

**Universal Benchmarking
California's Going To Make It So**

March 31, 2008
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Chair, Benchmarking Work Group

State Goals for Benchmarking

- Develop infrastructure for automated benchmarking
- Benchmark all state buildings
- Make benchmarking universally available
- Use benchmarking to track progress toward energy use reduction goals

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Why Benchmarking in CA?

- Governor's Executive Order
- Energy efficiency programs
- Help owners manage their energy use
- AB 1103
- Strategic Plan

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Executive Order S-20-04

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    graph TD
      Governor --> CEC[California Energy Commission]
      CEC --> BWG[Benchmarking Work Group]
  
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S-20-04 Directives for California Buildings

- State Bldgs Benchmarked by 2007
 - With energy use data back to 2003
- Reduce state bldg energy use 20% by 2015
 - From the 2003 baseline
- Encourage all commercial buildings to do likewise

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S-20-04 Directives for the California Energy Commission

Develop:

- Benchmarking system
- Benchmarking plan
 - to include all State and private commercial buildings in California
- Information system
 - for disclosing the benchmarking information to lenders and tenants, and to buyers at the time of sale

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[California Energy Commission]

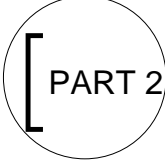
- Recommended U.S. EPA's Portfolio Manager
 - National benchmarking tool
 - Online at <http://www.energystar.gov/benchmark>
- Formed the Benchmarking Work Group
 - US EPA
 - California state agencies
 - California energy utilities
 - Private sector

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[Benchmarking Work Group]

- Facilitating development of the California benchmarking and infrastructure
 - Collecting and organizing state facility data
 - Modifying PM to meet California-specific needs
 - Automating energy data upload from utilities to PM
- Extending benchmarking to all buildings
 - Today's discussion

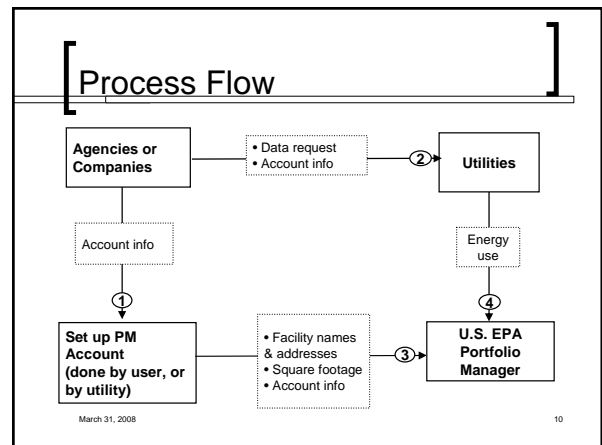
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[PART 2]

California Benchmarking Process

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[1. Initial Account Info]

- Facility identification (name, location, year built, square footage)
- Optional info (# of people, # of computers, op hours)
- Billing Meter identification (one or more utilities)
- Not as easy as it sounds where multiple facilities
- Process should be as automated as possible

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[2. Energy usage (utility) data]

- Need monthly data (back to 2003 & forward)
- Utility data transfer options
 - Automated monthly upload (best)
 - PG&E, SMUD
 - Manual monthly upload (okay)
 - SCE, SDG&E, SoCalGas
- Customer data transfer options
 - Utility-provided Excel spreadsheet (workable)
 - Manually-entered energy-bill data (ouch)
 - Non-automated utilities:
 - LADWP, all other POU's

State bldgs - doing everything possible to avoid this last option

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3. Data Release Forms (1)

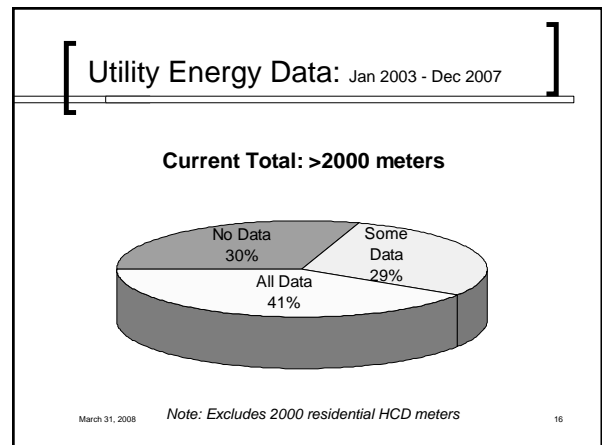
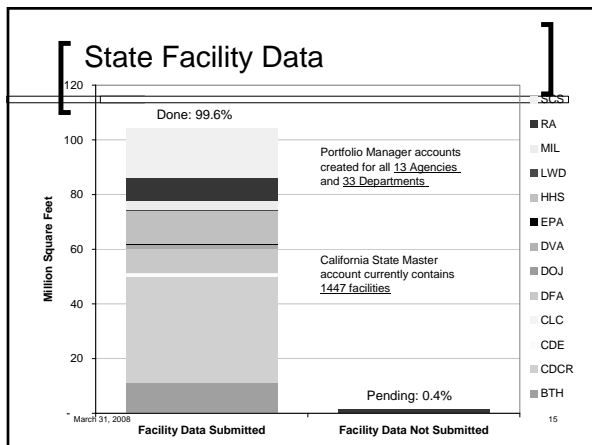
- Agreed to by IOUs & SMUD
- Required to automate data upload
- Customer gets:
 - Up-to-date benchmarking data
 - Automated billing data tracking
 - Assurance of data confidentiality
- Utility gets:
 - Assurance of customer authorization
 - Liability protection
 - Access to customer benchmarking data

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State Bldg. Benchmarking Status

- State Facility Data – nearly 100% Done
- Utility Energy Data – about 70% Done
- Data Quality Control – about 40% Done
- Reporting – (Need to do)

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State Bldgs: Next Steps and Schedule

- **March 2008:** Finalize data
 - PG&E residential, MUNIs, State Natural Gas Program
- **April 2008:** Final report for all State buildings

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PART 3

What you can with Portfolio Manager data

Tracking the 20% Savings Goal...

Portfolio Averages

Baseline Rating: 80 Facilities Included: 202	Current Rating: 77 Facilities Included: 187
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Portfolio Adjusted Percent Energy Reduction: No Reduction
Facilities Included: 499

Averages are weighted by Total Floor Space.
[More about Baselines](#)
[More about Adjusted Percent Energy Reduction](#)

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Portfolio Targets Report

PORTFOLIO MANAGER

Group Averages

Baseline Rating 100 Facilities Included: 7	Current Rating 100 Facilities Included: 7
Group Adjusted Percent Energy Reduction: 3.8% Facilities Included: 7	

Group-Adjusted Percent Energy Reduction: 3.8%
Facilities Included: 7

Download in Excel

Facility Name	Current Rating (1,000)	Current Site Energy Intensity (kBtu/Sq. Ft.)	Annual Energy Cost (U.S. Dollars) (\$M)	Target Rating (1,000)	Target Site Energy Intensity (kBtu/Sq. Ft.)
Agnewa DC	138.6		\$1,570,961.83	100	0.0
Calcutt Storage	135.0		\$243,648.00	100	0.0
Fairview DC	144.0		\$2,596,236.00	100	0.0
Lanterman DC	165.0		\$2,515,679.00	100	0.0
Porterville DC	135.8		\$2,485,588.67	100	0.0

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EUI Reductions (Excel)

Facility Name	Baseline Energy Period Ending Date	Current Energy Period Ending Date	Baseline Weather Normalized Source Energy Intensity (kBtu/Sq. Ft.)	Current Weather Normalized Source Energy Intensity (kBtu/Sq. Ft.)	Adjusted Percent Energy Reduction
Agnewa DC	12/31/2003	1/31/2008	258.3	226.2	12.40%
Canyon Springs	12/31/2003	12/31/2007	409.7	390.5	4.70%
Fairview DC	12/31/2003	12/31/2007	230.7	242.8	No Reduction
Lanterman DC	12/31/2003	12/31/2007	275.3	262.4	4.70%
Porterville DC	12/31/2003	11/30/2007	214.3	219.8	No Reduction
Sierra Vista	12/31/2003	11/30/2007	110.5	124.8	No Reduction
Sonoma DC	12/31/2003	12/31/2007	300.6	267.6	11.00%

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Electric/Gas Site Savings (Excel)

Facility Name	Baseline Site Electric Use (kWh)	Current Site Electric Use (kWh)	Change Site Electric Use (%)	Baseline Site Natural Gas Use (therms)	Current Site Natural Gas Use (therms)	Change Site Natural Gas Use (%)
Agnewa DC	8,714,621	7,110,913	-18.4%	756,001	708,699	-6.3%
Canyon Springs	1,775,000	1,711,000	-3.6%	17,944	19,215	7.1%
Fairview DC	13,656,370	13,748,000	0.7%	1,044,892	1,116,654	6.9%
Lanterman DC	12,573,000	12,604,000	0.2%	1,461,463	1,310,772	-10.3%
Porterville DC	13,250,000	13,216,000	-0.3%	1,078,574	1,024,473	-5.0%
Sierra Vista	821,000	822,200	0.1%	18,009	21,993	22.1%
Sonoma DC	8,072,000	14,559,000	80.4%	2,605,036	1,878,289	-27.9%
Group Total	58,861,891	63,771,113	8.3%	6,981,909	6,080,095	-12.9%

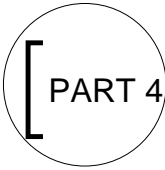
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Summary Performance

Summary Energy Performance Report	
Facilities included: Sacramento Group	
Date Generated: 11/2/06	
Number of facilities: 36	
2005	
Total Floorspace (sq. ft.)	11,037,609
Average Rating	77
Number of Facilities with a Rating	24
Total Site Energy Use (kBtu)	972,537,263
Total Weather Normalized Source Energy Use (kBtu)	2,077,065,465
Site Energy Intensity (kBtu/Sq. Ft.)	88.1

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- ### Benchmarking Utility Uses for the Data
- Use benchmarking results to target products and services.
 - Look for relatively low Energy Star scores (<80) or high Energy Utilization Intensity (EUI) values.
 - EUI converts to common measure (BTUs) per building square foot per year.
 - Assist energy managers look for trends and persistence of efficiency goals.
 - Mine buildings data (new, valuable source)
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PART 4

Other Reasons for Benchmarking

AB 1103 - effective Nov 2007

- Title: Energy Efficiency; Nonresidential Benchmarking (Soldaña)
- By 2009 (10 months from now):
 - electric utilities shall provide automated billing information for nonresidential buildings in a format that is compatible for uploading onto the Energy Star system (upon owner authorization)
- By 2010 (22 months from now):
 - when a nonresidential building is put up for sale or lease, or when it is financed or refinanced, the benchmarking data and scores generated by the Energy Star system must be disclosed

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CA Energy Efficiency Strategic Planning (CEESP)

- Utilities' plans thru 2020
 - Respond to Big Bold Initiatives
 - Incorporate into efficiency programs
- Plans for 2009-11
 - Start progress toward strategic goals
- Commercial sector
 - Benchmarking is one of the key strategies
 - May become the ultimate metric of program performance and evaluation

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Questions/Comments

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Paying for Benchmarking

- Need to make it PERMANENT
- Options
 - Provide it as a basic customer service (embedded in rates)?
 - Provide it as an energy efficiency service (embedded in program budgets)?
 - Provide it as an optional service (customer fee)?
 - Leave it to 3rd party, fee-for-service providers?
 - Other?

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Estimated Cost to Automate

	3/yr	hrs/mo	months	\$/study	50 utilities
Setup (one time)	120	160	2	\$ 38,400	\$ 1,920,000
O&M (annual)	120	40	12	\$ 57,600	\$ 2,880,000

If 100,000 customers, \$2.40/month

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[How to link BM to other activities?]

- Efficiency programs
 - sign up all participants?
 - require as condition of rebates?
 - use as enticement to participate?
- AB 1103 activities
 - Due diligence disclosures
 - Factor in appraisals
- Others?

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[Who takes the lead?]

- Utility customer service (routine)
- Utility website sign-up (automated)
- Utility program application process
- Send customers to EPA's PM website

What's the best user interface?
Should it be consistent statewide?
or nationwide?

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[How do we engage the POUs?]

- So far, only SMUD
- ~30% of CA customers served by POUs
- Mechanisms
 - AB 1103 to force action?
 - Provide tech support (as BMWG has done for IOUs)?
 - Let EPA set up the system?

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[Technical / Procedural Issues]

- Customer service
 - billing data errors
 - account changes
 - etc.
- IT issues
 - see tomorrow's agenda

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