



C&I Program Strategies - Deep Dive

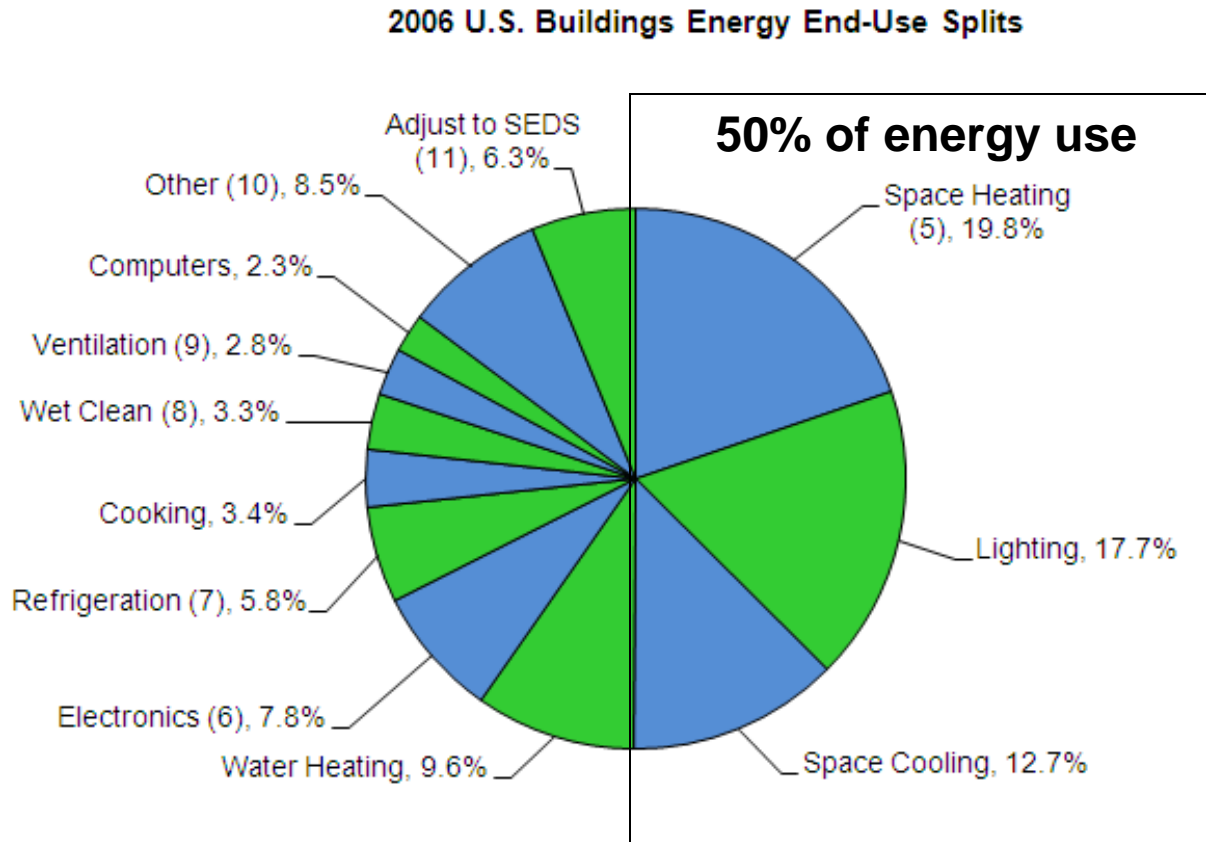
June 14, 2011



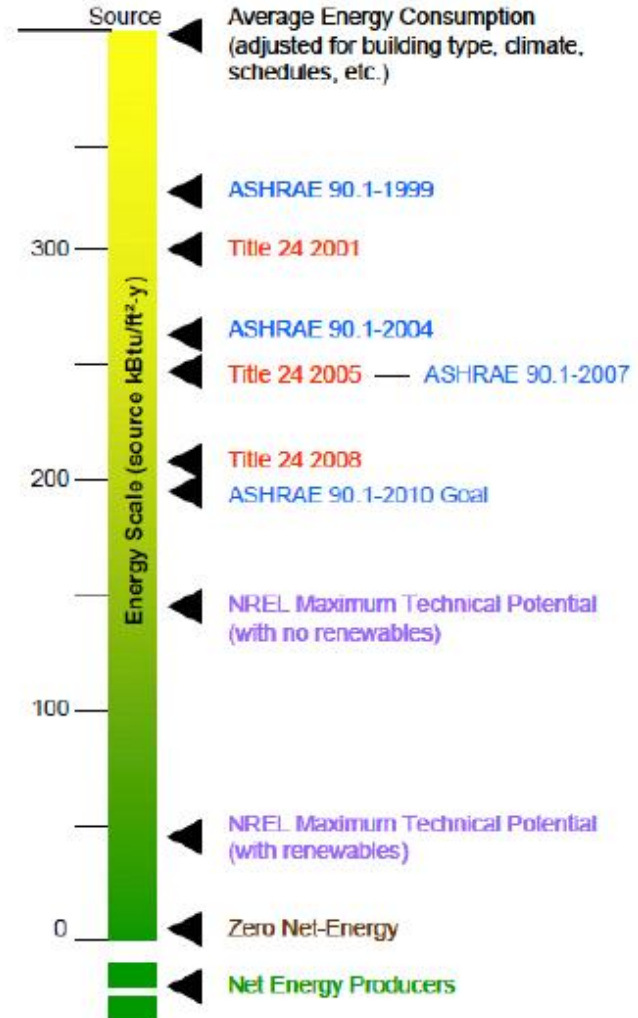
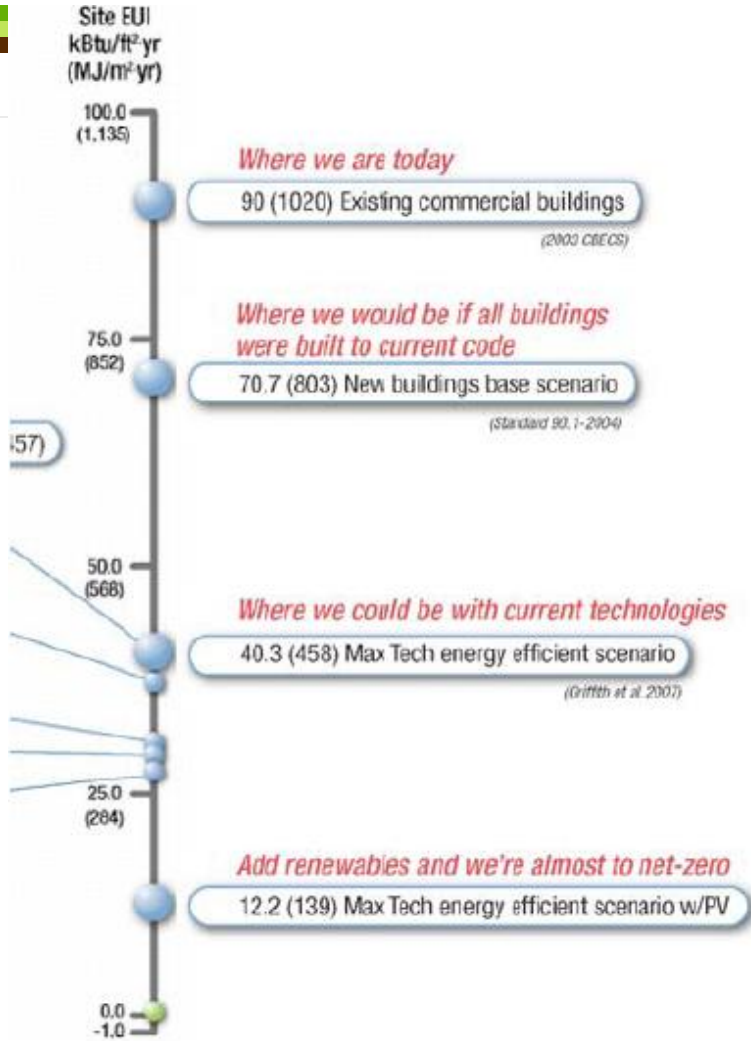
Agenda

- Three Year Plan Goals
- Guiding Principles: How we are going to get there
 - G&E Integration
 - Consistent State-Wide Programs
 - Going Broader
 - CHP
 - Financing
 - Going Deeper
- Additional Tactics/Strategies
 - Strategic Energy Management Plans
 - Upstream Incentives
 - Codes and Standards

HVAC and lighting account for 50% of building's energy usage



What is an energy efficient building?



Small Business Deep Dive

- Small business customer: warehouse
 - 22,000 kWh per year
 - Lighting project saved 38% of annual energy use
 - T5 fluorescents
 - High performance T8s
 - CFLs
 - Controls

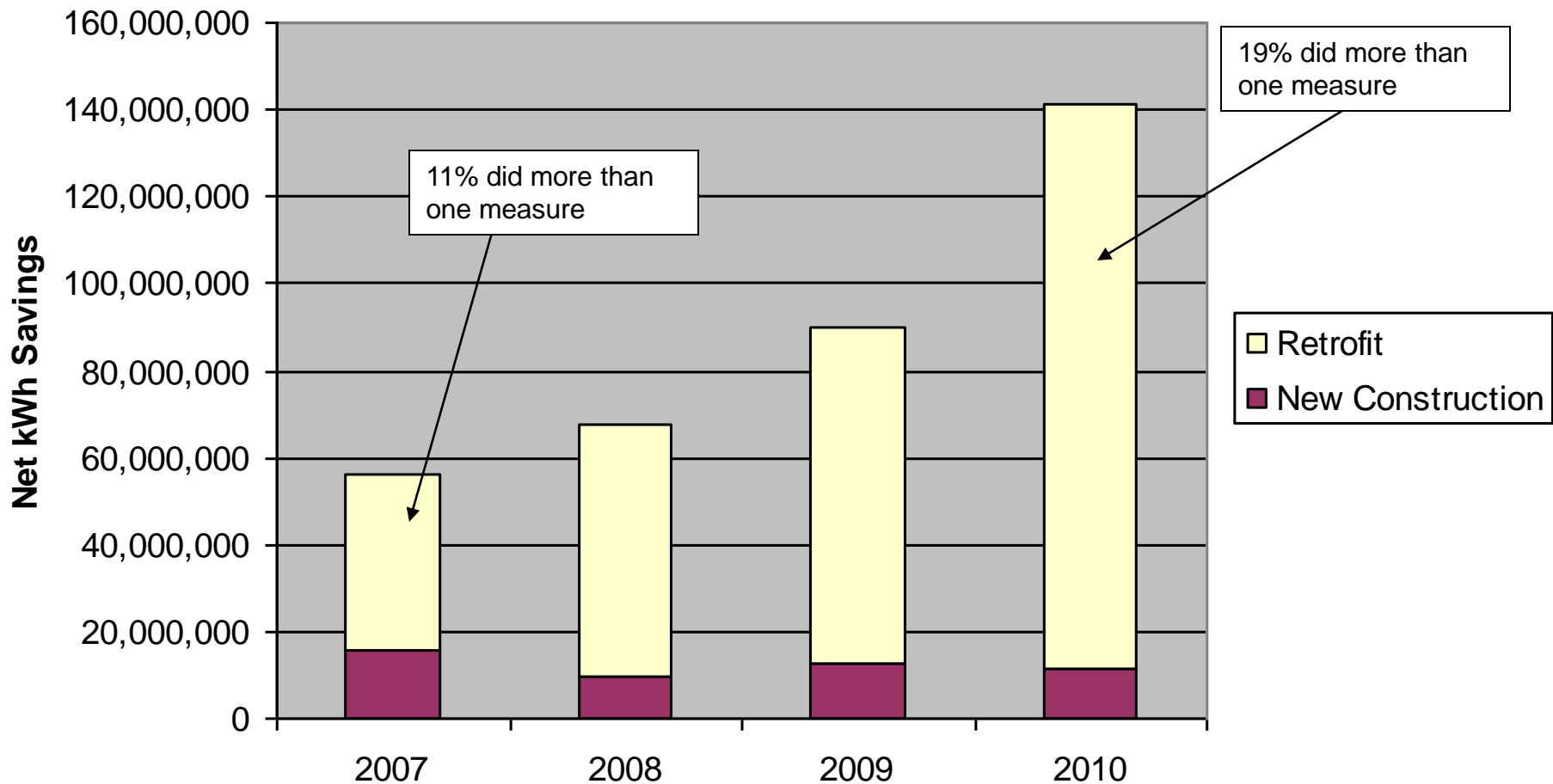
Deep Dive: Large Business

- Large High School
 - 2+ year planning/budgeting process
 - Six different measures installed
 - Lighting: two phases
 - Lighting Controls
 - Energy Management System
 - Refrigeration Controls
 - VFDs
 - HVAC System: Retro-commissioning
- Manufacturing Facility
 - Multi-year planning/budgeting process
 - Four different measures
 - Lighting controls: three phases
 - VFDs: controlling process and non-process motors
 - HVAC upgrades to AHU
 - Compressed Air Leak Repair



Retrofit Program Participation

Large Business Program Savings



- “Deep Dive” report being drafted
- EEAC consultants currently evaluating PA program participation data
- “Deep Dive” Strategies
 - Whole Building Assessment
 - Enhanced incentives for multiple measures
 - Multi-year energy management plans
 - Codes and Standards
 - Advanced analytics to remotely benchmark building energy performance using interval data

Lighting

- High efficiency lighting and fixtures (new & reconfigured systems)
- Occupancy controls
- Lighting management systems
- Daylighting and dimmable controls/sensors (harvesting & renovations)

HVAC

- HERTUs & chillers, some w/ VRF
- HE heat pumps (air, water, ground)
- HE gas & gas condensing boilers
- VAV conversions
- VFDs
- Passive ventilation (renovations)
- Heat recovery
- Plate and frame heat exchangers
- Radiant systems (renovations)
- Also: ice storage, evaporative cooling, economizers

Controls/Energy Management

- Occupancy controls/timers (lighting, equipment)
- Daylighting controls/dimmers
- Building/energy management systems
- CO2 sensors
- Commissioning (RCx, project Cx, continuous Cx)
- Energy monitoring systems

Envelope

- Insulation upgrades: wall, roof, attic, ect
- HE window replacements/upgrades
- Operable windows (natural ventilation)
- Cool roof treatment
- Reduced infiltration/enveloped tightening
- Window tinting/films
- Solar shading (interior & exterior)