

# Energy Efficiency: America's First Fuel

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Kateri Callahan, President

October 18, 2011

Yale Blueprint for Efficiency Webinar Series



ALLIANCE TO  
**SAVE ENERGY**

*Creating an Energy-Efficient World*

# America's First Fuel:

## An Overview

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- A few words about the Alliance
- A Quiet History of Huge Success
- Game Changers: Creating the “Decade of Energy Efficiency”
- Public Policy: Delivering energy efficiency at scale
- Kateri’s “Crystal Ball”: A Decade of Energy Efficiency Success Ahead?

# What is the Alliance to Save Energy?



## ***Mission:***

- To promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security.

## ***Organization:***

- Staffed by 80+ professionals
- 33 years of experience
- \$15 million annual budget
- Recognized as the premier energy efficiency organization in the world



# What is the Alliance to Save Energy?



- ***The Alliance to Save Energy promotes energy efficiency worldwide to achieve a healthier economy, a cleaner environment and greater energy security.***
  - Non-profit organization headquartered in U.S.; operations world-wide
  - Led by **Senator Jeanne Shaheen (D-NH)** and **Peter Darbee, Chairman of the Board, Retired CEO and President, PG&E Corporation**
  - Includes 13 Members of Congress – Bi-Cameral; Bi-Partisan
  - Also includes environmental, consumer, and trade association heads, state and local policy makers, corporate executives





Bob Dixon  
Siemens  
First Vice-Chair



Frank Murray  
NYSERDA  
Secretary



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# Working with and Across All Sectors of the Economy



## Business ▪ Government ▪ Public Interest

- Coalition membership of more than 175 diverse organizations
- Involvement by businesses in all economic sectors
- Participants active in policy advocacy, research, standards, education and communication



Sempra Energy®

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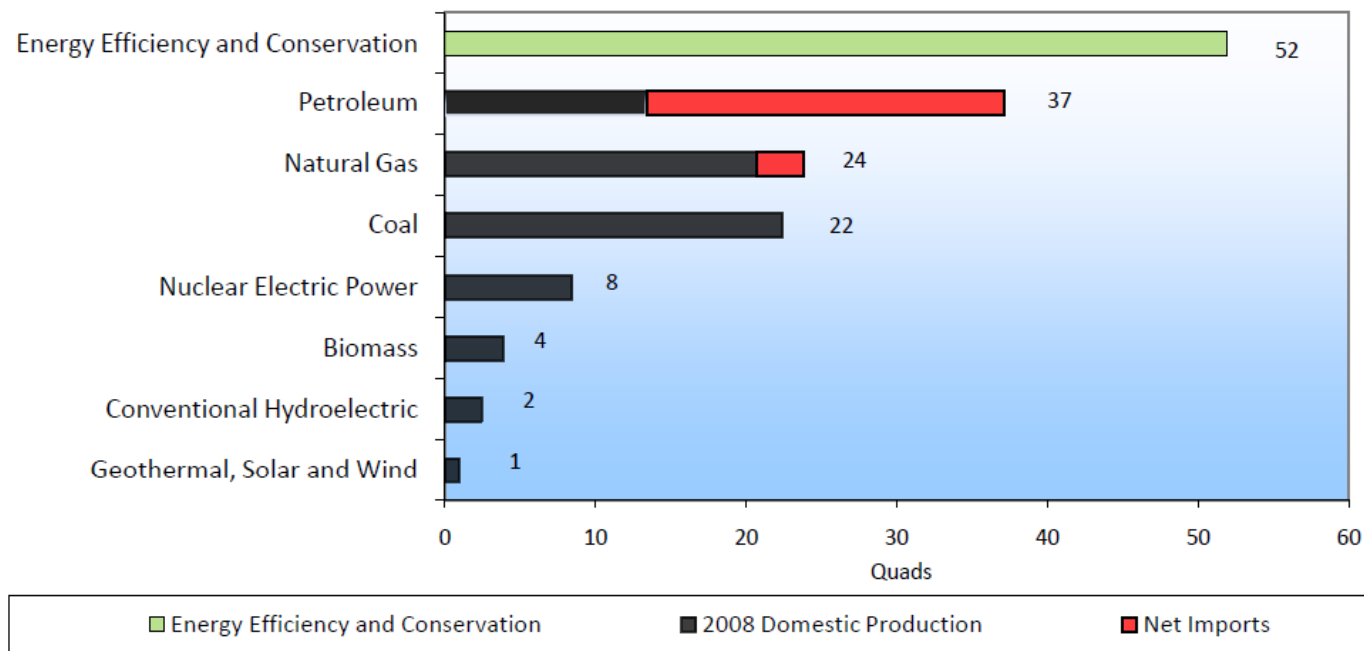
JM  
Johns Manville



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# A Quiet History of **HUGE** Success

**Energy Efficiency and Conservation Improvements Since 1973  
Have Reduced Annual Energy Consumption by 52 Quads in 2008**



Alliance to Save Energy, June 2009

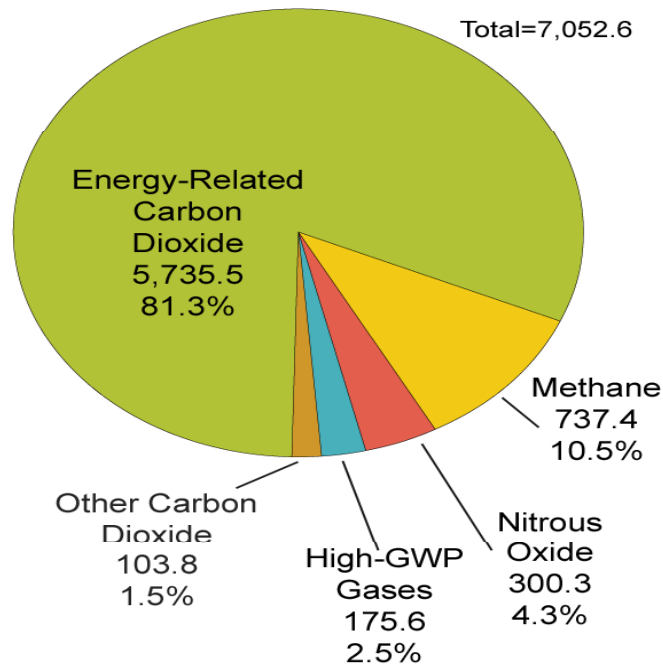
# Game Changers: Societal Imperatives...



## ■ Climate Change: ■ Security:

Energy use directly linked to  
U.S. GHG emissions

**U.S. Greenhouse Gas Emissions  
by Gas, 2008** (Million Metric Tons  
Carbon Dioxide Equivalent)



Source: EIA estimates, published in *Emissions of Greenhouse Gases in the United States 2008* (December 2009).

Unchecked growth in energy demand can:

- Accelerate fossil fuel depletion
- Increase our reliance on foreign sources of energy

## ■ Economy:

Energy waste comes at high costs:

- “Business as usual” energy use will cost U.S. \$1.2 trillion more between now and 2020 than investment in energy efficiency



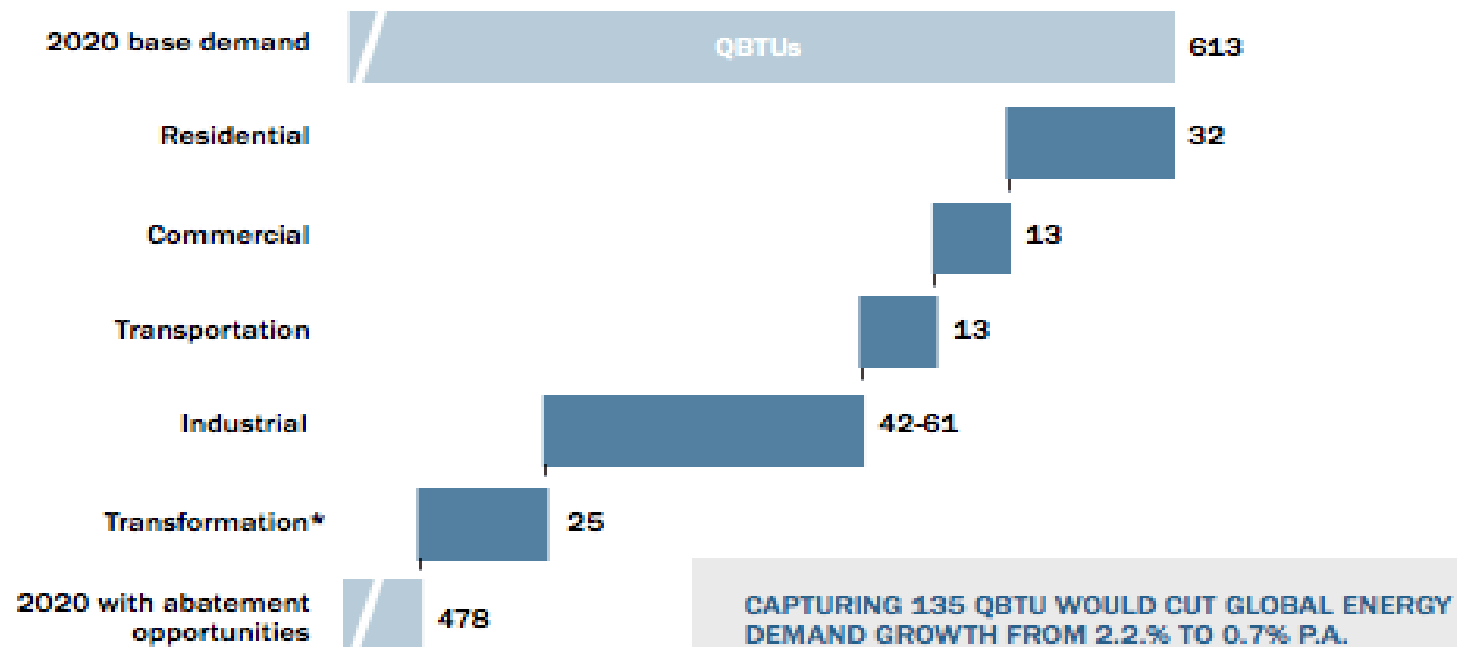
# Game Changers: Understanding the Enormous Potential for Savings



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## LARGE OPPORTUNITIES FOR IMPROVING ENERGY PRODUCTIVITY ARE AVAILABLE

Potential demand reduction in 2020 through enhanced energy productivity



# Game Changers: A “No Regrets” Climate Policy

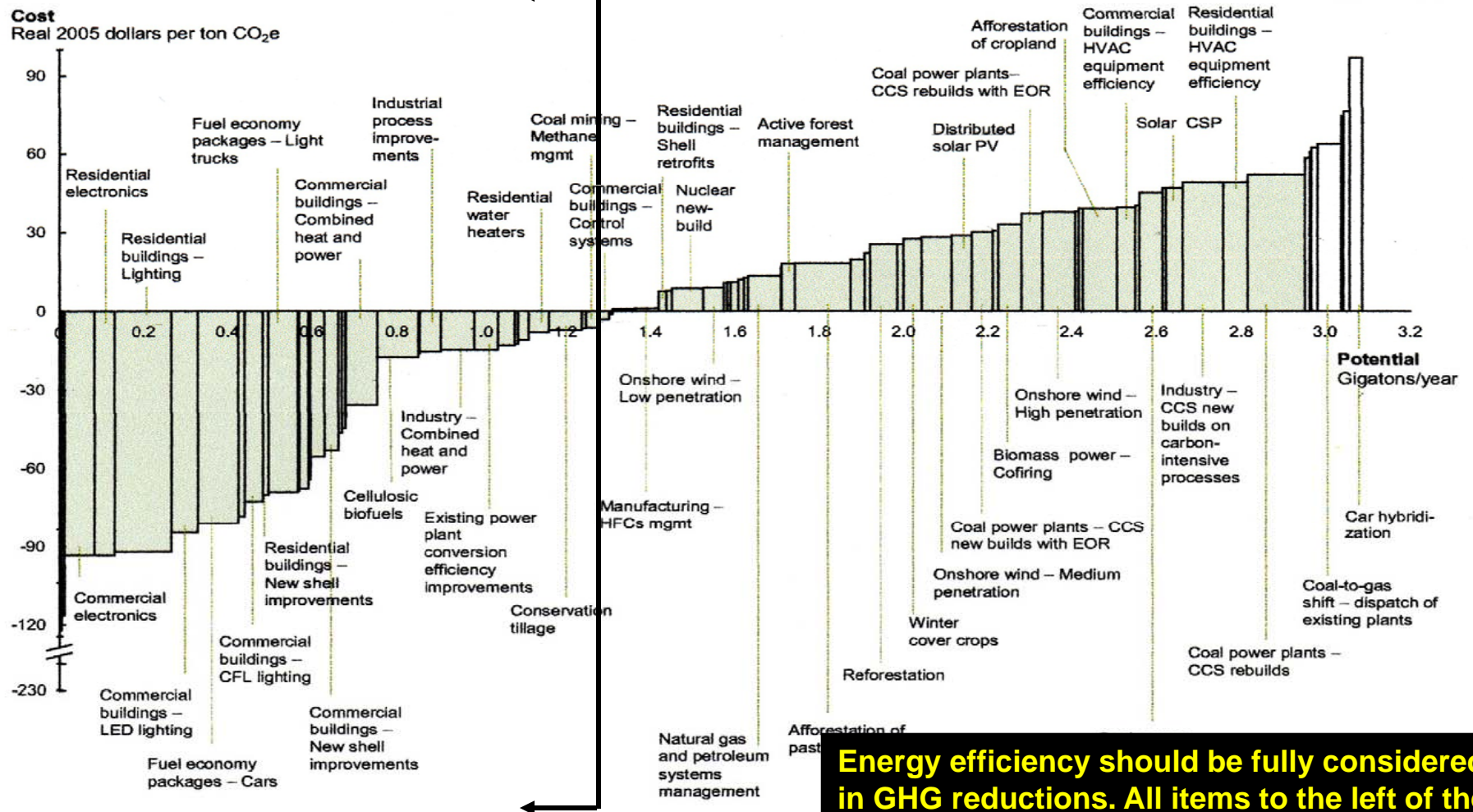


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## U.S. MID-RANGE ABATEMENT CURVE – 2030

Abatement cost <\$50/ton



Source: McKinsey analysis

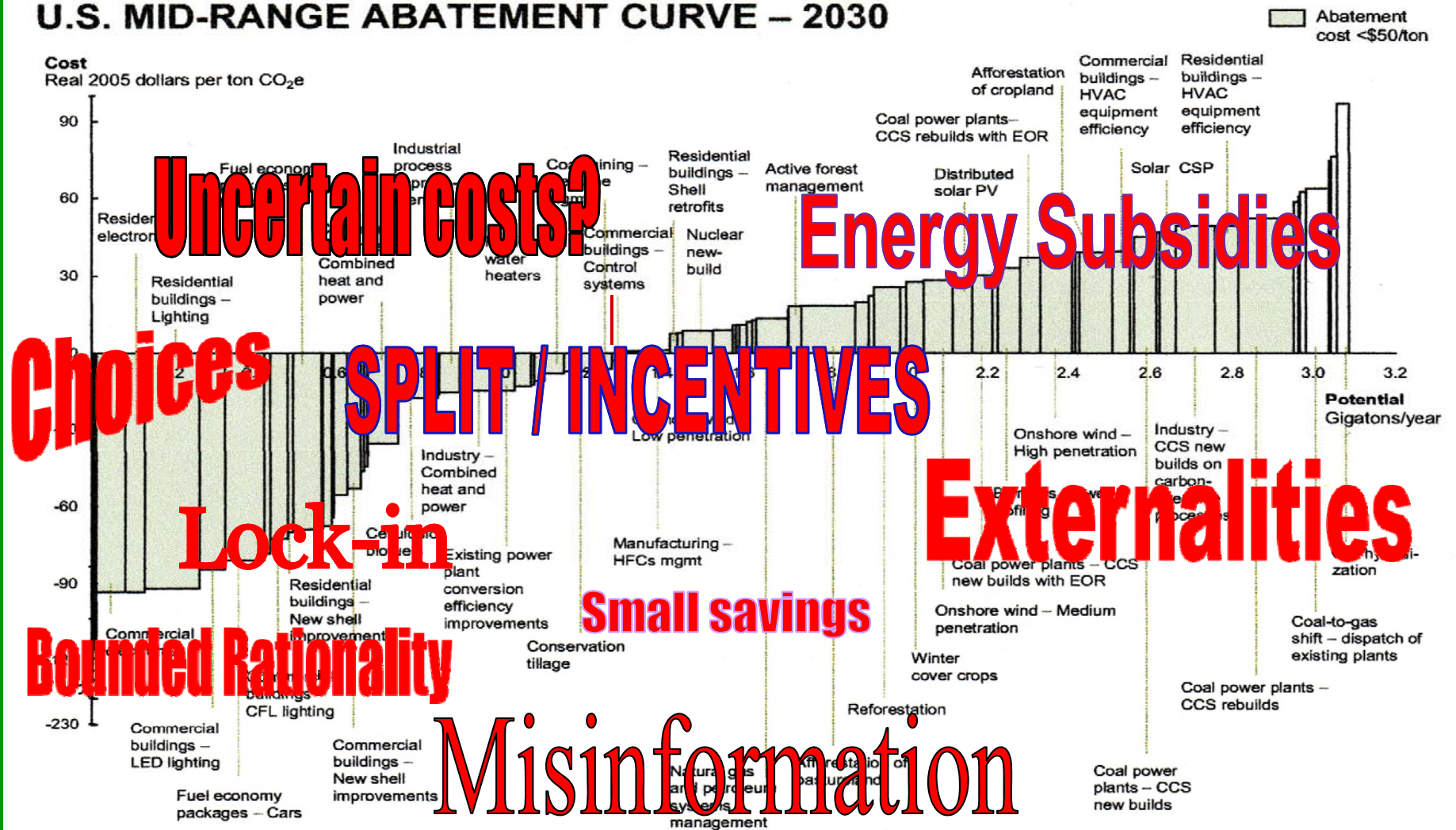
**Energy efficiency should be fully considered in GHG reductions. All items to the left of the arrow represent “negative marginal costs”**



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# BUT: Many “Non-Price” Barriers

## U.S. MID-RANGE ABATEMENT CURVE – 2030



Source: McKinsey analysis

# Game Changers: Competitiveness Matters



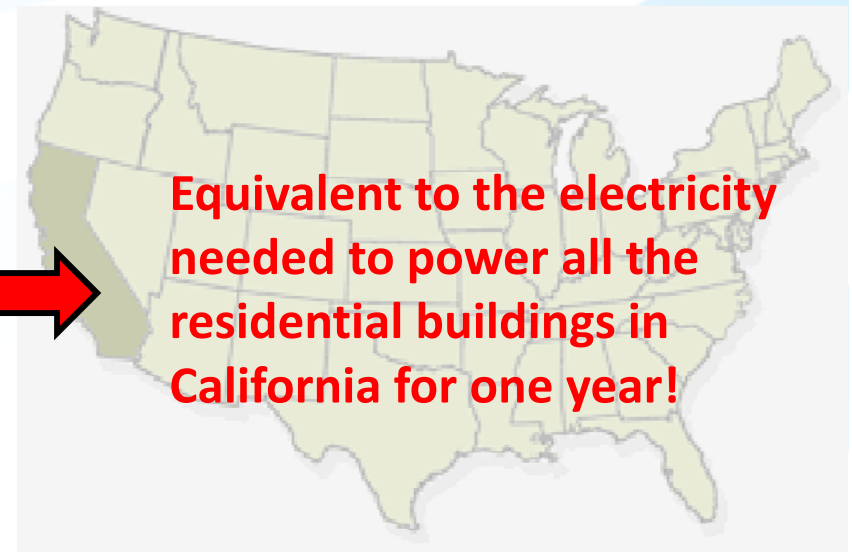
- **Through energy efficiency alone, WAL\*MART...**
  - is saving 250 million kwh/year in the U.S. (enough to power 23,000 homes)
  - has reduced energy load by approximately 15-20%
- **Learning Resulted in New Sustainability Goals:**
  - Reduce GHG emissions at existing stores 20% by 2012
  - Long-term: 100% powered by renewable energy
  - Zero-waste operations
  - Sustainable product selection
  - Sustainability/efficiency criteria for supplies and vendors around the world
- **EE technologies are helping WAL\*MART get there NOW:**
  - Daylighting                      White Roofs
  - Efficient HVAC                  Lighting Retrofits



# Game Changers: Competitiveness Matters



- Since 1990 energy intensity reduced by 38% (BTU/pound of product)
- 1,800 trillion BTU saved since 1994
- Prevented more than 90 million metric tons of CO<sub>2</sub> from entering atmosphere





# Game Changers: Innovation Matters

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## ■ Aggressive product stewardship & sustainability goals:

- Recycle one billion pounds of consumer goods
- Reduce carbon footprint by 20 percent by 2020
- Improve environmental management system (EMS) to align with ISO 14001

## ■ Continuing partnerships with ENERGY STAR:

- In 2010, Best Buy helped U.S. consumers purchase more than 23 million ENERGY STAR-qualified products,
- **Conserved one billion kilowatts of energy**
- **Avoided 1.6 billion pounds of CO2**
- **Saved consumers \$114 million**

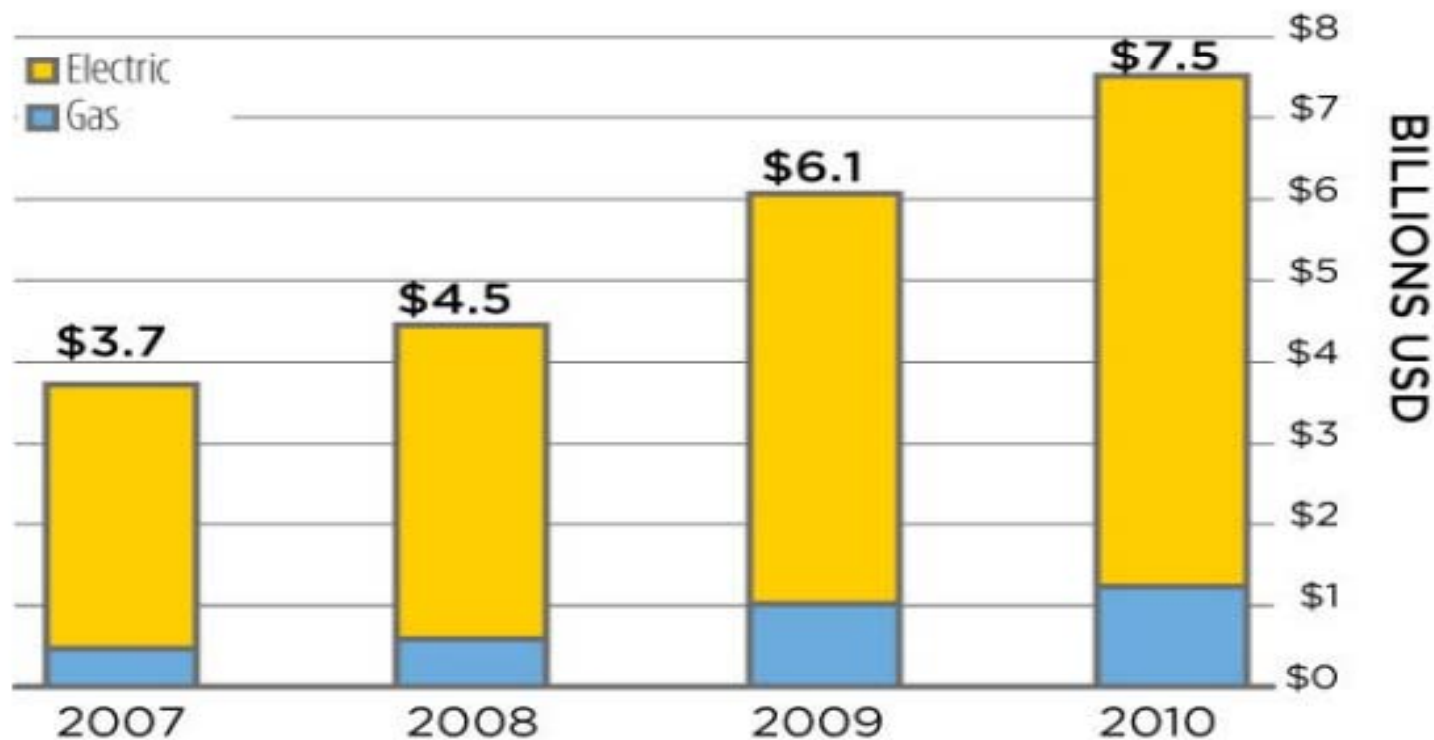
# Game Changers: Investment Matters



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**Figure 1. U.S. and Canadian Efficiency  
Program Budgets, 2007 – 2010**



Source: Consortium for Energy Efficiency: State of the Efficiency Program Industry, 2009 Expenditures, Impacts & 2010 Budgets

# Game Changers: Investment Matters



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- **A “better yield” than other climate-related business**
  - Global revenues from climate-related businesses rose by 75% in 2008 to \$530 billion
  - Climate-related business revenues could exceed \$2 trillion by 2020
  - **Energy efficiency recorded by highest investment return at 30%**
- **Keeping up the pace...**
  - Energy efficiency received \$184 billion (53%) of the \$350 billion in global green stimulus funds



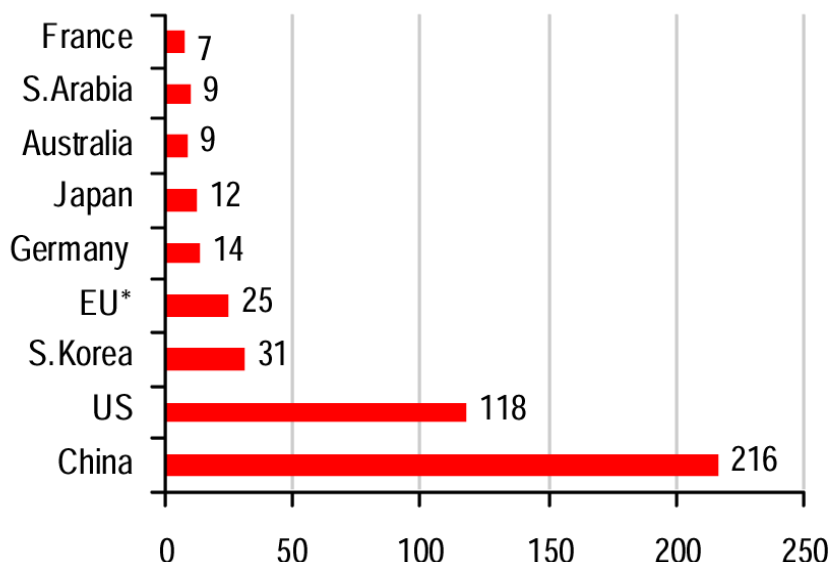
# A Global Race is Underway: *Following the Money Trail...*



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## Ranking by country:

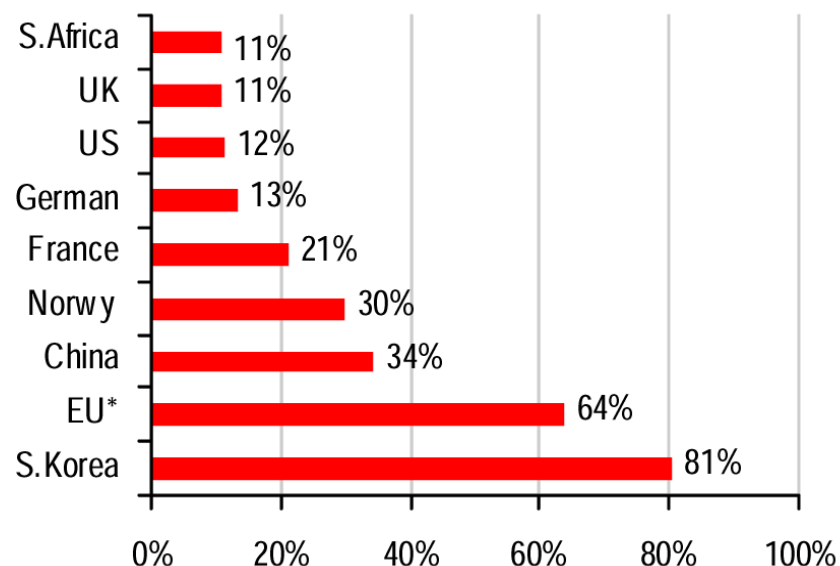
Green stimulus regional ranking (USDbn)



Source: HSBC (\*Only central EU recovery plan)

## Percentage of “green” stimulus funds:

Green stimulus regional ranking as a % of total stimulus

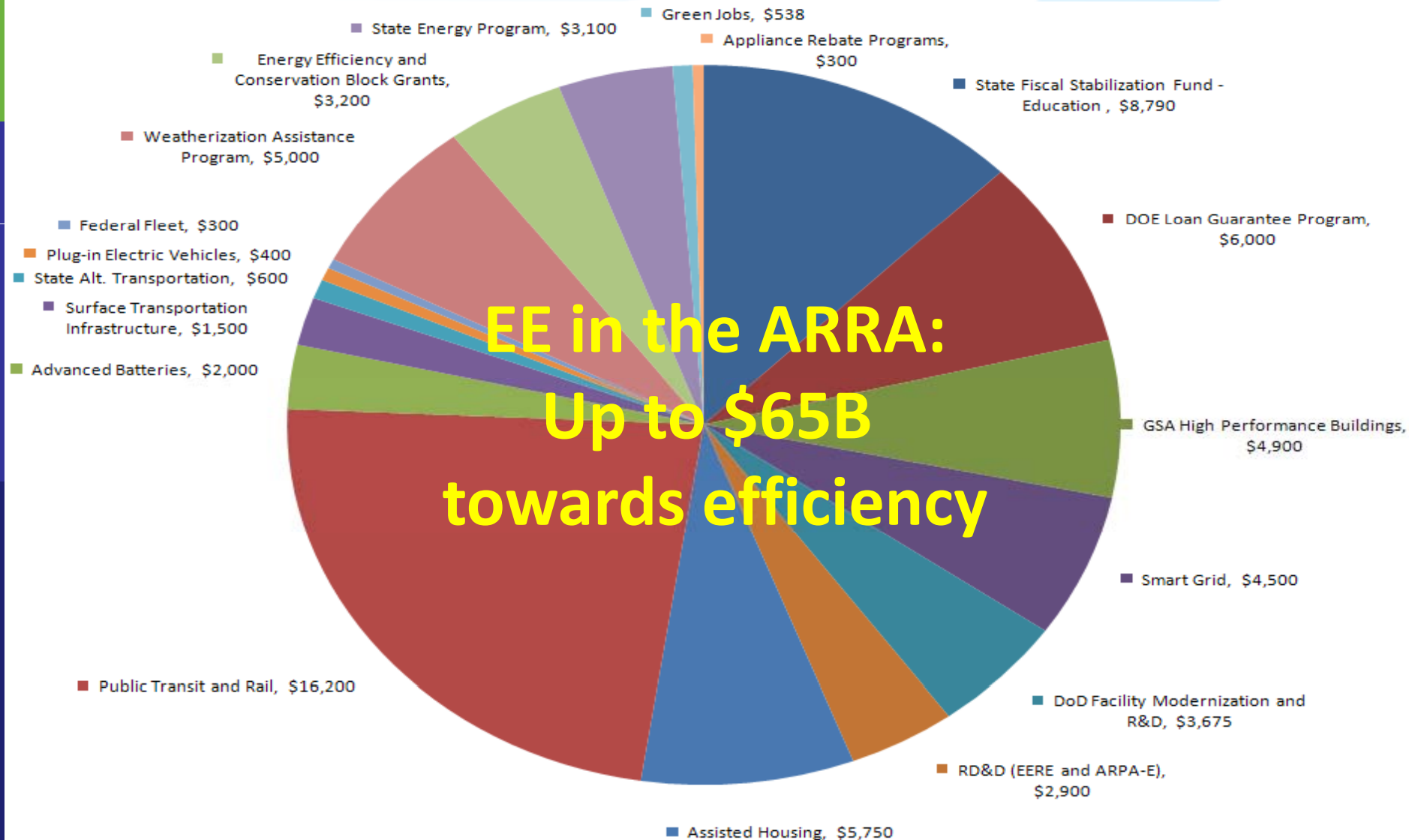


Source: HSBC (\*Only central EU recovery plan)

# Game Changers: Federal Investment in EE



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# Game Changers: Public Policy Matters



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## RD&D

- To encourage technological innovation

## Incentives

- To gain foothold in market

## Education/Outreach

- To achieve market penetration

## Codes/Standards

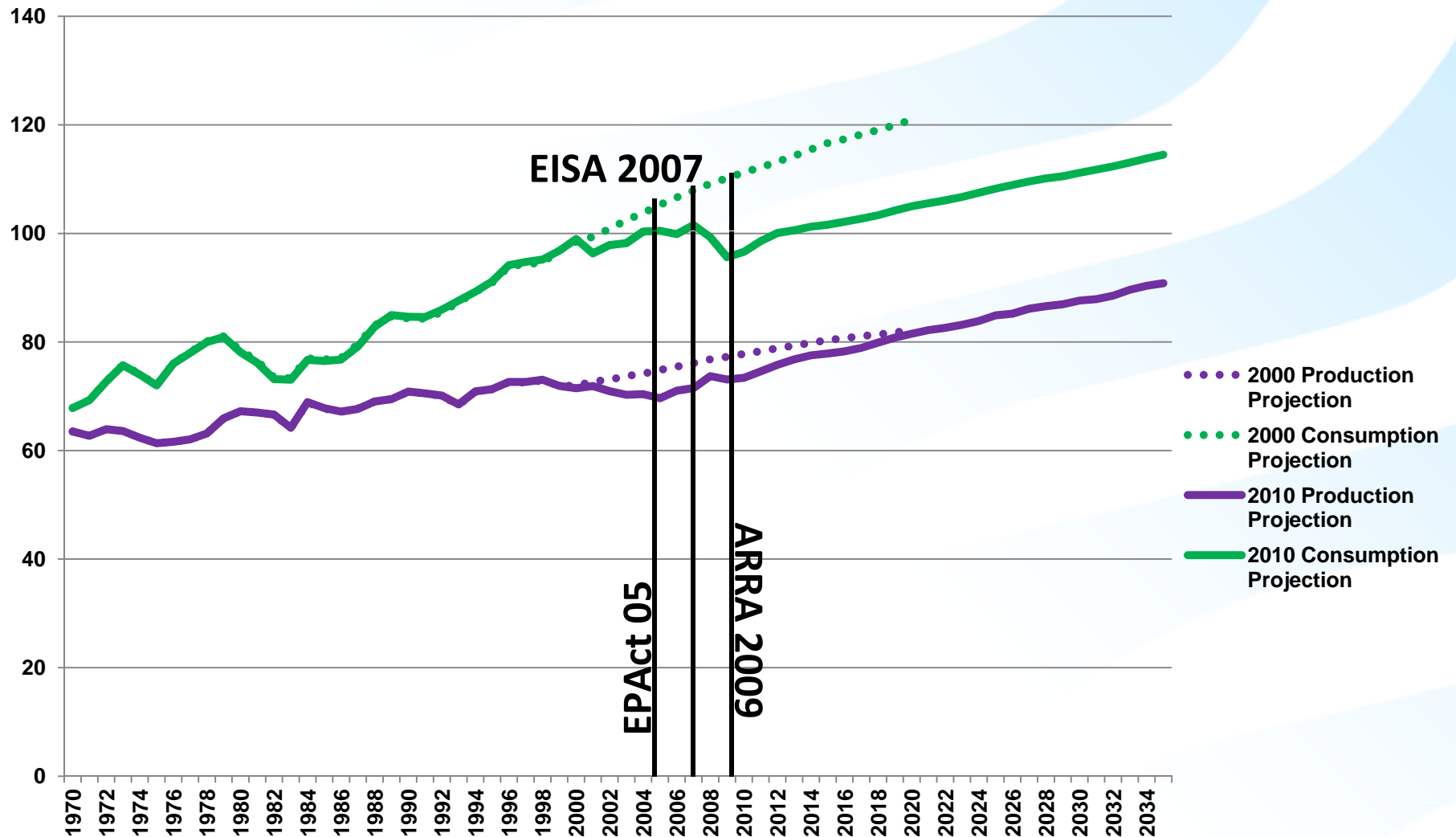
- To lock in savings for consumers and businesses

# Public Policies Matter: Shaving Demand



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# Public Policy Matters: PACE Financing

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## Property Assessed Clean Energy Bonds

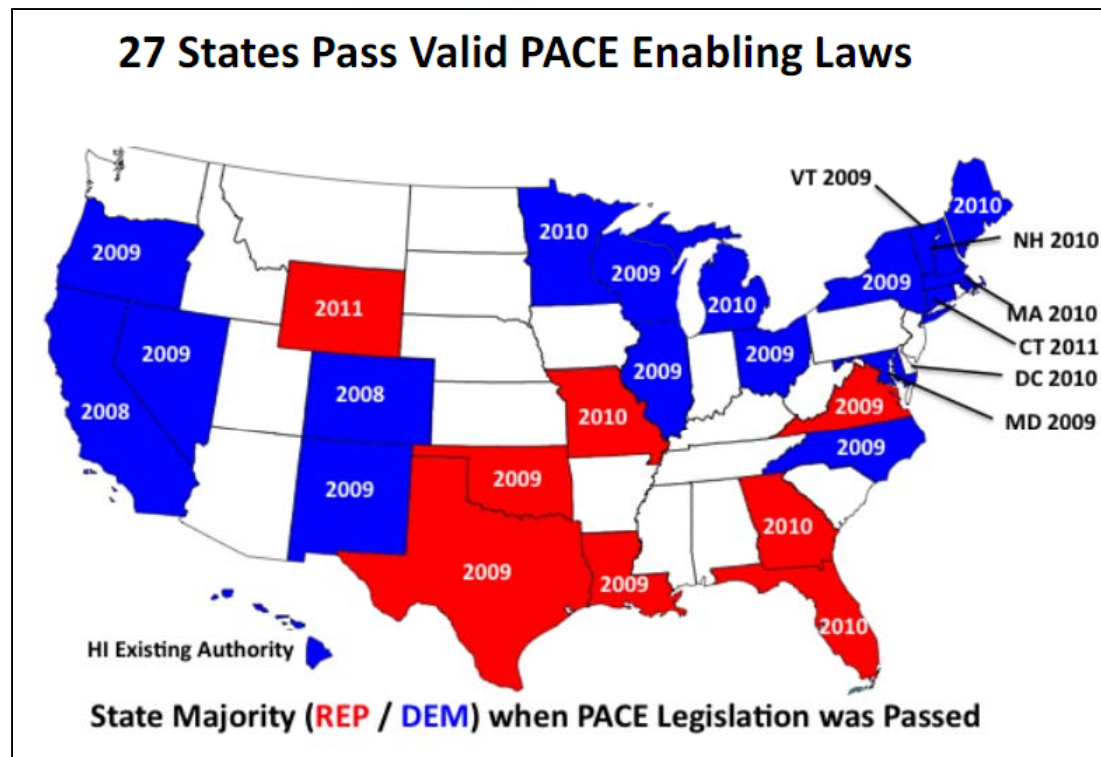
- Funds Clean Energy Projects
- Projects Paid through Property Tax Assessments
- Typical Amortization: 20 Years
- Assessments are Senior to Existing Debt
  - Same as ad valorem property taxes
- Must be Permanently Affixed to the Property
- Assessments are voluntary and run with the Property
- Underwriting must Validate Investment

# PACE: Financing Building Efficiency



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- Since 2008 27 States have Passed PACE Legislation
- Typical Goals: Jobs and Economic Stimulus
- Energy Independence and GHG Reduction



Source: Ygrene Energy Fund, Retooling America with PACE presentation June 9, 2011

Image courtesy of: PACENow via <http://pacenow.org/blog/wp-content/uploads/PACE-2011-Bill-Webinar-071911.pdf>

# Keeping PACE Alive?

## National Policy

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### **PACE Assessment Protection Act of 2011 (H.R. 2599)**

- Introduced in U.S. House of Representatives July, 2011
- Rescinds 2010 guidance from FHFA, OCC, Fannie and Freddie
- Prohibits discrimination against homeowners and communities with PACE
- Defines a PACE assessment as an “assessment” not a “loan”
- Establishes national program standards
  - Projects capped at 10% of home value
  - Homeowner must have at least 15% positive equity
  - Energy assessment must demonstrate projects pay for themselves
  - Solid property tax payment history



# National Policy Steps Forward: *The SAVE Act*



## The Sensible Accounting to Value Energy (SAVE) Act

Sen. Michael Bennet (D-Colo.) and Sen. Johnny Isackson

*Requires federal loan agencies to assess the expected energy costs for mortgage loan applicants*

- **Enables** federal mortgage programs to improve the quality of mortgage underwriting
- **Provides** accurate picture of repayment risk and expected costs of homeownership
- **Accelerates** the supply of and demand for EE new homes
- **Encourages** the purchase of EE homes
- **Accounts** for EE in appraisals
- **Puts people** in the construction and manufacturing sectors **back to work!**



# National Policy Steps Forward: ESICA of 2011



**Energy Savings & Industrial Competitiveness Act of 2011**  
**Sens. Jeanne Shaheen (D-N.H.) and Rob Portman (R-Ohio)**

- **Buildings: National Goals/Support for Dynamic Building Energy Codes**
- Buildings: Appliance Standards
- Finance: Commercial Loan Guarantees
- Industrial: Revolving Loan Funds
- Federal Energy Management

# Stepping Forward: Building Energy Codes are Key

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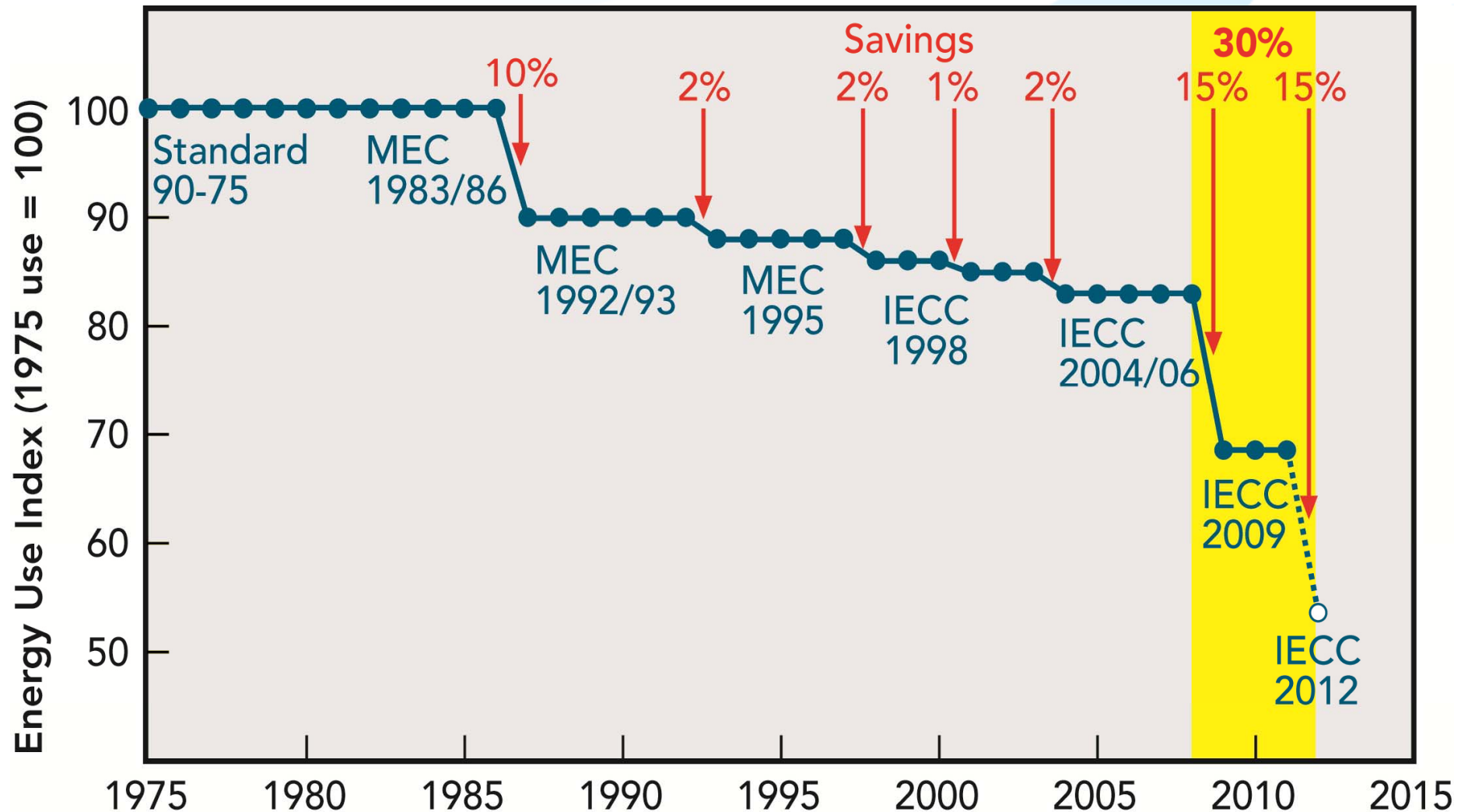
- Establish minimum standards for the energy efficiency of buildings
- Protect individuals from substandard living and working conditions
- Make homes more affordable
  - Average U.S. Home Energy Bills = \$2,175/year
- Overcome economic barriers
  - Split incentive: eg builders pay costs, buyers pay energy bills

# After 30 Years of Modest Gains, 30% in Just 2 Code Cycles



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# Stepping Forward: Building Energy Codes Potential Savings

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If all states improved codes, by 2030 our nation could save each year:

- 5% of total building energy use reduced (3.5 quadrillion Btu)
- \$40 billion in consumer savings
- 200 million tons of carbon dioxide avoided

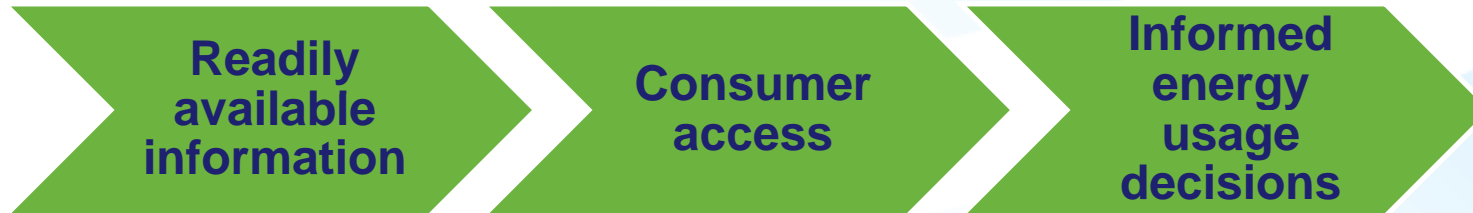


# A Step Forward?

## *the “e-KNOW” Act*



### **The Electric Consumer Right to Know Act, S. 1029** Sens. Udall (D-Colo.) & Brown (R-Mass.)



***Consumers can save from 5 – 15% on their electricity use simply by acting on the feedback they receive.***

# A Step Forward or Back?

## FY 2012 Appropriations



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*(Millions of Dollars)*

Program	FY11 CR Plan	FY12 Request	FY12 House	FY12 Senate Committee	Change from '11 Plan
<b>Building Tech.</b>	\$210.5	\$470.7	\$150	<b>\$210.5</b>	0%
<b>Industrial Tech.</b>	\$108.241	\$319.784	\$96	<b>\$96</b>	-11%
<b>FEMP</b>	\$30.402	\$33.072	\$30	<b>\$30</b>	-1%
<b>SEP</b>	\$50	\$63.798	\$25	<b>\$50</b>	0%
<b>Weatherization</b>	\$174.3	\$320	\$33	<b>\$174.3</b>	0%
<b>TOTAL EERE*</b>	\$873.443	\$1795.357	\$588	<b>\$879.957</b>	1%
<b>ARPA-E</b>	\$179.64	\$550.011	\$179.64	<b>\$250</b>	39%
<b>Loan Guarantee EE + RE</b>	\$169.66	\$200	\$160	<b>\$200</b>	18%
<b>Loan Guarantee Better Bldgs.</b>	0	\$105		<b>0</b>	0%

\*Total EERE for selected programs including: Bldg. Tech., Industrial Tech., Vehicle Tech., FEM, SEP, Weatherization Assistance

# Kateri's U.S. Policy “Crystal Ball”: Modest and Cheap!



## ■ **Obama Administration Hyper-Focused on EE**

- Weatherize 1 millions homes/year
- 20% Improvement in Existing Commercial Buildings by 2020
- Appliance, vehicle & equipment standards
- Double investment in energy efficiency

## ■ **Conservative “back to basics” U.S. Congress**

- Anti Government Regulations & Spending
- Pro Tax Reform & Relief
- Pro National Security
- Pro Economic Stimulators
- Pro Incentives

**Result? Low-Cost EE Policy & Flat-to-Lower  
Federal Funding**

# **eGLOBAL** ORLANDO, FLORIDA

2012 ENERGY EFFICIENCY GLOBAL FORUM  
MARCH 27-29

A white silhouette of the Orlando skyline, including the Peabody Energy Center, the Orlando Convention Center, and the Orlando-Sanford International Airport, set against a blue background with a starry night sky.

- Fifth annual gathering of executive-level delegates, international policymakers and thought leaders from over 40 countries
- Showcasing proven international best practices and concrete EE examples ready for local-level implementation and action



High-level plenary speakers engage with conference attendees across 3 sessions



The Solutions Showcase features industry achievements & networking opportunities



20 concurrent Executive Dialogue sessions feature leading global voices from all end-use sectors

**March 27 – 29, 2012 at The Peabody Resort, Orlando**

**[www.eeglobalforum.org](http://www.eeglobalforum.org)**

# Thank you!

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[kcallahan@ase.org](mailto:kcallahan@ase.org)

[www.ase.org](http://www.ase.org)



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