



# On-Site Renewables vs RECs



# Agenda

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- Whole Foods Market and Sustainability
- Growth in Commercial Use of Energy
- Reducing WFM's Use of Electricity
- Renewing WFM's Use of Electricity
- Conclusion

# **Whole Foods and Sustainability**

# Conscious Capitalism

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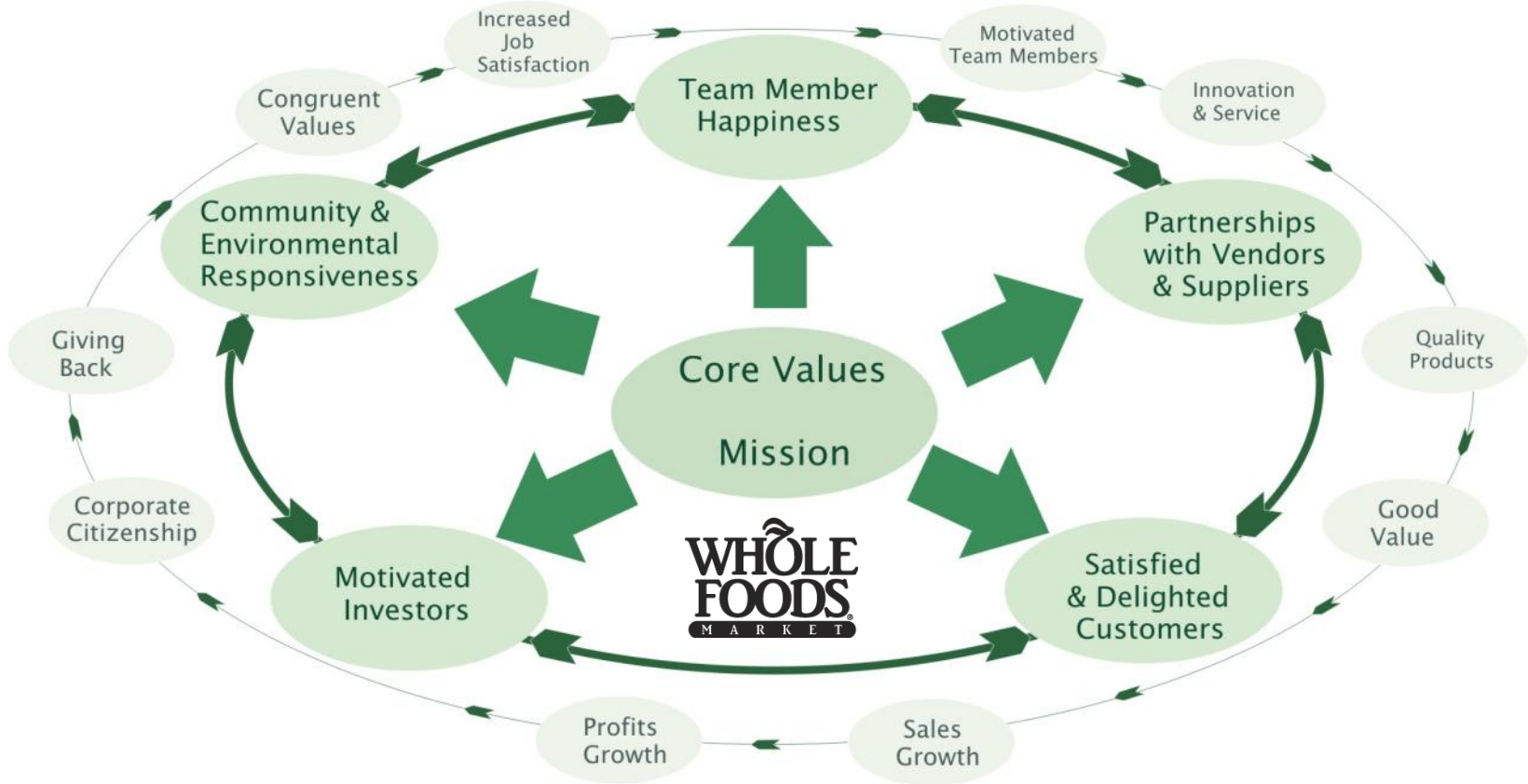
- is a presentation that Whole Foods Market Co-Founder, John Mackey, has created with others that describes a more complete way of doing business, with a long-term focus

# Foundation for Sustainability

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- Among the most important environmentally-supportive contributions Whole Foods Market makes is to provide a retail sales outlet for thousands of organic products and to address animal welfare and seafood sustainability issues in the supply chain.
- We've done this in partnership with a variety of multi-stakeholder groups that may include customers, vendors and non-profit and government agencies, depending on the issue of concern.
- The consensus decision-making process we use in our team meetings is what we use with any other teams we assemble to solve problems and drive change.
- We've helped lead positive change in the composition of food retailing, and global citizenship, for thirty years—and counting.

# The Whole Foods Conscious Business Model: Holistic Interdependence



## Whole Foods Market's Highest Purpose is:

- ***The Heroic: Courage to Do What is Right to Change and Improve the World***

## Our Core Values

**1** Selling the highest quality natural and organic products available **2** Satisfying & delighting our customers **3** Supporting team member happiness & excellence **4** Creating wealth through profits & growth **5** *Caring about our communities & environment* **6** Encouraging win-win partnerships with our suppliers **7** Promoting the health of our stakeholders through healthy eating education



# Caring About our Environment

- We strongly support organic, local, & sustainable agriculture
- Sustainable seafood—Marine Stewardship Council, farmed fish standards with 3<sup>rd</sup> party certification, sustainability transparency
- Animal Welfare program for livestock
- Commitment to energy and waste reductions, recycling and alternative energy: up to 100% Wind Energy Credits.
- Partnerships with DOE and EPA
- Green Building, LEED and Green Globes
- Fuel cell, solar and other on-site alternative energy installations
- Store & Facility Green Mission Teams





# Partnerships and Collaboration

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- EPA-Green Power, Energy Star, Green Chill
- DOE-Retail Energy Alliance
- NRDC
- CA-CP
- Suppliers and Communities

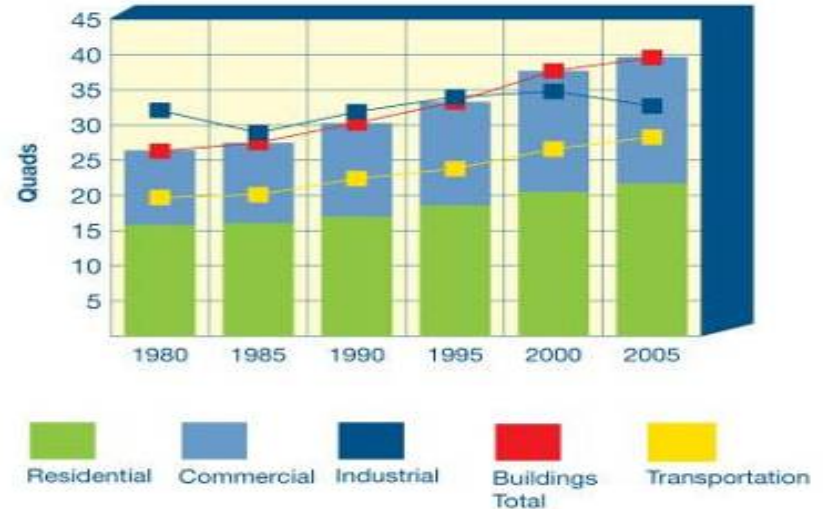
# **Growth in Commercial Use of Energy**

# Buildings...Fastest Growing Energy Sector

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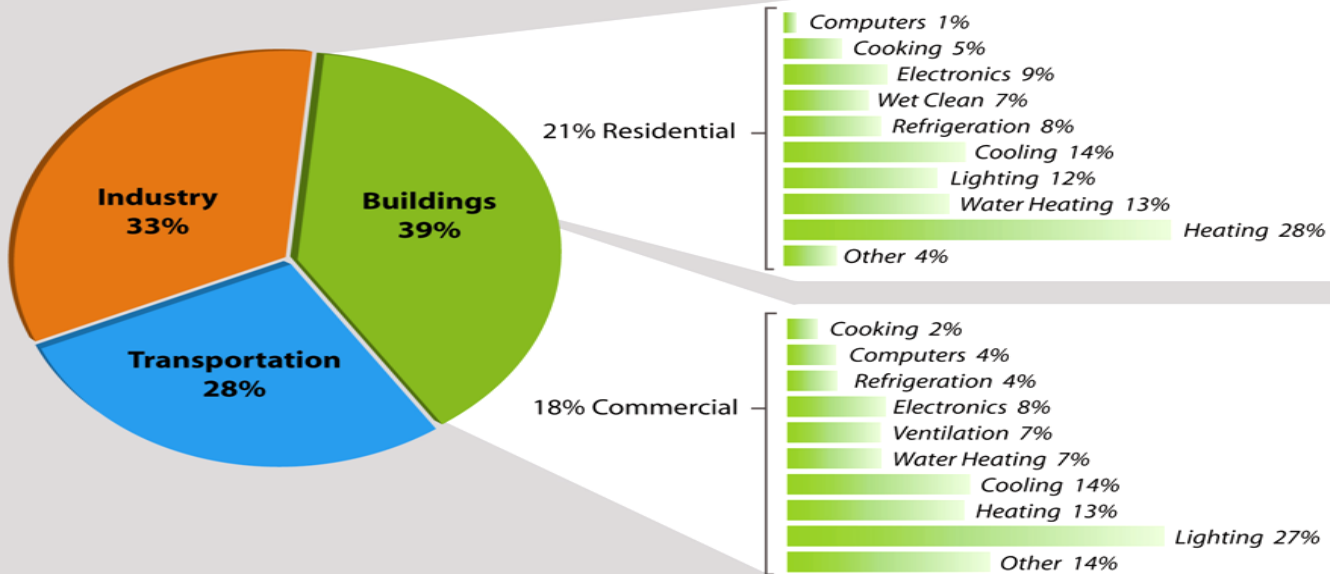
- Energy consumption rose 70% between 1980 and 2005
- Commercial buildings consume greater amounts of energy relative to other sectors

Growth in Buildings Energy Use Relative to Other Sectors



# Building Energy Use

## 2006 Buildings Share of U.S. Primary Energy Consumption End-Uses



Source: Buildings Energy Data Book <http://buildingsdatabook.eren.doe.gov/>  
Tables 1.1.3, 2.1.5, 3.1.4

Note: The "Adjust to SEDS" percentages for the residential and commercial end-use splits were distributed among the other categories.

# Commercial Buildings' Energy Share

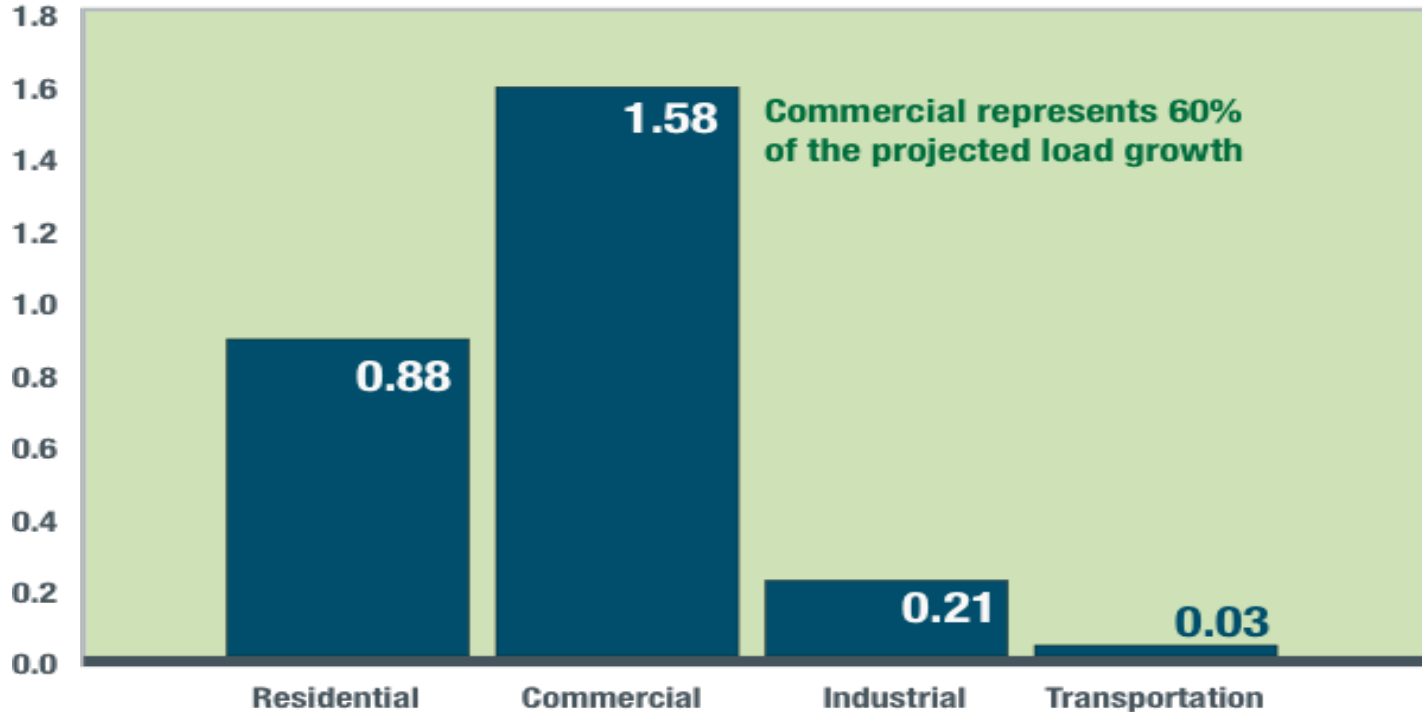
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- Commercial buildings account for:
  - 18% of U.S. energy
  - 18% of greenhouse gas emissions (~1,000 MMT of CO<sub>2</sub>e)
  - slightly less than India's entire energy consumption and GHG emissions



# Projected Electricity Growth

2010 to 2030, by End-Use Sector (site quad)



Source: EIA AEO 2009, Table 2

# The Economics of Efficiency

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- **Energy efficiency costs less than the fuel it saves.** Interestingly enough, 100% of the experts involved in energy efficiency measures talk about profits, and 100% of the politicians concentrate on the costs.
- The fact is that using energy more efficiently offers economic benefits not just in terms of stopping global warming, but because saving fossil fuel is a lot cheaper than buying it.
- Preventable energy waste costs the global economy more than USD 1 trillion a year. For example, **saving each barrel of oil through efficiency improvements costs only USD 12, about one-fifth of what petroleum sells for today.**



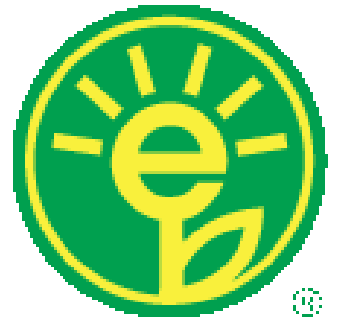
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# **Whole Foods Market Energy Strategy**

# Whole Foods and Electricity

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- Reduce what we can
  - Energy efficiency New and Remodel projects
  - Energy reductions at existing stores
- Renew what we can't
  - Off-site with Wind RECs
  - On-site with solar panels, fuel cells, waste cooking oil



# Energy Efficiency-New Development

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U.S. Department of Energy's  
Commercial Building Partnerships



## THINKING LIKE A WHOLE BUILDING:

### A WHOLE FOODS MARKET NEW CONSTRUCTION CASE STUDY

Whole Foods Market (WFM) is the world's leading natural and organic foods retailer, with more than 300 stores in North America and the United Kingdom. WFM's participation in the U.S. Department of Energy's (DOE) Commercial Building Partnerships (CBP) is a natural extension of its values and vision.

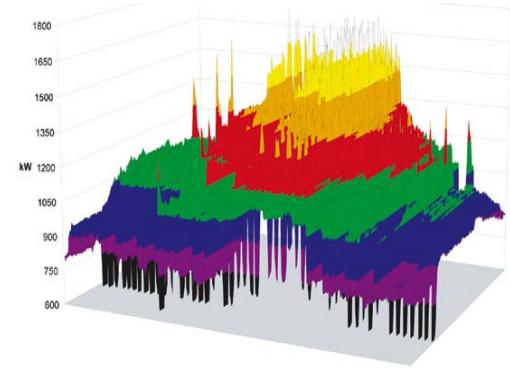
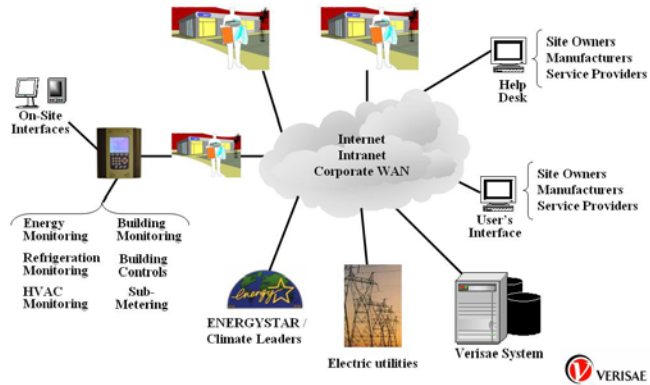
"Whole Buildings are a focus at WFM, and the company has had internal green building standards and practices in place for years," says Kathy Loftus, global leader, sustainable engineering, maintenance, and energy management for WFM. "But our participation in CBP provides an opportunity for us to dig into the details of how our stores use energy in ways that we haven't explored before."

Whole Foods Market uses a combination of ambient and accent lighting to highlight the products in its stores.

Credit: Ian Doebber, NREL



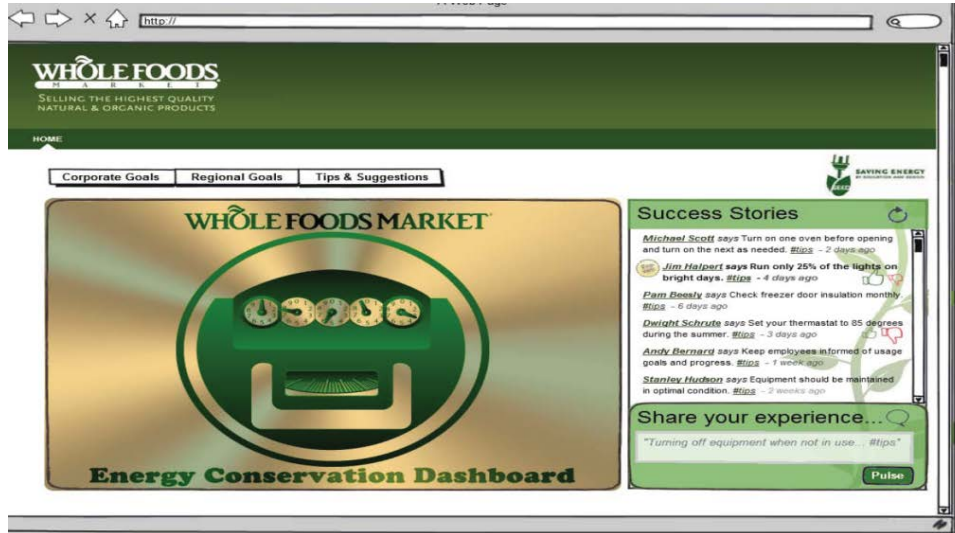
# Energy Efficiency-Existing Portfolio



- Implementing a web-based, enterprise-wide tracking and reporting system to identify high-usage and high-cost stores and facilities (sub-metering, benchmarking, exception reporting) with load profile analysis and modification-demand response, ongoing expense reduction identification-operational
- Implementing equipment upgrades for savings (capital improvements)
- Working with design and engineering teams to see that efficient systems, equipment, & control strategies are specified for new stores
- Commissioning/Re-commissioning

# Race to Reduce: 25 by 2015

- Our goal is to reduce our energy consumption 25% by square foot by 2015
- Many teams including Green Mission working on the drivers, tools and brand of this program—some great ideas have been generated...



The screenshot shows a web browser displaying the Whole Foods Market Energy Conservation Dashboard. The page features a navigation bar with "Corporate Goals", "Regional Goals", and "Tips & Suggestions". The main content area is divided into two sections: "Success Stories" and "Share your experience...".

**Success Stories**

- Michael Scott* says Turn on one oven before opening and turn on the next as needed. #tips - 2 days ago
- Jim Halper* says Run only 25% of the lights on bright days. #tips - 4 days ago
- Pam Beatty* says Check freezer door insulation monthly. #tips - 6 days ago
- Dwight Schmitz* says Set your thermostat to 85 degrees during the summer. #tips - 3 days ago
- Andy Barnard* says Keep employees informed of usage goals and progress. #tips - 1 week ago
- Stanley Hudson* says Equipment should be maintained in optimal condition. #tips - 2 weeks ago

**Share your experience...**

"Turning off equipment when not in use... #tips"

Buttons: "Post" and "Cancel"



# On-Site Renewables

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- Off-site
  - 100% of Electricity Use With Wind RECs
- On-site
  - Solar: 14 stores 1 DC; host & own PPAs
  - Fuel Cells: 4 stores; operating leases
  - Waste to Electricity: 1 Commissary pilot at one store; PPA
  - Wind Turbine Feasibility Studies





## Fueling Green Power

Whole Foods Market Glastonbury is now able to generate about half of its electricity requirements on-site using UTC Power's fuel cell, which uses an electrochemical process that combines hydrogen and oxygen to produce electricity, heat and water. In traditional power plants, more than half the energy potential goes up the stack as waste heat, but the system at the Glastonbury store turns potential waste heat into usable energy by capturing the exhaust for cooling and heating.

This harnessed exhaust heat will provide heat and hot water year-round and help cool the refrigerated cases in the summer months.

Because the fuel cell operates without combustion, this electricity production is virtually pollution-free. With this installation, Whole Foods Market Glastonbury will prevent the release of more than 90 tons of CO<sub>2</sub> into the atmosphere per year. Additionally, the Glastonbury fuel cell will save 800,000 gallons of water each year that would otherwise be required by conventional electrical generation.



# Fuel Cells-- From outer space...into supermarkets!

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- More than half of the energy potential in traditional power generation goes up the stack as waste heat.
- The UTC Power fuel cell converts heat exhaust into heating and cooling, turning potential waste into usable energy.
- Central power plants achieve efficiencies of between 30-40%; fuel cells can attain energy conversion efficiencies up to 90 percent.
- High system efficiencies translate into greater fuel utilization, thereby contributing to the conservation of natural resources and energy



# PV Case Study: Edgewater, NJ

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- Size: 121 kWdc – meets about 25% of peak energy needs
- Term: 10 years; operational since March, 2004
- Since installation, electricity prices have risen from \$0.09/kWh to over \$0.12 per kWh, annual savings have increased \$1,000
- Operations run smoothly, no interruption; total production more than 246,000 kWh
- Savings have risen from a projected 5% to over 20%!
- Communication & Education including Earth Day “solarbration”

# Glastonbury, CT

## They love their fuel cell...





GLA requires half the power from the grid of a similar size store;  
saving 30-40% utility costs  
DED may not need any at times!

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# On-site Waste Cooking Oil Generator

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# WFM Wind REC Purchase

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## History

- In 2004 and 2005, a couple of regions were purchasing RECs on their own through local and national brokers and suppliers, and in one case, bundled with energy (approximately 71,000 MWh annually).
- Then, Southern Pacific Regional President and Green Mission Guru Michael Besancon brought together a proposal for the Whole Company to vote on—100% green power to offset electricity use in all regions of the country. To help evaluate options and facilitate the purchasing process, World Resources Institute (WRI) was brought on board.
- First purchase: December 9, 2005 more than 458,000 MWh of RECs from wind farms offsetting all of the electricity used at our US and Canadian stores and facilities.
- This purchase helped avoid more than 700 M lbs of carbon dioxide pollution annually. A similar environmental impact would be to take more than 60,000 cars off the road or plant more than 90,000 acres of trees.
- In 2006, became first Fortune 500® company to purchase wind energy credits for 100% of its electricity use across U.S. operations..

# WFM Wind REC Purchase

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## Action

- Have matched 100% of our electricity with Green-e RECs for 6 of the past 7 years
- Currently matching with 100% U.S. Wind RECs
- Since 2004, we have contracted for approximately 4.3 billion MWh
- For 2012, extended green power commitment from the U.S. and Canada to the UK

## Recognition

- Top 50 Green Power Partners
  - Third on list
- Green Power Partner Award
  - Five time winner
- Corporate Renewable Energy Index
  - Top ranking for wind-specific procurement
- LEED
  - Certification for 12 Stores
- Green Globes
  - Certification for 4 Green Globes



# Continuous Improvement

- Collaborate
- Co-operate
- Connect
- Communicate

