged Utility Program meeting at CES 2009

➤ ENERGY STAR

- Co-branding strategy
- Supported development of a 2 tier specification for TVs

2009 Allocations to Date

Projected Results vs. Plan	PG&E	SMUD	NEEA*
Plan	25 GWH 4.27 MW	3.25 GWH .5 MW	8.76 GWH 1MW
Results	42.7 GWH 6.41 MW	7.0 GWH 1.05 MW	9.96GWH 1.49 MW
% of Plan	171% GW 150% MW	215% GWH 210% MW	114% GWH 149% MW

*NEEA projections based on contracts signed to date – including outstanding

Contracts NEEA would be 197% of GWH goal and 259% of MW goal

Implementation

Business and Consumer Electronics Alliance

Background Information

	PG&E	SMUD	NEEA
Who we are	Regulated Utility <ul style="list-style-type: none"> •15 million customers •Shareholders 	Municipal Utility <ul style="list-style-type: none"> •590,000 customers •Customer owners 	Alliance of Utilities <ul style="list-style-type: none"> •11.5 million customers •130 utilities in the Northwest
Why start an electronics program	<ul style="list-style-type: none"> •Energy Savings Potential •Portfolio Diversification 	<ul style="list-style-type: none"> •Energy Savings potential •Market Transformation •Customer Service 	<ul style="list-style-type: none"> •Energy Savings Potential •Opportunity to accelerate market transformation
Background Work required for Program Start-up	<ul style="list-style-type: none"> •Conducted market & technology potential studies 2005-2008 •Developed workpapers •Pulled internal resources to run program 	<ul style="list-style-type: none"> •Initial advertising campaign •Budget / staff dedication for 2009 program 	<ul style="list-style-type: none"> •Conducted market and technology potential studies •Pulled internal resources to run program
Challenges to start-up	<ul style="list-style-type: none"> •Program design •Regulatory requirements •Evaluation for up/mid stream 	<ul style="list-style-type: none"> •Program design •Understanding of marketplace •Internal operations adjustments 	<ul style="list-style-type: none"> •Program design •Funding •Technical Specifications •Contracts

Business and Consumer Electronics Alliance

Background Information

	PG&E	SMUD	NEEA
Benefits to working with Alliance Program	<ul style="list-style-type: none"> •Cost-sharing opportunities •Increase market share potential 	<ul style="list-style-type: none"> •Marketplace influence •Leverage combined funds •Shared successes •Effective, able team to address shared issues 	<ul style="list-style-type: none"> •Effectiveness with retailers •Cost Sharing •Opportunity to influence CE Roadmap
Internal Resource Requirements	•4.25 FTE, split across 10 employees	•1 - 1.5 FTE across 4 employees	•1-2 FTE
External Resources	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions (data verification and invoice payment) •Opinion Dynamics Corporation

Program Barriers

- **Very busy / distracted target customers**
 - In most organizations the buyer is the single point of contact
 - We need to be easy to do business with
- **Products evolving quickly – challenging any specifications in place**
 - Need to keep an eye on the market / influence specifications and standards
 - Need to regularly update work papers
- **Base line data is not readily available**
 - Data submitted for historic ENERGY STAR products often does not track criteria for new ENERGY STAR specifications, limiting base line comparisons
 - Model numbers among manufacturers, retailers and ENERGY STAR do not match
- **EM&V model did not exist and needed to be created**

6 Critical Success Factors for an Electronics Program

1. A team and team leader – representing all of the key constituents and senior management support – lots of cross-functional issues to resolve, such as contracting
2. Continuous / experienced channel outreach – a market facing team that knows the market, the players and is staffed to provide the necessary support
3. Data tracking and matching – development of a data collection system, linkage to the retailers, validation of product models and payment system
4. EM&V planning and tracking – building an ongoing case to support an upstream EM&V model
5. Product / measure management – developing processes and organization to annually update measures and expand portfolio
6. Communications – to the channel and the customer

1 - Internal and External Cross Function Team

- Program management
 - Measure specification and development of work papers
 - Benefit to Cost Ratios
 - Technology roadmap
 - Account management
 - Marketing communications
 - Administration and data management
 - EM&V
- Functional Expertise!

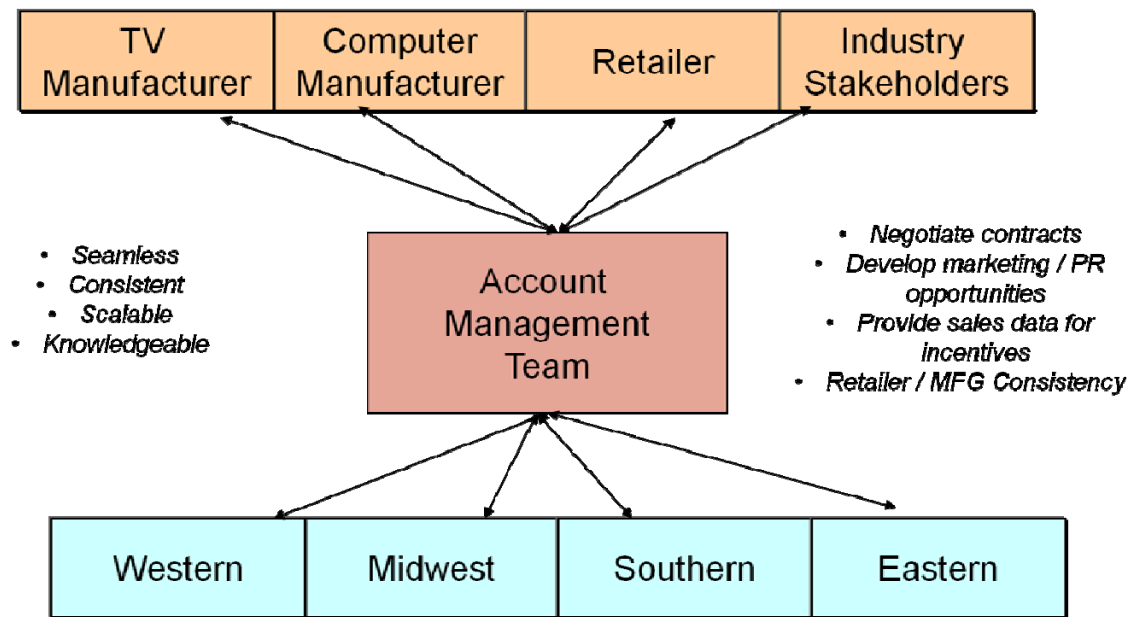
2 - Account Management

Separate implementation overwhelms participants due to complexity of:

Day-to-Day Implementation

- Account management
- Data management
- Product updates
- Allocations
- Detailer management
 - Store location changes
 - POP management
- Sales reporting
- Reconciliation

Effective Communications Model.....



42

A single-point of contact facilitates retailer and manufacturer participation

3 - Program Administration and Data Management

Utility Outreach Team.

- Utility Forecasting– savings, costs and TRC
- Coordinating program development and implementation / detailing / signage / marketing communications
- Contracting, allocation planning and performance reporting

Data Manager

- Data capture from retailers and OEM
- Model number database management
- Sales data reporting to utilities
- Payment (in some cases to retailers)



Washington, Oregon, Montana, Idaho

Model Matching Challenges

- Retail and OEM sale product lists do not match ENERGY STAR list of qualified products
- To verify that products should qualify for the program, outreach to manufacturers and retailers to understand naming conventions is needed
- Of product lists first submitted by Retailers, an average of 27% matched ENERGY STAR. The average is now 73%.

4 - New EM&V Model

Electronics model: Measure attribution based on measuring changes in **annual** retail buyer and OEM market behavior **NATIONALLY**



- Changes when to measure and what to measure:
- Traditional model measures transaction behavior throughout the year, a consumer decision impacts one sale at a specific point in time
- The Midstream model measures market impact based on decisions made by the buyer one or two times per year – a single decision can impact sales of products for 12 months **LOCALLY AND NATIONALLY**

5 - New Measures and Measure Updates – Require a Technology Roadmap

[illegible]

Coordinating with:

ENERGY STAR Specifications

Federal Standards

Title 20

New Product / Technology Developments

Consumer TVs

Computer Monitors

Desktop Computers

Business TVs

Notebook Computers

DVD Players

Multifunction Devices/Printers

Servers / Thin Clients

Set Top Boxes

Coordinating with:

ENERGY STAR Specifications

Title 20

New Product / Technology Developments

Legend

- Emerging Technologies
- Technology Transfer & Core Team Programs & Deployment
- State Standards
- Federal Specifications

Information Still Needed:

- Retailer Purchasing Cycles
- OEM Production Cycles by technology

Category	2008 Q1	2008 Q2	2008 Q3	2008 Q4	2009 Q1	2009 Q2	2009 Q3	2009 Q4	2010 Q1
Consumer TVs	1#REF! 1 - Urgent	TV (Commercial)							
Computer Monitors	1#REF! 1 - Urgent	TV (Commercial)							
Desktop Computers	1#REF! 1 - Urgent	TV (Commercial)							
Business TVs	1#REF! 1 - Urgent	TV (Commercial)							
Notebook Computers	1#REF! 1 - Urgent	TV (Commercial)							
DVD Players	1#REF! 1 - Urgent	TV (Commercial)							
Multifunction Devices/Printers	1#REF! 1 - Urgent	TV (Commercial)							
Servers / Thin Clients	1#REF! 1 - Urgent	TV (Commercial)							
Set Top Boxes	1#REF! 1 - Urgent	TV (Commercial)							

6 - Marketing Communications

In-Store Marketing

- Store detailing and training
- POP

Retailer/OEM Marketing

- In-store programs / training
- Advertising / events



Web Marketing – CNET Marketing Program

The screenshot shows the CNET reviews website with a search bar and navigation tabs for Cell Phones, Desktops, Digital Cameras, Laptops, MP3 Players, TVs, All Categories, and Forums. A 'Special Advertising Section' is highlighted, featuring a large blue banner for 'Energy-Efficient Electronics' by PG&E. The banner includes a 'Replay' button and text stating: 'Purchasing energy-efficient electronics can save you energy, money and help the environment. The product you choose can make a big difference.' Below this, it says 'Look for the Pacific Gas and Electric Company (PG&E) and ENERGY STAR® stickers.' There are also icons for 'SAVE' and 'ENERGY STAR'. A section titled 'Get the facts about:' has buttons for MONITORS, DESKTOPS, and TVs. Under 'Energy-Efficient Desktops', it says 'You found: 629 items'. Below this are four columns: 'Find by Price' (listing price ranges and item counts), 'Find by Manufacturer' (listing manufacturers and item counts), 'Find by Product line' (listing product lines and item counts), and 'Or find by' (listing various specifications). To the right, there is a section titled 'Click an image to find the right energy-efficient electronics for your needs.' with images of two computer monitors and a small ENERGY STAR sticker.

cnet reviews

Cell Phones Desktops Digital Cameras Laptops MP3 Players TVs All Categories Forums

Special Advertising Section

Energy-Efficient Electronics

Replay

Purchasing energy-efficient electronics can save you energy, money and help the environment. The product you choose can make a big difference.

Look for the Pacific Gas and Electric Company (PG&E) and ENERGY STAR® stickers.

SAVE

ENERGY STAR

Get the facts about: MONITORS DESKTOPS TVs


Energy-Efficient Desktops

You found: 629 items

Find by Price	Find by Manufacturer	Find by Product line	Or find by
<ul style="list-style-type: none">Less than \$400 (22)\$400 - \$500 (62)\$500 - \$600 (84)\$600 - \$700 (79)\$700 - \$800 (62)See all Prices	<ul style="list-style-type: none">Acer (4)Apple (47)Dell, Inc. (98)enano Computers (1)Gateway (22)See all Manufacturers	<ul style="list-style-type: none">Acer Veriton (4)Apple eMac (3)Apple iMac (26)Apple Mac mini (11)Apple Mac Pro (4)See all Product lines	<ul style="list-style-type: none">Desktop typeProcessorRAM sizeHard drive sizeProcessor manufacturerOS providedSee all

Click an image to find the right energy-efficient electronics for your needs.

<http://reviews.cnet.com/showcase/pgehome/>



Energy Efficient Electronics

Home | Why SAVE MORE | Where Can I Purchase | FAQ | Press


Looking for an Energy Efficient TV?

Are you one of the millions of Americans who love your TV as much as you love your planet? Consumers like you are becoming more energy conscious and expect their electronic devices to be environmentally friendly without sacrificing quality and performance.

To meet growing consumer demand and as part of a commitment to conserve energy, your local utility companies have joined forces with ENERGY STAR® as well as leading retailers and manufacturers to develop and promote the most energy efficient TVs.


Why TVs? The TV all by itself accounts for a whopping four percent of household usage.

Look for TVs with the SAVE MORE Sticker - SAVE MORE Energy, Money and the Environment



All televisions promoted through the SAVE MORE program meet and exceed the stringent ENERGY STAR® specifications. Head to a participating retailer and look for the SAVE MORE sticker. Take home your new TV along with the assurance you've done your part to conserve energy. There's another bonus: purchasing a more energy-efficient TV means lower energy costs. Wouldn't you like to keep some extra cash in your own pocket during these tough economic times?

If you're considering purchasing a new TV, shop smart! Be an energy-conscious consumer and look for the SAVE MORE sticker at your local participating retailer. SAVE MORE energy, money and the environment.



About This Website
This website is sponsored by the Northwest Energy Efficiency Alliance (NWEA), a nonprofit organization made up of 120 Northwest utilities working together to encourage the development and adoption of energy-efficient products, practices and services.



Energy Efficient Electronics

Home | Why SAVE MORE | Where Can I Purchase | FAQ | Press

Why SAVE MORE?

When shopping for TVs, tech-loving consumers no longer limit their focus to screen size, resolution and sound quality. Consumers like you are taking a hard look at a product's energy efficiency before they make the decision to part with their hard-earned dollars.

By giving consumers more options and information about the most energy efficient TVs, we can dramatically reduce energy consumption and save you money.



SAVE MORE Energy



There are approximately 12.5 million TVs currently in use in the Pacific Northwest, consuming over 23 billion kWh of energy each year – or four percent of the electricity used in an average household.

If consumers in the Pacific Northwest purchased SAVE MORE TVs, we could save enough electricity to power all the homes in Seattle for an entire year! We would also reduce the strain on the energy grid, which in turn would help avoid building expensive new power plants.

SAVE MORE Money



If all televisions sold in the Pacific Northwest (Washington, Oregon, Idaho and Montana) met stringent SAVE MORE specifications, Pacific Northwest consumers would save an estimated **\$60 Million** in annual energy costs.

Save the Environment



We could reduce greenhouse gas emissions by the equivalent of removing 60,000 cars from the road if all consumers in the Pacific Northwest (Washington, Oregon, Idaho and Montana) purchased SAVE MORE TVs over other models.

Bottom line: YOU can make a positive impact on the environment by choosing a TV with the SAVE MORE sticker.

Future Planning

Business and Consumer Electronics Alliance

Background Information

	PG&E	SMUD	NEEA
Who we are	Regulated Utility <ul style="list-style-type: none"> •15 million customers •Shareholders 	Municipal Utility <ul style="list-style-type: none"> •590,000 customers •Customer owners 	Alliance of Utilities <ul style="list-style-type: none"> •11.5 million customers •130 utilities in the Northwest
Why start an electronics program	<ul style="list-style-type: none"> •Energy Savings Potential •Portfolio Diversification 	<ul style="list-style-type: none"> •Energy Savings potential •Market Transformation •Customer Service 	<ul style="list-style-type: none"> •Energy Savings Potential •Opportunity to accelerate market transformation
Background Work required for Program Start-up	<ul style="list-style-type: none"> •Conducted market & technology potential studies 2005-2008 •Developed workpapers •Pulled internal resources to run program 	<ul style="list-style-type: none"> •Initial advertising campaign •Budget / staff dedication for 2009 program 	<ul style="list-style-type: none"> •Conducted market and technology potential studies •Pulled internal resources to run program
Challenges to start-up	<ul style="list-style-type: none"> •Program design •Regulatory requirements •Evaluation for up/mid stream 	<ul style="list-style-type: none"> •Program design •Understanding of marketplace •Internal operations adjustments 	<ul style="list-style-type: none"> •Program design •Funding •Technical Specifications •Contracts

Business and Consumer Electronics Alliance

Background Information

	PG&E	SMUD	NEEA
Benefits to working with Alliance Program	<ul style="list-style-type: none"> •Cost-sharing opportunities •Increase market share potential 	<ul style="list-style-type: none"> •Marketplace influence •Leverage combined funds •Shared successes •Effective, able team to address shared issues 	<ul style="list-style-type: none"> •Effectiveness with retailers •Cost Sharing •Opportunity to influence CE Roadmap
Internal Resource Requirements	•4.25 FTE, split across 10 employees	•1 - 1.5 FTE across 4 employees	•1-2 FTE
External Resources	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions •Opinion Dynamics Corporation 	<ul style="list-style-type: none"> •QDI Strategies •Energy Solutions (data verification and invoice payment) •Opinion Dynamics Corporation

Issues for 2010 and Beyond

➤ Program scope

Markets	PG&E	SMUD	NEEA
Consumer Market Products	TVs Desktops Monitors Laptops Set Top Boxes	TVs Desktops Monitors Laptops Set Top Boxes	TVs Desktops Monitors Set Top Boxes
B2B Market Products	Desktops Monitors Laptops Servers TVs	Desktops Monitors Laptops Servers TVs	

- Measure development / technology roadmap
- Communications strategy
- Sign up new utilities and energy efficiency organizations

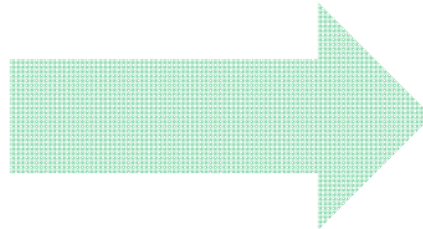
Potential Future Products

Current Products

TVs (consumer)

Desktop Computers

Computer Monitors



Future Products

TVs (commercial)

Notebooks

Set Top Boxes

Audio/Video/DVD

Servers

Thin Clients

WEB and OEM Marketing

Web-Site Marketing

- Web and OEM programs require POS marketing support for qualifying products – to educate buyers
- Being developed with OEMs today as a model for web retailers in 2010



lenovo Call: 800.405.6875

ThinkCentre M58 Tower

DON'T WASTE YOUR ENERGY ON OTHERS. OR YOUR MONEY.

Lenovo and Pacific Gas and Electric Company (PG&E) are addressing customers' needs to save energy and lower electricity costs at home and at work through PG&E's Business and Consumer Electronics program. The program encourages businesses and consumers to save energy, money and help save the environment using **energy-efficient electronics**. These products aim to address statistics such as:

- Monitors that have earned the Environmental Protection Agency's (EPA) ENERGY STAR® use 25-60% less electricity than standard models.
- If every computer purchased by businesses this year earned the new EPA ENERGY STAR, businesses would save more than \$260 million over the lifetime of the products. That's equivalent to lighting 130 million square feet of U.S. commercial building space each year.
- If all computers sold in the U.S. earned the EPA's ENERGY STAR, we could save about \$2 billion per year in energy costs and help protect the environment

Lenovo ThinkCentre M58 Tower

- Intel® Pentium Dual-Core E5200 Processor
- Genuine Windows Vista® Business
- 1GB memory
- 160GB hard disk drive
- Integrated Video GMA4500
- Integrated Gigabit Ethernet

Monitor not included. **STARTING AT \$859**

TOP FEATURES

- Low energy consumption EPEAT™ Gold and ENERGY STAR 4.0 certified
- Dual Independent Display on board (VGA and DisplayPort)
- Latest DDR3 RAM – 10% Faster, 25% Power Savings

Lenovo ThinkVision Monitors. Engineered Green. Rated Gold.

ThinkVision L174	ThinkVision L1900p	ThinkVision L2440x
17" essential monitor 30% more energy-efficient than standard models Part Number: 9227AE1	19" normal aspect monitor 1280 x 1024 resolution ergonomic stand Part Number: 4431HE1	24" wide mercury-free White LED monitor 60% more energy-efficient than standard models Part Number: 4421HB2
\$279.99	\$309.99	\$569.99

Call your Lenovo Sales Representative today at 800.405.6875 for more information or to place your order!

*"PG&E" refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. © 2009 Pacific Gas and Electric Company. All rights reserved. This program is funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.

Pricing: Does not include tax, shipping & handling or any recycling fees and is subject to change without notice. Reseller prices may vary. Availability: All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors. Trademarks: The following are trademarks of Lenovo: ThinkPad and Lenovo. Intel, Celeron and Pentium are trademarks of Intel Corporation. Other company, product and service names may be trademarks or service marks of other companies. ©2009 Lenovo. All rights reserved.

SUBSCRIPTION SERVICES
You provided Lenovo with your e-mail address, ites@DIRECTALLIANCE.COM, so that we could keep you informed of important events and new business solutions. We hope you found this e-mail helpful. If, however, you prefer not to receive future notices of this sort from Lenovo, please [go here](#) and your e-mail address will be promptly removed.

This eFlyer was sent from:
Lenovo Direct
1009 ThinkPlace - Bldg 1, Lenovo Inside Sales (ofc 3013)
Morrisville, NC 27560 USA

Your privacy is important to us. Please visit <http://www.lenovo.com> for more information on Lenovo's privacy policy.

[About Lenovo](#) | [Contact](#) | [Privacy](#)

Business and Consumer Electronics Alliance

National Expansion through Cooperation

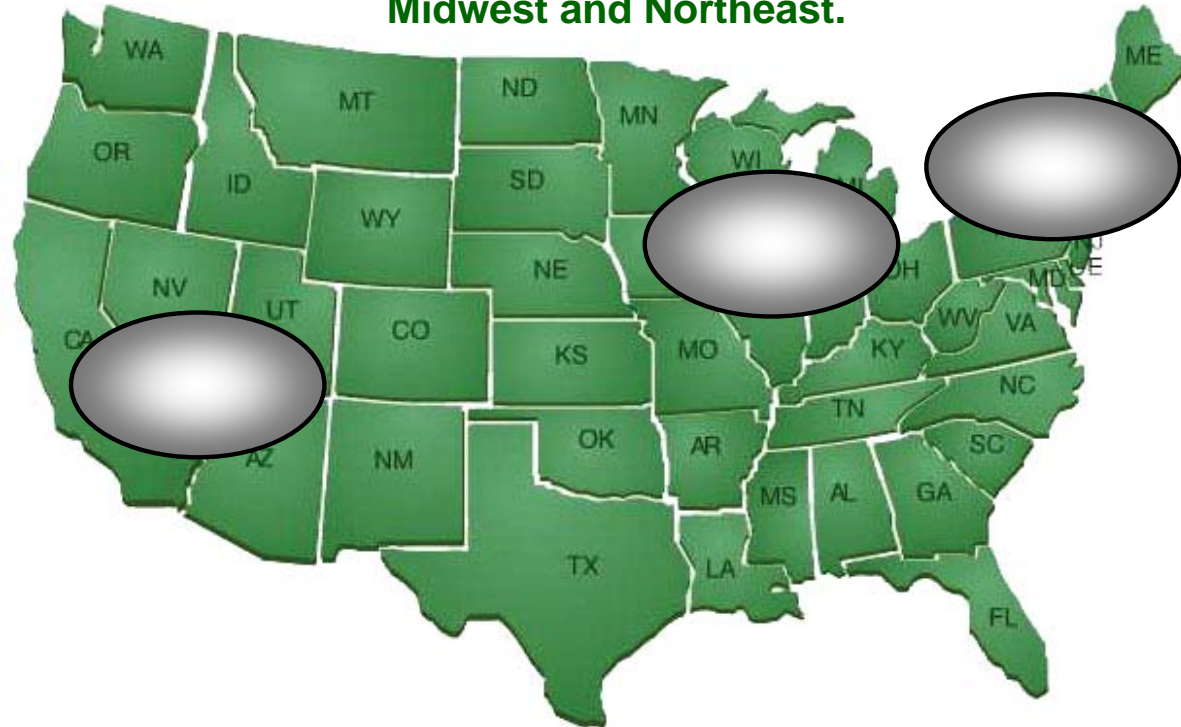
In the Program



Washington, Oregon, Montana, Idaho

In Discussion

...with utilities and energy organizations in the Southwest, Midwest and Northeast.



Your Interest

- Visit www.etcc-ca.com for more background
- Call Tim Michel – PG&E
 - Tim3@pge.com (415) 973-3614
- Janis Erickson – SMUD
 - Janis.erickson@smud.org (916) 732-5438
- Stephanie Fleming – NEEA
 - sfleming@nwalliance.org (503) 827- 8416 x245



***Your interest in
participating is welcome!***

Sources Cited

- Consortium for Energy Efficiency Consumer Electronics Initiative (Final), Consortium for Energy Efficiency (CEE), June 2007.
- Energy Consumption by Consumer Electronics in Residences, TIAX LLC for Consumer Electronics Association (CEA), January 2007.
- Alex Chase, Ryan Ramos, and Ted Pope, *Consumer Electronics: Market Trends, Energy Consumption, and Program Recommendations*, PG&E Application Assessment Report #0513, Energy Solutions, December 2006.