EPA Portfolio Manager as a Viable Management Tool for American Reinvestment and Recovery Act (ARRA) – Energy Efficiency & Conservation Block Grants

Mark H. Clevey, MPA, Director Entrepreneurship and Commercialization Saginaw Valley State University, Certified Public Managers Program (CPM) Trainer & Consultant, EPA Portfolio Manager Program

mhclevey@svsu.edu, (517) 242 6880 (cell)

(Please see handouts)
• Trainer, EPA *Portfolio Manager* Program

• Community Energy Management (CEM)
  – Community Energy Manager, City of Kalamazoo
  – CEM Consultant, City of Ann Arbor
  – Managed Renewable Energy Demonstration Program, County of Muskegon

• Past Director, State of Michigan, ENERGY STAR Promotion Program

• Specialist in Alternative Energy, Energy Efficiency & Green Entrepreneurship
  – Consultant and College Instructor in Alternative Energy & Green Entrepreneurship.
  – Grant Manager on Renewable/Energy Efficiency grants from DOL, EPA, DOE, State of Michigan (MPSC, Energy Office, DNR).
  – SBIR Grant Reviewer for U.S. DOE and EPA.
• Basic Premise – *You can’t manage what you can’t measure.*

• “State and local officials can leverage EPA’s no-cost ENERGY STAR Portfolio Manager tool to assess the energy use of buildings to **identify their best opportunities for improvement**, track immediate and cost effective reductions over time and document savings results.”
Communities can specify Portfolio Manager in their EECBG Plan as the management tool for:

Getting baseline energy use and GHG emissions inventory, and forecasting future energy use

Setting goals/objectives & action plans стратегies and expected outcomes and benefits

- Energy saved
- Renewable energy capacity
- GHG emissions reduced

• Evaluation, monitoring and verification planning

• Use as a framework for Aggregated Purchasing of Energy Efficient products.

• Lay foundation for
  - LEED EB (Existing Buildings)
  - Alternative Energy Use (Wind, Solar, BioFuels, etc.)
Implementation Choices:

- Train in-house/community staff to use Portfolio Manager as an EECBG tool…

- Contract with a Portfolio Manager Trainer/Consultant…

- Combination of above…
In the main, communities have **two choices** for how to use the PM program:

- **Individual Use** - Encourage individual building owners to work *independently* with PM

- **Sector Strategy** - Organize *sector-wide* PM programs so that data can be tracked and verified on a comprehensive, aggregate basis for individual *sectors*. 
Example of a Sector Strategy…

• Government Buildings, Schools, Hospitals.

• Industrial/Commercial

• Residential

• Faith Based…
Guide for Congregations

This Guide is designed to educate and assist the faith community in taking advantage of the benefits of energy efficiency. Your house of worship typically needs lighting, heating, air conditioning, power for office equipment, and other services to serve your mission and members’ needs. This Guide can help you identify building equipment and systems that can be upgraded and maintained to save you money, as you prevent pollution.

We call this energy optimization; you will just call it smarter stewardship.

Download the Guide

Putting Energy Into Stewardship, The ENERGY STAR Guide for Congregations 1.3MB
- Get Started 300KB
Step 1: Join ENERGY STAR

Individual users can join a ENERGY STAR sector program that provides information and resources tailored to their needs.

www.energystar.gov
Step 2: Measure Your Energy Use

Set up an Account in Portfolio Manager, enter monthly energy use and to track energy use over time.

www.energystar.gov/benchmark
Required data varies with building type, core data for competent building management

- Building square footage
- One year (minimum) monthly energy consumption from each source (e.g. electricity and natural gas)
- Zip code
- Occupancy rates
- Occupancy hours
- Computers or other key equipment (only for rateable spaces)
What Does My Bill Tell Me?

Account # 0123456789  Due Date: Jun 27, 2003

Total Amount Due: $ 68.91

Previous Amount Due: $ 51.79
Payments as of Dec 03: $ 51.79CR


Billing and Payment Summary

Meter and Usage
Current Billing Days: 30

Billable Usage
Schedule 1 05/05-06/04
Total kWh 742

Usage History

<table>
<thead>
<tr>
<th>Mo</th>
<th>Yr</th>
<th>kWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun</td>
<td>02</td>
<td>647</td>
</tr>
<tr>
<td>Jul</td>
<td>02</td>
<td>745</td>
</tr>
<tr>
<td>Aug</td>
<td>02</td>
<td>444</td>
</tr>
<tr>
<td>Sep</td>
<td>02</td>
<td>501</td>
</tr>
<tr>
<td>Oct</td>
<td>02</td>
<td>593</td>
</tr>
<tr>
<td>Nov</td>
<td>02</td>
<td>538</td>
</tr>
</tbody>
</table>

Explanation of Bill Detail

Dominion Virginia Power 1-888-667-3000

Previous Balance  51.79
Payment Received  51.79CR
Balance Forward  0.00

Residential Service (Schedule 1) 5/05-06/04
Distribution Service  23.57
Electricity Supply Svc  42.19

State/Local Consumption Tax  1.15
County Utility Tax  2.00
Total Current Charges  68.91

Total Account Balance  68.91

Price To Compare  ¢/kWh
Jun-Sep  4.71 ¢
Oct-May  3.55 ¢
Annual Average  4.01 ¢
Trends in Energy Use

Trends Can Identify Areas Of High Energy Use Requiring Investigation

[Chart showing energy use trends from 2004 to 2006 with months and years indicated.]
Perceived Barrier: Benchmarking is Time Consuming

Estimated time = 1 – 2 ½ hours

Phase I. Initial Benchmarking
– Data collection—up to 1-2 hours
– Data input—15-30 minutes

Phase II. Monthly updates
– 5 to 15 minutes
Setting Up an Account in Portfolio Manager

Portfolio Manager Overview
Assess and Track Building Performance

Take control of your energy and water consumption by managing your entire portfolio of buildings in a secure online environment. Whether you own, manage, or hold properties for investment, Portfolio Manager can help you make smart choices.

Manage Energy and Water Consumption for All Buildings.
Efficient management of resources requires effective data management. Portfolio Manager helps you streamline your portfolio's energy and water data, and track key consumption, performance, and cost information portfolio-wide. For example, you can:

- Track multiple energy and water meters for each facility
- Customize meter names and key information
- Benchmark your facilities relative to their past performance
- View percent improvement in weather-normalized source energy
Setting up a New Account: New User Registration

Write down your Username/Password for future reference. You should receive an email confirming your information and registration.

Account Information

Please complete the following information to set up your account in Portfolio Manager.

* REQUIRED

*Username: 

Your password must be between 8 and 32 characters in length (letters and numbers only, no special characters)

*Enter Password: 

*Re-Enter Password: 

*First Name: 

*Last Name: 

*E-mail: 

Title: 

Organization: 

Address: 

City: 

State: 

ZIP Code: 

PORTFOLIO MANAGER

EPA’s system for helping you track and improve energy efficiency across your entire portfolio of buildings.
The “My Portfolio” page summarizes the performance of your entire portfolio of buildings.

Welcome: Steve Bell

Summarized below are the facilities in your account assigned to the NADA Group group. Groups and Views are provided below to help you customize the way in which you view your Portfolio. To improve system performance, users are strongly encouraged to create multiple Groups to help manage large Portfolios of facilities. Select a facility to view or edit more detailed information about it.

To view a column's definition, select the icon next to the column header.
NOTE: In order to help you get familiar with the Portfolio Manager tool, you can create a sample facility. Once you are familiar with the tool, this sample facility may be deleted.
### Add Building Characteristics

#### Space Use

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Space Type</th>
<th>Floor Area (Sq. Ft.)</th>
<th>% Floor Area</th>
<th>Alert</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Space Name</strong></td>
<td>Office (General)</td>
<td>15,000</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>15,000</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Due to rounding, the % Floor Area may not total 100%

### Energy Meters

<table>
<thead>
<tr>
<th>Energy Meters</th>
<th>Meter Name</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Worship Facility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sample Meter</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Space Name:

- **Sanctuary and Offices**

### Current Space Attribute Values

<table>
<thead>
<tr>
<th>Space Attribute</th>
<th>Space Attribute Value (Temporary values should only be used if an Actual value is not currently known)</th>
<th>Use Default Value</th>
<th>Units</th>
<th>Effective Date (when this Attribute Value was first true)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Floor Area (required for benchmarking)</td>
<td>89000.00</td>
<td>N/A</td>
<td>Sq. Ft.</td>
<td>01/01/1971</td>
</tr>
<tr>
<td>Operating Hours/Week (required for benchmarking)</td>
<td>73.00</td>
<td></td>
<td>Hours</td>
<td>01/01/1971</td>
</tr>
<tr>
<td>Number of PCs</td>
<td></td>
<td></td>
<td></td>
<td>01/01/1971</td>
</tr>
<tr>
<td>Occupants</td>
<td></td>
<td></td>
<td></td>
<td>01/01/1971</td>
</tr>
</tbody>
</table>

*Please select the Other space type category that best describes your facility.*
Add Energy Use-Type

Add Meter

To add a meter, enter the name and select the appropriate characteristics for the meter.

If you are entering temporary values for energy data, please indicate so by selecting "Yes" and entering the date range the values will be considered as temporary.

* REQUIRED

Add Energy Meter

* Enter the Meter Name: [text input]

* Apply this meter to the following (check all that apply):
  - [ ] Entire facility
  - [x] Sample Space Name

Select the Meter Type:

* Energy Type: [dropdown]

* Units: [dropdown]

Add this Meter to Total Facility Energy Use?

- [ ] Yes, calculate this facility’s total energy use by including this meter
- [ ] No, adding this meter to this facility’s total energy use will inflate the actual value
Add Billing Information

Edit Energy Use: tc meter x

Please enter the energy use for each meter entry below. Portfolio Manager requires that entries are for consecutive time periods, only one day of overlap or one day of gap can exist between meter entries to be eligible to generate an Energy Performance Rating.

If you are accounting for “sold” energy, indicate this by entering a negative energy use for the appropriate time period.

Meter Information

**Fuel Type:** Electricity (kWh (thousand Watt-hours))

**Space(s):** Entire Facility

Download Meter Data in Excel

### Edit Energy Use:

#### Add Meter Entries

<table>
<thead>
<tr>
<th>Remove Entry</th>
<th>Start Date (MM/DD/YYYY)</th>
<th>End Date (MM/DD/YYYY)</th>
<th>Energy Use (kWh (thousand Watt-hours))</th>
<th>Cost - US Dollars (optional)</th>
<th>Last Updated By</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>04/01/2007</td>
<td>04/30/2007</td>
<td>20000.00</td>
<td>$2,000.00</td>
<td>ESGMASTERACCB</td>
</tr>
<tr>
<td></td>
<td>03/01/2007</td>
<td>03/31/2007</td>
<td>20000.00</td>
<td>$2,000.00</td>
<td>ESGMASTERACCB</td>
</tr>
<tr>
<td></td>
<td>02/01/2007</td>
<td>02/28/2007</td>
<td>20000.00</td>
<td>$2,000.00</td>
<td>ESGMASTERACCB</td>
</tr>
<tr>
<td></td>
<td>01/01/2007</td>
<td>01/31/2007</td>
<td>20000.00</td>
<td>$2,000.00</td>
<td>ESGMASTERACCB</td>
</tr>
<tr>
<td></td>
<td>12/01/2006</td>
<td>12/31/2006</td>
<td>20000.00</td>
<td>$2,000.00</td>
<td>ESGMASTERACCB</td>
</tr>
</tbody>
</table>
Step 3: Identify, Prioritize, Purchase and Install ENERGY STAR Rated & Renewable Energy Products

Many technical resources are available from ENERGY STAR.

www.energystar.gov
Step 3: Identify, Prioritize, Purchase and Install, Monitor & Verify

Based on “payback” (how long it takes for the energy savings to pay for the initial purchase)…

– Identify, prioritize, purchase and install energy efficient emissions reducing products…

• … Appliances, Machines, HVAC, Lighting, Office Equipment, Restaurant Equipment, Buildings, Weather-stripping/Insulation, Water Heating

**AFTER ENERGY EFFICIENCY ONLY** - Utilize COST EFFECTIVE renewable energy…
– Install Renewable Energy Products on an individualized basis.
– Purchase Green Energy from 3rd. Party
– Community Installs Centralized Renewable Energy
Step 4: Verify and Track Energy & Emission Reductions
• Allow organizations to identify individual participants, consolidate participants and aggregate energy and carbon savings for all participants.

• **Process:**
  – Organization creates a Master Account
  – Individual users can share facilities with Master Account *if* they choose
  – Master Account holder can view progress for all facilities that have been shared
Select User or Master Account

Users with whom you share facilities will now be able to see your name and email address on their Facility Summary page for that shared facility. In addition, users will also have the option to select your name and email address to appear in their custom views. Select Cancel if you do not wish to share any facilities.

Portfolio Manager provides the ability to share multiple facilities from your account with other users of the system in a single transaction. Users with whom access is being shared or removed MUST have a Portfolio Manager user account. To share facilities, select a Portfolio Manager user in Step 1.

If you are only removing access to facilities in your account, select “Remove this User’s Access” in Step 1 after selecting a user from the Current Access List or enter a username in the textbox. You will then be able to select all of the facilities from which you want to remove this user’s access.

**STEP 1: Select the account to which you want to grant access, modify existing access or remove access rights.**

Portfolio Manager User:

User from my current access list:  
- OR -

Enter Portfolio Manager Username:
- OR -

Select a Portfolio Manager Master Account: Greater Washington Interfaith Power and Light - GREATERWASHINGTONIPL Master Accounts

Learn more about Master Accounts
Percent Energy Reduction

- **Objective:** Provide a metric to show a percent change in energy use over time
  - Creates tracking capability for non-ratable spaces
- **Process:**
  - No additional information required from user
  - The tool compares energy use between two periods adjusting for weather only

### Facility Performance

<table>
<thead>
<tr>
<th>Facility Performance</th>
<th>Set Baseline Period</th>
<th>Set Energy Performance Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Select View:</strong></td>
<td>alternate view</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12 Months Ending</th>
<th>Current Energy Period Ending Date</th>
<th>Baseline Site Electric Use (kWh (thousand Watt-hours))</th>
<th>Baseline Source Energy Intensity (kBtu/Sq. Ft.)</th>
<th>Adjusted Energy Reduction (kBtu (thousand Btu))</th>
<th>Annual Energy Cost (US Dollars ($))</th>
<th>Adjusted Energy Reduction per Sq. Ft. (kBtu/Sq. Ft.)</th>
<th>Adjusted Percent Energy Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2007 (Current)</td>
<td>04/30/2007</td>
<td>727,525.3</td>
<td>84.0</td>
<td>456,511.11</td>
<td>$32,372.95</td>
<td>5.1</td>
<td>10.6%</td>
</tr>
<tr>
<td>April 2006</td>
<td>04/30/2007</td>
<td>727,525.3</td>
<td>84.0</td>
<td>No Savings</td>
<td>$27,379.58</td>
<td>No Savings</td>
<td>N/A</td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>($4,993.37)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Statement of Energy Performance

FACILITY SUMMARY REPORT
TC Home

For 12-month Period Ending: April 30, 2007
Date Generated: May 31, 2007

This document was generated using EPA’s Portfolio Manager system. All information shown is based on data provided by the Portfolio Manager account holder. Depending on the use of the SEP Facility Summary, building owners or managers may want to have a professional engineer (PE) verify that the underlying data is accurate. Blank space has been left intentionally on the SEP Facility Summary for a PE stamp.

100 Golf way
Pebble Beach, CA 93953

Year Built: 1971
Gross Floor Area: (ft²) 89,000

Facility Space Use Summary

<table>
<thead>
<tr>
<th>Space Name</th>
<th>Gross Floor Area (ft²)</th>
<th>Operating Hours/Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Showroom and Office</td>
<td>69,000</td>
<td>78</td>
</tr>
</tbody>
</table>
## Energy Performance Comparison

<table>
<thead>
<tr>
<th>Results</th>
<th>Current</th>
<th>Baseline</th>
<th>Delta</th>
<th>Target</th>
<th>Industry Average</th>
<th>ENERGY STAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Performance Rating</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>50</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Energy Intensity (kBtu/ft²)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site</td>
<td>22.76</td>
<td>27.89</td>
<td>-5.13</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Source</td>
<td>68.58</td>
<td>84.04</td>
<td>-15.46</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Energy Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$/year</td>
<td>32,372.95</td>
<td>45,752.53</td>
<td>-13,379.58</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>$/ft²/year</td>
<td>0.36</td>
<td>0.51</td>
<td>-0.15</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>CO₂ Emissions (1,000 lbs/year)</td>
<td>736.00</td>
<td>902.00</td>
<td>-166.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
Step 5: Aggregated Purchasing of ENERGY STAR Products
(See Handout)

Portfolio Manager identifies ENERGY STAR Rated and Renewable Energy products that could be purchased in bulk to reduce front-end costs and accelerate payback…

EPA ENERGY STAR Funded a Model Aggregation Project in Michigan.

Communities can organize & manage an Aggregated Purchasing Program as part of their EECBG…
Step 6: ENERGY STAR Building Designation

Facilities can gain recognition as a leader in reducing energy consumption.

(EECBG Ref: plans to coordinate and share information with the state in which the eligible unit of local government is located regarding activities carried out using the grant)
To qualify as an ENERGY STAR rated building, a building or manufacturing plant must score in the top 25 percent based on EPA's National Energy Performance Rating System.

EPA compares energy use among other, similar types of facilities on a scale of 1-100…

… buildings that achieve a score of 75 or higher may be eligible for the ENERGY STAR.

The EPA has released its list of the US cities with the most commercial buildings earning Energy Star ratings in 2008. These buildings both use 35% less energy than average buildings and emit 35% less CO2.

Los Angeles
San Francisco
Houston
Washington DC
Dallas-Fort Worth
Chicago
Denver
Minneapolis-St Paul
Atlanta
Seattle
Step 7 - **Green Jobs** result from a viable **Green Entrepreneurship Strategy**.

Dedicated effort to enhance local **Entrepreneurial Culture & Climate**:
- Green Business *Creation, Retention, Expansion* ("Economic Gardening")
- Green Business *Attraction*

Define “entrepreneurs” not as “small business” but as those with a **combined** “intent” and “capacity” for growth

**Incentivize Green Innovation**

**Implement a Multi-Sector Green Entrepreneurship Community/Economic Development Strategy**:
- Green **Small Business** Entrepreneurs
- Green **Social** Entrepreneurs
- Green **Intrapreneurs** (Social & Business)

(See: “Michigan Entrepreneurship Score Card, 2008-09”, [www.sbam.org](http://www.sbam.org) and SVSU Economic Gardening Institute)
Communities can identify EPA Portfolio Manager in their EECBG Program plan.

- Sector Strategy – Organize, train and assist sectors to use Portfolio Manager.

- Baseline, EE Planning and Implementation, Verification and Tracking

- ENERGY STAR Buildings and Community Designation
  - Lay foundation for LEED EB (Existing Buildings) if desired.

Framework for Aggregated Purchasing

Catalyst for Green Jobs Initiative
Energy Management Strategy

ENERGY STAR Resources Support Your Planning & Process

Make Commitment → Join ENERGY STAR and/or Commit to Challenge

Assess Performance & Set Goals

Create Action Plan → Training & Presentations

Recognize Achievements

Implement Action Plan → Guidebooks, Fact Sheets, Calculators, Energy 101 Trainings

Evaluate Progress → ENERGY STAR Qualified Products

Re-Assess

Portfolio Manager

Awards Program and Success Stories
Thank you

Portfolio Manager and the Energy Efficiency Community Block Grant Program

Mark H. Clevey, MPA, Director Entrepreneurship and Commercialization

Saginaw Valley State University, Certified Public Managers Program (CPM)

Trainer & Consultant, EPA Portfolio Manager Program

mhclevey@svsu.edu, (517) 242 6880 (cell)