Sustainability Metrics

A Tale of 2 Companies

Hosted at: USA
Vision Statement

The FMCC is the resource and voice for Facility Management Consultants worldwide to leverage our collective expertise to benefit IFMA members, and the Facility Management profession.

Mission Statement

To serve as a global Facility Management consultants' resource and representative for Knowledge Sharing, Networking and Business Opportunities in support of our impact upon the built environment and value to their clients.
How We Can Help

Ask the Expert

Find a Consultant by Location & Expertise

Online Educational Resources

Locate a Speaker

fmcc.ifma.org
Today’s Presentation

Moderator:
Josh Amos, IFMA Components Liaison

Presentation Title:
Sustainability Metrics: A Tale of 2 Companies

Presenter(s): Lynn Baez, CFM, FMP, SFP
Alana F. Dunoff, FMP, IFMA Fellow
Presentation Logistics

• Polls will be used throughout the webinar
• Q&A at the end of the presentation
• Quick survey at the conclusion of the Webinar
• PowerPoint & Recorded Webinar will be available online via FMCC’s Website (fmcc.ifma.org)
• Your Participation is Greatly Appreciated!
Interested in Sponsoring FMCC? Contact Joshua.amos@ifma.org
• 14 years’ experience in facility management and environmental fields.
• Previous Environmental Researcher for Region 2, EPA.
• Previous Corporate FM for Dr Pepper Snapple Group (DPS).
  • Served on DPS Environmental Committee for its CSR Goals.
  • Led all internal and external audits and environmental reporting.
  • Led DPS Headquarters to obtain LEED EB O&M Gold in 2012.
• IFMA’s Director on the Board of Directors.
  • Liaison for Sustainability Advisory Group and the EHSC Council.
  • Steward of SFP credential.

Lynn N. Baez, CFM, SFP, FMP
IFMA Director, Board of Directors
Director of Workplace Services
Cushman & Wakefield for the Ericsson Account
Alana F. Dunoff, FMP, IFMA Fellow

Strategic Facility Planner, AFD Facility Planning
Adjunct Instructor, Temple University
IFMA Qualified Instructor, FMP

- 22 years’ experience FM
- MS Facility Planning & Management
- Director on the Board of Directors 2003-2005
- President of Philadelphia Chapter of IFMA 2001
- Current Chair FM Educators SIG
- 2013 IFMA Distinguished Member
- Adjunct professor 12 years
- Bit of a data geek
- PJM sustainability initiative:
  - Program development
  - Base line data and metrics
Remember 1990?

The Americans With Disabilities Act of 1990

Passed by Congress in 1990, the Americans with Disabilities Act (ADA) is the nation's first comprehensive civil rights law addressing the needs of people with disabilities, prohibiting discrimination in employment, public services, public accommodations, and telecommunications. EEOC was given enforcement authority for Title I of the Act, the employment discrimination provisions. Congress provided that Title I would not take effect for two years in order to allow the Commission time to develop regulations and technical assistance, time to conduct comprehensive public education programs on the new disability law, and time for employers to adjust to the new requirements.
Sustainability is here to stay
How do we integrate into daily operations?
Agenda

2 Companies

Data (collection, dashboards, metrics)

Integration
- Communications
- Vendor Relationships
- Track, Measure & Monitor

Wrap up and Q&A
Participant Poll #1

Are you tracking sustainability data?
The 2 Companies
PJM Interconnection LLC

- Manage High Voltage Electric Power Grid
- Operate Largest Wholesale Energy Market
PJM as Part of the Eastern Interconnection

- Formed 1927
- 26% of generation in Eastern Interconnection
- 28% of load in Eastern Interconnection
- 19% of transmission assets in Eastern Interconnection

KEY STATISTICS

- PJM member companies: 750+
- Millions of people served: 60
- Peak load in megawatts: 163,848
- MWs of generating capacity: 185,600
- Miles of transmission lines: 65,441
- GWh of annual energy: 832,331
- Generation sources: 1,365
- Square miles of territory: 214,000
- Area served: 13 states + DC
- Internal/external tie lines: 142

21% of U.S. GDP produced in PJM

- 4 building primary campus
  - 250,000 GSF
- 2 live control centers 24/7

They think about energy & consumption all day long
- They implement sustainable projects all the time
- No formal sustainable “program”
- No trackable data/metrics
- Their redundancies have redundancies
Dr Pepper Snapple Group (DPS)

- Beverage Company
- Direct store delivery and warehouse delivery capabilities
  - 21 manufacturing centers
  - 115 distribution centers
Dr Pepper Snapple Group
(creator, producer, and distributor of flavored beverages)

- Became a public company in 2008
- Major user of water and energy for production and distribution of products

- ~220 locations in North America
  - 21 Plants produce 50+ products
  - Headquarters, Plano, TX
    - Food grade laboratories
  - Various field offices and distributions

- Shareholders, consumers and customers wanted information on sustainable practices/goals
- Had to build a system for responses for Corporate, Social and Environmental activities
- Wanted to incorporate Headquarters in leading sustainable activities
Data
Base Line Data

Point in time

Collect data consistently

Identifying the data that is critical (KPI)

Don’t collect data that you won’t use or don’t care about
POWER OF SMART DATA

ACTIONABLE KNOWLEDGE SYSTEM

Smart data
- Surveys
- Observation
- Interviews
- Automated systems

Data & Information

Performance Measures
- Targets
- Metrics
- Benchmarks
- Best Practices
- KPI

Decision Tools
- Dashboards
- Scorecards
- Business Case
- Financial Analysis
- RFP Docs

Smart decisions
PJM Sustainability Initiative

Collect operations baseline data
- Understand existing conditions
- Tell sustainability stories

Build/implement a sustainability team
- Educate and engage employees
- Evaluate future initiatives
- Bottom up effort
Data Collection

Utilities
- Electricity (transmission/supplier)
- Gas
- Water

Waste
- Compost
- Recycling 100% landfill diversion
- Trash to steam

Custodial
- Total green clean

Office Supplies
- Total ‘green’ purchases
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**Raw Utility Data – Labor of Love**

**Shout out to the coop who input all of this manually**
Data from vendor partner

We rely on vendor data... but is it reliable data?

PJM Green Cleaning Report 2013

Listed below is a breakdown of the Green Cleaning Standards currently being maintained with recommendations:

**Restroom Products**
- 85%
  - No Changes Recommended
  - Trash Liners: 0% Green
  - Recommendation: Trash Liners can be used with recycled paper, costs increase.

**Daily Cleaning Products**
- 65%
  - No Changes Recommended
  - Periodic Cleaning Chemicals: Carpet Cleaning/Floor Care—40% Green
    - Carpet Cleaning Chemicals meet CRI Standards, Floor Cleaning do not.
  - Walk-off Matting: 95% Green
    - No Changes Recommended
  - Cleaning Equipment: 80% Green
    - Note: Of the Equipment that can be certified, No standard is available on some items
    - Recommendation: Mop Buckets can be changed to used recycled water and Micro-Fiber Mops—Cost is minimal

**Overall Green Clean**
- 72%
  - Overall it is estimated that JMI is operating the Green Cleaning Program
  - Overall it is estimated that JMI is operating the Green Cleaning Program
  - We have determined that 2012 level to be 67%.

119 Cherry Lane, Suite 100, Doylestown, PA 18901 P: 215.992.2071 jmicleane.com
Data from Vendor partner

Recycled products increased AND then dipped! The culprit - ink toner
Dashboards & Metrics
### PJM OM Dashboard - Utilities

#### Electric PECO - Transmission

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#### Electric HESS - Supplier

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#### Water IFMA Bench

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<td>20.83</td>
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<td>CTC</td>
<td>$12,516</td>
<td>$1,043</td>
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<tr>
<td>VF</td>
<td>1</td>
<td>0.2</td>
<td>8.40</td>
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</tr>
<tr>
<td>MIL</td>
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<td>na</td>
<td>na</td>
<td>na</td>
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**Recycling/SINGLE Stream (SWS)**

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<td>VF</td>
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<td>4.09125</td>
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**MSW/ Waste (SWS)**

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<tr>
<td>VF</td>
<td>53.36</td>
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<td>80.98</td>
<td>6.75</td>
<td>64.97</td>
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<td>41%</td>
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<td>0.2</td>
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**Cleaning (JMI)**

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</thead>
<tbody>
<tr>
<td>VF</td>
<td>65%</td>
<td>72%</td>
<td>72%</td>
<td>78% Green Clean Ops</td>
</tr>
<tr>
<td>MIL</td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

**Procurement - Office Supplies (Office Depot)**

<table>
<thead>
<tr>
<th></th>
<th>$ spent on Green supplies 2012</th>
<th>$ spent on Green supplies 2013</th>
<th>% Green of total supplies 2012</th>
<th>% Green of total supplies 2013</th>
<th>% of total supplies YTD 2014</th>
<th>$ Spent on green supplies 2014</th>
<th>Target 2014</th>
</tr>
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<tbody>
<tr>
<td>VF</td>
<td>$ 43,410</td>
<td>$ 43,836</td>
<td>31%</td>
<td>33%</td>
<td>29%</td>
<td>$ 39,181.00</td>
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<tr>
<td>MIL</td>
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<td></td>
</tr>
</tbody>
</table>
All buildings illustrate a decline or status quo in energy consumption; likely reason - the effect of the implementation of more energy efficient systems during recent building renovations.

Electricity Consumption (Hess)
2012-2014 Average Monthly KWH

- CC: 653,409
- SC: 53,627
- TC: 99,204
- CTC: 147,482
- Milford: 541,400
Oh No! Most facilities show a significant increase in water consumption in 2014.

Water Consumption 2012-2014
Average Monthly Gallons

<table>
<thead>
<tr>
<th>Year</th>
<th>CC</th>
<th>TC</th>
<th>CTC</th>
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<tbody>
<tr>
<td>2012</td>
<td>113,750</td>
<td>23,083</td>
<td>72,333</td>
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<tr>
<td>2013</td>
<td>237,667</td>
<td>36,083</td>
<td>100,333</td>
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<tr>
<td>2014</td>
<td>237,667</td>
<td>36,083</td>
<td>100,333</td>
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</table>

The Analysis
# DPS Samples

## Performance Checklists

### Functional Performance Checklist

**Dr. Pepper Snapple Group Air Handling Unit**

- **Location:** 6301 Legacy Dr., Plano, TX 75024
- **Equipment ID:** AHU-A
- **Date:** 5/23/2011

### System Setpoints & Monitoring

#### System Setpoints

1. **Discharge air temperature setpoint:** 50-55 degrees (user adjustable), 55 in unoccupied
2. **Occupied heating mode space temperature setpoint:** 72 - 2 degree deadband
3. **Occupied cooling mode space temperature setpoint:** 72 + 2 degree deadband
4. **Setback temperature:** 65 degree
5. **OA damper minimum position:** 15%
6. **Max % Return closed:** 100%
7. **Supply duct static pressure setpoint:** 1-1.5 inches static (see notes)
8. **Return duct static pressure setpoint:** 1” static (Relief Air dampers modulate of this)
9. **Off mode mixed air low temperature control setpoint:** 45 degree F
10. **Enthalpy when OA enthalpy is greater than:** 40
11. **Enthalpy when OA enthalpy is less than:** 22
12. **RAF Speed Offset from RAF:** +13.00%

#### System Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Holiday</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1:00</td>
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## Total Ongoing Consumable Purchases

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<tr>
<th>Date of Purchase</th>
<th>Purchaser</th>
<th>Supplier</th>
<th>Item Purchased</th>
<th>Cost per Item</th>
<th>Quantity Purchased</th>
<th>Total Value as Purchased</th>
<th>Category</th>
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<tr>
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<td>Lab Safety Supplies</td>
<td>CHEM IPA SLTN 70 PCT 4 LT PLAS</td>
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<td>$62.40</td>
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<tr>
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<td>BOTTLE 30ML BOSTON ROUND CS48</td>
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<td>PIPETTOR FAST RELEASE 10ML</td>
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</table>
DPS Samples

3rd Party Data Submissions

Online Payment > Bill Pay / Acct Info > View Consumption History

Welcome, Linda. Logout

BILLING ACCOUNTS
LATEST BILL
PAST BILLS
PAY NOW
CONSUMPTION
MY PROFILE

INFORMATION
PAYMENT HOME
REGISTER NOW!
LOGIN NOW!
BILL PAY / ACCT INFO
CUSTOMER SERVICE
TERMS & CONDITIONS
FAQS
HELP

BILLING ACCOUNT:
DR PEPPER/7-UP INC.
ATT: LYNN BAEZ FACILITIES DEPT
5301 LEGACY DR
PLANO, TX 75024

SERVICE LOCATION:
5301 LEGACY DR
PLANO, TX

Account #: 176855-129534

Select an Account:
176855-129534 5301 LEGACY DR

Comparison
Current Month: 63,660 gals.
1 Year Ago This Month: 367,000 gals.
City-wide Avg This Month: 8,760 gals.

Monthly History
Consumption in Gallons

<table>
<thead>
<tr>
<th>Year</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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</thead>
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<td>2011</td>
<td>227,500</td>
<td>205,500</td>
<td>302,500</td>
<td>434,500</td>
<td>254,500</td>
<td>778,500</td>
<td>1,341,000</td>
<td>2,192,000</td>
<td>1,060,000</td>
<td>891,000</td>
<td>220,000</td>
<td>83,500</td>
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<tr>
<td>2010</td>
<td>139,500</td>
<td>136,500</td>
<td>197,000</td>
<td>329,500</td>
<td>608,500</td>
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<td>2,423,000</td>
<td>1,708,000</td>
<td>715,500</td>
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<tr>
<td>2009</td>
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<td>1,194,100</td>
<td>1,017,000</td>
<td>170,000</td>
<td>163,000</td>
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</table>

View Meter Reads
### Audit Forms

**Audit Form - Building Exterior (excerpted from I-BEAM)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition</th>
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</thead>
<tbody>
<tr>
<td>Building Shell</td>
<td>X</td>
</tr>
<tr>
<td>Potential for infiltration through doors (e.g., condition of weather-stripping?)</td>
<td>X</td>
</tr>
<tr>
<td>Potential for infiltration through walls (e.g., no cracks in exterior panels, shell penetrations?)</td>
<td>X</td>
</tr>
</tbody>
</table>

### Sub-metering Data

<table>
<thead>
<tr>
<th>Units</th>
<th>Start Date</th>
<th>End Date</th>
<th>Water Use</th>
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</thead>
<tbody>
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<td>11/14/2011</td>
<td>12/13/2011</td>
<td>63,500.00</td>
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<td>Gallons</td>
<td>10/14/2011</td>
<td>11/13/2011</td>
<td>220,000.00</td>
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<tr>
<td>Gallons</td>
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<td>Gallons</td>
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<td>9/13/2011</td>
<td>1,050,000.00</td>
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<tr>
<td>Gallons</td>
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<td>8/15/2011</td>
<td>2,192,000.00</td>
</tr>
<tr>
<td>Gallons</td>
<td>6/16/2011</td>
<td>7/15/2011</td>
<td>1,341,000.00</td>
</tr>
<tr>
<td>Gallons</td>
<td>5/15/2011</td>
<td>6/15/2011</td>
<td>778,500.00</td>
</tr>
</tbody>
</table>

**Total Water Use:** 6,536,000.00

**Percent of 3-Yr Average:** 49.3%

**Percent Reduction:** 50.7%
Integration
Integration Elements

**Vendor Relationships**
- Current vendors (policy and process changes)
- New vendors (RFI, RFP, RFQ)

**Communication & Rollout**
- Intranet
- SharePoint
- Posters, Contests, etc.
- Websites
- Social Media

**Track, Measure & Monitor**
- Benchmarking
- Best Practices
- Metrics
- Continuous improvement
- Tools
- Resources
Vendor Relationships
## Current Vendors

**Hosted Kickoff, Workshops and Training Sessions**

**LEED EB Corporate Headquarters Materials and Resources Credit Kick-Off**

August 31, 2011

<table>
<thead>
<tr>
<th>Company</th>
<th>Service Type</th>
<th>Vendor Credits</th>
<th>Vendor Comments</th>
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</thead>
<tbody>
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<td>AHI</td>
<td>Janitorial</td>
<td>SS2, MRpre1, MR1, MR3, MR6-9, IEQpre3, IEQ3.1-3.5</td>
<td>SS2: All: MR 6-9 (applicable materials): IEQ 3.1-3.5 (All)</td>
</tr>
<tr>
<td>Air Performance</td>
<td>HVAC Flakt Fans</td>
<td>EApre1, EA1, EA2.1, EA2.2, EA2.3, EA3.1, IEQpre1, IEQ1, IEQ1.4</td>
<td>EA1: 7and 8 (Air Handler only)</td>
</tr>
<tr>
<td>Aire Dynamics</td>
<td>HVAC mechanical systems</td>
<td>EApre1, EApre3, EA1, EA2.1, EA2.2, EA2.3, EA3.1, IEQpre1, IEQ1, IEQ1.4</td>
<td>EA1: 7and 8; EA3: All</td>
</tr>
<tr>
<td>Allied Waste Services</td>
<td>Waste Disposal</td>
<td>MRpre2, MR6-9</td>
<td>MR 6-9 (applicable materials)</td>
</tr>
<tr>
<td>Balcones Recycling Inc</td>
<td>Recycling</td>
<td>MRpre2, MR6-9</td>
<td>MR 6-9 (applicable materials)</td>
</tr>
<tr>
<td>Centimark</td>
<td>Roofing</td>
<td>SS7.2, MR3, MR6, MR-7, MR8 - 9</td>
<td>SS7.2: All; MR3; All; MR 6-9 (applicable materials)</td>
</tr>
<tr>
<td>Cohesive Automation</td>
<td>HVAC systems controls</td>
<td>EApre1, EA1, EA2.1-2.2, EA2.3, EA3.1 - 3.2, MR8 - 9, IEQpre1, IEQ1, IEQ1.2</td>
<td>EA1: Except 7 and 8: IEQ 1.2 (Case 1): EQ 1.2: All; IEQ 2.3: All</td>
</tr>
<tr>
<td>Corporate Express/Staples</td>
<td>Office Supplies</td>
<td>MRpreq1; MR1, MR6, MR7</td>
<td>MR1: All: MR 6-9 (applicable materials)</td>
</tr>
</tbody>
</table>
New Vendors

Policies as part of RFI, RFP and RFQ’s

Environmentally Preferable Purchasing Policy
Dr Pepper Snapple Group Headquarters
LEED for Existing Buildings: Operations and Maintenance Version 2009

August 5, 2011

SECTION 1: PURPOSE
The Dr Pepper Snapple Group Headquarters (DPS) facility located at 5301 Legacy Drive, Plano, TX wishes to encourage the purchase and utilization of materials, products, and services that have a minimal impact on the environment and society throughout their life cycle, and to give preference to those companies who supply them. For this purpose, DPS has developed this environmentally preferable purchasing policy for the purchase of goods and materials associated with the operations and maintenance of the facility.

SECTION 2: SCOPE
This policy applies to purchasing practices at DPS that are within the building and site management’s control. Purchasing activity for the building and entire grounds must be tracked and documented.

DPS seeks environmentally preferable and sustainable purchasing of the following types of products:
- Ongoing Consumables (see Section 4.1),
- Durable Goods (see Section 4.2),
- Building materials used in facility Alterations and additions (see Section 4.3),
- Mercury-containing lamps (see Section 4.4),
- Food and beverages (see Section 4.5).

This policy should not be construed as a requirement for DPS to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

2.1 Vendor Product Considerations
DPS acknowledges the value of purchasing sustainable products and requires that vendors support this effort when appropriate and/or possible. DPS requests that all vendors provide recycled content alternatives for goods when available. If a product is available with recycled content, vendor will dispose of that option to the appropriate DPS representative.

DPS also desires to reduce waste generated through daily operations and recognizes that such reduction begins with the material that enters the facility. DPS requests that all items purchased be packaged and delivered with minimal packaging material. DPS reserves the right to request that vendors alter the packaging of goods delivered, when appropriate and/or possible.

SECTION 3: GOALS
The goal of this policy is for DPS to purchase goods in a manner that will protect the environment and public health, conserve natural resources, minimize waste (including landfilling and incineration wastes), reduce toxicity, encourage the growth of a sustainable economy, and evaluate life-cycle costing methods when selecting sustainable products.

SECTION 4: PERFORMANCE METRIC
DPS elects to make purchases that meet product sustainability criteria as defined by the United States Green Building Council Leadership in Energy and Environmental Design (LEED) Reference Guide for Green Building Operations and Maintenance (2009 Edition), where practicable. Sustainable purchase percentage goals (as itemized in the sections below) must be based on total purchases of sustainable goods on a cost basis. Product purchases must be monitored and documented using the
Internal Communications

Headquarters LEED Project

[Diagram showing various categories with percentages such as Sustainable Sites (12%), Energy & Atmosphere (39%), Materials & Resources (18%), Water Efficiency (60%), Regional Priority (0%), Overall Project Completion (22%), and Indoor Environmental Quality (26%).]
Internal Communications

Headquarters LEED Project

Energy & Atmosphere

- EAC1: Energy & Atmosphere Documentation/Compliance
- EAC2: Energy & Atmosphere Performance

MANGO MADNESS

Snapple

Materials & Resources

- MR1: Sustainable Purchasing Policy
- MR2: Solid Waste Management Policy

VENOM ENERGY

- MR3: Sustainable Purchasing - Ongoing Consumables
- MR4: Solid Waste Mgmt - Ongoing Consumables

- MR5: Sustainable Purchasing - Reduced Mercury in Lamps
- MR6: Solid Waste Mgmt - Waste Steam Audit
Track, Measure & Monitor
Tools

- Data Collection Tools/Software
- Best Practices/Benchmarks
- Calculators
- Reporting Tools
- External resources
- Other Resources
Data collection tools

Introducing the Competitors
This year buildings are teaming up with other buildings - and coaches - to work off the waste, making this our biggest competition ever.

Learn the benefits
Get started
Use Portfolio Manager
The new ENERGY STAR Portfolio Manager
How Portfolio Manager helps you save
The benchmarking starter kit
Identify your property type
Enter data into Portfolio Manager
The data quality checker
How Portfolio Manager calculates metrics
Interpret your results
Verify and document your savings
Share and request data
Updates to ENERGY STAR scores with CBECs data
Save energy
Find financing
Earn recognition

The new ENERGY STAR Portfolio Manager

EPA's new ENERGY STAR Portfolio Manager® has been updated to improve its value to users while also providing a more secure online environment. Portfolio Manager is the industry-leading, no-cost online tool that lets you benchmark, track, and manage energy and water consumption and greenhouse gas emissions against national averages.

What's New?
- Improved collaboration with advanced reporting and increased security
- Custom tabs that let you plan and set goals to track both current and future projects
- Performance upgrades, enhanced ease-of-use and powerful new features
- Easier data entry with enhanced graphics, wizards and prompts

www.energystar.gov
PJM Service Center

Year Built: 1979

Current Score: 75
Baseline Score: 75

Metrics Summary

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY STAR score (1-100)</td>
<td>75</td>
<td>75</td>
<td>0(0.0%)</td>
</tr>
<tr>
<td>Source EUI (kBtu/ft²)</td>
<td>195.6</td>
<td>196.4</td>
<td>0.8(0.4%)</td>
</tr>
<tr>
<td>Site EUI (kBtu/ft²)</td>
<td>77.6</td>
<td>75.7</td>
<td>-1.9(-2.4%)</td>
</tr>
<tr>
<td>Energy Cost ($)</td>
<td>88,380.63</td>
<td>89,026.32</td>
<td>645.69(0.7%)</td>
</tr>
<tr>
<td>Total GHG Emissions (Metric Tons CO2e)</td>
<td>374.5</td>
<td>374.7</td>
<td>0.2(0.1%)</td>
</tr>
</tbody>
</table>

Data Quality for this Property

The metrics that Portfolio Manager calculates depend on your energy use data and your energy bills. The data quality checker inspects the information you have entered to identify possible errors. If a property is shared with you as "Read Only," you will not have access to edit the data.
View Report: Energy Performance

Date Generated: 06/05/2015 10:42 PM EDT

Number of properties in report: 2
Comparing Baseline Year vs. Current Year

The following displays the data generated from your report template. It includes the information and metrics that you selected for the properties you included. You may "Generate a New Report" to get updated information from the action menu for this report template.

<table>
<thead>
<tr>
<th>Weather Normalized Source EUI (kBtu/ft²)</th>
<th>Site EUI - Adjusted to Current Year (kBtu/ft²)</th>
<th>Source EUI - Adjusted to Current Year (kBtu/ft²)</th>
<th>National Median Site EUI (kBtu/ft²)</th>
<th>National Median Source EUI (kBtu/ft²)</th>
<th>Percent Better than National Median Source EUI</th>
<th>Energy Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>321.3</td>
<td>117.7</td>
<td>324.2</td>
<td>112.9</td>
<td>310.9</td>
<td>4.2</td>
<td>128870.43</td>
</tr>
<tr>
<td>341.1</td>
<td>Not Available</td>
<td>Not Available</td>
<td>50.4</td>
<td>148.1</td>
<td>130.5</td>
<td>134522.07</td>
</tr>
<tr>
<td>196.9</td>
<td>75.7</td>
<td>196.4</td>
<td>100.6</td>
<td>261.1</td>
<td>-24.8</td>
<td>89026.32</td>
</tr>
<tr>
<td>192.6</td>
<td>77.6</td>
<td>195.6</td>
<td>103.6</td>
<td>261.1</td>
<td>-25.1</td>
<td>88380.63</td>
</tr>
</tbody>
</table>
Best Practices

LEED for Existing Buildings: Operations & Maintenance

LEED O&M: Existing Buildings v4 - LEED v4
Indoor water use reduction

Required

Intent
To reduce indoor water consumption.

Requirements
Option 1. Calculated Water Use Establishment
For the indoor plumbing fixtures and fittings listed in Table 1, reduce water consumption to or below the LEED v4 for Existing Buildings: Operations & Maintenance v4 baseline assuming 100% of the building’s indoor plumbing fixtures and fittings meet the fixture flow rates listed in Table 1.

The LEED v4 for Existing Buildings: Operations & Maintenance v4 baseline is set depending on the year of the building’s occupancy, as follows:
- For a building with a certificate of occupancy dated 1996 or later, the LEED v4 for Existing Buildings: Operations & Maintenance v4 baseline is 120% of the water use that would result if all fixtures met the code requirements in Table 1.
- For a building with a certificate of occupancy dated before 1996, the LEED v4 for Existing Buildings: Operations & Maintenance v4 baseline is 180% of the water use that would result if all fixtures met the code requirements in Table 1.

Table 1. Fixture and fitting code requirements

<table>
<thead>
<tr>
<th>Commercial Fixtures, Fittings, and Appliances</th>
<th>Current Baseline (l/units)</th>
<th>Current Baseline (SI units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water closets (toilets)*</td>
<td>1.6 gallons per flush (gpf)</td>
<td>6 liters per flush (l/pf)</td>
</tr>
<tr>
<td>Urinal*</td>
<td>1.0 (gpf)</td>
<td>3.8 lpf</td>
</tr>
<tr>
<td>Public lavatory (restroom) faucet</td>
<td>0.5 gpm at 60 psi all others except private applications</td>
<td>1.9 lpm at 415 kPa, all others except private applications</td>
</tr>
<tr>
<td>Private lavatory faucet*</td>
<td>2.2 gpm at 60 psi</td>
<td>8.3 lpm at 415 kPa</td>
</tr>
<tr>
<td>Kitchen faucet (excluding faucets used exclusively for filling operations)</td>
<td>2.2 gpm at 60 psi</td>
<td>8.3 lpm at 415 kPa</td>
</tr>
<tr>
<td>Showerhead*</td>
<td>2.6 gpm at 80 psi per shower stall</td>
<td>9.5 lpm at 650 kPa per shower stall</td>
</tr>
</tbody>
</table>

*"Water closets (toilets)" includes urinals, urinal partitions, and urinal flush valves.

Source: http://www.usgbc.org/credits/existing-buildings/v4
Benchmarking

**Utility Consumption**

Targeted Goals

Four out of 10 respondents have a stated annual goal that relate to the facility's utility consumption. The majority are striving to use less energy, working toward a reduction goal of 7% average. Those who anticipate an increase in consumption are holding to an average increase of 5%.

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Total Utilities</th>
<th>Electricity</th>
<th>Fuel Oil #2</th>
<th>Natural Gas</th>
<th>Steam</th>
<th>Water</th>
<th>Sewer</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>$8.85</td>
<td>$6.39</td>
<td>$0.77</td>
<td>$2.15</td>
<td>$1.72</td>
<td>$0.62</td>
<td>$0.29</td>
<td>$0.19</td>
</tr>
<tr>
<td>95</td>
<td>$5.55</td>
<td>$5.14</td>
<td>$0.53</td>
<td>$1.25</td>
<td>$1.40</td>
<td>$0.27</td>
<td>$0.38</td>
<td>$0.09</td>
</tr>
<tr>
<td>90</td>
<td>$4.58</td>
<td>$3.77</td>
<td>$0.40</td>
<td>$0.84</td>
<td>$1.19</td>
<td>$0.27</td>
<td>$0.38</td>
<td>$0.09</td>
</tr>
<tr>
<td>75</td>
<td>$3.05</td>
<td>$2.36</td>
<td>$0.11</td>
<td>$0.51</td>
<td>$1.00</td>
<td>$0.15</td>
<td>$0.38</td>
<td>$0.09</td>
</tr>
<tr>
<td>50</td>
<td>$2.12</td>
<td>$1.51</td>
<td>$0.03</td>
<td>$0.29</td>
<td>$0.64</td>
<td>$0.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>$1.51</td>
<td>$1.00</td>
<td>$0.01</td>
<td>$0.13</td>
<td>$0.34</td>
<td>$0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>$1.25</td>
<td>$0.77</td>
<td>$0.02</td>
<td>$0.03</td>
<td>$0.22</td>
<td>$0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>$1.14</td>
<td>$0.71</td>
<td>$0.01</td>
<td>$0.01</td>
<td>$0.15</td>
<td>$0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>$2.56</td>
<td>$2.02</td>
<td>$0.10</td>
<td>$0.40</td>
<td>$0.68</td>
<td>$0.13</td>
<td>$0.07</td>
<td>$0.30</td>
</tr>
<tr>
<td>N</td>
<td>923</td>
<td>954</td>
<td>139</td>
<td>911</td>
<td>1042</td>
<td>171</td>
<td>194</td>
<td></td>
</tr>
</tbody>
</table>

Good reference, old data

EUI Range for PJM
3 Facilities are below IFMA & Portfolio Manager Median benchmarks
2 Facilities have high electrical redundancy

Energy Utilization Index - Electricity kBTus 2012-2014

CC  SC  TC  CTC  Milford
472,11 65,48 105,01 35,02 357,93

IFMA Benchmark
Portfolio Manager

Energy Star Portfolio Manager Data from 2013 median based on 63,000 SF building and 60 hrs. of operation.
Calculators

Greenhouse Gas Equivalencies Calculator
Did you ever wonder what reducing carbon dioxide (CO₂) emissions by 1 million metric tons means in everyday terms? The greenhouse gas equivalencies calculator can help you understand, such as "equivalent to avoiding the carbon dioxide emissions of 183,000 cars annually."
This calculator may be useful in communicating your greenhouse gas reduction strategy, reduction targets, or other initiatives aimed at reducing greenhouse gas emissions.

Enter Your Data
There are two options for entering reduction data into this calculator.

If You Have Energy Data

If You Have Emissions Data

Please note that these estimates are approximate and should not be used for emission inventory or formal carbon footprinting exercises. Read more about the caveats and e

70000 kilowatt-hours of electricity

Calculate

Equivalency Results
The sum of the greenhouse gas emissions you entered above is
48.3 Metric Tons of Carbon Dioxide Equivalent. This is equivalent to:

Annual greenhouse gas emissions from

- 10.2 Passenger vehicles
- 114,925 Miles/year driven by an average passenger vehicle
- 17.3 Tons of waste sent to the landfill
- 2.5 Garbage trucks of waste recycled instead of landfilled

http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results
Reporting Tools

Assurance Statement: AA1000

Trucost was engaged by DR PEPPER SNAPPLE GROUP (DPS) to provide assurance of its 2013 Carbon Disclosure Project (CDP) submissions.

Intended users
The intended users of this assurance statement are the management and stakeholders of DPS.

Responsibilities of DPS and of the assurance providers
The management of DPS has sole responsibility for the preparation and content of its CDP submission. Trucost’s statement represents its independent and balanced opinion on the content and accuracy of the information and environmental data within.

Assurance Standard
Trucost undertook the assurance in accordance with AA1000AS (2005) Type 2 moderate-level assurance, covering:

- Evaluation of adherence to the AA1000APS (2008) Principles of indubitability, materiality and responsiveness (the Principles); and
- The reliability of greenhouse gas emissions from electricity use, natural gas and propane consumption, business travel and transit.

Scope and limitations
Trucost was engaged to assure the data and claims relating to DPS’s 2013 CDP Investor Response and 2013 CDP Water Disclosure Response. This submission covered the period 01 January 2012 – 31st December 2012. DPS took an operational control approach. No potential Scope 1 or Scope 2 emission sources have been excluded.

Specific data points validated by Trucost are listed in the following table.

Description of methodology
Trucost’s assurance methodology included the following activities:

- Review of the processes by which DPS defines the sustainability issues that are relevant and material to its operations and its stakeholders;
- Interviews with employees responsible for sustainability data collection and drafting of CDP response;
- Assessment of the extent to which DPS’s CDP response and internal processes adhere to the Principles;
- Limited assessment of evidence provided to support key claims in the CDP response;
- Review of processes and systems used to gather and consolidate environmental data;
- Verification of data accuracy for a selection of sites, including an audit of conversion factor and calculations used.

Findings, conclusions, and recommendations
The principles: Nothing came to Trucost’s attention to suggest that the CDP Responses do not adhere to the Principles.

Performance: Environmental

Disclosure on Management Approach

- Managing Sustainability

Environmental Performance Indicators

Aspect: Material
EN1 Materials used by weight or volume.
EN2 Percentage of materials used that are recycled input materials.

Aspect: Energy
EN3 Direct energy consumption by primary energy source.
EN4 Indirect energy consumption by primary source.
EN5 Energy saved due to conservation and efficiency improvements.
EN6 Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.

Aspect: Water
EN8 Total water withdrawal by source.
EN9 Water sources significantly affected by withdrawal of water.
External Resources

Energy Benchmarking + Assessment Report

Audits

General Information

<table>
<thead>
<tr>
<th>PJM Conference and Training Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Floor Area Excluding Parking: (ft²)</td>
</tr>
<tr>
<td>Year Built</td>
</tr>
<tr>
<td>For 12-month Evaluation Period Ending Date:</td>
</tr>
</tbody>
</table>

Facility Space Use Summary

<table>
<thead>
<tr>
<th>Space Type</th>
<th>Office</th>
<th>Space Type</th>
<th>Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Floor Area (ft²)</td>
<td>109,000</td>
<td>Gross Floor Area (ft²)</td>
<td>195,645</td>
</tr>
<tr>
<td>Weekly operating hours</td>
<td>60</td>
<td>Enclosed Floor Area</td>
<td>0</td>
</tr>
<tr>
<td>Workers on Main Shift</td>
<td>250</td>
<td>Non-Enclosed Floor Area (w/o roof)</td>
<td>0</td>
</tr>
<tr>
<td>Number of PCs</td>
<td>300</td>
<td>Open Floor Area (w/o roof)</td>
<td>195,645</td>
</tr>
<tr>
<td>Percent Cooled</td>
<td>50% or more</td>
<td>Weekly Hours of Access</td>
<td>50</td>
</tr>
<tr>
<td>Percent Heated</td>
<td>50% or more</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Energy Performance Comparison

<table>
<thead>
<tr>
<th>Performance Metrics</th>
<th>Evaluation Periods</th>
<th>Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current</td>
<td>Baseline</td>
</tr>
<tr>
<td>Energy Performance Rating</td>
<td>75</td>
<td>77</td>
</tr>
<tr>
<td>Energy Intensity</td>
<td>Site (kBtu/hr)</td>
<td>71</td>
</tr>
<tr>
<td>Source (kBtu/hr)</td>
<td>268</td>
<td>202</td>
</tr>
<tr>
<td>Energy Cost</td>
<td>$/year</td>
<td>$174,966.46</td>
</tr>
<tr>
<td></td>
<td>$/year</td>
<td>$1.61</td>
</tr>
<tr>
<td>Greenhouse Gas Emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂, t/yr</td>
<td>974</td>
<td>946</td>
</tr>
<tr>
<td>kgCO₂, t/yr</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

More than 50% of your building is defined as Office. Please note that your rating accounts for all of the spaces listed. The National Median column presents energy performance data your building would have if your building had a median rating of 50.

Notes:
- This attribute is optional.
- A default value has been supplied by Portfolio Manager.
Resources

Sustainability “How-To Guide” Series

Global Green Cleaning
Jennifer Corbett-Shramo
IFMA Fellow
CEO, Innovative Cleaning Services; CEO, Clean Solutions Inc.

Dan Wagner
Director of Facility Service Programs
ISSA

Green Building Rating Systems
Mayra Portalatin, LEED AP
Project Manager
Facility Engineering Associates, PC

Maureen Roskoski, REPA, LEED AP
Senior Professional
Facility Engineering Associates, PC

Krislina Koepke
Staff Engineer
Facility Engineering Associates, PC

Teena Shouse, CFM, IFMA Fellow
Senior Facility Management Consultant
Facility Engineering Associates, PC
Resources

Just the tiny tip of the iceberg

- www.ifmafoundation.org
- www.energystar.org
- www.ghgprotocol.org
- www.epa.gov.climateleaders.org
- www.appa.org/research/FPI/index.cfm
Call for Sharing

Challenges

• External Best Practices & Benchmarking hard to find
• Current focus on methodology of collection and processes NOT on actual data
• What are you doing?
  • Project evaluation criteria (e.g. ROI)
  • Metrics and targets to achieve

Opportunities

• Call of Sharing!
• IFMA Web Community
  • Sustainability
  • Case Studies
Final Thoughts

- You are not alone
- Paradigm shift from separate to integrated
- Critical vendor partnership relationship
- Continuous improvement through tracking & monitoring
- Measure what matters
- Low hanging fruit
- Internal vs external benchmarking
- Share, share, share
Q&A

Alana F. Dunoff  alanadunoff@gmail.com

Lynn Baez  lynn.baez@mail.com

If you would like a pdf copy of this presentation please email Alana at alanadunoff@gmail.com
Our future complimentary webinars

http://fmcc.ifma.org/events/upcoming-events

<table>
<thead>
<tr>
<th>Webinar Title</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMCC Webinar: Top 5 Ways to Reduce Fall Hazard Risk</td>
<td>09 – 09 Jul, 2015</td>
</tr>
<tr>
<td>FMCC Webinar: How Academic Design Trends Are Reshaping the Workplace”</td>
<td>03 – 03 Sep, 2015</td>
</tr>
<tr>
<td>FMCC Webinar: Risk Management and Mitigation through Strategic Facility Management</td>
<td>16 – 16 Sep, 2015</td>
</tr>
</tbody>
</table>
IFMA Councils

- Academic Facilities Council
- Airport Facilities Council
- Banking Institutions & Credit Unions Council
- City & Country Clubs Council
- Corporate Facilities Council
- Corporate Real Estate Council / W.E.
- Environmental Health & Safety Council
- FM Consultants Council
- Food Service & Restaurant Council
- Information Technology: Council
- Legal Industry Council
- Manufacturing, Industrial & Logistics Council
- Museums/Cultural Institutions Council
- Public Sector Facilities Council
- Religious Facilities Council
- Research & Development Facilities Council
- Utilities Council

To learn more visit http://ifma.org/community/industry-councils
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