How Will the Recent Updates to Energy Requirements and Options Affect You?
San Diego County Greenhouse Gas Inventory

An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets
aka “Title 24”

Effective date changed from August 1, 2009 to January 1, 2010
Title 24

- Increasingly more stringent ... 2008, 2011, 2014 ...

- “Net Zero” Residential by 2020

- “Net Zero” Commercial by 2030
2008 Title 24 – Major Changes (NR)

- New definitions of Daylit areas: 2 zones, controls required
- Sky-lighting: include smaller buildings: 8,000 sf
- More occupancy sensors
- Lower Lighting Power Densities (W/sf)
- Credit for Demand Response controls
- Revised Outdoor Lighting approach and allowances
2008 Title 24 – Major Changes (NR)

- Tighter insulation guidelines, but no change to glazing
- More Cool Roofs
- Better Acceptance Requirements for HVAC, Fenestration, and Lighting
- Expand DDC systems to zone level
- Gas water heating becomes standard
- Some refinements to Additions and Alterations
2008 Title 24 – Major Changes (NR)

- New Compliance Options:
  - Under Floor Air Distribution Systems
  - Fault Detection And Diagnostics For Air Handler Units, VAV, and Rooftop Units
  - Thermal Energy Storage
Title 24 – Alterations and Additions

Alterations must meet the Prescriptive Guidelines for the feature being altered

- Lighting: meet current requirements if:
  - Increasing connected load
  - Replacing 50%+ of luminaires

- Glazing

- HVAC
Title 24 – Alterations and Additions

New:

- If replacing, recovering, or recoating > 50%, or >= 2,000 sf, → must do Cool Roof
  - Low-Slope: SRI >= 64
  - High-Slope: SRI >= 16

- Exceptions ...
CSI: PV Incentives – as of July 1, 2009

New Construction
- 15% Better than Title 24
- Verified by CEPE

Existing Buildings
- 100,000 sf or more
- Energy Star Rating of 75
LEED v3 – What is it?
LEED v3 ROLLOUT

April 27, 2009
LEED v3 LAUNCH
- Technical enhancements to rating system: LEED 2009
- LEED Online
- New Building Certification Model

June 27, 2009
New projects will be required to register for LEED 2009

December 31, 2009
Last day for FREE upgrades to LEED v3 for existing projects

New reference guides available - electronic and hard copy
LEED v3 2009
LEED v3 2009 - EBOM

Prerequisites:
- WE-p1: Min. Indoor Plumbing Fixture, Fitting Efficiency
- EA-p1: Energy Efficiency Best Management Practices
- EA-p3: Refrigerant Management
- MR-p1: Sustainable Purchasing Policy
- MR-p2: Solid Waste Management Policy
- EQ-p1: Minimum IAQ Performance
- EQ-p2: Environmental Tobacco Smoke (ETS) Control
- EQ-p3: Green Cleaning Policy
LEED v3 2009 - EBOM

Upcoming Local Courses:
USGBC San Diego Chapter [news@usgbc-sd.org]

Green Your Facility with the LEED for Existing Buildings: Operations & Maintenance Green Building Rating System
Speakers on Water Efficiency, Energy Efficiency
Wednesday, September 16, 2009, Expo Open at 9:00 a.m.

Workshop - Green Building Operations & Maintenance:
The LEED Implementation Process: 300-level course.
Friday, October 16, 2009, 8:30 a.m. - 5:00 p.m.
AB-1103 — the new Game Changer

Requires Energy Benchmarking for Nonresidential Buildings

a) Facilitating a *benchmarking system* that provides energy consumption information for all nonresidential buildings in the state would allow building owners and operators to compare their building’s performance to that of similar buildings and to manage their building’s energy cost.

b) Benchmarking scores could motivate building operators to take actions to improve the building’s energy profile and help to justify financial investments.
AB-1103 — the new Game Changer

What is the trigger?
Financial transaction for the whole building:

- Must disclose Energy Star Portfolio Manager benchmarking data and ratings ...
  ... to a prospective buyer, lessee, or lender.

- Energy Star only covers about half of CA buildings
  → California Benchmarking tool
AB-1103 — the new Game Changer

<table>
<thead>
<tr>
<th>Eg: Building Type</th>
<th>Proposed Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>July 1, 2010</td>
</tr>
<tr>
<td>Solely Owner Occupied</td>
<td>5,000 sf</td>
</tr>
<tr>
<td>Office Buildings</td>
<td>50,000 sf</td>
</tr>
<tr>
<td>Retail Spaces</td>
<td>50,000 sf</td>
</tr>
<tr>
<td>Food Stores</td>
<td>25,000 sf</td>
</tr>
<tr>
<td>Health Care</td>
<td>50,000 sf</td>
</tr>
<tr>
<td>other types ...</td>
<td>varies</td>
</tr>
</tbody>
</table>
Coming soon to a theater near you …

LEED
AB1103
CSI-15%
Title 24
Emissions Reporting
Cap and Trade
White Tags

A lot of pressure to improve the performance of buildings!
Cxg –

Plugged in? Sensors working?
Cxg –

Ducts connected? Dampers working?
Building overpressurized?
Cxg: New Buildings

- Title 24
  - Acceptance
  - Requirements
  - Manuals

- LEED
  - Cxg
  - OPR
  - BOD
  - Testing
  - Training
Cxg: Retro-actively

- An existing building that has never been cxd at all

Re – Cxg:

- Every few years ...
- Federal buildings: at least every four years

Ongoing – Cxg:

- Like it says ...
Energy Upgrades and Retrofits

1. When start thinking about it?
   Do a benchmark: compare with similar buildings
   ➢ *Especially if have a transaction coming up!!*

2. How find and quantify opportunity?
   Audits: walk-through, technical

3. What support and incentives are available?
Financial Aid
Financial Aid: examples

- Rebate Programs:
  - Express Efficiency
  - Small Business Super Saver (small account)

- Performance Programs:
  - Standard Performance Contract
  - Energy Savings Bid

- Demand Response – dispatchable loads
  - Audits and Incentives
  - Variety of DR Rates
Financial Aid: *examples*

- 3rd Party Programs, *eg*:
  - Rcx: Retro-commissioning
  - Online Business Assessment Program
  - Premium Efficiency Cooling

- New Construction
  - Savings By Design

- Emerging Technology:
  - Request support to help implement new technologies
Financial Aid: examples

On-Bill Financing (Interest-Free)

<table>
<thead>
<tr>
<th>General Example:</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Efficiency Measures</td>
<td>$110,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Other Rebates and Incentives</td>
<td>-$25,000</td>
<td>-$50,000</td>
</tr>
<tr>
<td>Loan Amount</td>
<td>$85,000</td>
<td>$200,000 Max $250,000</td>
</tr>
<tr>
<td>Annual Savings Amount</td>
<td>$17,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>Simple Payback (Loan / Savings)</td>
<td>5.0 Max 5 years</td>
<td>8.0 Max 10 years</td>
</tr>
<tr>
<td>Months (plus one)</td>
<td>61</td>
<td>97</td>
</tr>
<tr>
<td>Monthly payment on utility bill (Loan / months)</td>
<td>$1,393</td>
<td>$2,062</td>
</tr>
</tbody>
</table>
Financial Aid: *examples*

AB 811: Property Tax Financing (Low Interest)

Administered in San Diego by CCSE
- Renewable Onsite Generation Systems
- Energy Efficiency Measures

“Eliminates concerns that the property will sell before recovering the system investment from utility bill savings.”
Financial Aid: examples

Federal Energy Efficiency Tax Deduction

- Ranges from $0.30 to $1.80 / sf,
  - depending on efficiency
  - Lighting can be done separately
  - 35% MTB: actual benefit is about $0.10 to $0.60 / sf

- Requires:
  - Complicated energy modeling for max incentives
  - Field Check

- Equipment placed in service: 1/1/2006 and 12/31/2013

http://www.dsireusa.org/ www.energytaxincentives.org
What’s Next?

- **SITE:** Restore a healthy relationship with nature
- **ENERGY:** Harness on-site renewable resources
- **MATERIALS:** Eliminate the environmental impacts of construction
- **WATER:** Treat water as a precious resource
- **INDOOR QUALITY:** Ensure all environments are healthy, vibrant places
- **BEAUTY+INSPIRATION:** Design celebrates culture, spirit, place
- **LEADERSHIP:** Explore theory and practice of transformative design
Q & A
Brummitt Energy Associates, Inc. gives you the information you need to achieve comfortable, highly energy efficient, cost-effective projects.

Consulting for new construction and for existing buildings, we specialize in whole building energy and daylight modeling, increasing financial incentives, and documentation for Title 24, LEED and CHPS.

20 years experience includes thousands of buildings, with hundreds of projects pursuing and achieving high energy efficiency, and LEED ratings from Certified to Platinum.

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