

Green Action Team Meeting

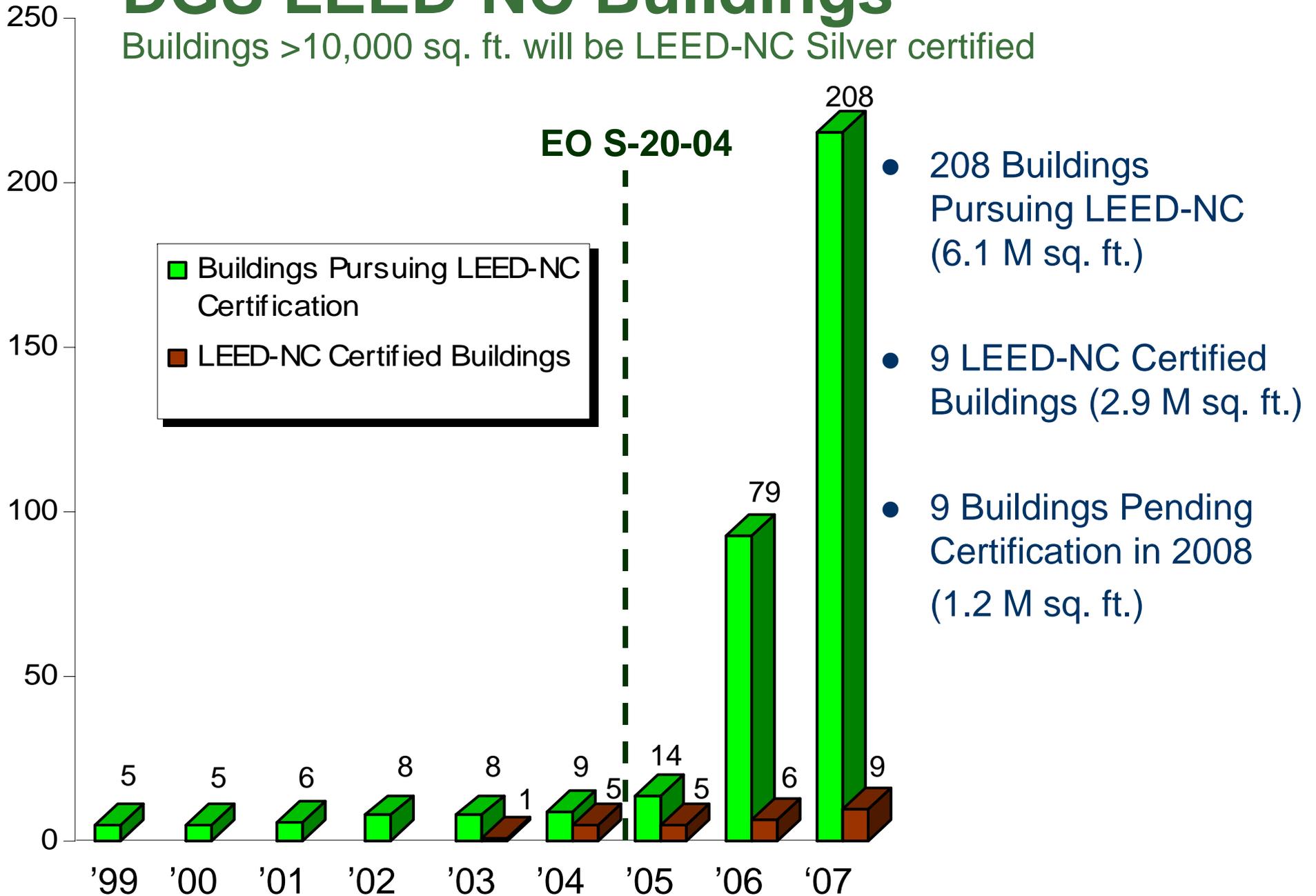
Feb. 6, 2008

Status of Major Deliverables

Green Building Initiative
(Exec Order S-20-04)

DGS LEED-NC Buildings

Buildings >10,000 sq. ft. will be LEED-NC Silver certified



LEED-NC - Statewide Program

- **Other Agencies** -13.5 M sq. ft. over 8 years
- **Average Energy Savings** - 14% to 40% >Title 24
 - 8 Certified Buildings average 35% savings
- **More Environ. Benefits** – Reduced GHG, Water, Waste, Improved Air Quality
- **Buildings under 10,000 sf** – LEED Standards
- **LEED-NC Training**
 - 105 trained during Fall 2007
 - 35 currently undergoing training Winter 2007
 - 10 LEED Accredited Professionals so far
 - Intro training/assistance: CDCR, Caltsrans, State Parks, DWR, DMV
 - Next steps: On-line training for all state agencies

Executive Order S-20-04: Benchmarking State Energy Use

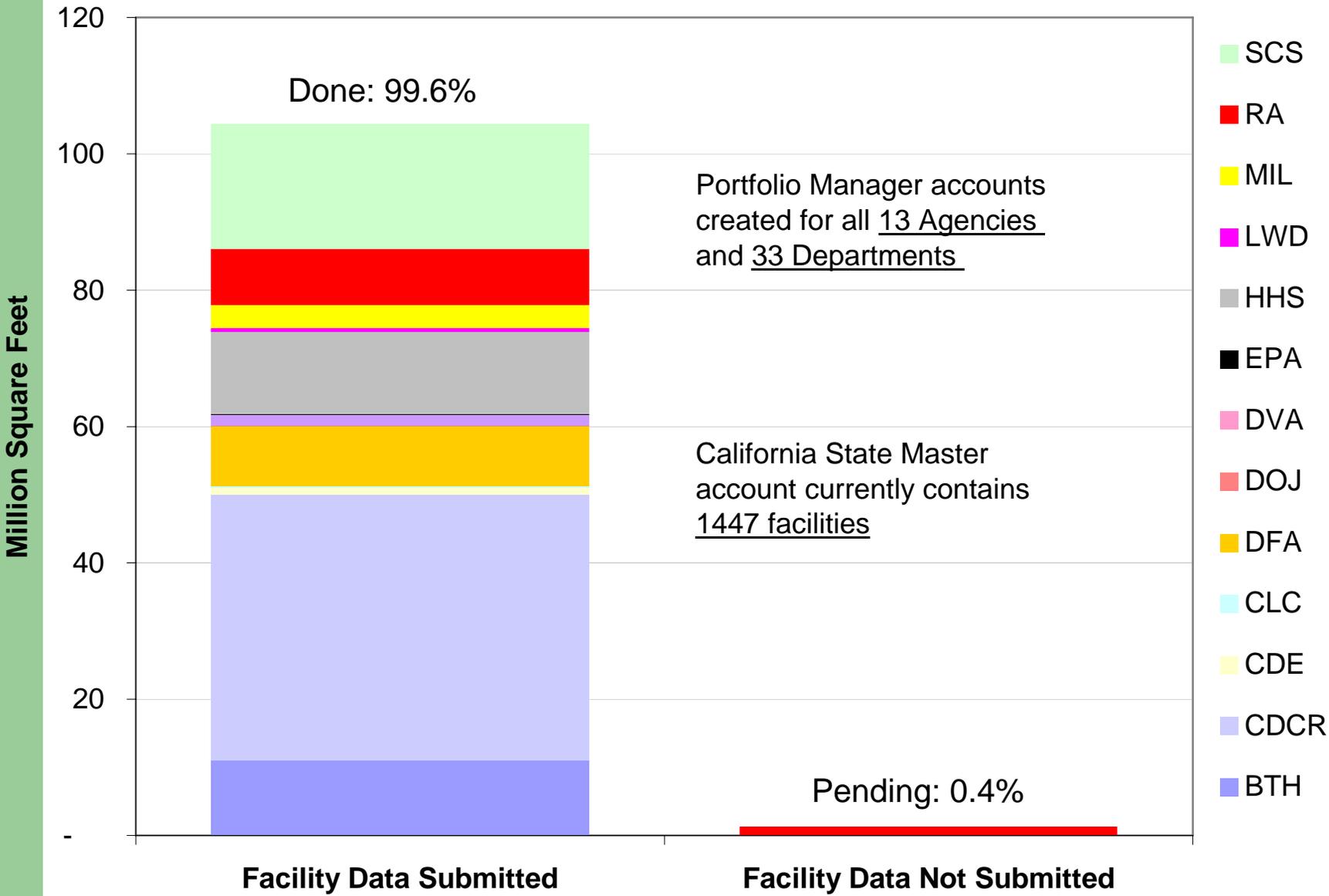
Karen Herter, HMG
Mike Langley, DGS

February 6, 2008

Summary

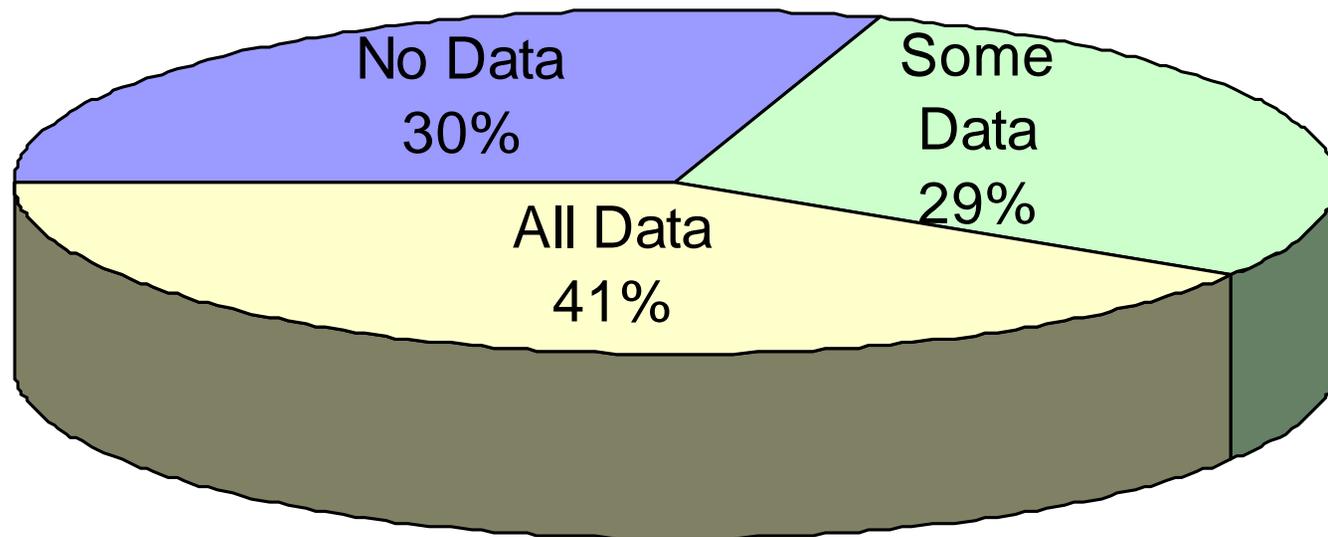
- State Facility Data – nearly 100% Done
- Utility Energy Data – about 70% Done
- Data Quality Control – about 40% Done
- Reporting – (Need to do)

State Facility Data



Utility Energy Data: Jan 2003 - Dec 2007

Current Total: >2000 meters



Note: Excludes 2000 residential HCD meters

Tracking the 20% Savings Goal...

Portfolio Averages	
Baseline Rating: 80 Facilities Included: 202	Current Rating: 77 Facilities Included: 187
Portfolio Adjusted Percent Energy Reduction: No Reduction Facilities Included: 499	
<p>Averages are weighted by Total Floor Space.</p> <p>More about Baselines</p> <p>More about Adjusted Percent Energy Reduction</p>	

Next Steps and Schedule

- **February 2008:** Benchmarking Summit
 - Day 1: High level planning meeting, including AB1103
 - Day 2: Automated Benchmarking System remodel
- **March 2008:** Finalize data
 - PG&E residential, MUNIs, State Natural Gas Program
- **April 2008:** Final report for all State buildings

Retro-Commissioning Program

All state-owned buildings greater than 50,000 sq.ft.
RCx on a 5 year cycle.

- Current Status:
 - 25 projects in 2006/07
 - 19 projects with completed investigative reports and in various stages of implementation (see chart for results)
 - 4 projects still in investigation phase that required implementation work up front
 - 2 projects where the scope was downgraded to an energy audit due to simplistic building systems
- 20 projects in 2007/08 to begin February, 2008
- Sustainable funding mechanism needed for ongoing RCx

Results-to-Date for 2006-07 RCx Projects

2006-07 RCx Project List				Measures Implemented Or To Be Implemented During RCx Project				Measures Identified / Not Implemented During RCx Project - Needs Funding		
Owner Agency	Facility	City	Square Footage	Estim % Elect Savings (kWh/yr)	Estim % Gas Savings (Therms/yr)	Costs	Simple Payback Period (yrs)	Estim % Elect Savings (kWh/yr)	Costs	Simple Payback Period (yrs)
ARB	HAAGEN-SMIT LABORATORIES	EL MONTE	54,000	21.4%	5.9%	\$412,656	7.5	-	-	-
CDCR	CSP, SAN QUENTIN (HOSPITAL & CLINIC)	SAN QUENTIN	70,884							
CDCR	NACYCF (VOCATIONAL/FREE VENTURE BLDG.)	STOCKTON	70,209	8.5%	4.0%	\$1,050	0.1	6.0%	\$100,000	13.6
CDCR	CSP, SOLANO (LEVEL 2 PROGRAM SUPPORT)	VACAVILLE	108,340							
CDCR	CALIFORNIA MEDICAL FACILITY	VACAVILLE	769,993							
CDCR	CSP, CORCORAN (HOSPITAL)	CORCORAN	68,654	-	-	-	-	18.0%	\$174,289	2.9
CHP	ACADEMY	BRYTE	163,000	3.0%	11.0%	\$24,350	0.6	-	-	-
CLC	CALIFORNIA STATE LOTTERY, BLDG. D	SACRAMENTO	77,527	7.8%	41.3%	\$33,650	2.8	-	-	-
CLC	CALIFORNIA STATE LOTTERY, BLDG. A, B & C	SACRAMENTO	189,753	7.8%	41.3%	\$14,420	2.8	-	-	-
DDS	FAIRVIEW DEVELOPMENTAL CENTER (R&T)	COSTA MESA	301,635	-	-	-	-	20.0%	\$1,270,636	3.7
DFA	PLANT PEST DIAGNOSTICS LABORATORY	SACRAMENTO	50,840	-	-	-	-	37.0%	\$527,700	6.7
DGS	BOARD OF EQUALIZATION (P.E.R.S.)	SACRAMENTO	568,000							
DGS	FRANCHISE TAX BOARD, SAN DIEGO BLDG.	SACRAMENTO	385,000	12.0%	5.0%	\$65,000	1.9	-	-	-
DGS	FRANCHISE TAX BOARD, LOS ANGELES BLDG.	SACRAMENTO	466,000	6.0%	2.0%	\$15,000	0.3	-	-	-
DGS	SANTA ROSA STATE BLDG. (JUDGE JOSEPH RATTIGAN BLDG.)	SANTA ROSA	97,397	10.2%	4.8%	\$100,000	8.0	-	-	-
DGS	CALIFORNIA TOWERS	RIVERSIDE	162,000							
DGS	MISSION VALLEY STATE OFFICE BLDG.	SAN DIEGO	250,000	11.4%	18.6%	\$43,308	1.6	-	-	-
DGS	NEW JUNIPERO SERRA STATE OFFICE BLDG.	LOS ANGELES	451,000	7.9%	11.0%	\$146,159	5.3	-	-	-
DHS	RICHMOND LABORATORY COMPLEX (PHASE I LABORATORY/OFFICE FACILITY)	RICHMOND	160,000	18.3%	9.6%	\$263,994	0.5	5.1%	\$641,100	4.8
DMV	SACRAMENTO WEST OFFICE BLDG.	SACRAMENTO	260,158	9.0%	1.0%	\$150,000	3.8	TBD	TBD	TBD
DOT	DISTRICT 04 OFFICE BLDG.	OAKLAND	525,000	5.2%	33.7%	\$1,000	0.0	8.7%	\$1,488,016	10.7
DOT	SAN BERNARDINO GOVERNMENT CENTER OFFICE BLDG.	SAN BERNARDINO	313,869	2.5%	4.2%	\$30,000	2.5	22.5%	\$336,960	2.5
DPR	RAILROAD MUSEUM	SACRAMENTO	100,000	-	-	-	-	37.0%	\$836,454	18.9
DTS	DATA CENTER, GOLD CAMPUS (STEPHEN P. TEALE)	RANCHO CORDOVA	137,275	6.2%	58.5%	\$50,827	1.0	-	-	-
DVA	VETERANS HOME AT CHULA VISTA (BLDG. A)	CHULA VISTA	122,298	1.0%	0.6%	\$2,990	0.6	12.4%	\$150,927	4.0
			5,922,832			\$1,354,404			\$5,526,082	
				8.6%	15.8%	\$84,650	2.5	18.5%	\$614,009	7.5
February 2008				Average Electrical Savings If All Measures Were Implemented = 27.2%						

Retrofit Program – Low-rated buildings implement cost effective efficiency retrofits - Retrofits to yield 12% of 20% goal

- **CDCR ESCO Projects**

- Energy \$Mart loans beginning Feb 8
- 9 projects - \$10.8 Million
- \$2.8 Million Utility Incentive, approx \$8 Million financed
- \$1.5 Million saved/year; approx 15MWH/y, 5.2 year payback

- **DGS Model ESCO Contract**

- Final editing/review - release for industry review/comment Feb 24
- Phase I – up to 10 projects: CPUC, DGS, DMV, DPR, DOT, EDD, CHP
- Phase II – up to 10 projects: DMH, DDS, CDCR, FTB, CEC, DVA
- Sustainable funding mechanism needed for project front-end costs

Distributed Generation - Solar Power Purchase Program

- **Phase I - 4.2 MW**
 - Last project (Ironwood) Complete 4/08
- **Phase II – 23MW/34 Facilities**
 - 3 RFP's Issued Oct 12/13
 - Bids Due Feb 21; Contracts 6/08
- **Next Steps**
 - Phase III – Master Services Agreement
 - Solar Farms - Customer Retail Wheeling; AB 1807 Feed-in Tariffs
 - Solar Thermal Hot Water
 - Carbon Footprint Reduction
 - Chilled Water Option

Distributed Generation - Fuel Cells

- **Back-Up Power**

- Stanford Mansion -- 20KW; PG&E/SMUD/State Partnership; preliminary design completed, funding in place, lease agreement is last hurdle
- Caltrans -- evaluating methanol cells for remote radio sites
- Telecom Microwave Monitoring – 30KW; in evaluation
- Up to 300 potential sites

- **Co-Generation**

- Corcoran Prison – anaerobic digester gas fuel; PG&E Study completed; next step is Request for Information to help develop RFP
- Folsom Prison – digester gas fuel: feasibility study underway Feb. 2008
- Up to 40 potential sites

LEED-EB (Existing Buildings)

- All state buildings over 50,000 Sq. Ft. (210) certified by 2015

- 2 LEED-EB Platinum Certifications:
 - CalEPA Building
 - DGS-operated building: CA Dept. of Education
- 4 DGS-operated buildings at the East End to attain LEED-EB Gold
 - \$1.6 million annual energy savings
 - Reported 15 million tons of CO2 emissions avoided per year
- Statewide LEED-EB Workgroup initiated: First meeting: Feb.27th
- Next version out of LEED-EB: Operations & Maintenance (O&M)
- Ziggurat LEED-EB: O&M certification underway (leased)
- Request for Proposal for LEED-EB Consultant near completion
- BPM Sustainability Program Positions Update
- Volume certification for 58 DGS operated buildings completed

LEED-EB (Existing Buildings)

- All state buildings over 50,000 Sq. Ft. (210) certified by 2015

REPORTING SYSTEMS USEFUL FOR LEED-EB POINTS:

- State Agency Buy Recycled Campaign (SABRC)
- State procurement policies for furniture/furnishings purchases
 - Prison Industry Authority Purchases
 - Salvaged Goods State Warehouse
- Environmental Preferable Purchasing (EPP) Best Practices Manual
- Mandatory State Contract for purchasing of Fluorescent Lamps
- Assembly Bill 75 – Waste Audit
- Hauler Documentation of Recycling containers
- Hauler Documentation for Construction Waste & Demolition
- Record of Electronic Purchases and end of life E-Waste

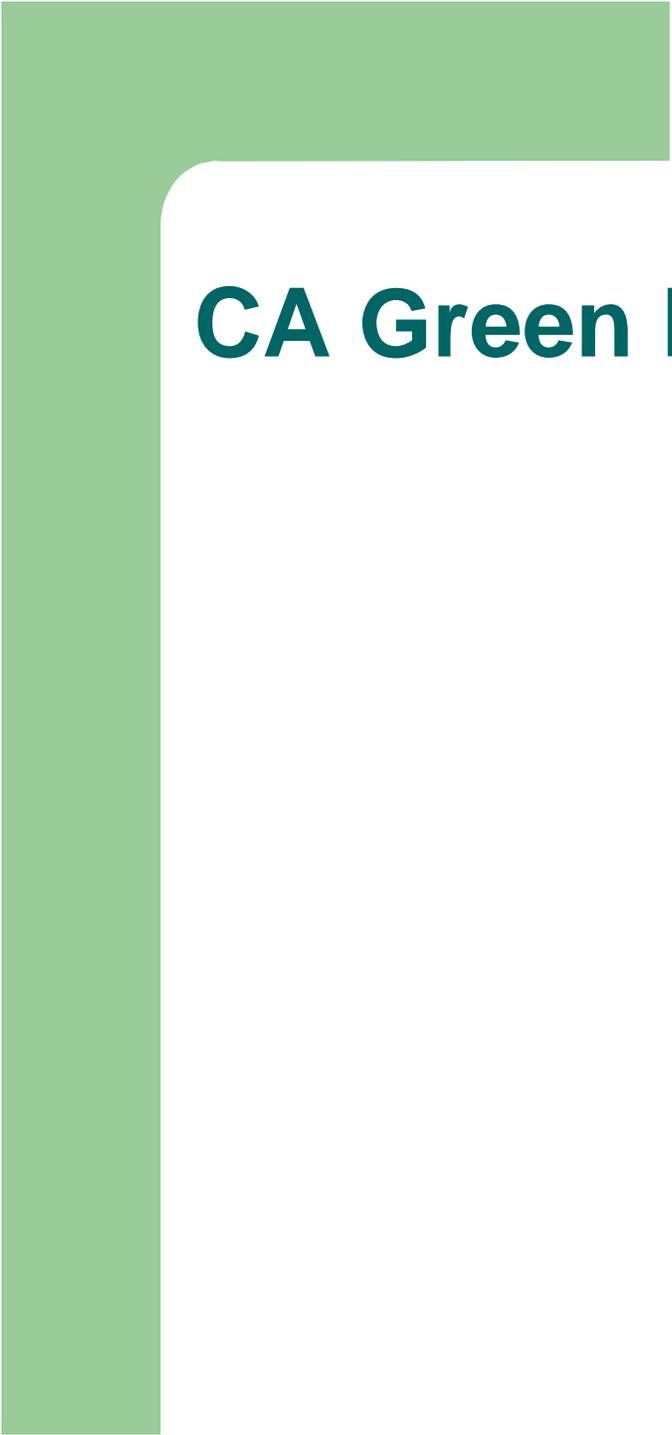
Green Leasing - Seek ENERGY STAR leases for buildings over 5,000 s.f. beginning in '06 (new leases) and '08 (existing leases)

Progress to date:

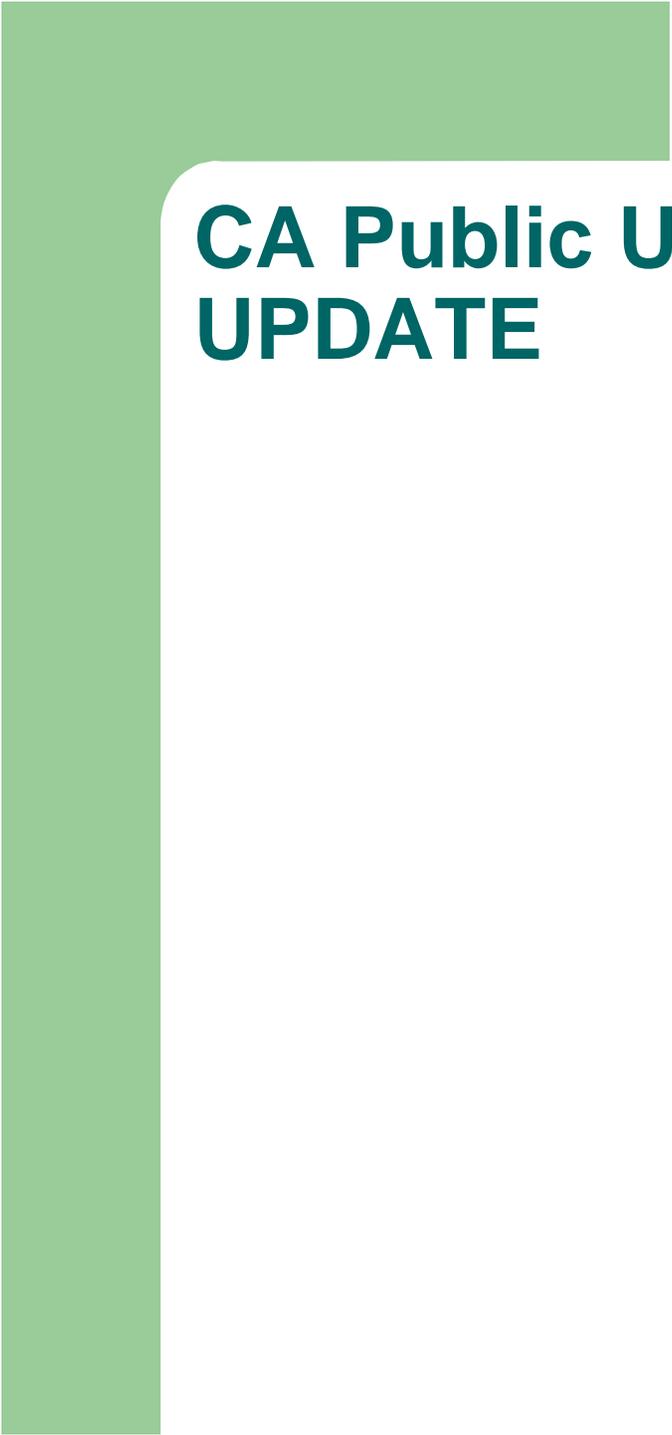
- 65 ENERGY STAR leases out of 1,855 total. Lessors are continually encouraged to pursue Energy Star with their buildings.
- All build-to-suit leases are being constructed LEED-NC Silver; 1 project has been completed, 2 projects are currently in construction and 1 project is pursuing.
- 1 retro-commissioning project has been completed and another is in progress on large leased facilities.
- 2,000+ letters sent advising lessors of the State's preference for Energy Star.
- 1,160 additional letters and e-mails sent to the general commercial market advising of the State's preference for ENERGY STAR and asking for the real estate community's support in this effort.

Green Schools: Net Zero Energy Goal (Grid Neutral)

- **Comprehensive Planning**
- **Energy Efficient Designs**
- **Energy Generating Technology**
- **Innovative Funding**



CA Green Building Code UPDATE



CA Public Utilities Commission UPDATE

AB 2160 Report to the Green Action Team

Elaine Hebert
California Energy
Commission
February 6, 2008



Assembly Bill 2160

- Authored by Ted Lieu (D-Torrance), signed by Gov. Schwarzenegger in 2006
- Legislates items from the Green Building Initiative:
 - Life-cycle cost analysis model for green building measures in **state facilities** (DGS)
 - Mechanisms for implementing green buildings/green building projects in **state facilities** (CEC; DGS, Treasurer)
- Asks for obstacles to/incentives for green building in **private commercial sector** (CEC; DGS, Treasurer, commercial building sector)

Life Cycle Cost Analysis Model

- AB 2160 directed DGS to develop the LCCA model “to evaluate the cost-effectiveness of state building design and construction decisions and their impact over a facility’s life cycle”
- DGS completed this before the July 2007 deadline

Note that the model follows a standard analysis formula that does not yet capture the full benefits of green building (that is, the “environmental and occupant health and productivity benefits”)

Mechanisms for Implementing Green Building in State Facilities

Green Action Team is familiar with many of these:

- GS \$mart Low-Interest Munic. Lease Loans
- Departments keep money from energy savings
- IOU/state energy partnership (\$17m) plus informal partnership with SMUD
- ESCO program

Mechanisms for Implementing Green Building in State Facilities - cont'd

- Benchmarking
- RetroCx (retrocommissioning)
- Retrofits
- LEED certification Silver or higher
- Renewables and other distributed gen.
- Green Leasing
- Green Schools

Mechanisms for Implementing Green Building in State Facilities - cont'd

- EPAC – Energy Policy Advisory Committee
- Title 24 Building Energy Efficiency Standards
- Statewide green building code (in process)
- CPUC planning for utility energy efficiency programs
- Possible future bond funding (Lockyer)

Private Commercial Sector – Green Building Obstacles and Incentives

Ten main obstacles

1. Lack of business case/value proposition for green building (owner/investor/developer perspective)
2. Difficulty financing
3. Building managers are inadequately trained on operating buildings for energy efficiency and sustainability
4. No mandates for maintenance or upgrades for energy systems over time
5. Uneven enforcement of Title 24 energy code across the state

Private Commercial Sector Green Building Obstacles – cont'd

6. Conflicts between green building strategies and existing building codes
7. Inconsistent green building ordinances across the state
8. Lack of a communication and feedback mechanism among building design, private manufacturers/research, and code communities
9. Lack of holistic, integrated approach in traditional construction practices
10. Differences in vocabulary, perspective, and concerns – utilities, policy makers, commercial building owners/investors/managers

Private Commercial Sector – Green Building Incentives and Options

- Cash incentives to support green bldg
- Subsidized costs of green bldg consultants
- Realignment of existing cash incentives for energy efficiency
- More and better information (reliable, understandable, easily accessible)
 - Green building costs and strategies
 - Tools for energy efficiency – benchmarking, retrocommissioning
- More trainings for property managers on energy mgmt
- Engage community colleges, other existing education venues

Private Commercial Sector – Green Building Incentives and Options **cont'd**

- More partnerships and collaborations; work with existing industry associations
- Encourage recognition and rewards for green projects, facilities managers who increase energy efficiency, etc
- Continue/step up education about and enforcement of existing energy code
- Better accounting methods for environmental benefits/externalities

Private Commercial Sector – Green Building Incentives and Options

Real Estate Industry Comments

We received letters from

- Calif. Business Properties Assoc (CBPA)
- Building Owners & Managers Assoc (BOMA California)
- Calif. Chamber of Commerce Representing:
 - International Council of Shopping Centers (ICSC)
 - National Association of Industrial and Office Properties (NAIOP)
 - Institute of Real Estate Managers (IREM)
 - California Downtown Association (CDA)
 - Retail Industry Leaders Association (RILA)
 - CCIM of Northern California (Certified Commercial Investment Member)

Real Estate Industry Comments

The industry requests - -

- More certainty in future electricity costs and rate structures
- More aggressive incentives for class A buildings (most 'low-hanging fruit' efficiency measures have been taken)
- Better financing options
- Tenants and owners as partners; submetering is critical
- Carbon credits
- More state programs focused on commercial properties

Real Estate Industry Comments (**cont'd**)

- Funding for training of building managers
- Support for voluntary benchmarking programs
- Assistance in retrocommissioning
- Other green certification programs besides LEED; perhaps a “Calif. Green Bldg” label
- Tax credits for energy and WATER conservation
- Energy and water use audits
- Funding for green bldg education via Bldg Stds Commission
- Full net metering for solar PV in commercial sector

Resources

www.energy.ca.gov/greenbuilding/ab2160/documents/

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916/654-4044

Climate Action Team: Green Bldg Subgroup

– Integrate CAT and GBI program efforts

- Draft Green Building Strategies Matrix complete Jan 22
 - Increase EE and environmental performance of buildings
 - Develop advanced EE standards
 - Implement funding/financing programs
 - Improve environmental performance of procurement
- Measures analysis (comprehensive cost analysis) due Mar 14
- Sector write-ups due April 8
- Draft scoping plan by Jun 26
- ARB Scoping Plan Hearing Nov 20 – Statutory deadline Jan 1, 2009