



California's Darker Shade of Green

Executive Order B-18-12

Small Business Council
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CALIFORNIA DEPARTMENT OF
GENERAL SERVICES



Executive Order B-18-12 Objectives



- Build upon history of green initiatives**
 - EO S-20-04
 - EO B-16-12
 - AB-32
 - CALGREEN
- Reinforce and Strengthen Initiatives**
- Extend green efforts into important areas**
 - GHG Reduction
 - Water Use Reduction
 - Electric Vehicle Charging
 - New & Existing Buildings
 - Zero Net Energy
 - Environmentally Preferable Purchasing
 - Energy Use Reduction
 - Onsite Renewable Energy
 - Financing
 - Monitoring & Oversight
 - Indoor Environmental Quality

Reduce Energy Use



- Reduce grid-based energy purchases for State buildings 20% by 2018
- Includes all forms of energy (elect., nat. gas, propane, etc.)
- Also reduce non-building retail energy purchases by 20% by 2018
- Compared to 2003 baseline

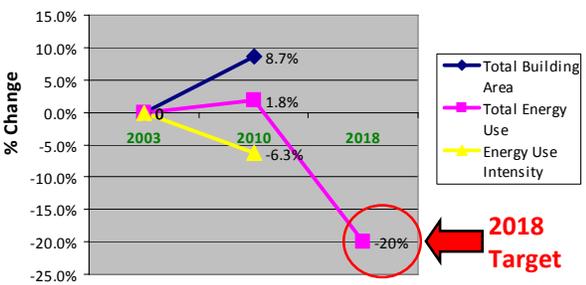



State Building Energy Use



2003-2010 Benchmark Status

>1,700 facilities & >110 million square feet

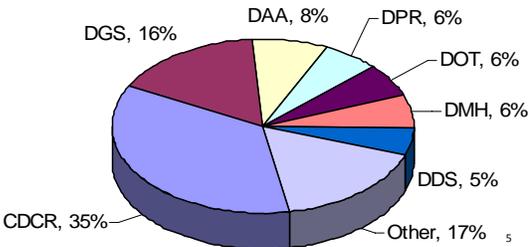


Year	Total Building Area	Total Energy Use	Energy Use Intensity
2003	0.0%	0.0%	0.0%
2010	8.7%	1.8%	-6.3%
2018 Target	-	-	-20%

State of CA Owned Facilities



- 33 State agencies own buildings
- >1700 facilities
- 110 million sq. ft.



Agency	Percentage
CDCR	35%
DGS	16%
Other	17%
DAA	8%
DPR	6%
DOT	6%
DMH	6%
DDS	5%

Zero Net Energy (ZNE)



- All new State buildings & major renovations beginning design after 2025 to be ZNE
 - Interim target 50% ZNE by 2020
- State agencies to take measures toward ZNE of 50% of existing State building area by 2025



Zero Net Energy Strategies



ZNE defined: "Produces as much energy as it uses during year"

1. High energy efficiency (50-70%>code)

- Improved thermal envelope
- Reduced infiltration
- More efficient HVAC systems, lighting, etc.
- Reduced plug loads

2. Onsite renewable energy generation

Rooftops Parking lot canopies Open space/land



ZNE Pilot Projects



- State to identify at least 3 buildings by Jan 2013 to pursue ZNE as pilot projects:

1. New building to be designed and constructed
2. Major renovation project
3. Existing building



Onsite Renewable Energy



- New & renovated state buildings to use onsite renewable power if economically feasible

- Solar PV
- Solar thermal
- Wind power



Onsite Renewable Energy



- Facilities w/ open land to consider large-scale distributed generation through various financing
 - Power Purchase Agreement (PPA) - 3rd party generation



Building Design & Construction



- All new and major renovated buildings >10,000 s.f. shall obtain LEED Silver or higher certification

- Build-to-suit leased buildings also



- Buildings < 10,000 sq. ft. to begin design after January 1, 2013 shall meet applicable CALGREEN Tier 1 measures

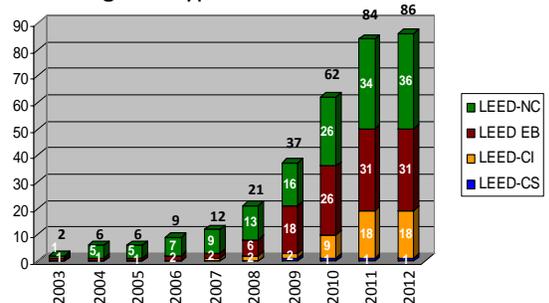
- Title 24, part 11



State of CA LEED Certifications



- 86 LEED Building Certifications (5/2012)
- Utilizing four types of LEED certification





Building Commissioning



- New & existing buildings to be commissioned
- Commission new const. or major renovations of office or other energy intensive spaces
- DGS to establish energy use intensity (EUI) thresholds to trigger retro-commissioning

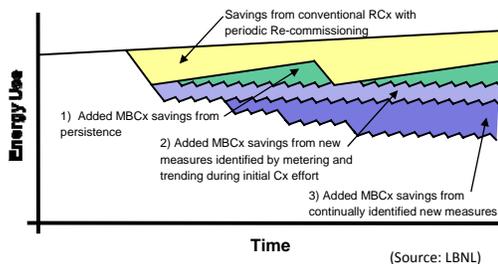


Monitoring-Based Commissioning



- Monitoring-based commissioning (MBCx) for energy intensive spaces >5,000 sq. ft.

– Thresholds determined by DGS



Existing Buildings



- Existing buildings >50,000 s.f. to complete LEED-EB certification by end of 2015
- Also achieve Energy Star score of 75



Existing Buildings



- DGS & other agencies to develop guidelines & policies for operation of exist. bldgs. by July 2013

- | | |
|-------------------------------|---------------------------|
| • Reducing plug loads | • Water efficiency |
| • Building & grounds maint. | • Cx, RCx & MBCx |
| • Recycling & waste diversion | • Energy use |
| • Env. Preferable Purchasing | • Monitoring |
| • Inform. Technology Mgmt. | • Indoor environ. quality |



Indoor Environmental Quality



- Implement feasible CALGREEN voluntary IEQ measures from to ensure healthy indoor environ.

CALGreen



CALGREEN A5.5

- Temporary ventilation during construction
- Protect on-site absorbent materials from moisture
- Flush out building (~2 weeks or equiv.)
- IAQ testing if flush out not possible (CO, formaldehyde, VOC's)

Indoor Environmental Quality



CALGREEN A5.5 (Cont.)

- Low or non-emitting materials
 - Resilient flooring
 - Acoustical ceilings
 - Paints & coatings
 - Composite wood products
 - Thermal insulation
 - Adhesives & sealants
 - Carpet systems
- Lighting, daylight, views, thermal comfort
- Entryway systems to capture dirt (6 ft. min.)



Water Efficiency & Conservation



- Reduce water use at facilities by 10% by 2015 & 20% by 2020
 - Compared to 2010 baseline
- DWR to develop water use guidelines by Jan 2013
 - Also recommend water use reporting database



Water Efficiency & Conservation



- Agencies to begin using water use reporting database by Jan 2013
 - Also collect baseline water usage info for 2010 or earlier
- New & renegotiated leases to encourage water use reporting & submetering where appropriate



Alternative Water Sources



- State buildings & landscapes to utilize cost-effective alternative water sources
 - Recycled water
 - Grey water
 - Rainwater capture
 - Stormwater retention
- Select landscape plants based on local climate suitability and reduced water & maintenance



Electric Vehicle Charging Stations



- Provide EV charging stations & accommodate future infrastructure demand @ employee parking facilities new and exist. bldgs.



Electric Vehicle Charging Stations



- DGS & other agencies to develop EV charging structure infrastructure plan that includes:
 - Evaluate & install EV charging infrastructure @ existing facilities where cost-effective and appropriate
 - Plan & install appropriate cost-effective EV charging infrastructure in new const. of state-owned parking



Environ. Preferable Purchasing



- State agencies to purchase EP products w/ reduced effect on human health & environ.
 - As cost effective & perform well (see PCC 12400)
- Examples include:
 - EPA Energy Star rated equipment and appliances
 - Consider use of recycled exterior paint from State contracts
 - Consider use of low VOC paints for building interiors
 - Use quality remanufactured ink & toner cartridges
 - WaterSense fixtures and equipment (including irrigation)



Financing



- State agencies to pursue avail. project financing & project delivery mechanisms to achieve goals
 - State revolving loan funds
 - Utility on-bill financing (OBF)
 - Power purchase agreements (PPA's)
 - GS \$Mart
 - Energy service contractors (ESCO's)
 - Other avail. programs



More Information



- Executive Order B-18-12 - <http://gov.ca.gov/news.php?id=17508>
- Green Building Action Plan http://gov.ca.gov/docs/Green_Building_Action_Plan_B.18.12.pdf
- LEED – www.usgbc.org
- CALGREEN - www.bsc.ca.gov/Home/CALGreen.aspx
- Green California Website – www.green.ca.gov
- Executive Order B-16-12 – Electric Vehicles <http://gov.ca.gov/news.php?id=17472>
- State Contracts Register www.eprocure.dgs.ca.gov

Questions?



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