

INSTITUTE FOR  
**Electric Efficiency**

# Increasing Role of Energy Efficiency and Demand Response in U.S. Electricity Market

13<sup>th</sup> Annual Washington Energy Policy Conference  
*New Energy Dynamics – Recession and Beyond*

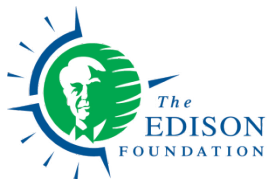
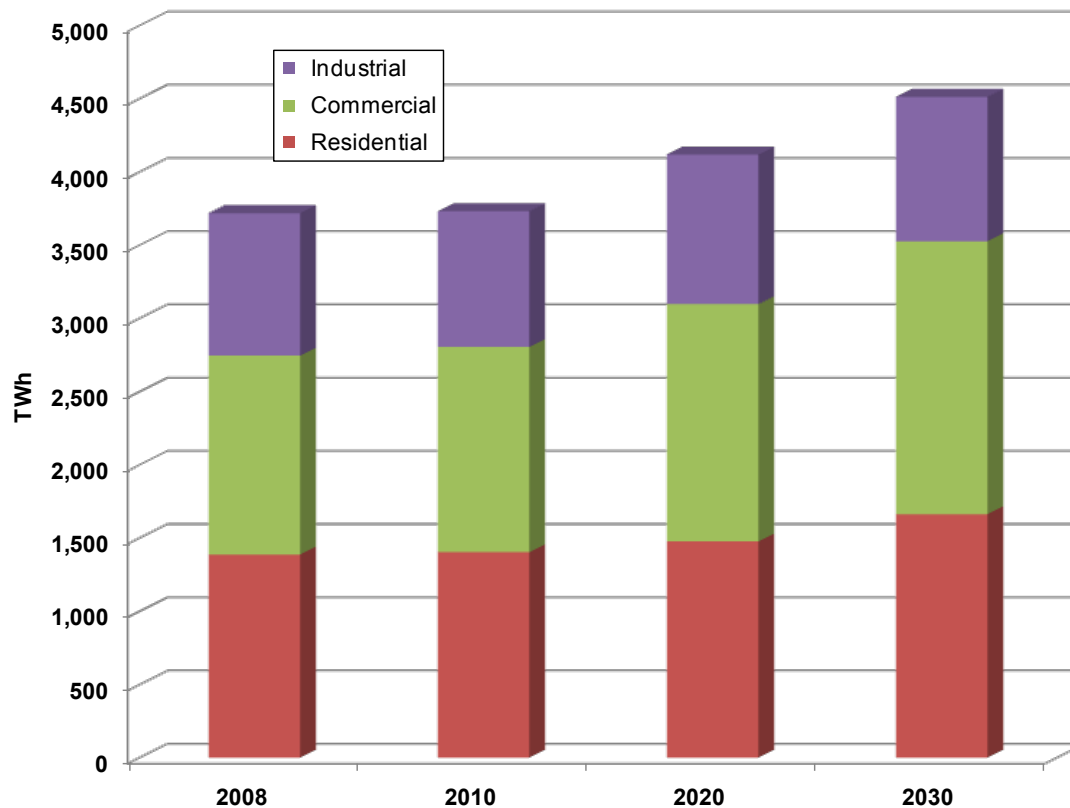
Lisa Wood  
Executive Director

April 27, 2009

# EIA Annual Energy Outlook (4/2009): Electricity sales grow from 3747 TWh (2007) to 4527 TWh (2030)

## Electricity Forecast (TWh)

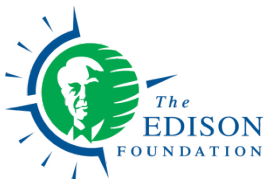
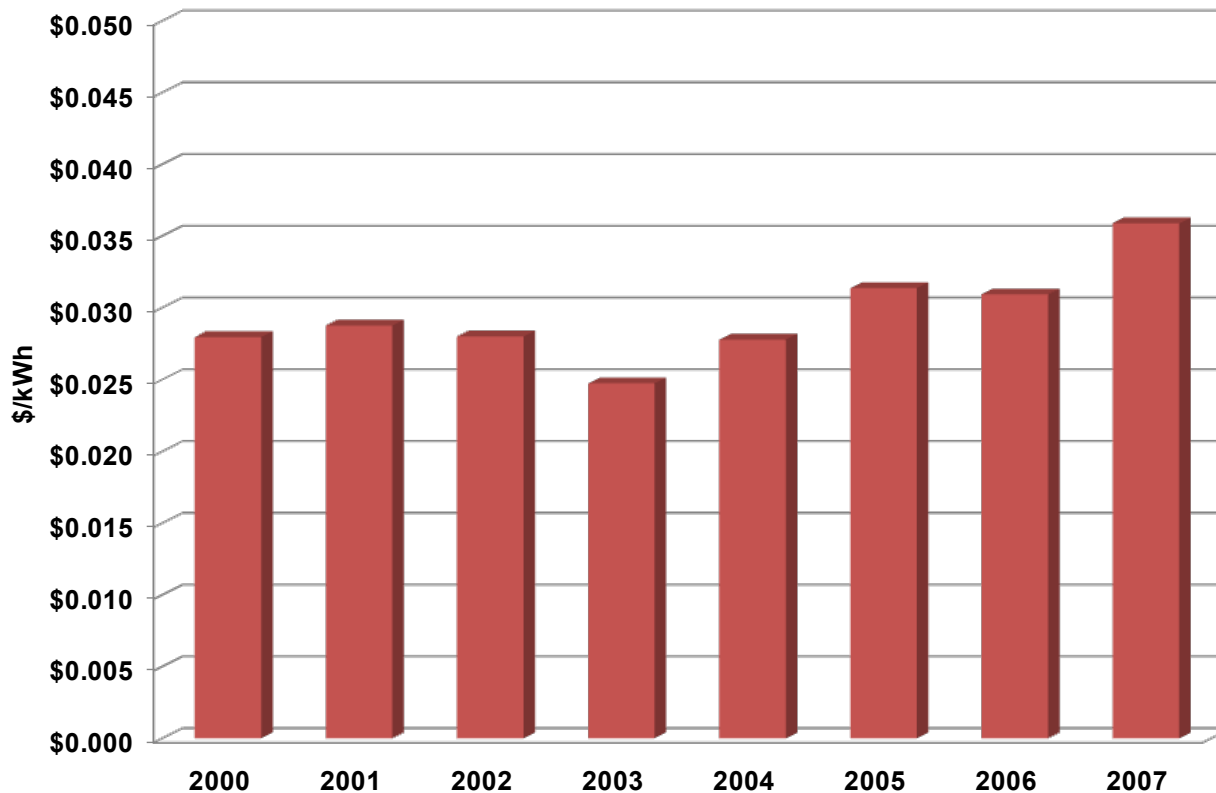
Source: EIA *Annual Energy Outlook*, Updated Reference Case, April 2009



# Energy efficiency is our 1<sup>st</sup> fuel: Average cost about \$0.035 per kWh saved (EIA 2007)

Total Utility EE Costs per kWh Saved (2000-2007)

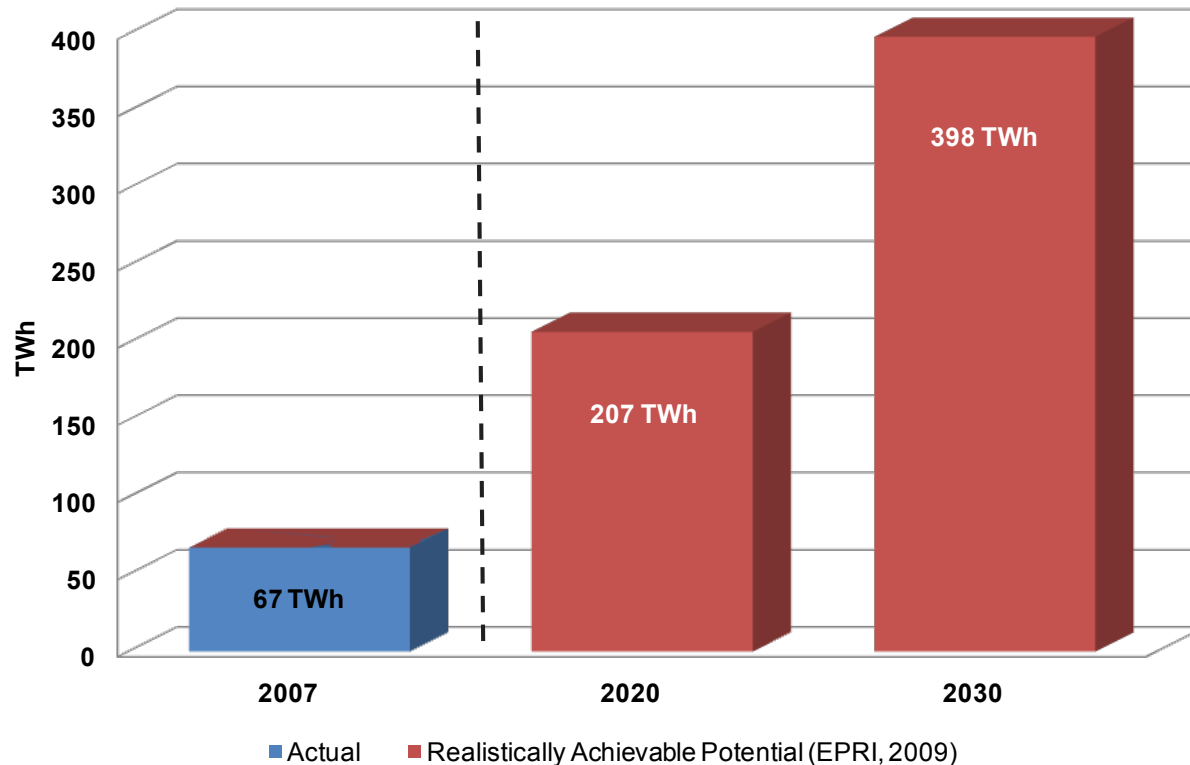
Source: EIA Form 861



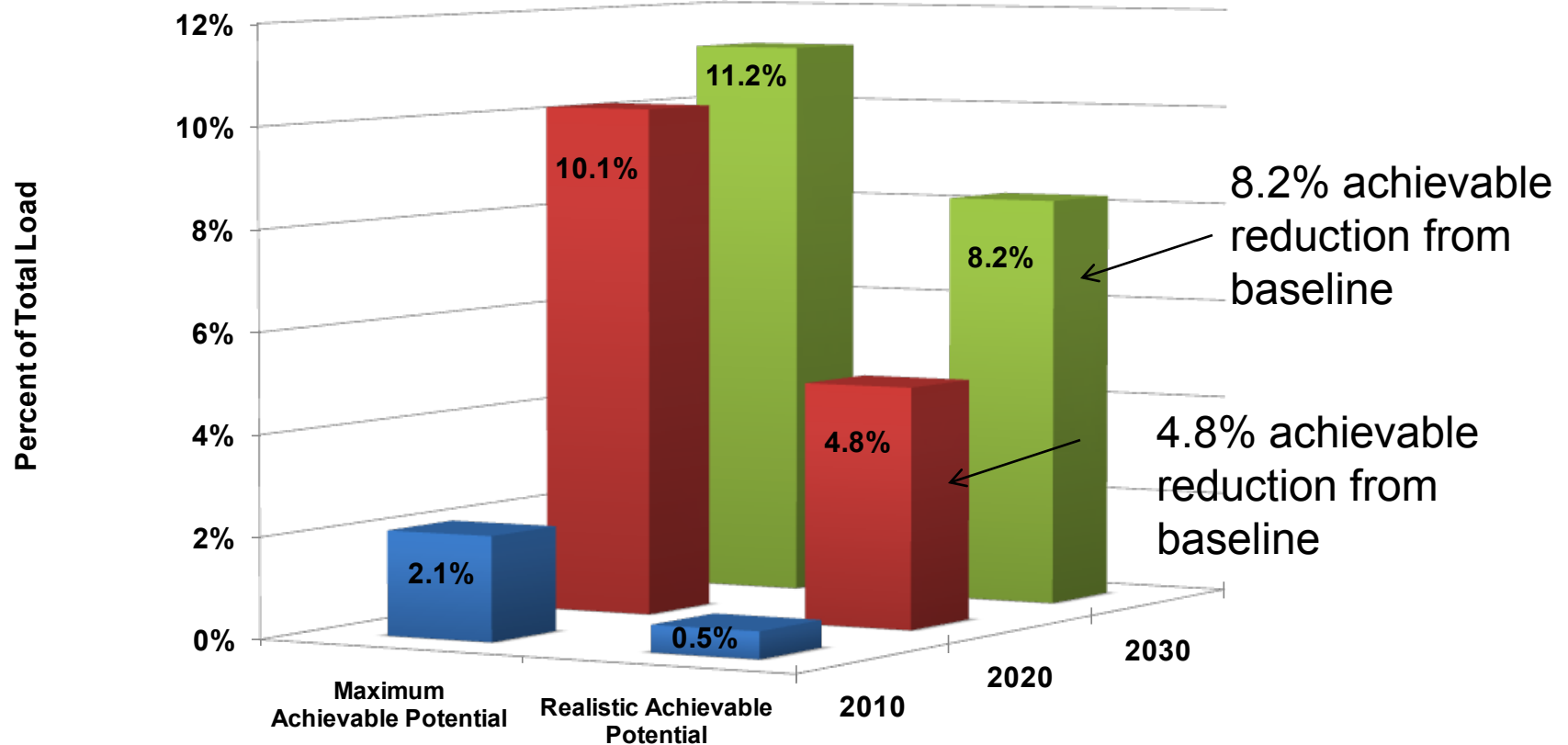
# Historical vs. projected U.S. energy savings due to energy efficiency only (EIA and EPRI Report #1016987)

## Total TWh Savings Due to Energy Efficiency

Sources: EIA Form 861, EPRI, "Assessment of Achievable Potential from EE and DR Programs in the U.S." (2009)



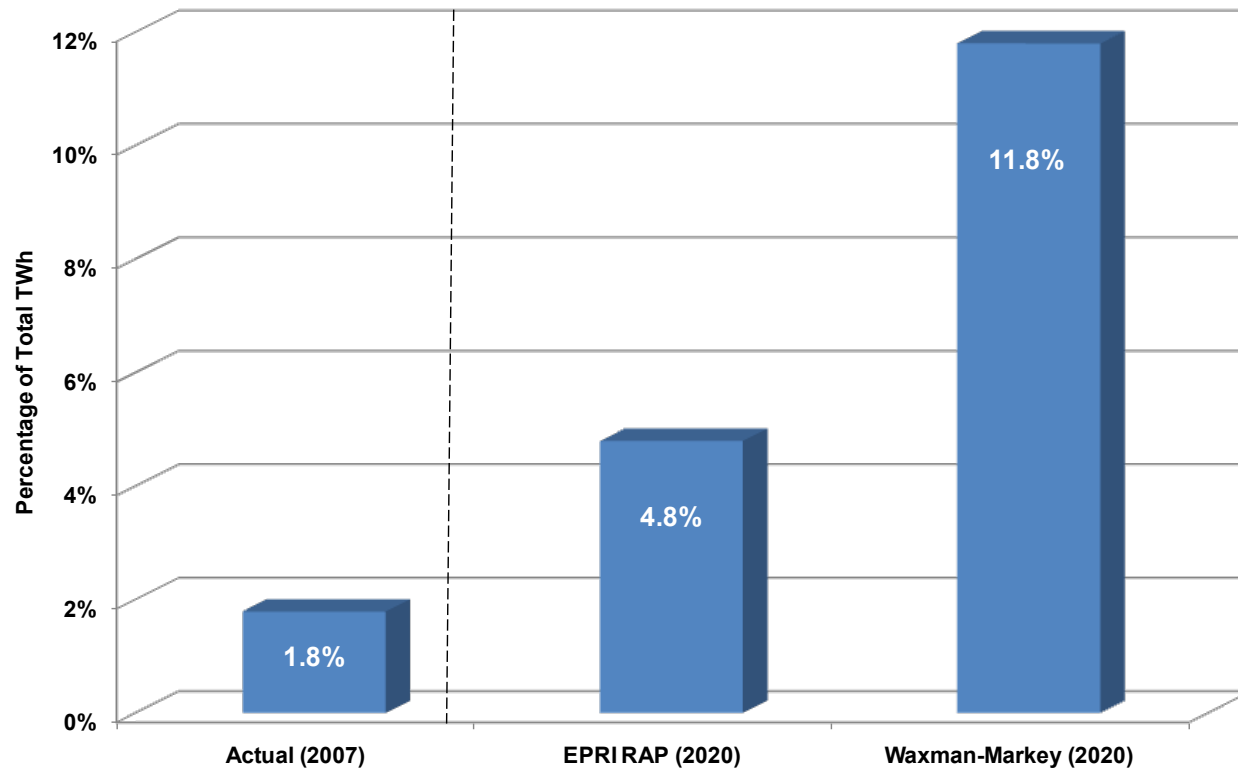
# Energy efficiency programs can save 4.8% in 2020 and 8% in 2030 of baseline U.S. electricity usage (EPRI Report #1016987 – RAP estimates)



# Energy efficiency as % of total electricity sales: Actual (EIA) and “potential” savings estimates (EPRI realistic achievable potential vs. Waxman-Markey draft bill)

## EE Savings as a Percentage of Total TWh - Actual v. Forecast

Sources: EIA Form 861, EPRI "Assessment of Achievable Potential from EE and DR Programs" (2009), and Waxman-Markey draft bill



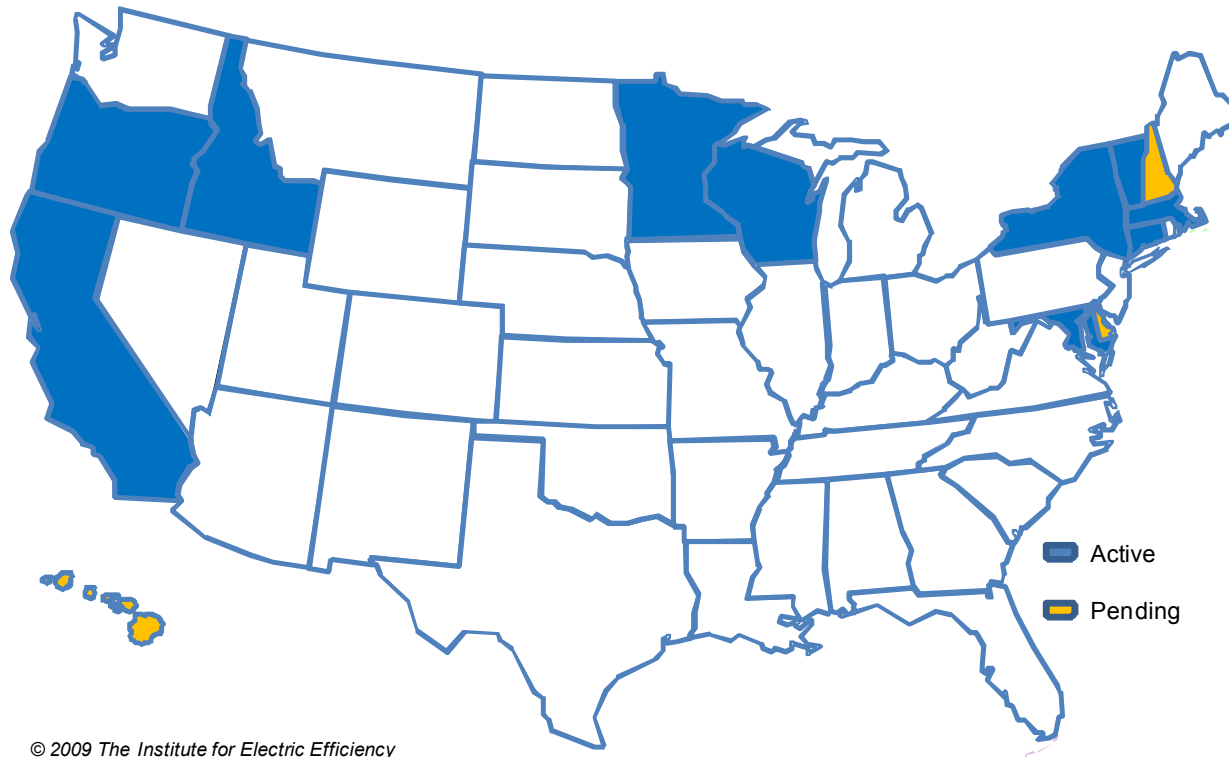
# State energy policy levers supporting energy efficiency in the U.S.

- Utilities recovery costs for energy efficiency program expenditures
- Some states have “decoupling” to recover lost revenue as a result of EE savings
- Many states now have performance incentives related to successful EE investments
- About 19 states in U.S. have energy efficiency resource standards (EERS)
- Waxman-Markey draft bill proposes federal EERS – 15% by 2020

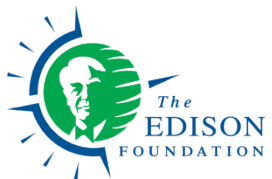


# Status of decoupling for electric utilities in the U.S. (IEE)

Status of Revenue Decoupling for Electric Utilities by State  
March 2009



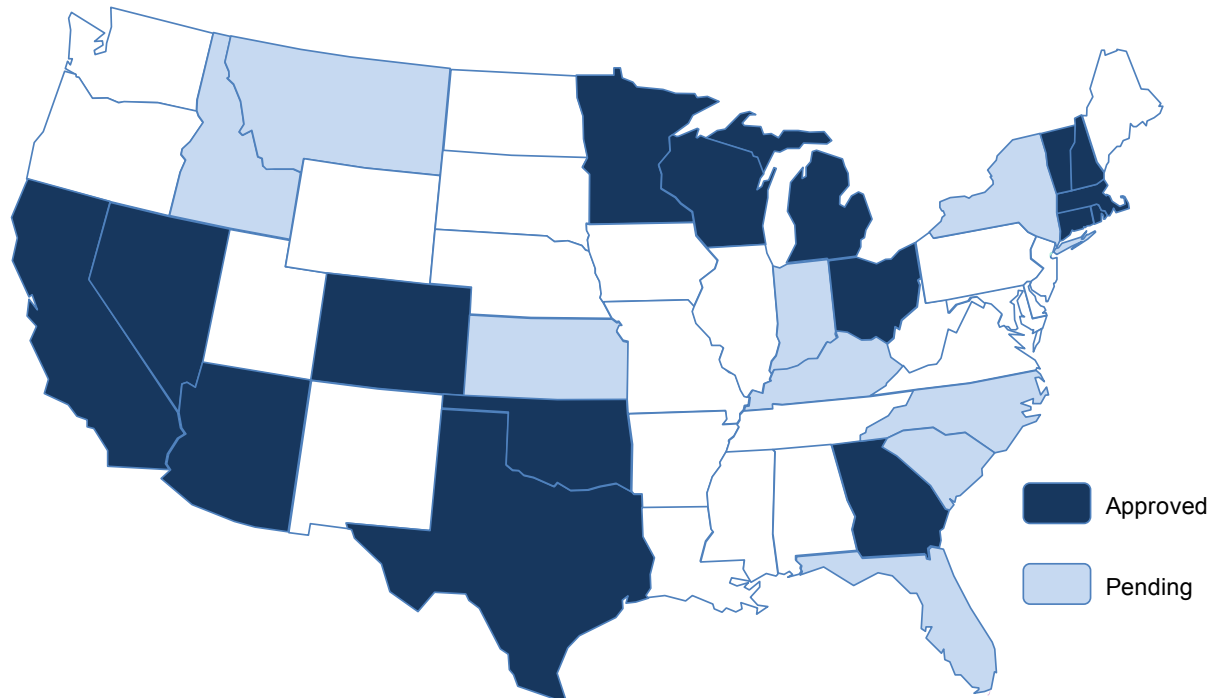
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# Status of utility performance incentives for energy efficiency programs in the U.S. (IEE)

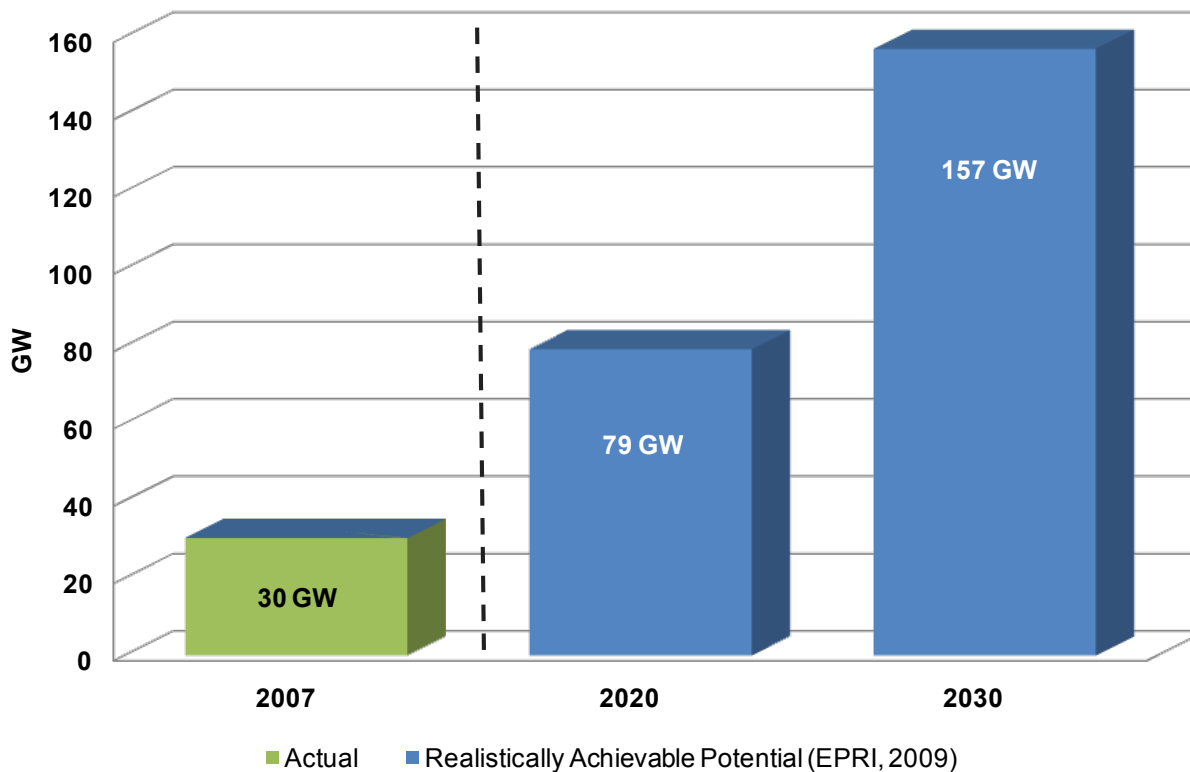
Performance Incentives for Energy Efficiency Programs by State  
April 2009



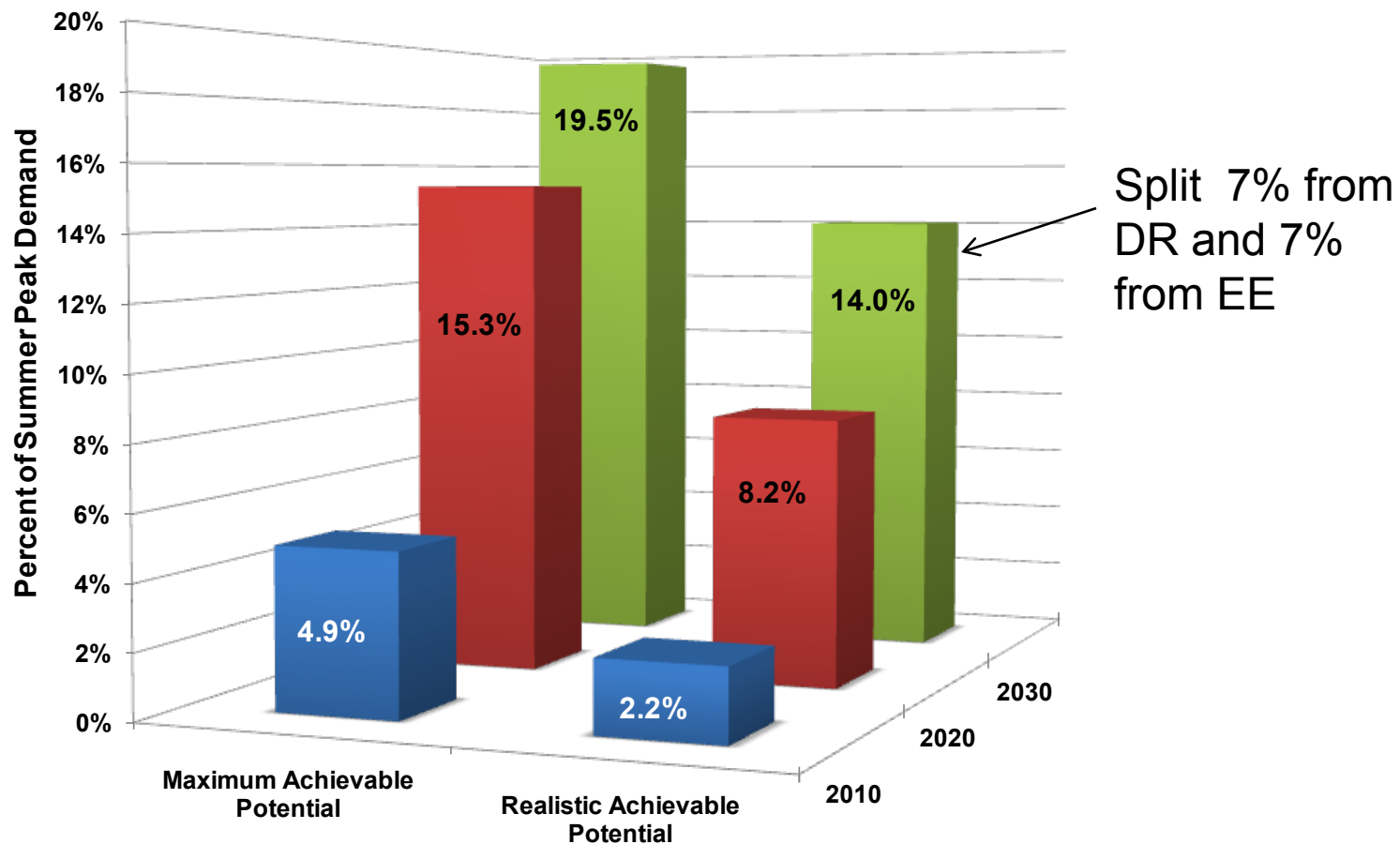
# Historical vs. projected U.S. summer peak load reduction (GW) due to energy efficiency and demand response (EIA and EPRI Report #1016987)

## Total U.S. Summer Peak Load Reduction due to EE and DR

Sources: EIA Form 861, EPRI, "Assessment of Achievable Potential from EE and DR Programs in the U.S." (2009)



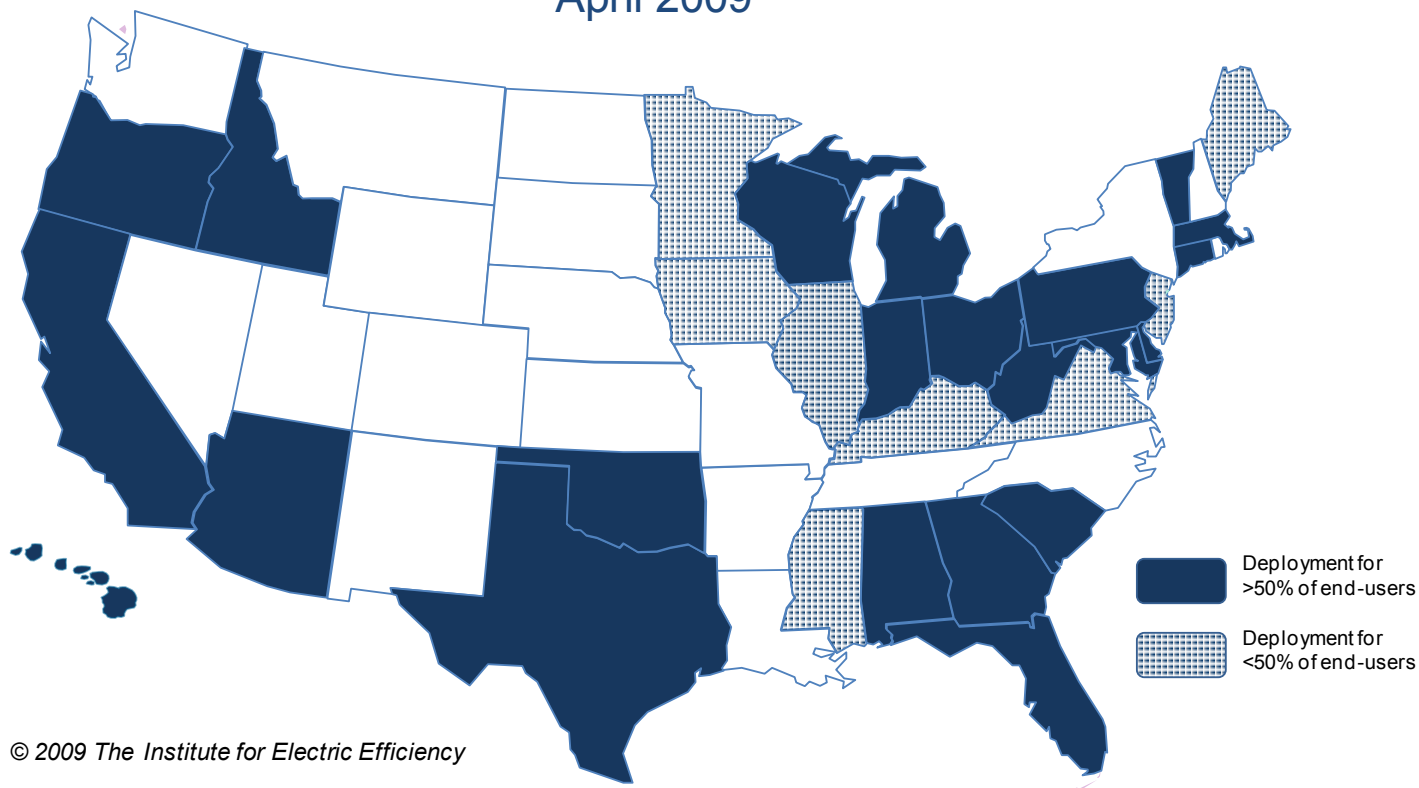
# EE and DR programs together can save 8.2% in 2020 and 14% in 2030 of U.S. summer peak demand (EPRI Report #1016987 – RAP estimates)



# Smart meter rollouts to mass market customers will transform electricity market (IEE)

## Utility-Scale Deployment of Smart Meters (IOUs)

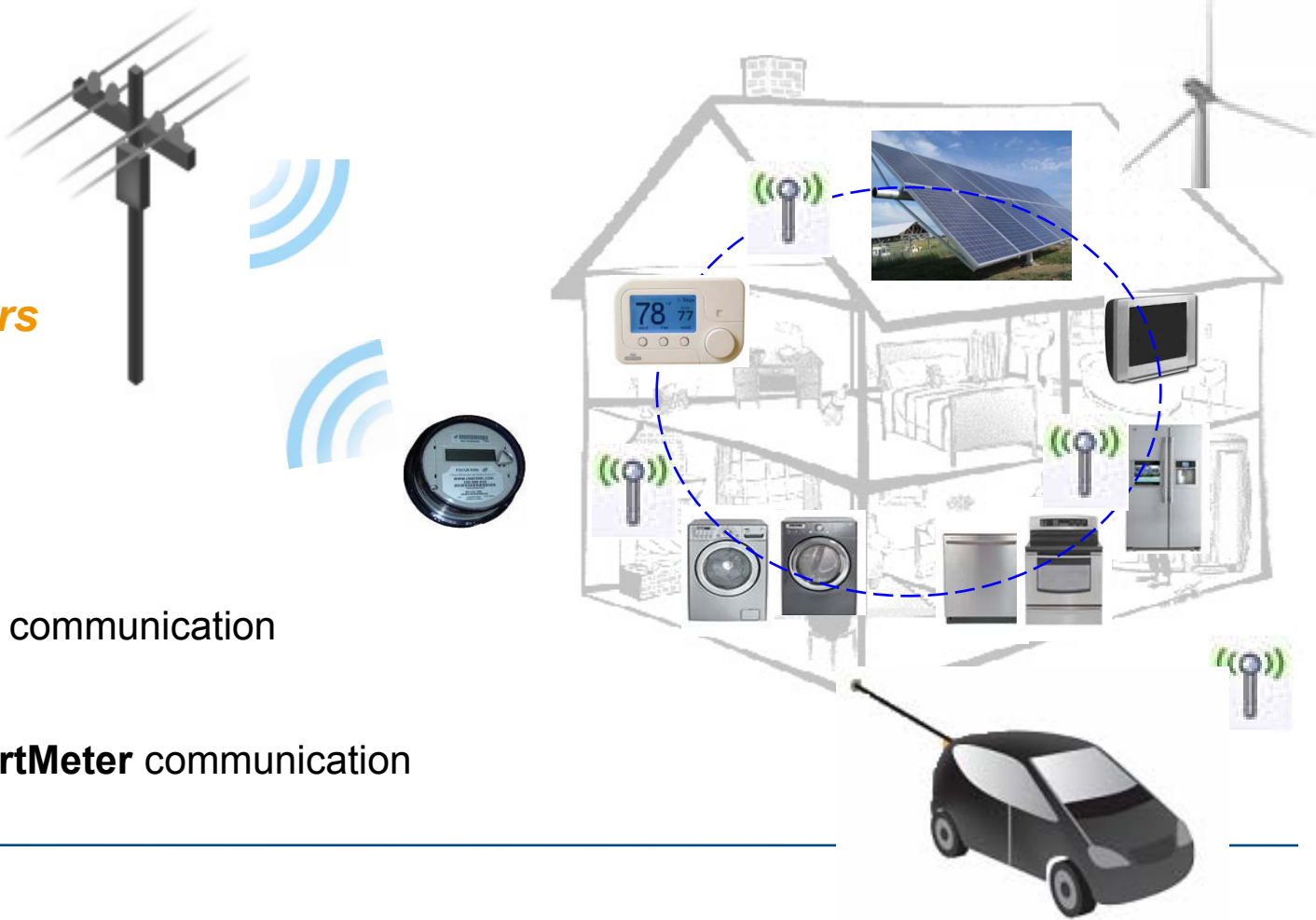
April 2009



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# Smart meter platform and home area network technologies will take EE and DR to new levels

*...Giving customers the tools and the know-how to be smarter energy consumers*



HAN communication



**SmartMeter** communication



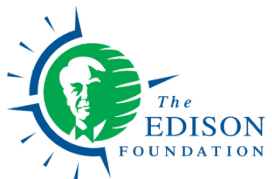
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# IEE website – targeted EE and DR information resource -- [www.edisonfoundation.net/IEE](http://www.edisonfoundation.net/IEE)

*Resource for industry & policy makers*

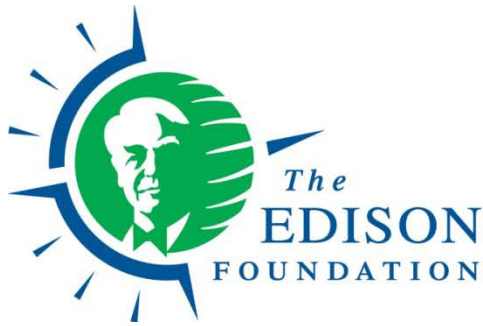


The screenshot shows the homepage of the Institute for Electric Efficiency (IEE). At the top left is the logo for The Edison Foundation, featuring a stylized green sun and a portrait of Thomas Edison. To its right is the text "INSTITUTE FOR Electric Efficiency". Further right is the tagline: "Advancing energy-efficiency practices and efficient pricing among electric utilities." Below this is a horizontal navigation menu with six items: "ABOUT IEE", "ISSUE BRIEFS", "NEWS & EVENTS", "REPORTS", "DATABASES", and "ONLINE ROUNDTABLE". The "REPORTS" item is highlighted in green. The main content area is divided into two columns. The left column has a "What's New" section with two links: "Upcoming Events Register Now!" and "Energy Efficiency Success Stories". Below this is an "Ask IEE" section with a large question mark icon and text: "Program cost recovery? Lost margins? Decoupling? If the resources on this site have not answered your questions about program design and best practices, please contact us." The right column features a large image of a city skyline at night, with three circular inset images below it: a digital meter, a compact fluorescent light bulb, and a close-up of an electrical outlet. At the bottom of the page is a footer with three links: "JOIN THE COMMUNITY", "EXTERNAL LINKS", and "ASK IEE".



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