Retailer Energy Alliance

REA Supplier Summit

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Who We Are

- **Best Buy Company (BBY on the NYSE)**
- Fiscal 2008 revenues of $40 billion
- Operating income of $2.2 billion
- 150,000 employees
- 1,314 stores
- > 48M ft^2 of retail of sales space in the United States, Canada, and China.
- **Best Buy Company Vision**
  - Making life fun and easy
- **Best Buy Company Values**
  - Have fun while being the best
  - Learn from challenge and change
  - Show respect, humility, and integrity
  - Unleash the power of our people.

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What We Sell

- Consumer electronics
- Appliances
- Services (Geek Squad)
- Cellular and mobile electronics

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Where We Are (Going)

- 90+ New Retail Stores per year (2.7M SF)
- Best Buy Mobile
- Pacific Sales
- International (Mexico, Canada, China, Turkey)
- Take Over Projects (Toys-r-Us, CompUSA)
- Recently Acquired 50% of The Carphone Warehouse's European and U.S. retail interests

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Our Locations

- 949 Existing Best Buy Stores – United States
- 51 Existing Best Buy Stores – Canada
- 1 Best Buy China
- 20 Pacific Sales (Upscale Appliances)
- 9 Best Buy Mobile (Small format, mall based)
- 7 Geek Squad Stand Alone Stores
- 12 Magnolia Home Theater Stores
- 132 Future Shop Stores (Canada)
- 159 Five Star Appliance (China) China's fourth-largest retailer of appliances and consumer electronics. 12,000 employees. Average store size (operating area) is 33,000 ft^2.
- 34 Distribution Centers/District Appliance Warehouses

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Range of Formats

- Best Buy Retail Store – 25,000–45,00 ft^2
- Pacific Sales – 30K ft^2 (10:00 a.m. to 6:00 p.m., Tuesday through Saturday)
- Best Buy Mobile - 1,500 ft^2
- Geek Squad Stand Alone Stores – 1,500 ft^2
- Magnolia Home Theater Stores – 5,000 ft^2
- Future Shop Stores – 30,000 ft^2
- Five Star Appliances – 33,000 ft^2
- International stores (generally larger)

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Business Structure

- Publicly Owned Corporation (BBY)
- Property Development Department
  - Market Analysis (7)
  - Real Estate (10)
  - Development (10)
  - Construction (12)
  - Purchasing (4)
- Outsource all design and engineering

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How We Manage Design, Construction, and Operations

- New stores area mostly turn key (Build to Suits) – 80%
- Self develop about 20% (most are take-overs)

By Size:

65% – 30,000 ft^2
25% – 45,000 ft^2
10% – 20,000 (25,000) ft^2

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Energy Use Profile (General)

- Energy intensity by use:

- **Typical 30,000 ft² Prototype Store**

- Lighting: 178,704 kWh/yr (32%)
- Plug Load: 240,445 kWh/yr (42%)
- HVAC: 148,153 kWh/yr (26%)

- Total: 567,302 kWh/yr (100%)

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Goals

- In an ideal world, what does your most energy-efficient building look like?

- Solid state lighting throughout
- Skylights
- Innovation to reduce plug loads
- Higher efficiency RTUs
- Greater use of EMS capabilities

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Current EEMs in Place (General)

- Energy efficiency programs in place/underway
  - EMS
  - Daylight harvesting
  - Dimmable lighting (CMH)
  - Energy recovery units (based on climate zone)
  - Photovoltaic for balers and trash compactors
- Green/sustainability policy and strategy
  - Participant in USGBC pilot program for volume certification.
- Commitment to REA
  - Member of Steering Committee and LED Subcommittee

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New Opportunities (General)

- Solid state lighting
- Lighting controls to maximize daylight harvesting
- HVAC efficiency
- Load shedding
- Photovoltaic?
- Wind?
- Geothermal?
- Energy storage?

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Inhibitors (General)

- Design concerns over CRI of lighting and levels.
- Need to control daylight in certain areas (HT).
- Plug Loads - Selling electronics is what we do (difficult to reduce plug loads).
- Maintenance concerns with complex solutions (flush valves for instance).
- We are challenged to design within both an energy and a dollar budget.

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Energy Use by Technology: Lighting

- 320 Watt dimmable CMH in sales
- Fluorescent (strip in warehouse, troffers in offices, etc.)
- 39/70 Watt Halo L5300 miniLUME CMH track lighting

- Retrofit program for FY 2009 is 156 stores

- Looking to suppliers – what should the R&D focus be based on, considering the above?

- Solid state lighting
- Higher LPW fixtures for CMH
- Must be dimmable

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Energy Use by Technology: Envelope

- Envelope is not a major factor due to internal heat loads from occupants and equipment
- We use white roof, EMS, and economizers
- Solar glare through windows is an issue.
- Looking to suppliers – what should the R&D focus be based on, considering the above?
- High-performance window tint/film (or eliminate glass)

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Energy Use by Technology: Water

- Limited water usage (restrooms and janitorial)
- Very limited irrigation need (strip center sites)

Water reduction with new low flow urinal:

Old urinal (1 gpf):	14,385 gal/yr
New urinal (0.125 gpf):	1,799 gal/yr
Savings:	12,590 gal/yr PER STORE

The big savings with this is that male employees went from a daily total of 37.5 gallons to 4.7 gallons (assume each male employee uses the urinal twice in an 8-hr. workday)

- Have not implemented new dual flush WC flush valves

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Energy Use by Technology: Controls

- EMS
- Temperature control throughout – limited user adjust
- 8 dimmable lighting zones, Sales, Warehouse, ISC
- Exterior lighting and signs on EMS

- Looking to suppliers – what should the R&D focus be based on, considering the above?

- User interface for nontechnical users (networked)
- LEED QC and maintenance – reporting features

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Energy Use by Technology: HVAC

- General technology need e.g., how much energy does HVAC use/need/cost?
- HVAC: 148,153 kWh/yr (26% of total)
- High-Efficiency RTUs with economizers
- EMS controlled.
- Efficiency goals/inhibitors
  - Destratification/Air Circulation? (High-volume, low-velocity fans)
  - Energy-efficient (EE) fans – Yes.
  - Improved RTU – Yes.
  - Year-round cooling in all climates.
  - Size limits of store inhibit innovations such as ice storage
  - Strip center format inhibits site use for innovations such as geothermal.

- Looking to suppliers – what should the R&D focus be based on, considering the above?

- Greater efficiencies in cooling equipment

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Energy Use by Technology: Plug Loads

- Biggest challenge for Best Buy.

- Looking to suppliers – what should the R&D focus be based on, considering the above?

- Products with standby power capability?
- Alternate energy source (PVs on roof)
- Load shedding technology?

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Energy Use by Technology: O&M

- Not a major issue or concern with respect to energy usage for daily maintenance.
- Implementing lighting retrofit program.
- Looking to suppliers – what should the R&D focus be based on, considering the above?
- Extend time period between re-lamps by better monitoring of lamp depreciation.

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Procurement Process

- Minimal for BTS projects
- For self-developed stores we purchase:
  - HVAC
  - Lighting
  - Modular wiring
  - Automatic entry doors
  - Electrical distribution system (walls/unitized switchgear)
  - Energy management system
  - Exterior Ssignage (freestanding pylon, monument signs, and wall-mounted signs)

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Prioritize

- Identify cost barriers for specific technologies
  - Size of midbox retailer means systems cost more per square foot.
  - Some technologies (wind, PV, chillers, energy storage) are not scalable to small formats
  - “Real” ROI tends to be greater than 5. Need 3 years or less.
  - R&D costs. Not willing to pay for R&D costs (scale again)
  - Rebate dependency (requires dedicated human resources)
  - Externalized O&M costs (Lack of internal labor resources to manage, outside contracts are expensive)
  - Leasing versus owning affects rebates and ROI.

Conclusion

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- What can the suppliers do?
- **Innovate. Eliminate R&D pass through costs. Provide increased implementation support (value add service). Internal staff limitations create need for supplier support.**
- How are you willing to work with and support the suppliers to address these challenges?
- **Willing to listen and entertain new products, but not willing to pay R&D costs.**
- What strategies can we implement to move these technologies into the marketplace?
- **Willing to participate in tests of new products (with limited cost to us)**
- How can DOE help verify the success of these measures?
- **Consolidate data from retailers, act as clearing house for info and results. Communicate the common needs and encourage innovation.**