



C&I Lighting Market Approaches



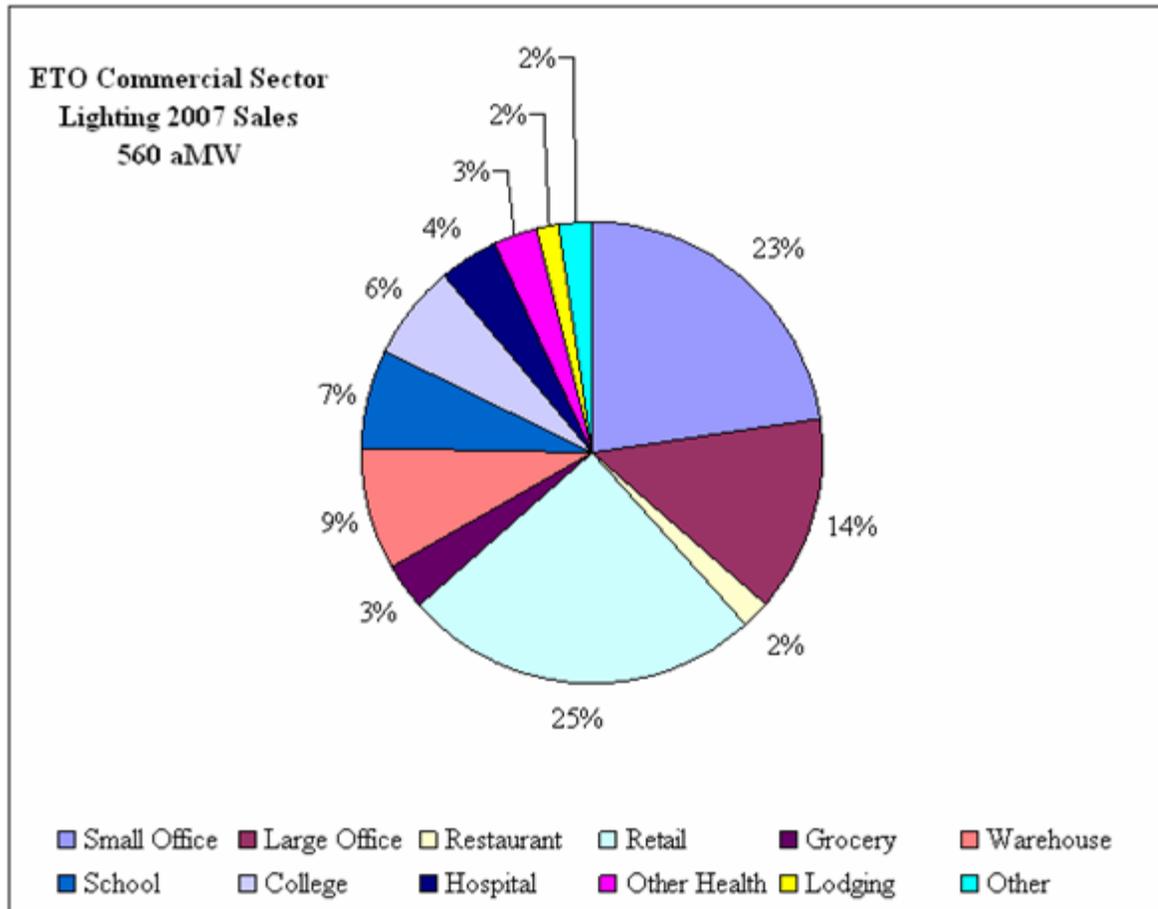
National Symposium on
Market Transformation
March 17, 2010



Background

- 43% of total commercial electric load is lighting
 - 35% of electric load for buildings with electric heat
 - 60% of electric load for buildings with gas heat
- Major changes in National Standards starting in 2012
- Major changes in Oregon commercial building code in 2010

Oregon Lighting Electricity Use by Building Type 2009





Energy Trust Program Impacts

- Energy Trust incentive projects have reduced lighting energy consumption in the nonresidential sector by ~ 4%
- HP T8's ~25% of the market for new fluorescent lighting
- ~80% of the market actors consider Energy Trust as having influenced the adoption of high performance T8s (25% Energy Trust “most important and 55% “major influence”)



Retrofit Program Opportunities

- 2012 phase out of T12s will provide Energy Trust a big opportunity
 - New generation of HPT8s and ballasts
 - Improved design
 - Addition of controls and sensors
- 17% of commercial lighting is still T12
- ¼ of lighting in pre 1994 buildings are T12s



ETO Current Approaches

- Build next linear fluorescent market to transform:
 - 25w-28w HP T8s with low ballast factor ballasts
 - Cost effective to replace old T8 systems
 - 1 to 1 replacement savings are over 25%
 - Higher savings (50%) if fewer lamps used (e.g. 3 to 2 replacement)
 - 36,000 hour life with high lumen maintenance



Training and Design and Controls Incentives

- Training for trade allies on design and controls
- Incentives that promote better designs:
 - Higher incentives for matching ballast factor to tubes
 - Higher incentives for systems that include more sophisticated controls (Bi-level, dimming etc.)



Support National Efforts in Developing LED Markets

- Qualify and provide incentives for cost effective Energy Star products
- Developed simple checklist based on Energy Star and other specs to screen LED products that are not Energy Star or product applications not covered by Energy Star



LED and Other Lighting Technology Directions

- \$30 prescriptive for LED recessed cans
- All <1 watt LED applications that have $\geq 50\%$ savings and are cost effective
- Street and parking LED projects on limited basis if marginally cost effective
- Prescriptive induction lighting incentives (replacing HID)
- Cold Cathode lamp incentives (3-18 watts)



New Construction

- 2010 Oregon New Code anticipated changes:
 - LPDs average decrease of 9-12%
 - Controls required in more applications (e.g. Egress lighting has occupancy sensors and bi-level lighting required)
- Performance path will require 15% improvement (lighting low cost option?)
- ETO looking at how to push simple design and controls
- ETO pilot programs pushing lower LPDs and net-zero approaches in new construction



Ongoing and Future Challenges

- Plethora of new products and choices
- Field testing a lot of work and coordination
- Customer demand
- Trade ally training
- Simple, easy to specify and install lighting designs and controls