



Innovation and Integration

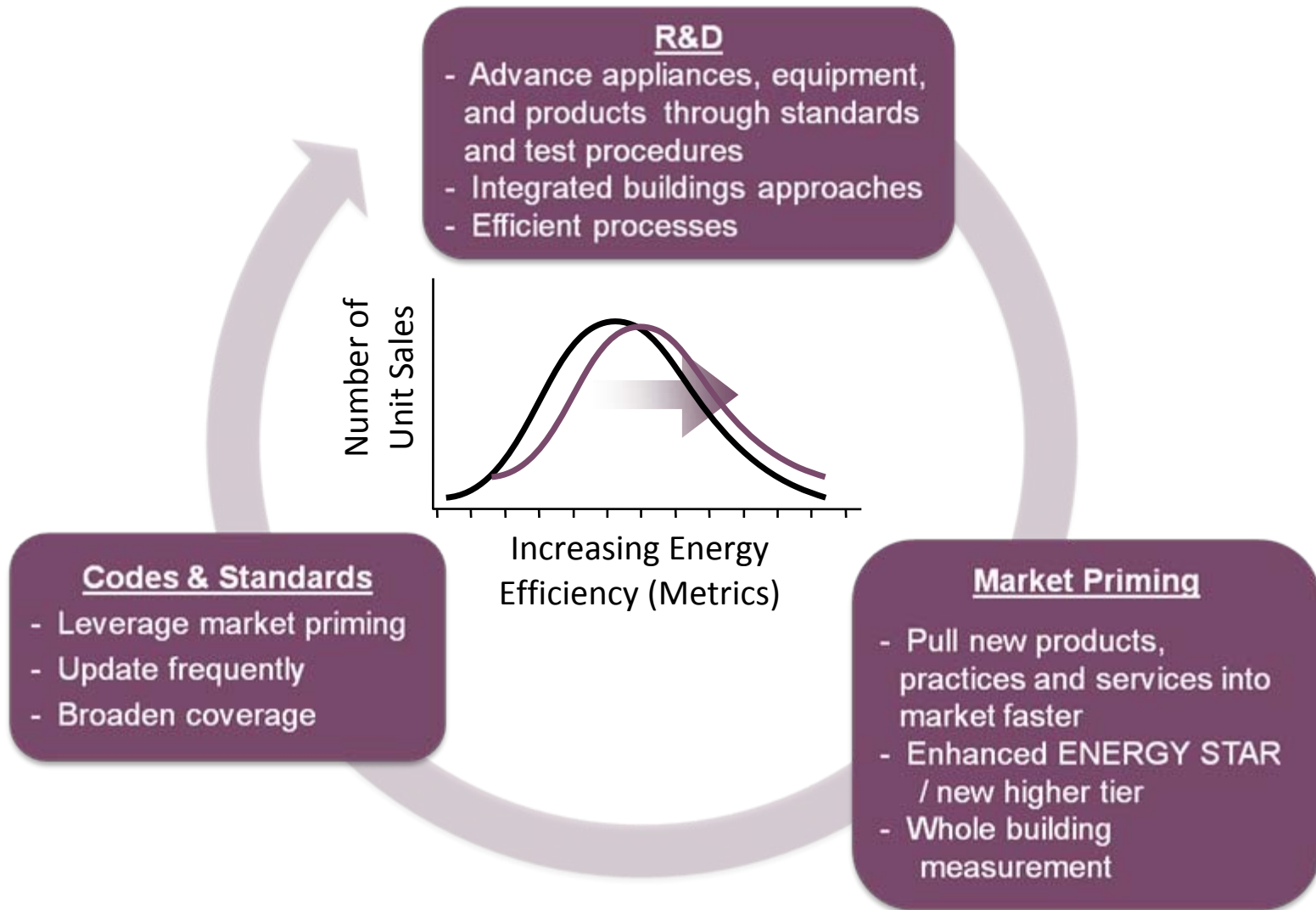
Transforming the Energy Efficiency Market through
State, Local, Utility, and Federal Leadership

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Building Technologies Program
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Our Mission is Possible

The Building Technologies Program develops technologies, techniques, and tools for making residential and commercial buildings more energy efficient, productive, and affordable.



Cracking Codes



Building Energy Codes and the ICC

International Code Council (ICC)

Members include:

- State & local energy & safety code officials
- Building Industry representatives
- Relevant stakeholders & DOE

Final Action Hearing in Oct 2010

- Passed changes to energy saving codes including residential and commercial
 - 30% goal over '06 base

On the road to achieving DOE's 2015 goal of 50% increase in energy savings compared to 2006 energy code base

International Energy Conservation Code 2012

BETTER standards in envelope efficiency

BETTER duct performance requirements

BETTER air exchange requirements (> infiltration)

MORE efficiency requirements for cooling towers and HVAC systems in commercial buildings

Cool Roofs and Codes

- **Cool roofs can decrease air conditioning loads by approximately 10%**
- June 2010: Secretary issued a cool roof policy for all DOE facilities:
 - Outlines cool roof performance criteria as well as promotes increased insulation levels for new and retrofitted buildings.
- Opportunity:
 - Incorporate into residential codes
 - Utility energy efficiency incentives



States, Utilities, and Feds...
Oh My!



State Energy Efficiency Action Network

- **Purpose:**

- Assist state and local governments with advancing EE policies & practices

- **Goals:**

- Leverage ARRA, create & sustain jobs, engage more state and local policy makers, facilitate consistency, make progress across 50 states & local gov'ts

- **Leverage 4-year NAPEE effort**

- 10 recommendations to achieve all cost-effective EE
- Framework for measuring progress (Vision 2025)
- Technical assistance 60% of states in 09

- **DOE/EPA Role:**

- Federal staff support for workflow
- Enhance working group discussions
- Help develop key deliverables
- Coordination of financing topics, utility regulatory structures supporting retrofit programs, energy data approaches to support retrofit programs and EM&V



Sustainable future =

- JOBS
- SAVINGS
- GHG REDUCTIONS

Windows of Opportunity



Scale Up Market Adoption = Energy Savings

Past

- BTP set specifications for and established volume purchase programs for:
 - CFLs
 - Set specifications on form factor and performance
 - Apartment size refrigerators
 - With New York Power Authority (NYPA) and
 - Consortium for Energy Efficiency (CEE)
 - Clothes washers
 - Residential recessed down lights

Present

- **BTP is sponsoring a volume purchase of R-5 windows for residential buildings**
 - Collaborated with industry partners on RFP to ensure all specs could be met
 - 45 qualified vendors of high performance windows
 - \$2-\$4 increase in price from Energy Star R3 window**
 - \$45k/month average sales *so far*
- Phase 2 begins 2012: commercial and new construction
- Storm Windows Volume Purchase to be organized with OWIP

The Future

- **Work w/ Commercial Energy Alliances**
 - Specifications increase efficiency and operational performance but w/o prolonged R&D
 - Integrate existing technology to reach market quickly
 - Include energy management features
- **Choice of technologies/equipment**
 - Driven by Alliance needs
 - Focus on price point, performance, and quality to ensure savings
 - Target standard IRR, not dependent on financial incentives
 - Greatest opportunity for wide adoption and largest energy impact
 - Avoid niche applications



Energy Star “Top Tier”

- **DOE and EPA working to use the powerful ENERGY STAR brand to recognize a higher tier of energy efficiency**
 - Opportunity for State and Local market/programs**
 - Connect the 'early adopters' with the technological achievement:
 - Build market share
 - Reduce manufacturing costs (thru scale)
 - Stakeholders comment on the proposed program approach Oct, 10
 - DOE/EPA providing efficiency requirements for a 6~ products Jan, 11
 - Program up & running Spring 2011



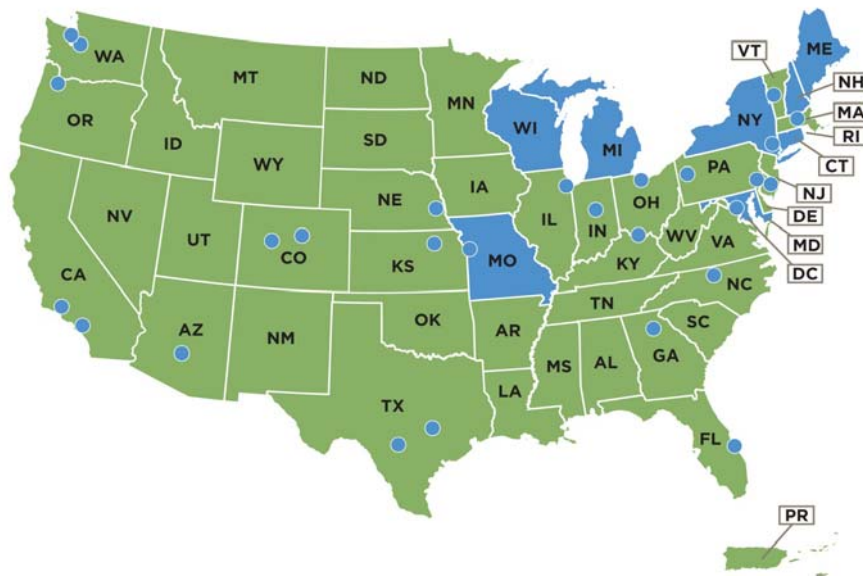
New Construction or Retrofit?

Driven by Economy or Opportunity?

Vision

A self-sustaining market for building energy efficiency retrofits that results in economic, environmental, and energy benefits across the United States

35 BetterBuildings Grantees
3-year grants of \$1.5 to \$40 million each



Program Goals

- Retrofit 200,000 buildings (30k FY11)
- Leverage \$2.8 Bil non ARRA resources
- Create or retain approx 30,000 jobs
- Reduce the cost of retrofit program delivery by 20% or more
- Achieve 15-30% energy savings
- Save consumers approximately \$50 million per year on energy bills
- **Develop sustainable energy efficiency retrofit programs:**
 - Cooperation with HUD's PowerSaver Program
 - Integration w/ Home Energy Score

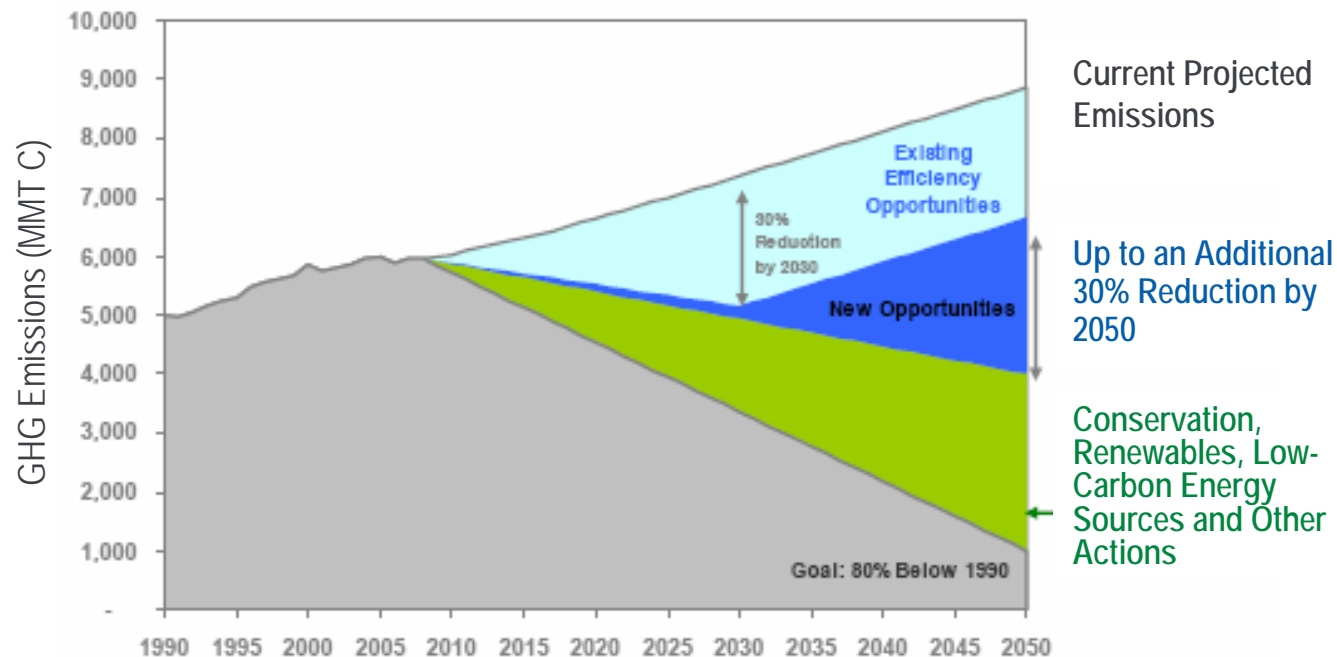


How Low Can We Go?

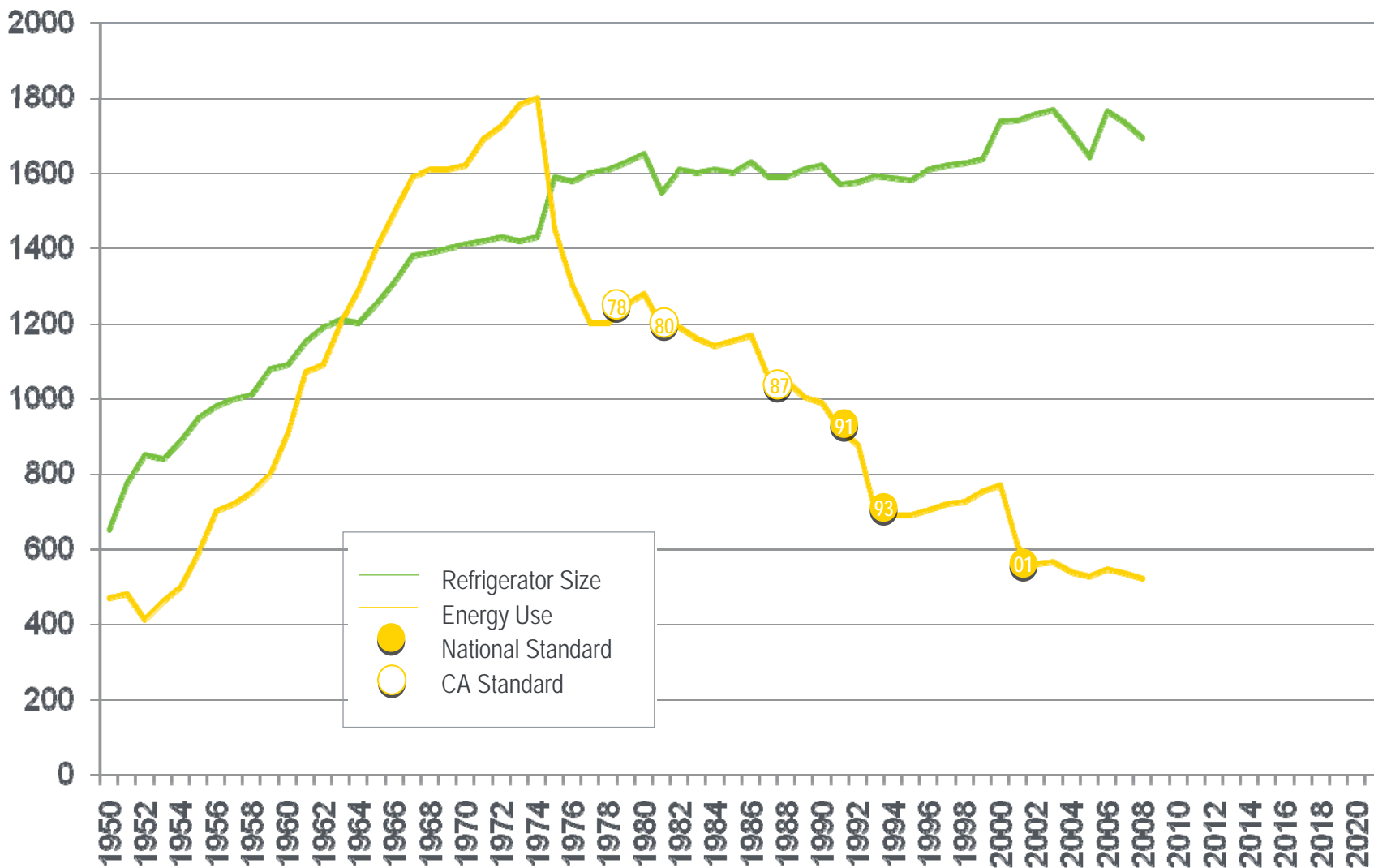


Appliance Standards

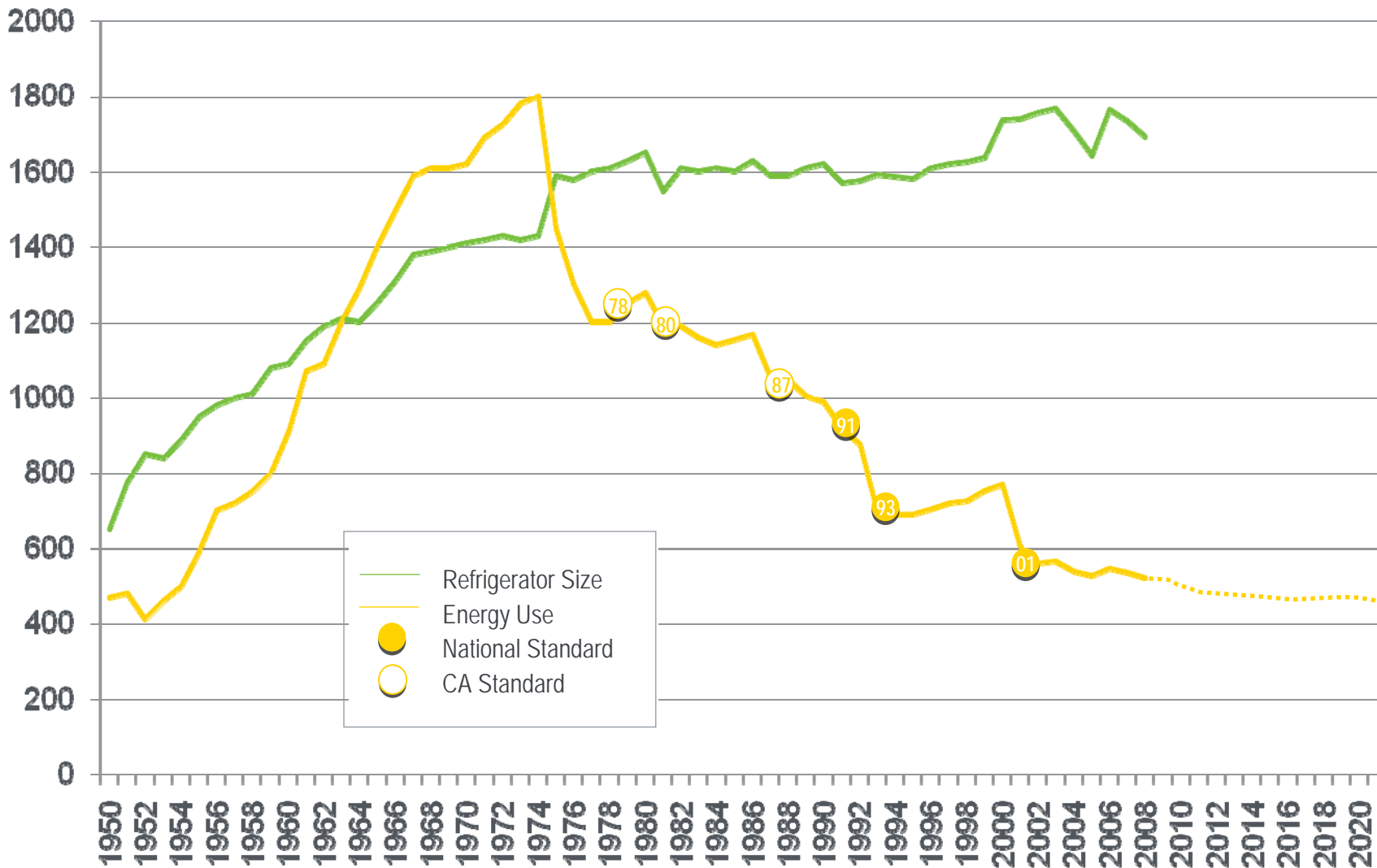
Role of Efficiency in Addressing Climate Change in U.S.



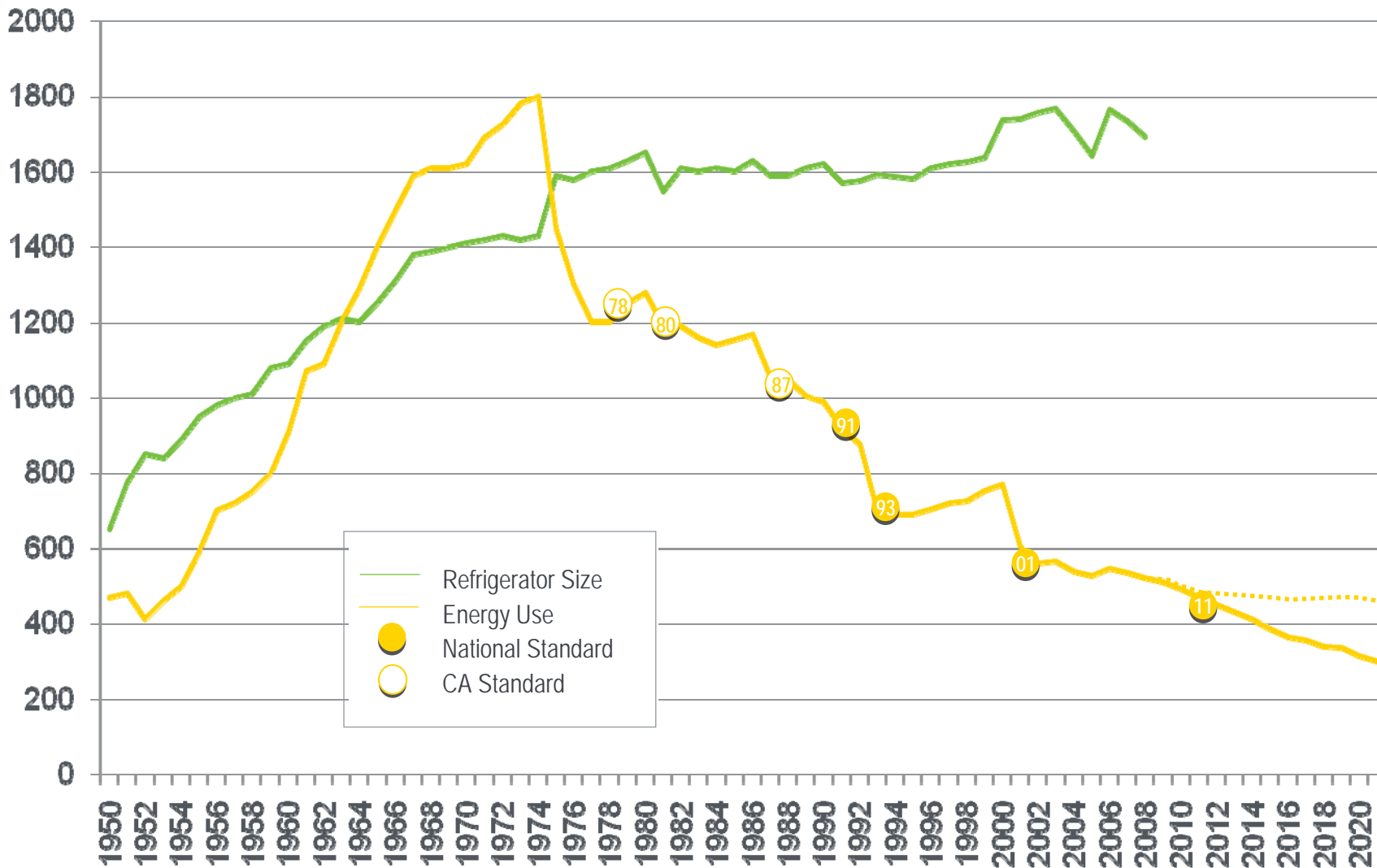
Technology and Standards Drive Refrigerator Efficiency



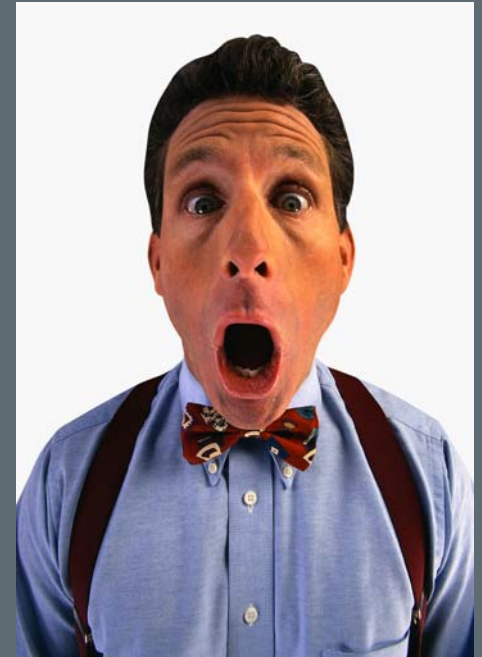
Technology and Standards Drive Refrigerator Efficiency



Technology and Standards Drive Refrigerator Efficiency



Questions for YOU!



Many ACEEE Minds are Better than One

- How can state/local/utility organizations support more aggressive building energy codes and compliance?
- Is there an EE opportunity in the upcoming FASB rule changes relative to building leases?
- What is a quick measurement for insulation value in an existing building shell to calculate a fair tax credit?
- How should we communicate with the public about the pending EISA lighting changes?
- How can we construct a Test Procedure for Lighting Controls?



Thank You

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not." ~Dr. Seuss

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Appendix

- Photo Credits:
 - Limbo: <http://www.metro.co.uk/news/81951-limbo-skating-is-all-the-rage>
 - DaVinci Code:
http://www.google.com/imgres?imgurl=http://www.collegenews.org/Images/da_vinci_code.jpg&imgrefurl=http://www.collegenews.org/x5549.xml&usq=__UjJrGRVNzV0AAopztJW3Vwv3Sc=&h=755&w=519&sz=84&hl=en&start=0&sig2=uuhNrPNmqZkNePWqsR4yQ&zoom=1&tbnid=FO7SH9BipDKzoM:&tbnh=130&tbnw=89&ei=Tob5TLSQBYGKlwe81YimBw&prev=/images%3Fq%3Ddavinici%2Bcode%26um%3D1%26hl%3Den%26sa%3DN%26rls%3Dcom.microsoft:en-us:IE-SearchBox%26biw%3D1259%26bih%3D511%26tbs%3Disch:1&um=1&itbs=1&iact=rc&dur=297&oei=Tob5TLSQBYGKlwe81YimBw&esq=1&page=1&ndsp=15&ved=1t:429.r:9.s:0&tx=96&ty=85
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 - Dr. Evil:
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