# Looking Ahead: 2010 and Beyond The Decade of Energy Efficiency

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Alliance to Save Energy
USEA Global Energy Efficiency Workshop
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### **Presentation Overview**



- A few words about the Alliance
- Why energy efficiency? Why Now?
- Delivering energy efficiency at scale: the public policy imperative
- Kateri's "Crystal Ball": Forecasting future U.S. action on energy efficiency

Climate? Energy? Jobs?

## 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 60+ professionals
- 32 years of experience
- \$12 million annual budget
- Recognized as the premier energy efficiency organization in the world



## What is the Alliance to Save Energy?



- Non-profit organization headquartered in U.S.; operations world-wide
- Led by Senator Mark Pryor (D-Ark.) and Peter Darbee, President and CEO of Pacific Gas and Electric
- Includes 10 Members of Congress Bi-Cameral; Bi-Partisan
- Also includes environmental, consumer, and trade associations heads, state and local policy makers, corporate executives











### Working with and Across All Sectors of the Economy



- 170 companies, organizations, and institutions in Associates Program
- Associates Program membership represents all economic sectors
- Initiatives underway in research, policy advocacy, education, technology deployment, market transformation and communications























































### A Global Reach: 22+ International Projects



- > 3 in India
- 1 in Pakistan
- 2+ pending in China
- 5 more in Asia-Pacific region
- 4 in Africa
- > 3 in Latin America (Mexico, Central America, Caribbean)
- 1 in Ukraine
- 1 in Eastern Europe/Eurasia region
- 2 in North America













## A closer look at some of the Alliance's international work:



#### India

- ■USAID's Energy Conservation and Commercialization III (ECOIII) Project
- ■Renewable Energy and Energy Efficiency Partnership (REEEP) initiatives

#### Empower Pakistan Project

#### China

- ■China EE Windows Initiative
- ■Support for USDOE/EERE

#### Asia-Pacific Regional Projects

#### Africa

- Watergy interventions in schools
- •UN Habitat Lake Victoria Region Climate Vulnerability Assessment
- •South Africa EE Buildings Training and Study Tour/Business Briefing

#### Eastern Europe/Eurasia

- Synenergy (aka Regional Energy Security and Market Development)
- •Ukraine Municipal Heating Reform project

#### Latin America

■Mexico, Central America, Caribbean Watergy

#### Global Partnerships

- ■Through Alliance events, activities, outreach
- ■The Alliance expanding to Australia (A2SE) and Europe (EASE)







### More on "Watergy"



- Term coined to describe strong link between water and energy in municipal water systems
- Since 1997: has helped more than 100 cities
- What does a Watergy Program involve?
  - Improving Pumping Systems:
  - System Automation
  - Management of Leaks
  - Metering and Monitoring
  - Incorporating Energy Efficiency at the Design Stage of New Water Utilities and Wastewater Systems

WATERGY AROUND THE WORLD



**EE in Caribbean Water Utilities** 



Lake Victoria Watergy project



Watergy in South African schools

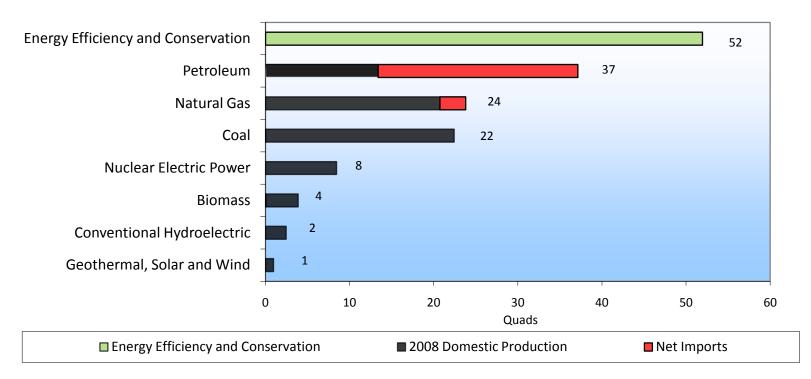
## Why Energy Efficiency? America's Greatest Energy Resource



Reducing energy use, saving money, and powering the domestic economy for over 30 years:

#### **America's Greatest Energy Resource**

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



## Creates Enormous Savings NCETO

AVOIDING roughly 2.5 billion tons of CO2 annually



Saving roughly \$400 billion annually



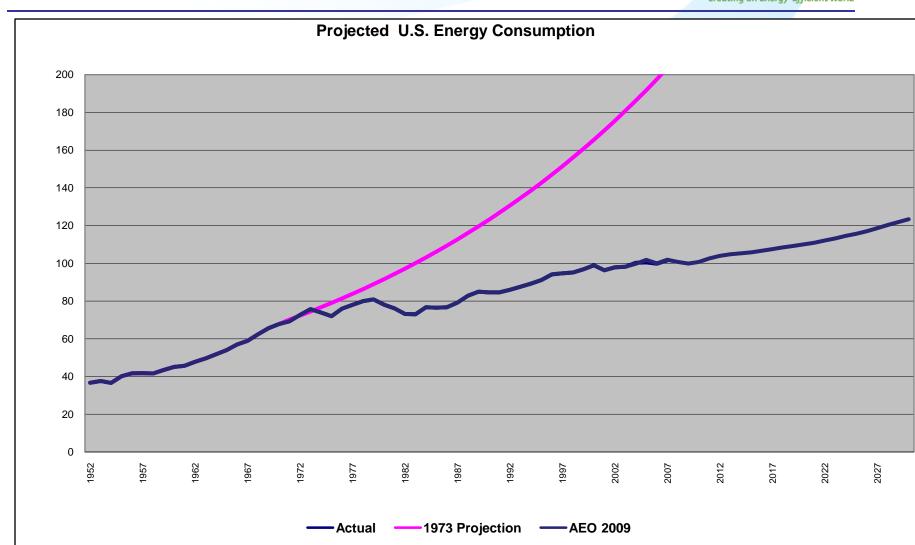
## Public Policy Helped Deliver EE Into the U.S. Economy



Year	Statute	Residential	Commercial	Industrial	Transport	Electric	Federal/State Government
1975	Energy Policy and Conservation Act			§340 Industrial Equipment Efficiency	§321 CAFE for cars and light trucks		§381 Federal Conservation Programs;
1976	Energy Conservation and Production Act	Low-income home weather- ization; appl. eff stds					EPCA §361 State Energy Programs
1978	National Energy Act (NECPA, PURPA, PIFUA)	Energy efficiency tax credits	Energy efficiency tax credits	PIFUA		PURPA §210, PIFUA	NECPA; EPCA §381, 382 Fed'I efficiency standards
1989	National Energy Conservation Policy Act	EPCA §321 Consumer Appliance Efficiency			EPCA §400 Alt fuel use in light duty vehicles	§210 Utility conservatio n program	EPCA §400 Federal fleet requirements; state program update; ESCOs
1992	Energy Policy Act of 1992	Model energy eff. building codes; appl and window stds	Comm office equipmt eff stds	§131 indust. efficiency grants		Utility energy efficiency grants	§157 Fedl energy training, audits, procurement

## Bending Down the Energy Demand Curve: Policies Matter





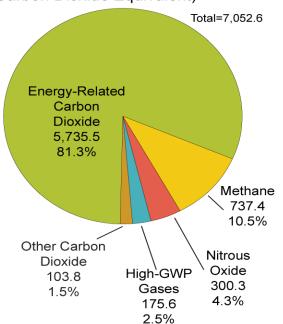
## In sum, energy use has a direct effect on...



#### Global Emissions: Security:

Energy use directly linked to GHG emissions..the U.S. example:

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:

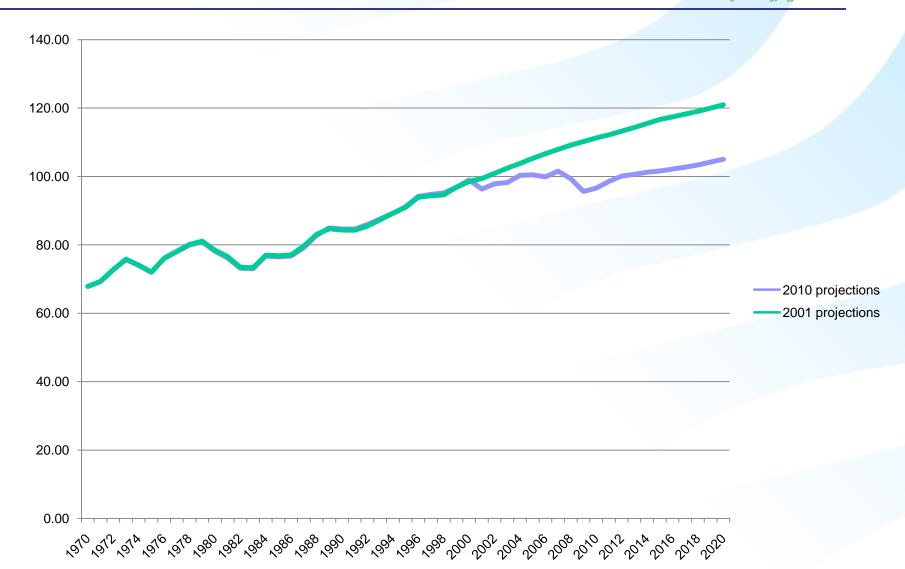
According to a McKinsey estimate:
 "Business as usual" energy use will
 waste more than \$1.2 trillion
 between now and 2020 in the U.S.
 alone – and this does not include
 transportation energy
 consumption.

### The EE Policy March Quickens

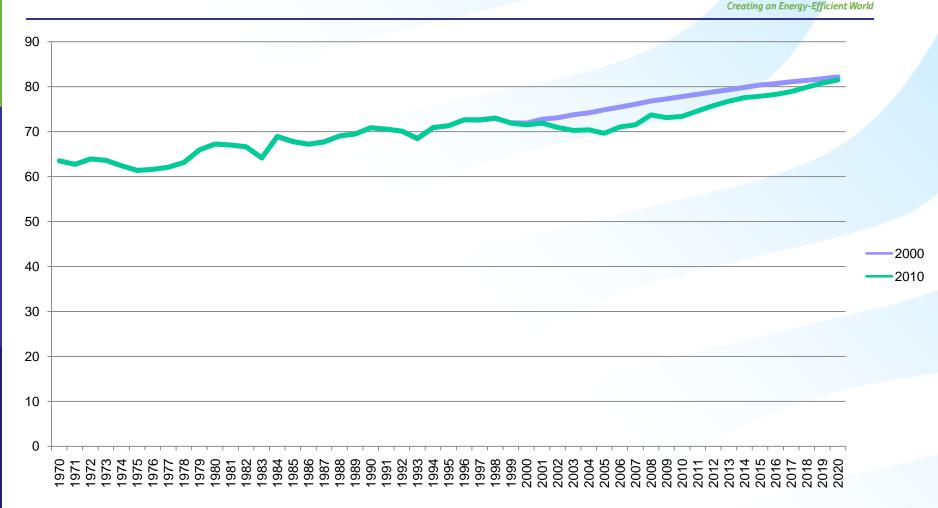


Year	Statute	Residential	Commercial	Industrial	Transport	Electric	Federal/State Government
2005	Energy Policy Act of 2005	§135 Appliance stds, 124 eff appliance rebates	Eff standards for commercial equipment		Fuel efficiency studies	Net- metering, Interconnec t standards, PURPA relief	§101 Energy saving measures in Federal buildings
2007	Energy Independence and Security Act of 2007	Light bulb and consumer appliance standards	Institutional Grants and Loan; Zero-energy Comm Bldgs	EPCA §371 Industrial Waste Energy Recovery	§101, new CAFE Stds;	Title XIII, Smart Grid policy	§141 Fed fleet reqs; §431,521 high perf Fed bldgs; §541 EECGB
2009	ARRA (Stimulus Bill)	Weatherization funding for low-income homes			Electric vehicle and battery funding	Smart grid funding; transmissio n study funding	State Energy Office Funding; EECGB Funding

# Consumption projections for 2020 have gone down by 15% LLIANCE TO Creating an Energy-Efficient World



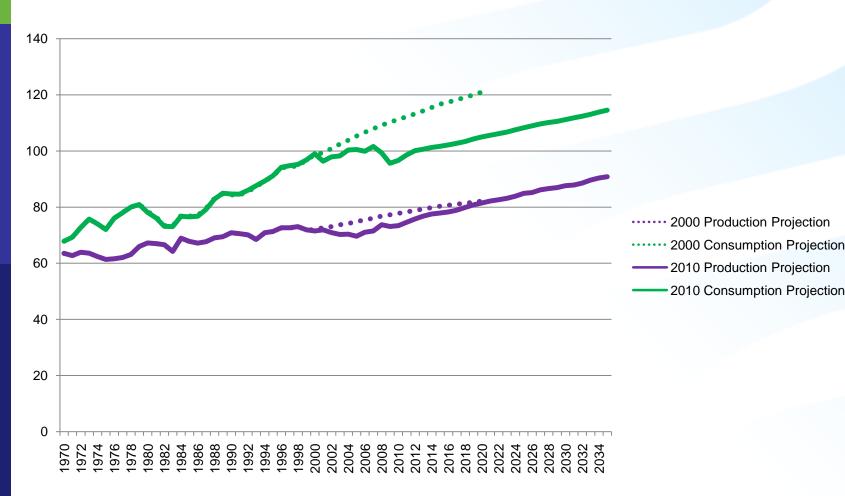
## While production projections for 2020 have remained constant SAVE ENERGY



## So: A Sunnier Outlook than in 2000 ...thanks to energy efficiency?



#### 2000 and 2010 Projections Compared:



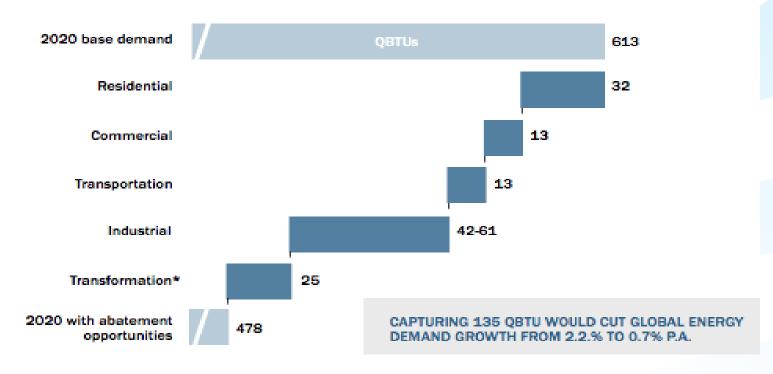
#### Efficiency: Enormous Potential for Savings in

### **ALL Sectors...**



#### LARGE OPPORTUNITIES FOR IMPROVING ENERGY PRODUCTIVITY ARE AVAILABLE

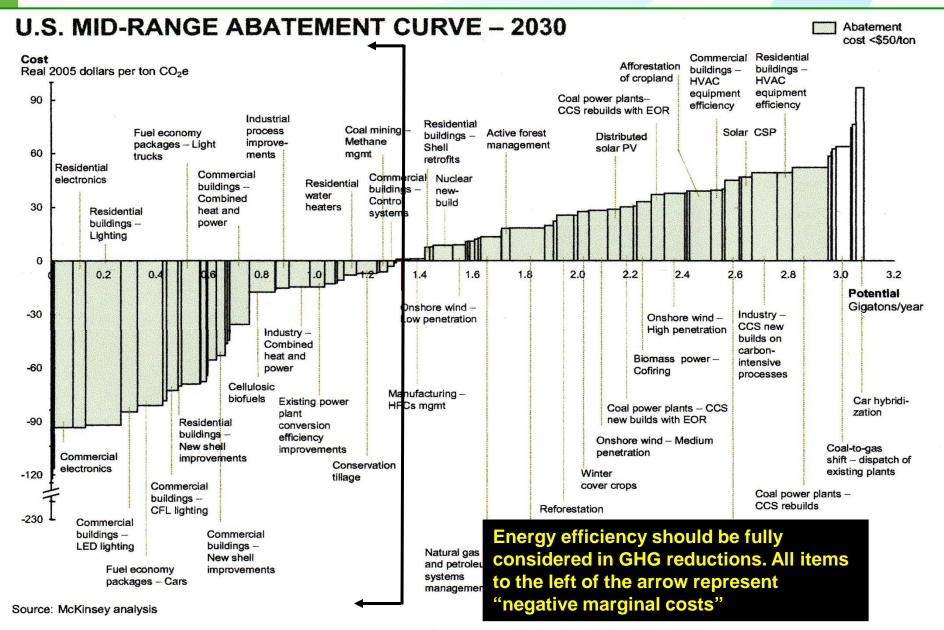
Potential demand reduction in 2020 through enhanced energy productivity



Source: McKinsey Global Institute

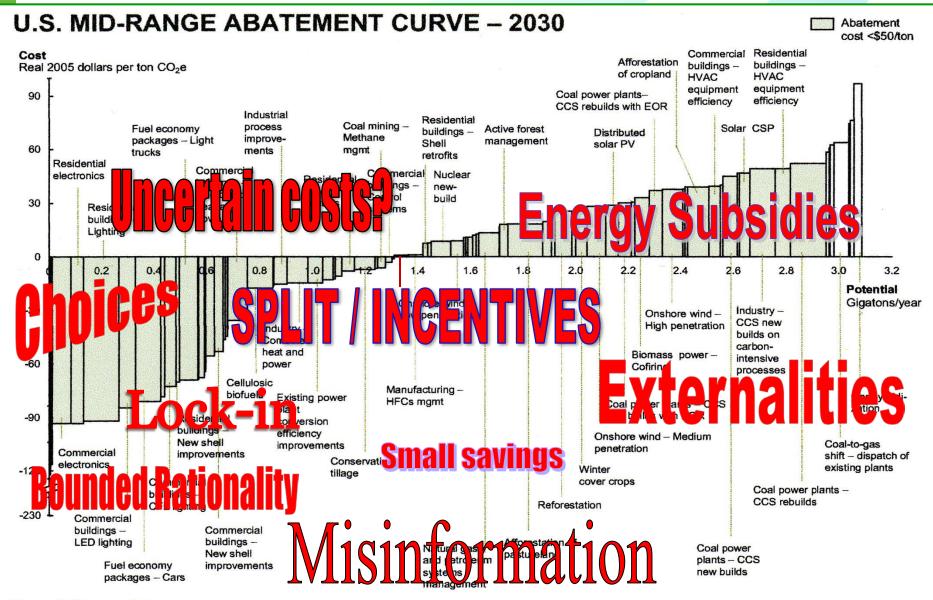
#### And: A No-Cost Way to Reduce GHG Emissions





### BUT: Many "Non-Price" Barriers





Source: McKinsey analysis

### Deploying EE at Scale Requires: A Foundation of Public Policy



#### Codes/Standards

To lock in savings for
 Education/Outreach consumers and businesses

To achieve market penetration

#### **Incentives**

To gain foothold in market

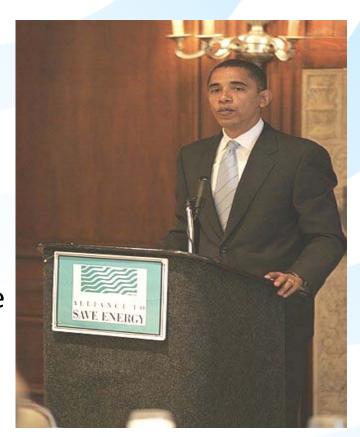
#### RD&D

To encourage technological innovation

### President Obama: EE Advocate in Campaign



- Reduce electricity use 15% by 2020
- Net-zero energy buildings by 2030
- Commitment to building U.S. clean energy economy
- Commitment to address climate change
- Investment incentives for "livable cities"



## President Obama's Energy Efficiency "Dream Team"





Carol Browner, Assist. to President for Energy and Climate Change ("Energy Coordinator", "Energy Czar")

EPA Administrator from 1993 to 2001



Lisa P. Jackson, Administrator, EPA

Chief of Staff to the Governor and Commissioner of the New Jersey Department of Environmental Protection (NJDEP).



Steven Chu, Secretary of Energy

Director of the Lawrence Berkeley National Laboratory Recipient of 1997 Nobel Prize in Physics



Nancy Sutley, Chair of White House Council on Environment Quality

Deputy Mayor for Energy and Environment for the city of Los Angeles, California

### The "Dream Team" (cont.)





#### Ken Salazar, U.S. Secretary of the Interior

- Senator (D-Colo.) Member of Senate Energy Committee
- Attorney General (State of Colorado)



#### Hillary Clinton, U.S. Secretary of State

- Senator (D-N.Y.)
- Vocal advocate of climate and clean energy legislation



#### **General Jim Jones, National Security Advisor**

- Executive Director, Institute for 21st Century Energy, an affiliate of U.S. Chamber of Commerce
- 4-star general in U.S. Marine Corps.

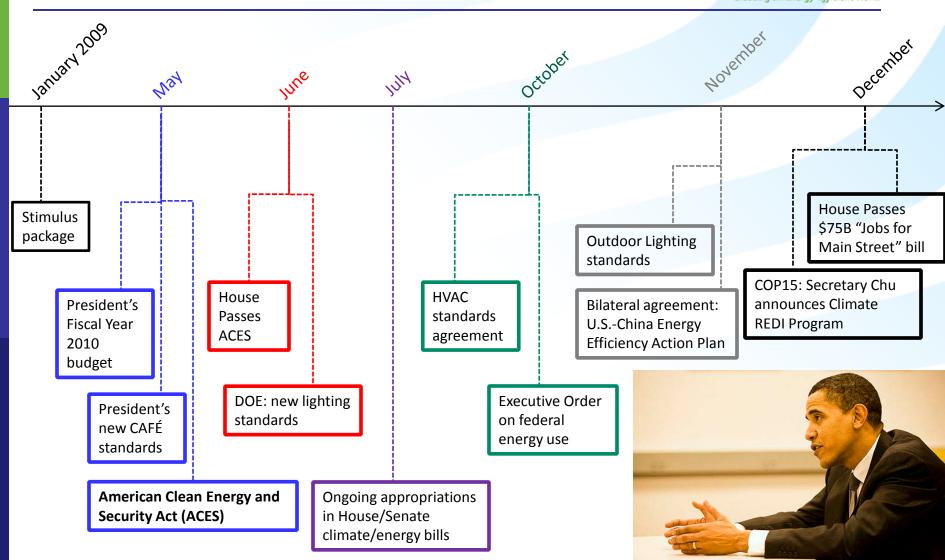


#### John Holdren, Assistant to the President for Science and Technology

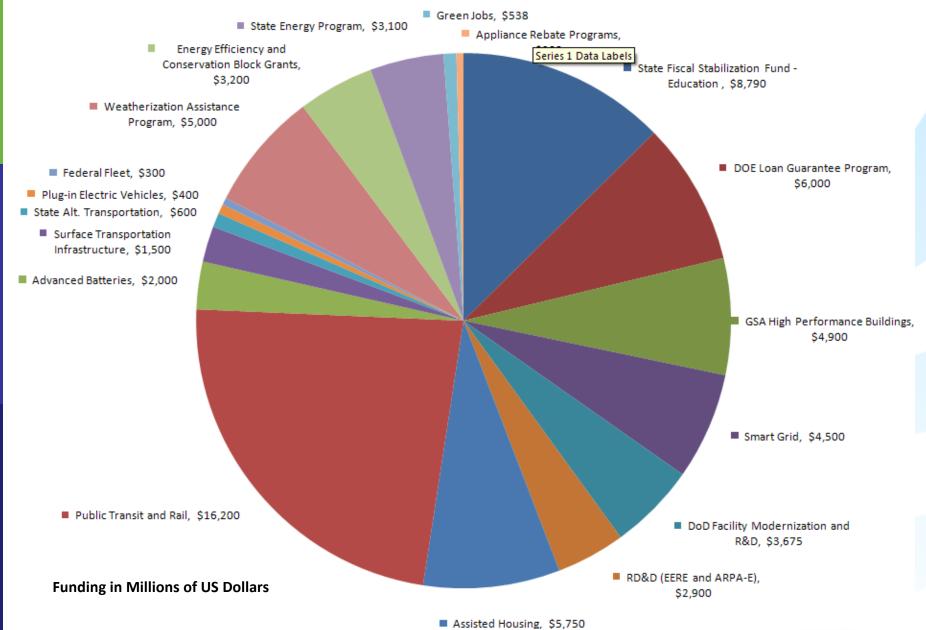
 Director of Science, Technology and Public Policy Program at Harvard University's Belfer Center for Science and International Affairs

## 12 months later – Opening the Decade of Energy Efficiency





### Stimulus: \$65B Related to Energy Efficiency



## ARRA: Built on the Five Pillars of Good Public Policy



#### RD&D

- Smart Grid (\$4.5 bill)
- DOE RD&D (\$2.25 billion)

#### Incentives

Extension and Increase in consumer EE tax incentives

#### Codes & Standards

"Conditions" State funding on strong building codes

#### Education & Outreach

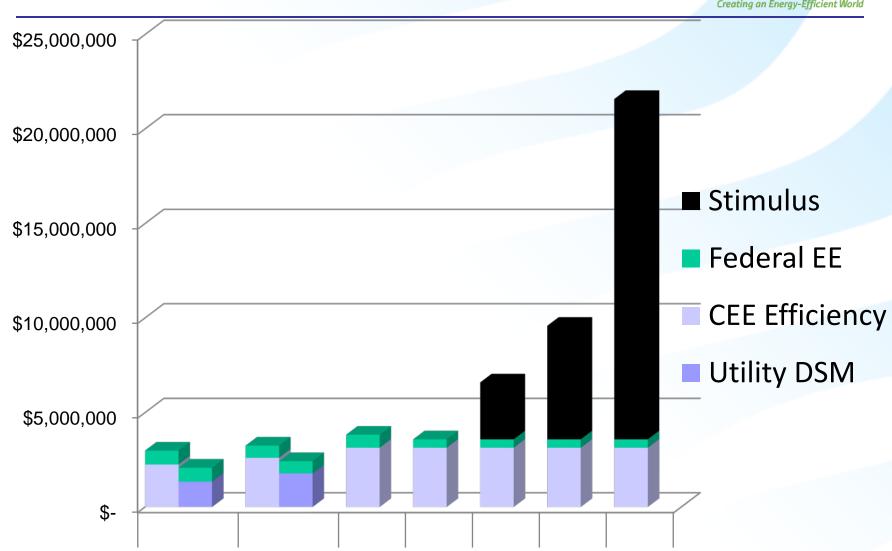
State Energy Star rebate programs (\$300 million)

#### Government Leadership by Example

Federal "High-Performance Green Buildings" (\$4.5 billion)

### Projected EE Funding, 2006-2012





### Leading by example



#### **Executive Order 135814:**

Federal Leadership in Environmental, Energy, and Economic Performance



For more information:

www.femp.energy.gov



#### Agencies to meet all EISA targets, plus:

- Achieve 30% reduction in vehicle fleet petroleum use by 2020
- Achieve 26% reduction in potable & 20% reduction in industrial, landscaping, & agricultural water consumption by 2020
- Comply with new EPA storm water management guidance
- Achieve 50% recycling & waste diversion by 2015
- Requires that 95% of all applicable procurement contracts will meet sustainability requirements
- Requires 15% of buildings meet the Guiding Principles for High Performance and Sustainable Buildings by 2015
- Design all new Federal buildings which begin the planning process by 2020 to achieve zero-net energy by 2030

## Kateri's Crystal Ball: Forecasting U.S. Future Action on EE



#### Senate

- Has Adopted Energy "Piece"
- Will consider climate "Piece" in early 2010??

#### House

- Adopted Climate & Energy bill in June
- Additional Support for Energy Efficiency in legislation
  - Significant Funding through CO2 Allowances (House bill)
  - Building Labeling Programs (both)
  - Utility Energy Efficiency Resource Standards (both)
  - Innovative Finance Programs (both)
  - Appliance Standards (both)
  - And much more.....

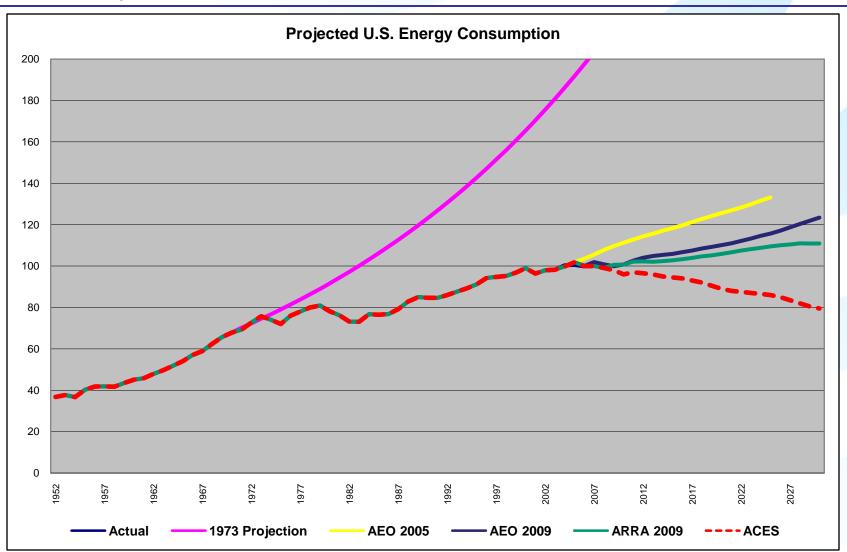
## The role of energy efficiency in climate legislation



- Efficiency is the quickest, cheapest way to reduce energy consumption and lower greenhouse gas emissions
- In ACES, energy efficiency provisions alone would:
  - Save American households about \$154 per year in 2025. (EPA)
  - Reduce carbon allowance price by 1.5 percent between 2015-2050. (EPA)
- On the whole, ACES would create on average 120,000 new energy efficiency jobs nationwide each year between 2012-2020.(Center for American Progress)

## The Outlook Should Waxman-Markey Become U.S. Law





### Kateri's Crystal Ball: U.S. Energy Efficiency Policy in 2010



#### Clean Energy Legislation w/ Strong EE

- Building Codes
- Appliance Standards
- Innovative Financing Mechanisms
- Significant Funding from Allowances

#### New Jobs Bill

- Loan Guarantees
- Workforce Training
- Federal Transit & Fixed Guideways
- Home Star??? Residential Retrofit
- Building Star??? Residential Retrofit
- Stagnant FY 2011 Appropriations
- International Accords & Binding International Climate Treaties???





## EE Global 2010: Ideas, Intersections, Solutions to Power an Energy-Efficient Economy May 10-12, 2010: Washington D.C. Convention Center

- Established in 2007; held annually, rotating among 5 regions of the world
  - Africa, Asia/Pacific, Europe, Latin America, North America
- Organized by an International Steering Committee

**Honorary Government Co-Chairs** 



Rep. Edward Markey



Sen. Mark Prvor





James E. Rogers

Chairman, President & CEO,

Duke Energy

Vice Chairs



Christopher B. Curtis President & CEO, N.A. Operating Div. & Buildings Business, Schneider Electric



Robert J. Dixon David
Sr. VP & Global Head EVP, o
Efficiency & Sustainability, Organ
Building Automation, Whirl
Siemens Building Technologies Inc.



David Szczupak EVP, Global Product Organizations, Whirlpool Corporation



Nobuo Tanaka Executive Director, IEA

- Draws 700+ stakeholders
  - High-level 40% of 2009 attendees self-identified as executives, and another 50% as managers
  - International –40 countries represented in 2009
  - Representative of all sectors buildings, industrial, utilities, transportation, finance
  - Even split of government (28%), business (37%) and non-profit (28%) in 2007 & 2009

### Questions?

### Thank you!

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