

WHERE BUSINESS



GREENING UP YOUR BOTTOM LINE

Measuring Sustainability- Paul Tangredi

October 21, 2009

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Who We Are

- > ECS, Inc., now an employee owned company, was founded in 1982 by Mark Hellstein.
- > ECS currently has 12 offices covering the Northeast, Southeast, and Mid-west
- > The staff includes over 200 scientists, engineers, and support professionals passionate about what they do
- > Current revenues of \$25 million
- > Services include environmental assessment and remediation, sustainability and energy consulting, and geothermal heat pump installations

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Our Services

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> Environmental Consulting

- All aspects including assessment, remediation, compliance, indoor air quality, design and construction

> Energy Consulting

- Sustainability Planning
- Auditing and Energy Planning
- Solar Development
- GHG Assessments
- Geothermal Heat Pump Installation
- Residential Energy Services

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What's Your Baseline?

- > Understanding how sustainability applies to your business
 - Large manufacturer vs. small office operation
 - Evaluating business processes
 - Awareness of upstream/downstream activities
 - Tracking results verses tasks
- > Putting your business in context- Define your stakeholders
 - Community
 - Consumers
 - Employees
 - Regulators

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What Are Communities Measuring?

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> Pioneer Valley Sustainability Network
research of community based
sustainability measures

- Environmental Quality Indicators
- Carbon and Energy Indicators
- Health Indicators
- Civic Engagement Indicators
- Waste Indicators

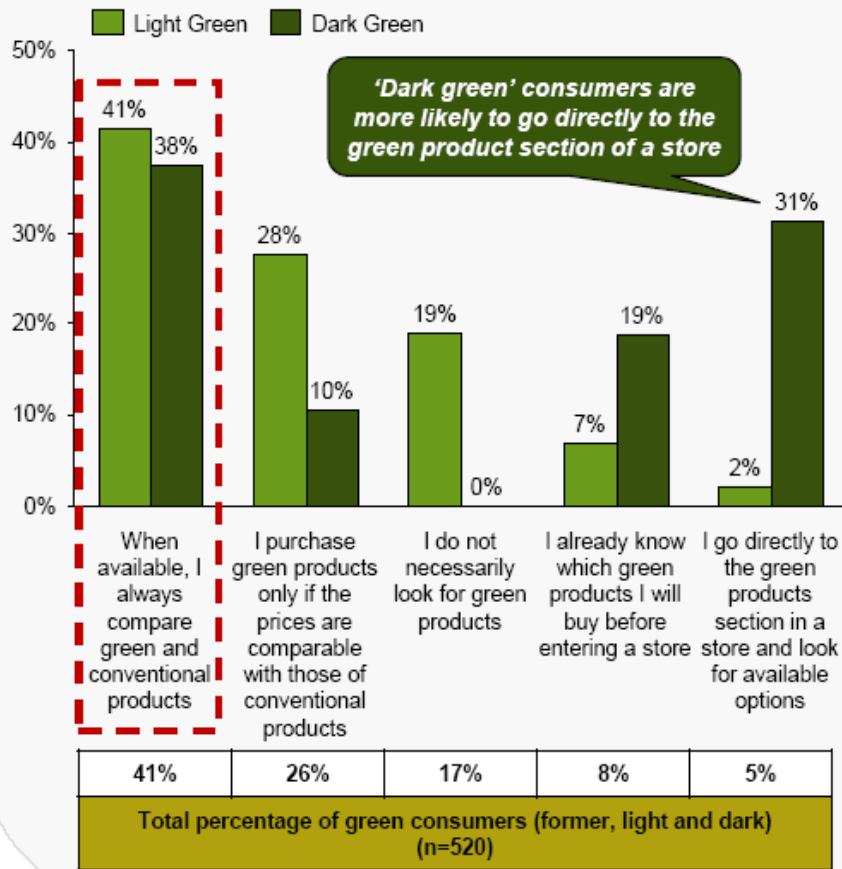
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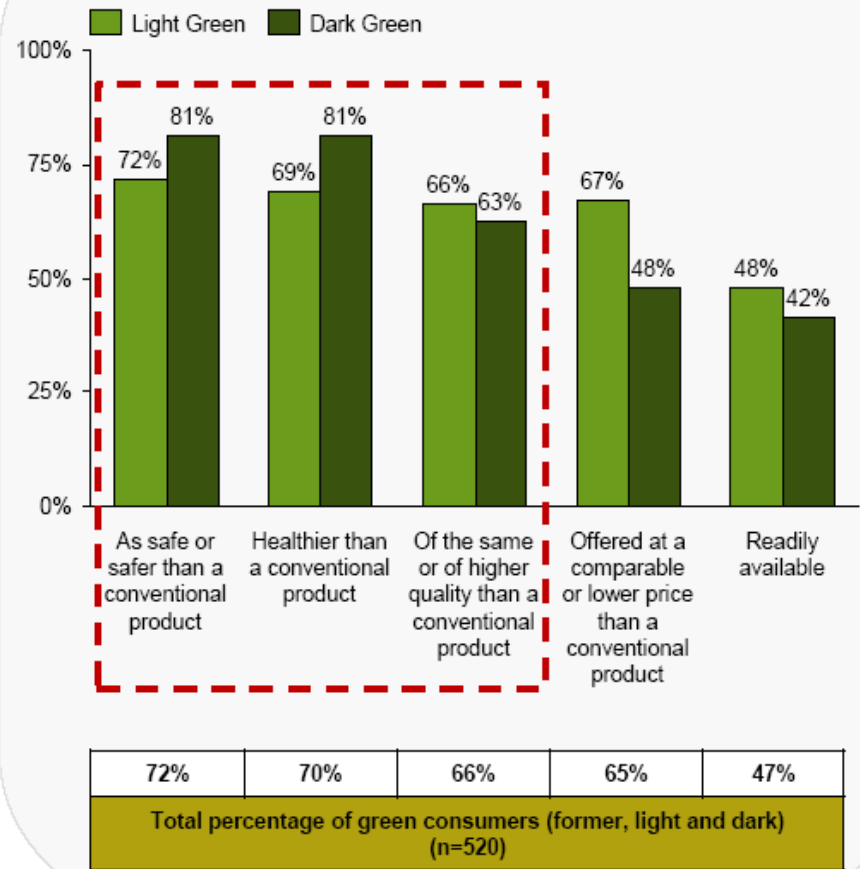
Measuring What Consumers Value

While at the store, green consumers tend to compare green and conventional products. A green product needs to be superior or at least at par with its conventional counterpart to be considered

In-Store Behavior¹



Top 5 Factors for Considering Green vs. Conventional Products



Note: ¹ Top 5 statements describing in-store purchase behaviors

S5: Please select the option that best describes your purchase behavior of green products. Consider only those green items purchased by you or by someone in your household.

Q1: Which of the following statements best describes your green purchase behavior when you are in a store?

Q7: Please select the top 5 factors you consider when buying a green product as compared to a conventional product. (Multiple responses accepted)

Measuring Your SBP's

- > It all starts with everything you purchase!!
 - What you purchase goes in one of two directions:
 - Finished Goods and Services
 - Waste Stream
 - Where does it come from?
 - How much do you buy?
 - How much does what you buy cost?
 - Are there alternatives to what you buy (recycled content)?
 - Can you reduce how much you buy?
 - Can any of the waste be re-used?
 - Can any of the waste be recycled?

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What Can We Measure From Our Purchases?

- > **Energy-** electricity, oil, gas, propane
 - BTU/Sq. Ft./year
- > **Waste-** solid, waste water, hazardous waste
 - Solid waste disposal- lbs, tons, etc.
 - Hazardous waste disposal- gallons
- > **Transportation-** fleet deliveries
 - Vehicle miles and trips
 - Fuel gallons consumed per year
- > **Water-** domestic, process, make-up, etc.
 - Gallons consumed per year

What Can We Measure From Our Purchases?

> **Raw Materials/Supplies-**

- Volume purchased
- Volume purchased/unit sold
- Recycled content
 - » Raw materials (plastic resins, etc.)
 - » Paper, disposables
 - » Cleaning supplies
- Refrigerant consumed (Re-charge)
 - » Type and pounds

> Do we have enough data to calculate our carbon footprint or carbon intensities?

Tracking What You Purchase

Baseline Description	Quantity Purchased	Units	Cost	CO2 Emissions	CH4 Emissions	N2O Emssions	Units
Utilities							
Energy							
Electric Consumption- Annual KWH	373,000		\$58,000.00	339,019.70	29.84	5.60	lbs
Gas Consumption- Annual therms	11,885		\$15,000.00	139,051.29	13.10	0.26	lbs
LNG Consumption- Annual gallons	n/a		\$0.00				
Oil Consumption- Annual gallons	n/a		\$0.00				
Renewables	n/a		\$0.00				
Water and Sewer							
Water- Annual gallons or cubic ft	8000 cubic ft		\$1,687.00				
Optional							
Voice	phone service provider		\$40,000.00				
Data	phone service provider		included above				
Video	n/a		\$0.00				
Baseline Description	Quantity Purchased	Units	Cost				
Waste Disposal							
Solid Waste	Allied Waste		\$4,600.00				
Electronic Disposal							
Composting	n/a						
Hazardous Waste	n/a		\$0.00				
Recycled Waste	Allied Waste		\$0.00				
Shredding	Iron Mountain		\$3,600.00				

Tracking What You Purchase

General Supplies							
Copy/Printer Paper							
Toner Cartridges	Printers/Fax		\$40,000.00				
Corporate Letterhead	Not purchased since 2001		\$0.00				
Invoices/Envelopes	Envelopes		\$5,000.00				
Filing Materials (folders, etc.)	n/a		\$0.00				
Marketing Materials/Collateral	still waiting on data from Marketing Department						
Post Cards	still waiting on data from Marketing Department						
Tri-Folds	still waiting on data from Marketing Department						
Coffee	Coffee Pause		\$3,500.00				
Coffee cups- Styrofoam/Paper	Cups, plates, plasticware		\$550.00				
Vending Services	n/a		\$0.00				
Soda/Water	Committee Meetings		\$500.00				
Snacks	n/a	n/a					
Baseline Description	Quantity Purchased	Units	Cost				
Facilities							
Light Bulbs	n/a		\$0.00				
Toilet Paper	Mansfield Paper		\$670.00				
Paper Towels	Mansfield Paper		\$560.00				
Lawn Care and Landscaping Products	Lawn Care/Snow Removal		\$13,000.00				
Pesticides	included above		\$0.00				
Weed Killer/Preventer	included above		\$0.00				
Refrigerants							
Electronic Equipment							
Computers		137					
Printers		81					
Monitors		99					
PDAs		3					
Servers		22					
Infrastructure		77					
Cell Phones	various		\$7,000.00				
Cleaning Chemicals/Supplies	Cleaning Contract		\$26,400.00				

Tracking What You Purchase

Employees							
Accident- Lost time							
Recordables							
Total Sick Days							
Educational Reimbursements							
Other							
CO2 Equivalent Factors				1.00	21.00	310.00	GWP
Total GHG Emisisions- Scope I				139,051.29	275.17	5.50	lbs
Total GHG Emissions- Scope II				339,019.70	626.64	117.50	lbs
Total GHG Emissions- Scope I and II				478,070.99	901.81	123.00	lbs
Total CO2 Equivalent Emissions tonnes				216.81	0.41	0.06	217.28

Energy Use Index (EUI)

TABLE 1 2003 CBECS¹ National Average Source Energy Use and Performance Comparisons by Building Type

Building Use Description ²	Average Source EUI ³ (Kbtu/Sqft)	Average Percent Electric	Average Site EUI (Kbtu/SqFt)
Education	170	63%	76
K-12 School	<i>See Target Finder / Portfolio Manager</i>		
College/University (Campus-level)	280	63%	120
Food Sales	681	86%	225
Grocery Store/Food Market	<i>See Target Finder / Portfolio Manager</i>		
Convenience store (with or without Gas Station)	753	90%	241
Food Service	786	59%	351
Restaurant/Cafeteria	612	53%	302
Fast Food	1306	64%	534
Health Care: Inpatient (Specialty Hospitals, Excluding Children's)	468	47%	227
Hospital (Acute Care, Children's)	<i>See Target Finder / Portfolio Manager</i>		
Health Care: Long Term Care (Nursing Home, Assisted Living)	255	54%	124
Health Care: Outpatient	183	72%	73
Clinic/Other Outpatient Health	219	76%	84
Medical Office	<i>See Target Finder / Portfolio Manager</i>		

Energy Use Index (EUI)

Lodging		194	61%	87
	Dormitory/Fraternity/Sorority	<i>See Target Finder / Portfolio Manager</i>		
	Hotel, Motel or inn	<i>See Target Finder / Portfolio Manager</i>		
Mall (Strip Mall and Enclosed)		271	71%	107
Office		<i>See Target Finder / Portfolio Manager</i>		
	Bank / Financial Institution	<i>See Target Finder / Portfolio Manager</i>		
Public Assembly		143	57%	66
	Entertainment/Culture	265	63%	95
	Library	246	59%	104
	Recreation	136	55%	65
	Social/Meeting	102	57%	52
Public Order and Safety		189	57%	90
	Fire Station/Police Station	157	56%	78
	Courthouse	<i>See Target Finder / Portfolio Manager</i>		
Service (Vehicle Repair/Service, Postal Service)		150	63%	77
Storage/Shipping/Nonrefrigerated Warehouse		56	56%	25
	Self-storage	12	44%	4
	Non-Refrigerated Warehouse	<i>See Target Finder / Portfolio Manager</i>		
	Distribution/Shipping Center	90	61%	44
Refrigerated Warehouse		<i>See Target Finder / Portfolio Manager</i>		
Religious Worship		83	52%	46
Retail (Non-mall Stores, Vehicle Dealerships)		191	67%	82
	Retail Stores	<i>See Target Finder / Portfolio Manager</i>		
Other⁴		213	56%	104

Sustaining Sustainability

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- > If you're not Wal-Mart, PepsiCo, GMCR with or one of the other big dogs with access to lots of data, keep it simple to start.
- > Measure results, manage initiatives and tasks
- > Track at least quarterly against annual goals
- > Celebrate improvements!!
- > Engage employees to continuously improve
- > Remember, if it doesn't get measured, it doesn't get done!!

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Questions

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