

From Shop Floor to Top Floor: Best Business Practices in Energy Efficiency



Judi Greenwald
Vice President, Innovative Solutions
Pew Center on Global Climate Change

**ACEEE Symposium: Energy Efficiency & the
Future of Manufacturing in the U.S. & Canada**

July 21, 2010

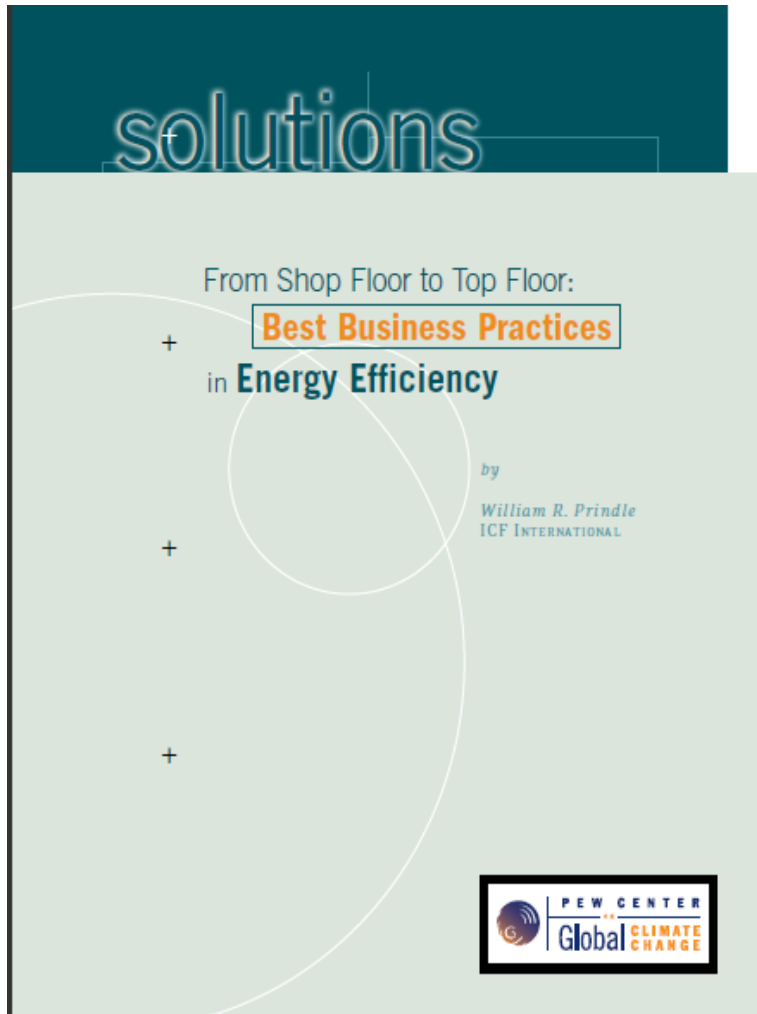
- Established in 1998 as an independent, non-partisan climate organization
- Three-fold structure – a “do” tank:
 - Research – 100+ reports over 12 years
 - Actively advise on policy – state, federal, international
 - Business Environmental Leadership Council (BELC)
 - 46 companies
 - \$2 trillion in revenues
 - Nearly 4 million employees

Introduction to BELC



- Exploring best practices in corporate energy efficiency
 - Project funded by 3-year, \$1.4 million grant from Toyota
- Focus is on management approaches to improving efficiency throughout a company, including:
 - Internal operations
 - Supply chains
 - Products & services
- Report published March 31, 2010
 - Major conference held April 6. Following up with yearlong communications/outreach campaign
 - Web portal (www.pewclimate.org/energy-efficiency) contains additional resources and project-related materials

Report Background



- Expert author: Bill Prindle, ICF International
- 4 BELC Workshops: Opportunities for companies to present & share lessons learned
- Survey: Designed to capture key quantitative data and broad trends in corporate efficiency programs
- Advisory Committee: 11 experts from range of sectors; provided overall direction and guidance for the project
- Case studies: In-depth profiles of six exceptional programs and strategies

- Survey designed to gather key quantitative data, identify trends, and gauge current activities
- 95 companies invited to participate
 - Large corporations with demonstrated commitment to climate & energy issues
 - Diverse industry representation
 - Average revenue: \$29 billion
 - Average energy costs: \$2 billion
 - 48 surveys completed (response rate >50%)
 - Approximately 65 questions covering range of corporate efficiency programs and activities

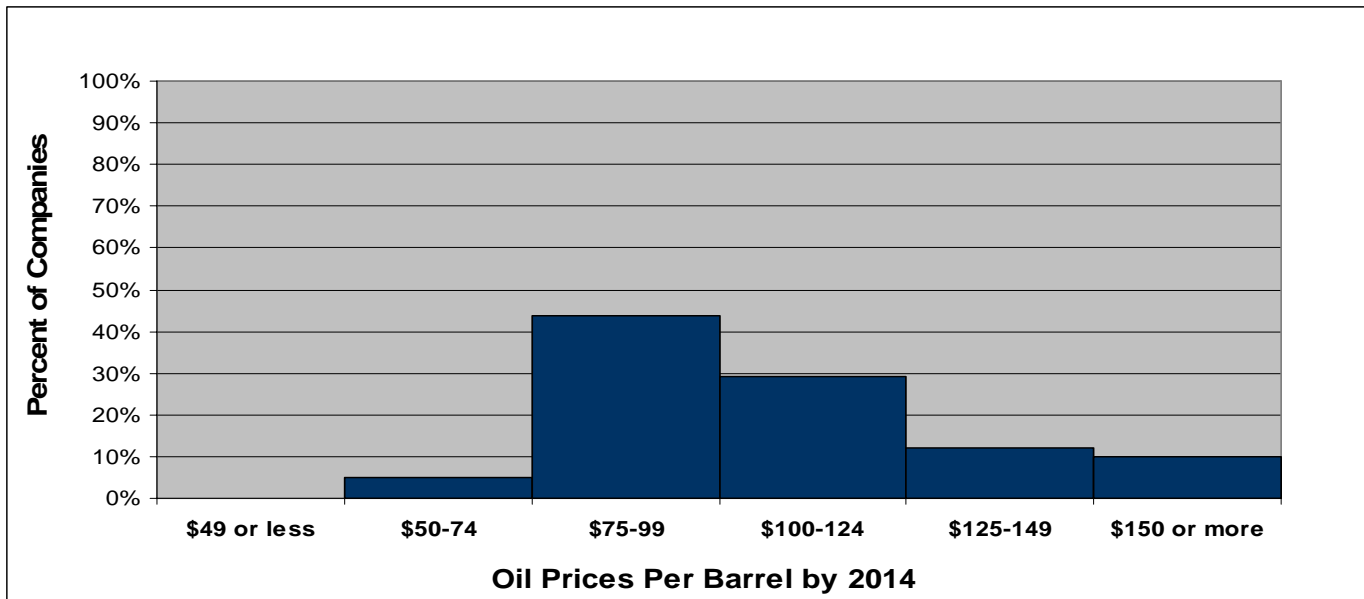
Corporate Expectations about Policy, Energy Prices



When do you expect U.S. climate change legislation to pass?

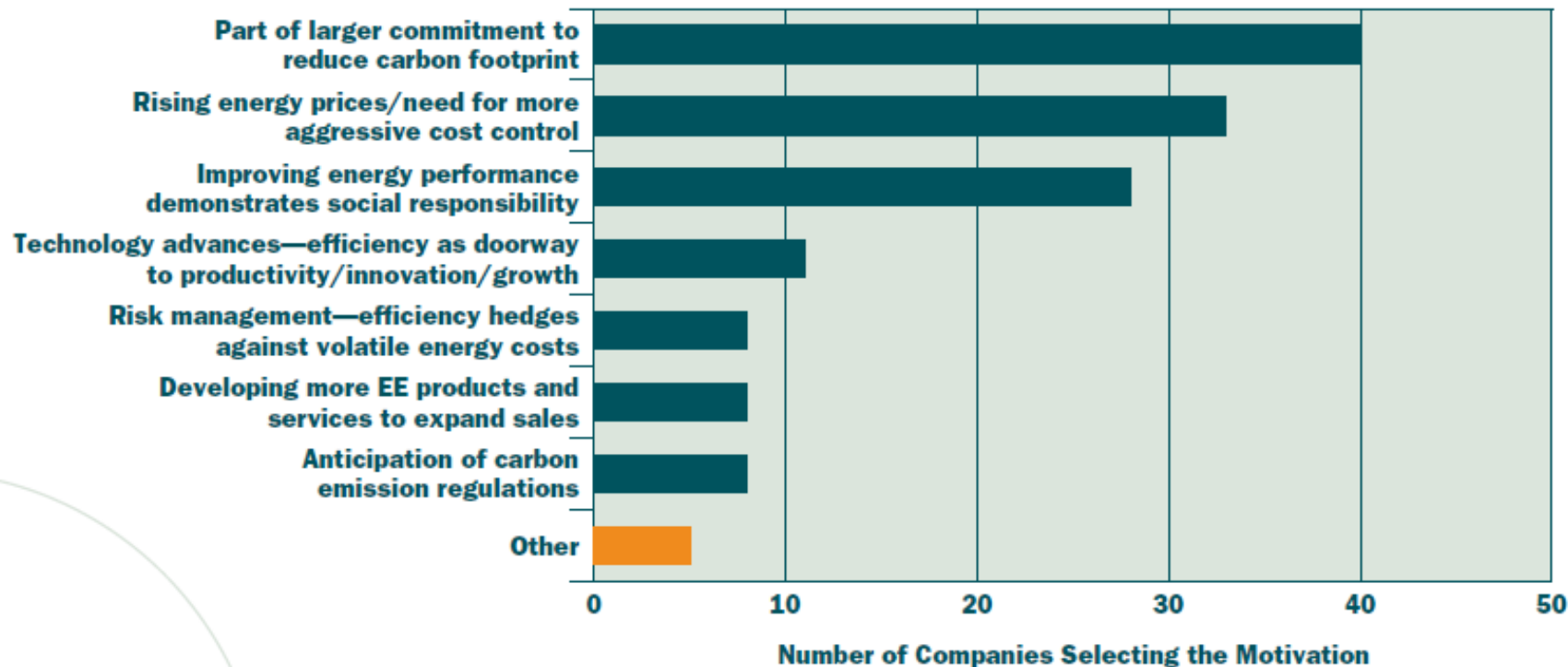
	# Companies	Percent
Within Two Years	27	57.4%
After 2 Years, but Before 4	20	42.6%
Total	47	100.0%

Where do you think energy prices will be in 2014?



Motivations for EE Strategies

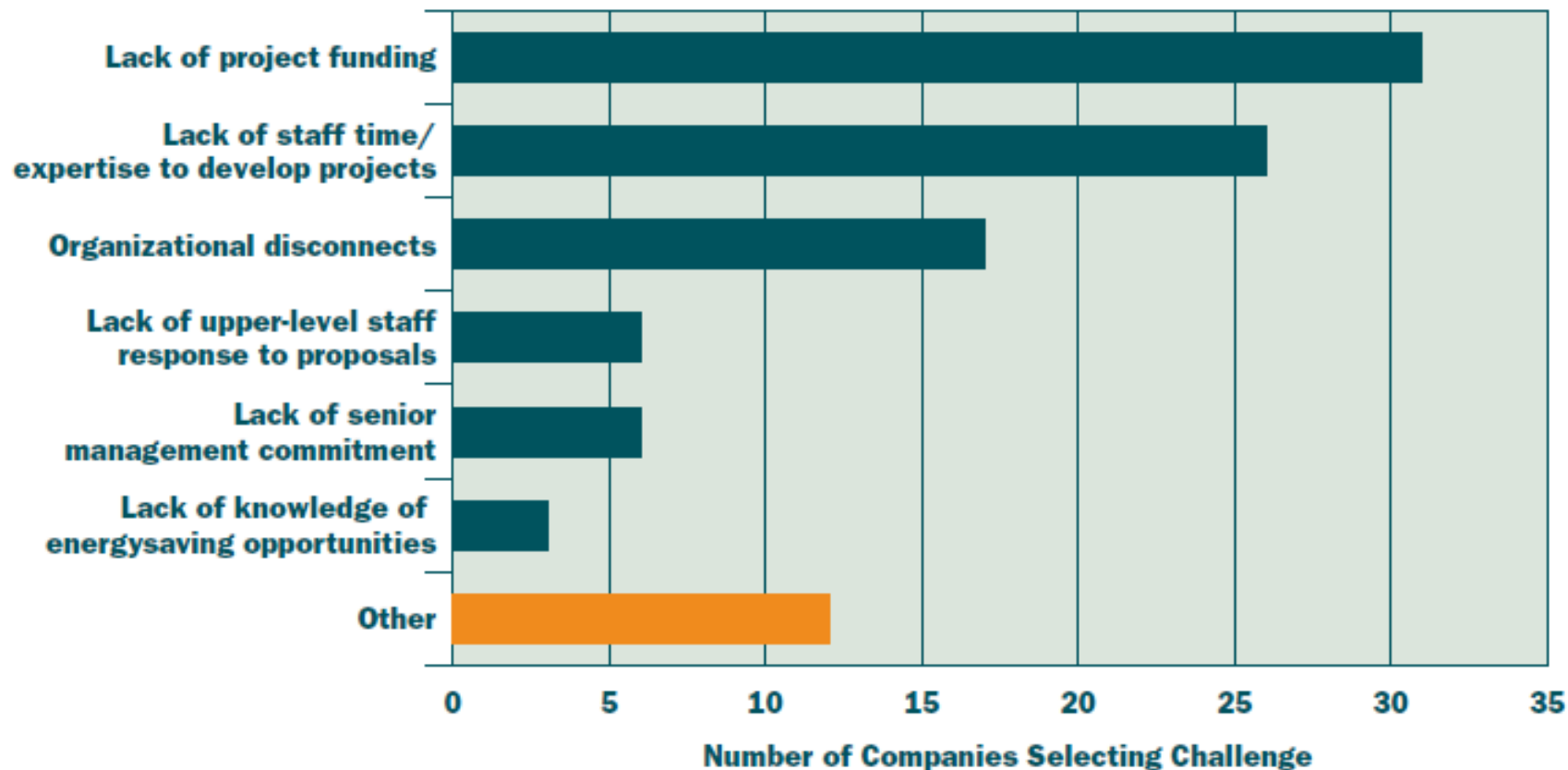
Pew Center Survey Respondents' **Leading Motivations** for Efficiency Strategies



Source: Pew Center 2009.

Challenges/Barriers to EE in Internal Operations

Greatest Challenges to Implementing Energy Efficiency Strategies



Source: Pew Center 2009.

- UTC: Highly decentralized company, but all business units focused on efficiency
- IBM: Parlayed internal expertise in efficient data centers into a customer offering
- Dow Chemical: Uses about the same amount of energy annually as Australia
- Toyota: Highly energy efficient auto manufacturing process
- PepsiCo: Leading edge of companies focused on supply chain energy efficiency
- Best Buy: Focus is on marketing energy efficiency solutions to customers

The 7-Habits of Highly Efficient Companies

1. Efficiency is a core strategy
2. Leadership & organizational support is real & sustained
3. Company has SMART energy efficiency goals
4. Strategy relies on a robust tracking & measurement system
5. Organization puts substantial resources into energy efficiency
6. Energy efficiency strategy shows results
7. Company effectively communicates results



"That is not one of the seven habits of highly effective people."

Habit 1: Efficiency is a Core Strategy

Habit 2: Leadership is Real & Sustained



- UTC: Broad corporate commitment to eliminate all forms of waste
- Toyota: Energy efficiency tied in to kaizen philosophy of continuous improvement
- Dow: Energy efficiency is a matter of competitive survival



- For companies with strong EE leadership and support:
- At least 1, full-time staff is responsible for energy performance
 - Energy performance results affect individuals' career advancement paths
 - Employees are empowered, rewarded for energy innovation

Habit 3: Company has SMART energy efficiency goals



- PepsiCo: Big Hairy Audacious Goals—purposefully set as stretch targets
 - Targeting 20% electricity; 25% fuel; 20% water savings by 2015 against a 2006 baseline
- UTC: Moved to absolute GHG reduction goal after years of energy efficiency improvements
 - 2010 target to reduce CO₂ 12% below 2006 baseline
- Dow Chemical: Re-upped on efficiency targets after exceeding previous goal
 - New target: 25% efficiency improvement by 2015 off a 2006 baseline

Habit 4: Strategy relies on robust tracking and measurement system

IBM's Business Intelligence Energy Management Reporting System

Rank Num	Locations	Geographies / IOTs	Countries	Previous Year YTD Usage (MWh)	Current Year YTD Usage (MWh)	Year to Year PCT Change	Avg CY Rate (\$/MWh)	YTD \$K Impact
1	Location 1	North America IOT	United States	438,512	406,926	-7.2%	\$80.13	-\$2,531
2	Location 2	North America IOT	United States	376,767	343,814	-8.7%	\$85.29	-\$2,811
3	Location 3	North America IOT	United States	212,888	193,991	-8.9%	\$81.24	-\$1,535
4	Location 4	North America IOT	United States	118,050	125,481	6.3%	\$56.71	\$421
5	Location 5	North America IOT	United States	151,824	148,770	-2.0%	\$52.05	-\$159
6	Location 6	North America IOT	United States	90,099	83,173	-7.7%	\$81.45	-\$564
7	Location 7	North America IOT	Canada	113,449	104,042	-8.3%	\$41.28	-\$388
8	Location 8	Southwest Europe IOT	France	47,704	63,622	33.4%	\$71.35	\$1,136
9	Location 9	North America IOT	United States	64,357	64,954	0.9%	\$83.44	\$50
10	Location 10	North America IOT	United States	94,564	87,572	-7.4%	\$73.70	-\$515
11	Location 11	North America IOT	United States	44,031	42,191	-4.2%	\$118.21	-\$218
12	Location 12	North America IOT	United States	50,148	49,553	-1.2%	\$68.50	-\$41
13	Location 13	Northeast Europe IOT	United Kingdom	45,023	42,971	-4.6%	\$119.66	-\$246
14	Location 14	North America IOT	United States	38,308	37,830	-1.2%	\$114.23	-\$55
15	Location 15	Latin America GMT	Brazil	45,062	52,163	15.8%	\$154.74	\$1,099
16	Location 16	North America IOT	United States	44,714	47,107	5.4%	\$123.49	\$295
17	Location 17	Northeast Europe IOT	United Kingdom	42,061	43,418	3.2%	\$113.91	\$155
18	Location 18	Northeast Europe IOT	Ireland	25,544	21,271	-16.7%	\$113.40	-\$485

Recreated from image provided courtesy IBM (2009).

Habit 5: Org. puts resources into EE

Habit 6: EE strategy shows results



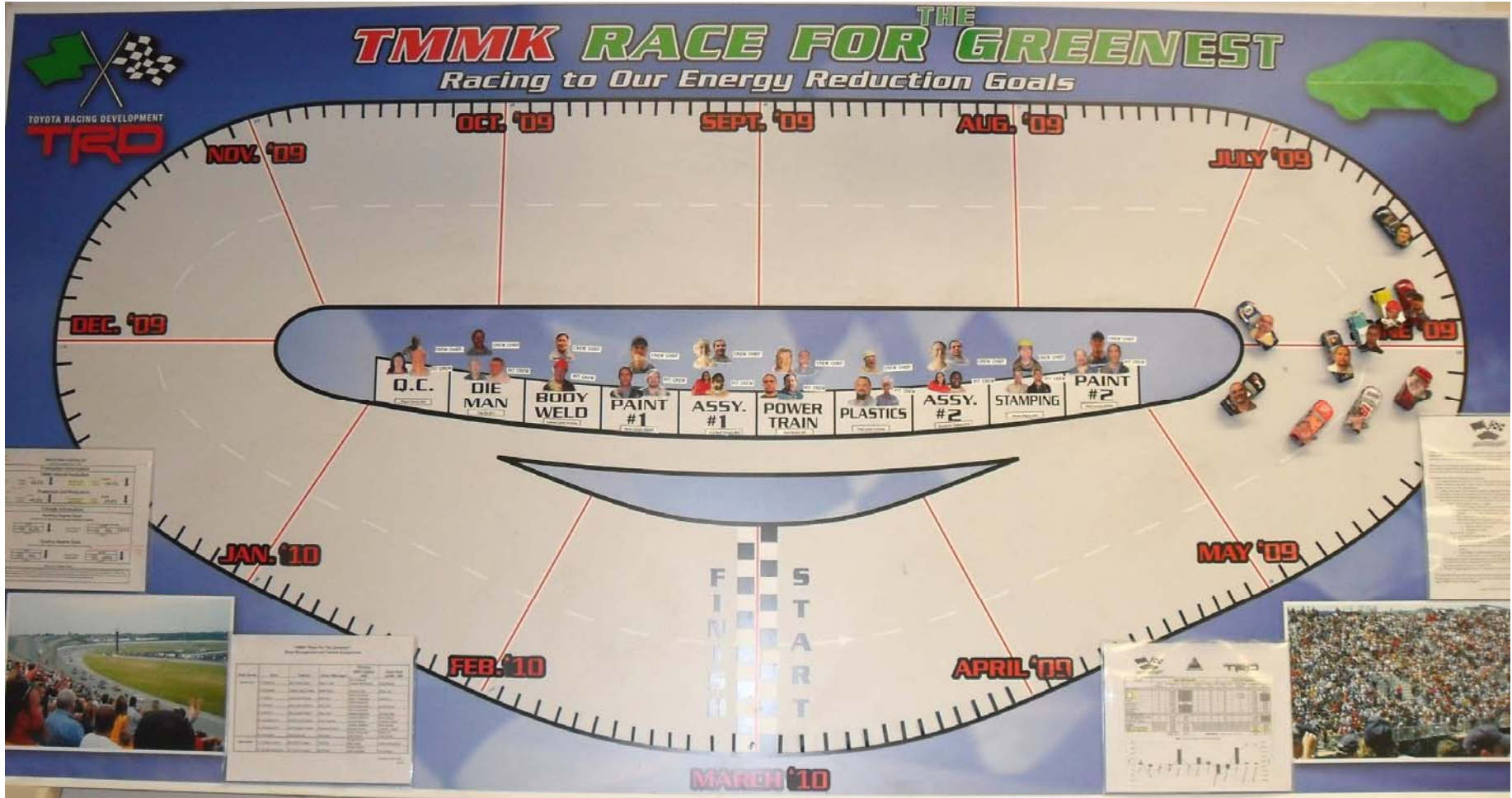
- **PepsiCo:**

- Resources: 2% of company's capital budget goes to a Sustainable Investment Fund
- Results: Saved \$100 million and prevented the release of 170,000 tons of CO₂ from 2006-2008

- **IBM:**

- Resources: \$9 million invested over & above routine operating expenses; considers co-benefits to EE investments, including increased productivity, improved worker morale, and broader innovation value
- Results: Saved \$26.8 million and prevented 142,000 tons of CO₂ in 2009.

Habit 7: Company Effectively Communicates Results



www.pewclimate.org/energy-efficiency

