

Energy Codes & Standards- A Key Strategy for Energy Efficiency in Buildings

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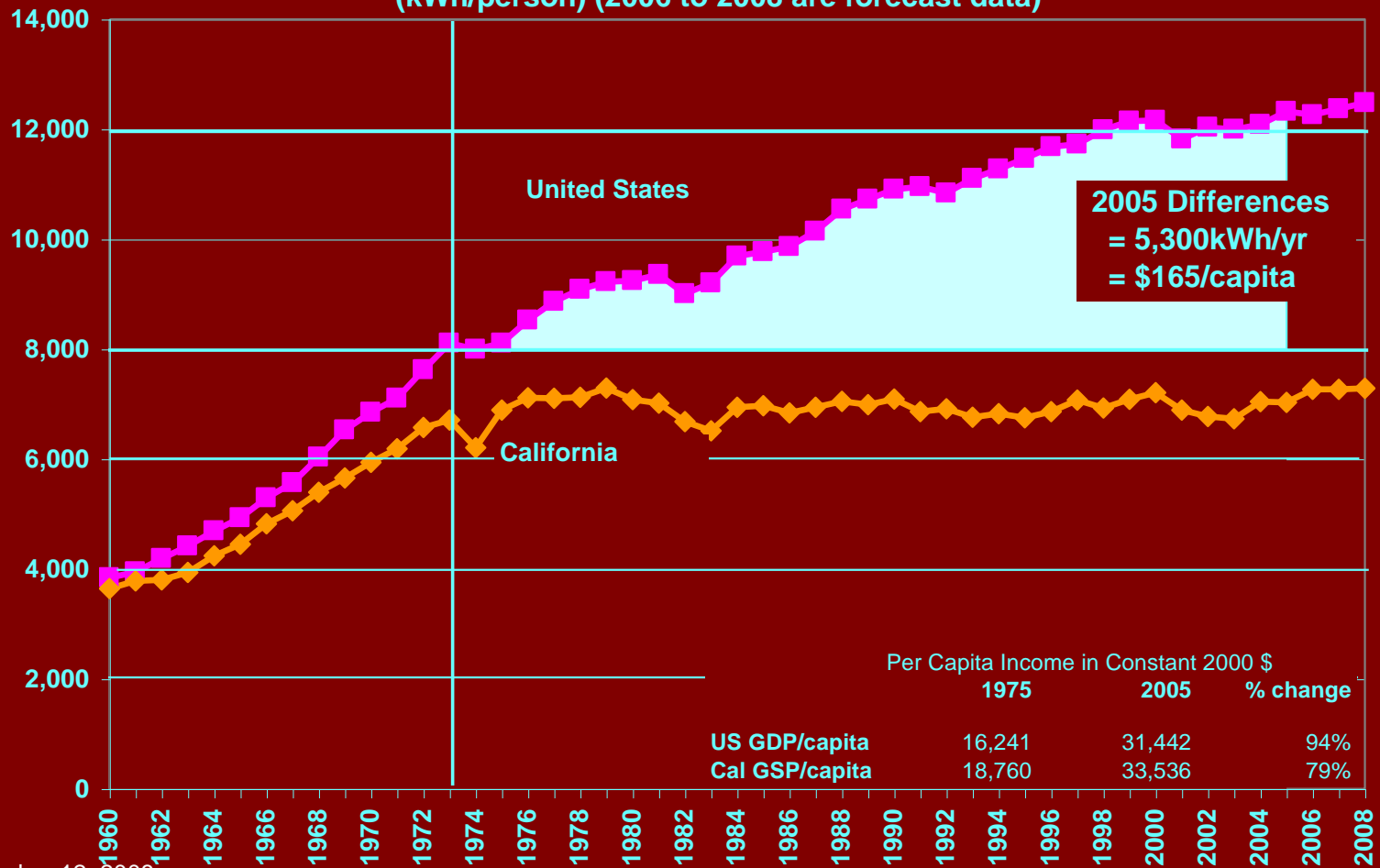
Course is Clear

- Energy efficiency in buildings is a big target
- Utility programs only reach some
- Standards apply to all
- Rebates are costly
- Standards raise the bar for the entire industry



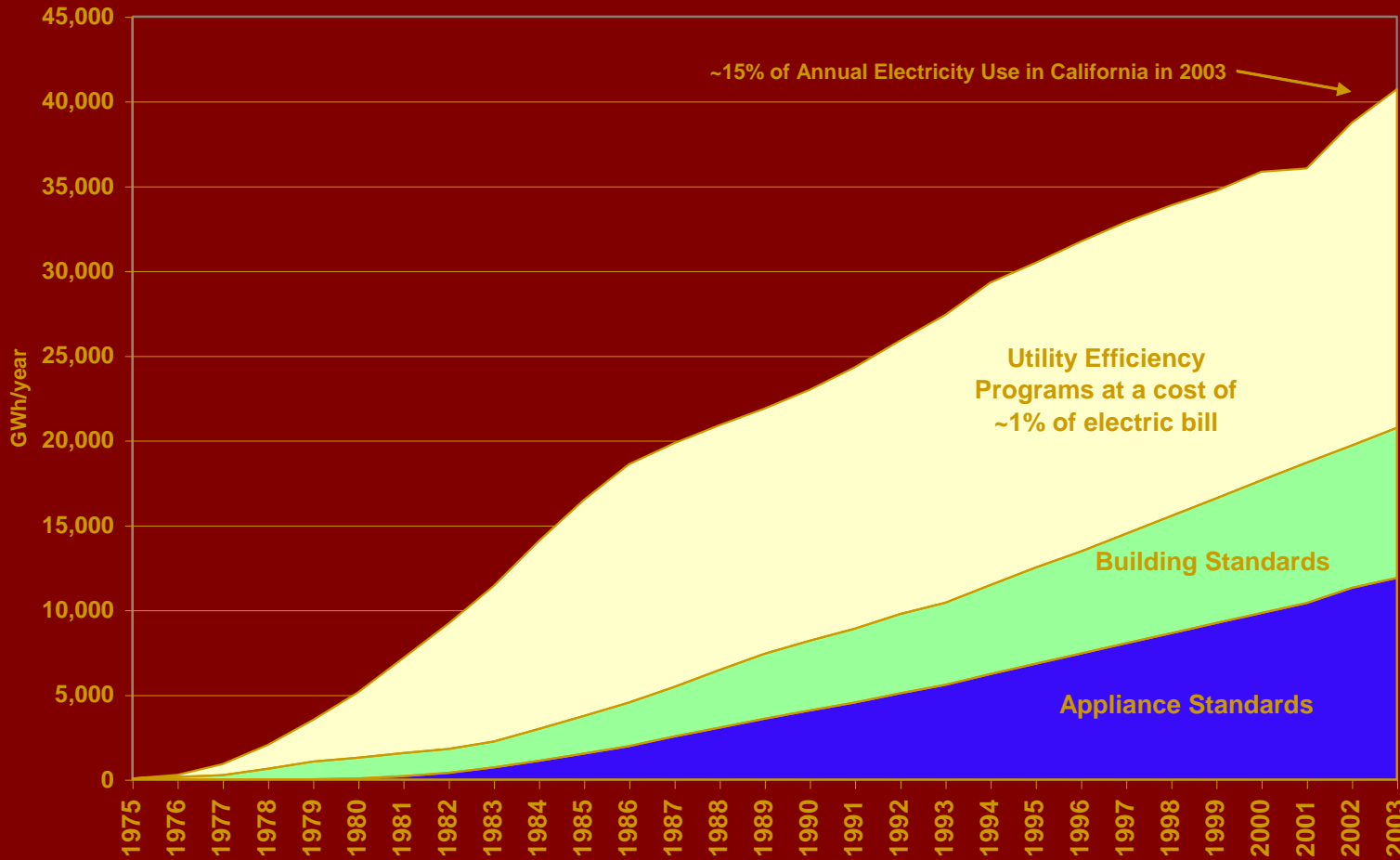
California's Favorite Graph

Per Capita Electricity Sales (not including self-generation)
(kWh/person) (2006 to 2008 are forecast data)



C&S Provide Foundation

Annual Energy Savings from Efficiency Programs and Standards



Energy Standards

- Establish norms for energy use
- Transform the building industry
 - Conservative & cautious
 - Slow to change
 - Diverse
- Combat “race to the bottom”



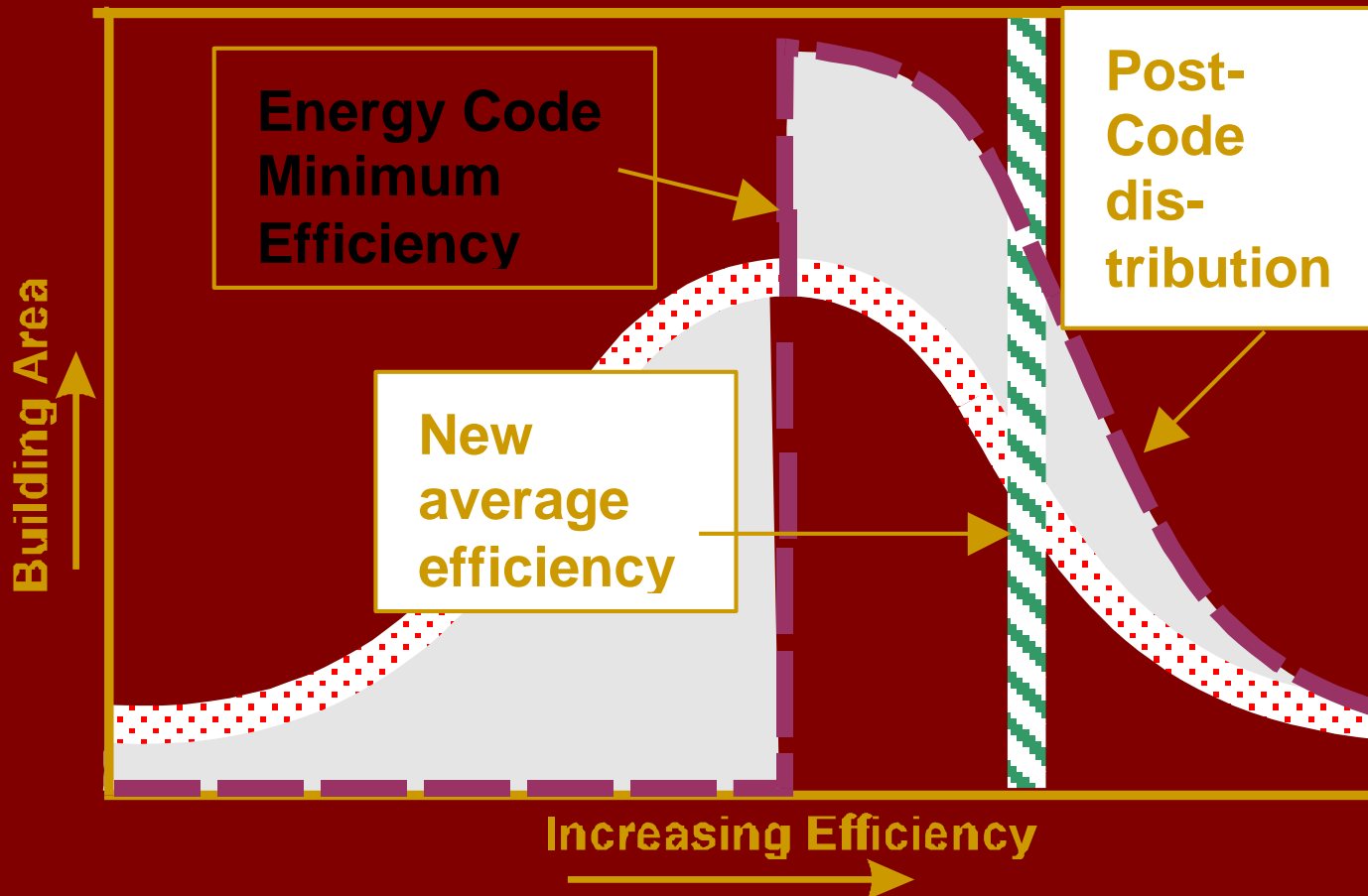
[Codes & Standards]

- Building codes govern construction
Energy codes set efficiency standards
- Advantages:
 - Large market penetration
 - Elevates standard practice
 - Pushes prices down
- Disadvantages:
 - Can't be too advanced
 - Depends on enforcement
 - Must be updated
(else drags market)



Standards Affect the Market

Building Population Efficiency



Get the framework right

- Set public policy for efficiency
- Adopt an energy code
 - Start with a building code
 - Strengthen enforcement mechanism
- Include C&S in utility savings goals
- Measure & credit the energy savings



New Construction Standards

- Efficiency is most cost effective
- Integrated design is most efficient
- If not now, wait many years (lost opportunity)
- Link to sustainability and green movement
- Extension of normal bldg permit process



Existing Building Standards

- Many more existing buildings
- Discrete efficiency change-outs
- Apply to individual trades
- Harder to reach through permits



Appliance Standards

- Govern what can be sold
 - Primary heating/cooling equipment
 - Water heaters & appliances
 - Lighting lamps & ballasts
 - Controls, electronics, etc.
- Apply to new & existing bldgs
- Federal pre-emption issue
- Enforced at point-of-sale



Utility C&S Programs

- Utility efficiency experts propose new standards
- Disadvantages
 - Takes away easy stuff
 - Rebate programs costlier
- Advantages
 - Everybody must do it
 - C&S programs most cost effective of all



How CA C&S programs work

- Utilities & CEC vet initial ideas
- Utilities prepare CASE studies
 - Assess technology opportunity/problems
 - Fill gaps – test methods, calcs, tools
 - Work through issues w/ stakeholders
 - Calculate cost effectiveness & savings
 - Develop code language
- Assist with deployment & education



Getting credit for savings

- CPUC C&S evaluation protocol
 - Estimate statewide energy savings
 - Adjust for normal market adoption
 - Adjust for non-compliance
 - Determine attribution credit (%) for utils
- Assist with enforcement/compliance
 - Train designers & building officials
 - Develop compliance tools



Conclusion

- We have a lot of buildings to improve
- Utilities have a lead role to play
- We're dealing with the building industry (i.e., it won't be easy)
- C&S are key to overall success



Questions/Comments?

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