

Bruce A. Measure
Chair
Montana

Rhonda Whiting
Montana

W. Bill Booth
Idaho

James A. Yost
Idaho



Dick Wallace
Vice-Chair
Washington

Tom Karier
Washington

Melinda S. Eden
Oregon

Joan M. Dukes
Oregon

March 31, 2010

MEMORANDUM

TO: Power Committee

FROM: Tom Eckman

SUBJECT: Briefing on Federal Appliance and Equipment Efficiency Standards

Congress charged the US Department of Energy with establishing and maintaining a process for regularly updating energy efficiency standards for appliances, heating and cooling equipment, motors, and a variety of other energy consuming products. The staff will provide an overview of the history of federal standards, their effect on the region and the current rulemakings underway to adopt new and/or revise existing standards.

The Energy Policy and Conservation Act (EPCA) of 1975 established test procedures and conservation targets and labeling for major residential appliances. It also called upon the newly formed Department of Energy (DOE) to set standards for these appliances if the targets were not met. Three years later Congress enacted the National Energy Policy and Conservation Act (NECPA) that amended EPCA to require standards. Nearly a decade passed before Congress enacted and President Reagan signed into law the National Appliance Energy Conservation Act (NAECA), the first national minimum efficiency standards for appliances. NAECA not only establish federal minimum standards for water heaters, clothes washers, refrigerators and other appliances, it set a schedule for the DOE to follow that was designed to ensure that these standards would be updated on a regular basis. NAECA has been amended four times to include additional products and to require DOE to maintain a more consistent update schedule. The most recent amendments to NAECA were included in the Energy Independence and Security Act of 2007 (EISA). Nearly 40 different major product categories are now covered by these federal appliance and equipment standards.

Council staff estimates that cumulatively federal standards are now saving the region just under 800 average megawatts. They contribute just over twenty percent of the savings achieved in the region since 1978.

Although federal standards have been a significant contributor to both regional and national energy savings, the DOE has failed to meet the update schedule required by Congress. As a

result, in July of 2005, fifteen states, including New York and California, and three public interest groups sued DOE for failure to comply with congressionally mandated standards update schedules. In December of 2005, DOE signed a consent decree placing it under a court supervised schedule to eliminate its standards backlog within five years. In January 2006, DOE adopted a 5-year plan to address both the backlog and new standards rulemakings required by the Energy Policy Act of 2005 and EISA. DOE has committed to issuing one standard for all backlog products by June 2011, while meeting all the EPACT 2005 deadlines. This translates into completing rulemakings on 18 products and updating numerous test procedures.

Because of DOE's commitment to comply with the court supervised schedule, federal standards rulemaking activity is occurring at a pace that is six-fold faster than since NAECA was enacted in 1987. This offers the Council and others an unprecedented opportunity to secure cost-effective efficiency gains through federal standards rather than through utility programs. For example, by the end of 2011 DOE is scheduled to issue final standards for water heaters, refrigerators, freezers, central air conditioners and heat pumps, clothes washers and room air conditioners.

The Council has actively participated in DOE's rulemaking proceedings since 1987. Staff participates in technical hearings on proposed standards and provides analysis in support of adopting standards at the levels of efficiency identified as being cost-effective in the Council plan. Staff also works with utilities and NEEA to assist in their efforts to support improvements in federal standards at levels consistent with the Plan.

Overview of Federal Appliance Standards and the Council's Role in the Rulemaking Process

April 10, 2010

Legislative History

Energy Policy and Conservation Act (EPCA), 1975

Set test procedures, conservation targets (followed by standards if targets are not set) and appliance labeling

National Energy Policy Conservation Act, 1978

Amended EPCA from targets to standards

National Appliance Energy Conservation Act (NAECA), 1987

Set standards and schedule for DOE to conduct rulemakings

NAECA amendment, 1988

Added Fluorescent ballasts

Energy Policy Act of 1992

Amended EPCA to expand coverage to certain commercial and industrial equipment

Energy Policy Act of 2005 (EPACT 2005)

Energy Independence and Security Act of 2007 (EISA 2007)

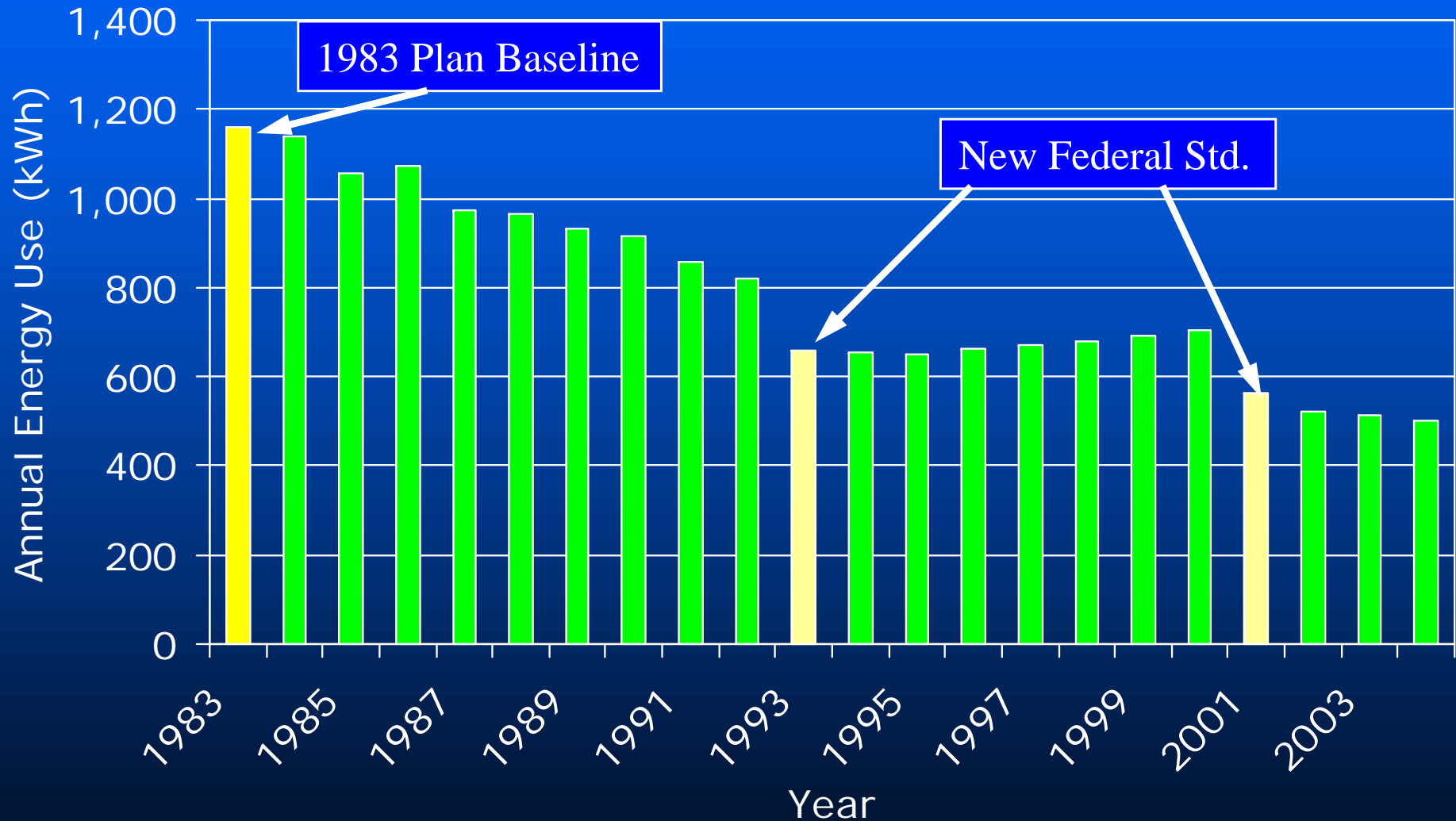
1975 1980 1985 1990 1995 2000 2005 2010



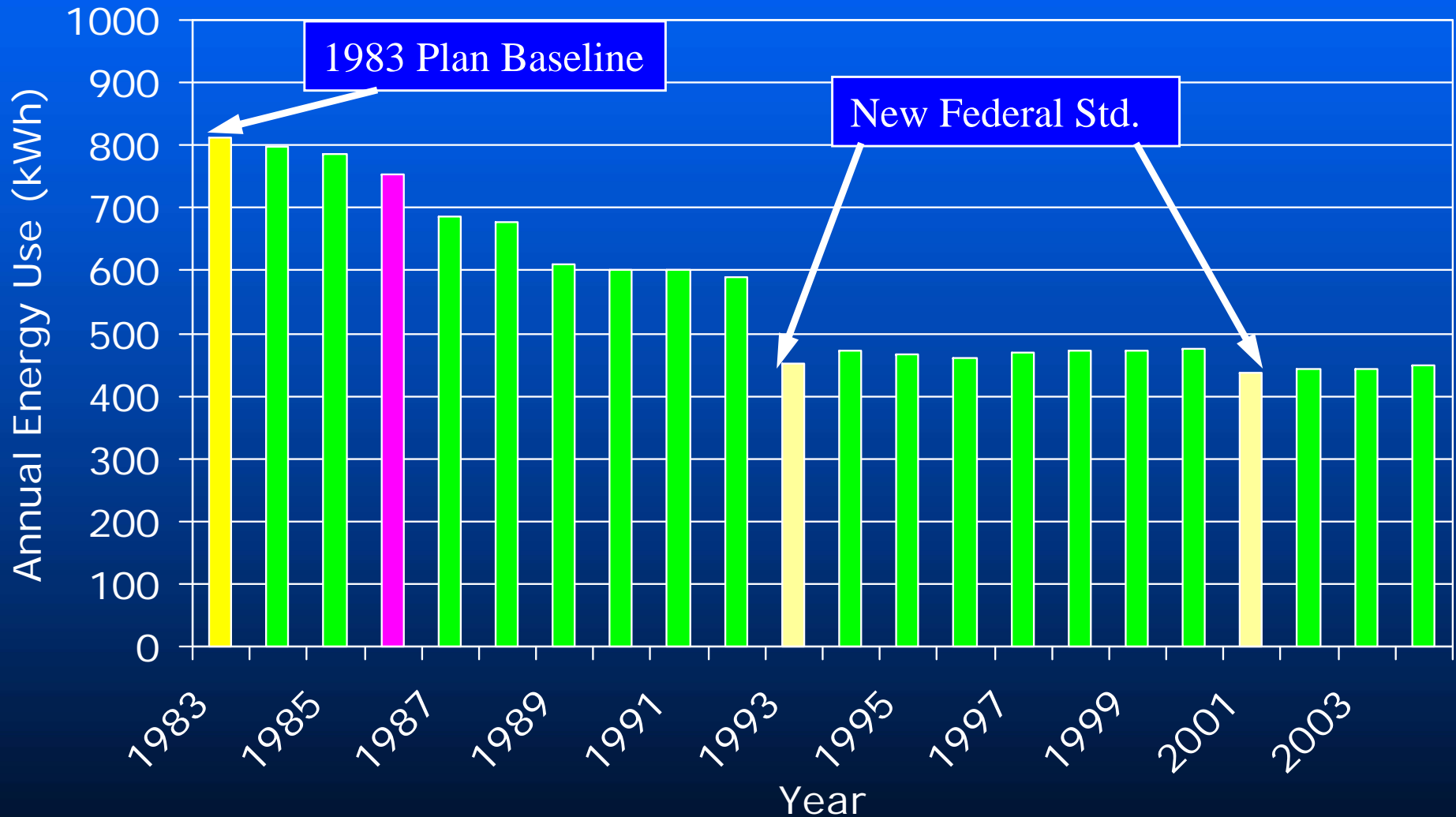
Standards Now Cover Over 35 Major Product Categories

- Battery Chargers and External Power Supplies
- Ceiling Fan Light Kits
- Residential & Commercial Clothes Washers
- Commercial Ice Makers
- Commercial Packaged Air Conditioners and Heat Pumps
- Commercial Packaged Heating and Cooling Equipment
- Residential & Commercial Refrigerators & Freezers
- Commercial Warm Air Furnaces
- Residential & Commercial Water Heaters and Unfired Water Heater Tanks
- Compact Fluorescent Lamps
- Dehumidifiers
- Direct heating equipment
- Electric Motors
- Exit Signs
- General Service Fluorescent Lamps and Ballasts
- General Service Incandescent Lamps
- Incandescent Reflector Lamps
- Low & Medium Voltage Transformers
- Metal Halide Lamps Fixtures
- Pool heaters
- Refrigerated Beverage Vending Machines
- Residential Central Air Conditioners and Heat Pumps
- Residential Clothes Dryers
- Residential Dishwashers
- Residential Furnaces & Boilers
- Residential Ranges and Ovens
- Room Air Conditioners
- Single Packaged Vertical Air Conditioners and Heat Pumps
- Torchiers
- Traffic and Pedestrian Signal
- Walk-in Coolers and Walk-In Freezers

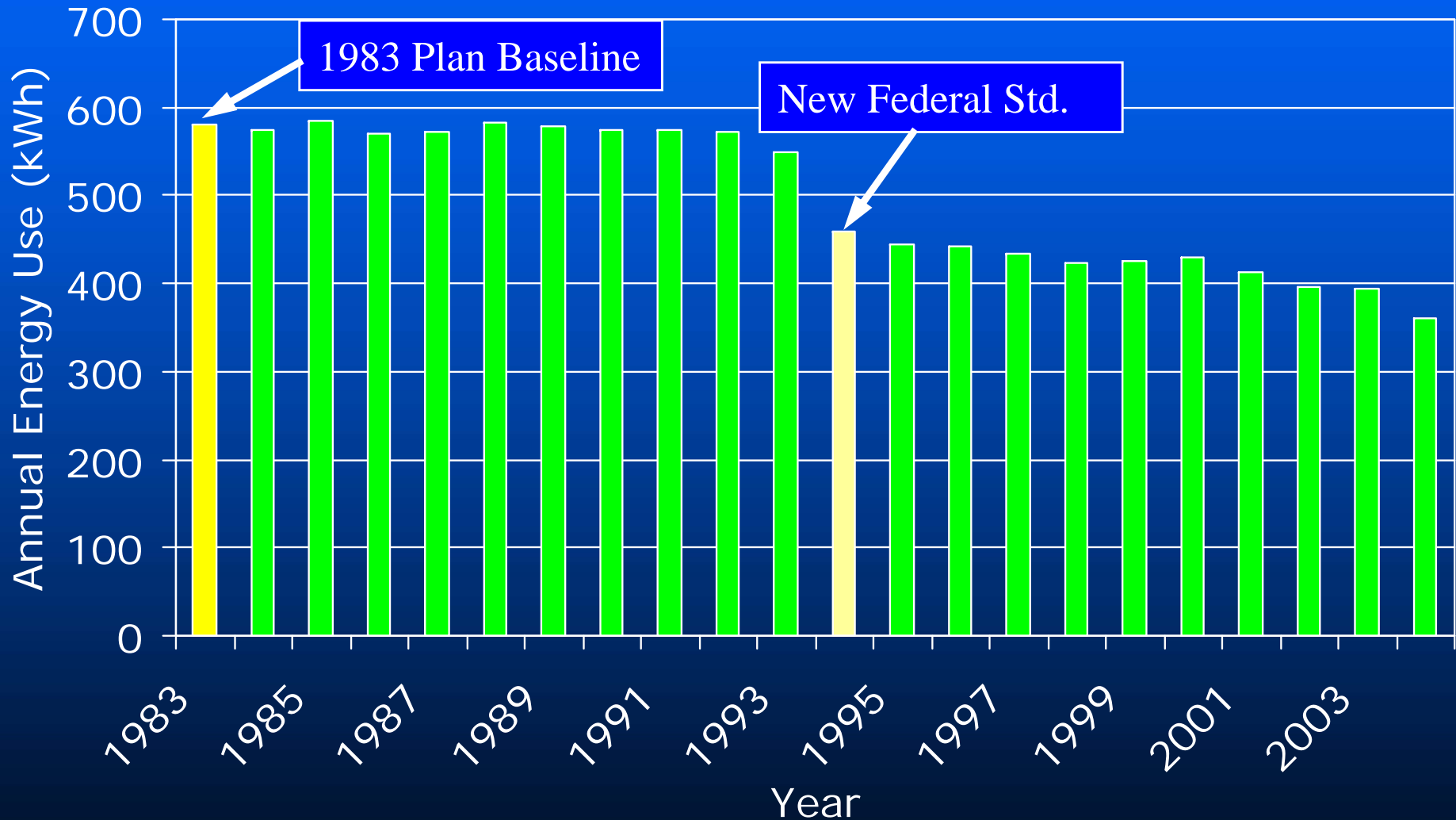
Standards Impact – Residential Refrigerators



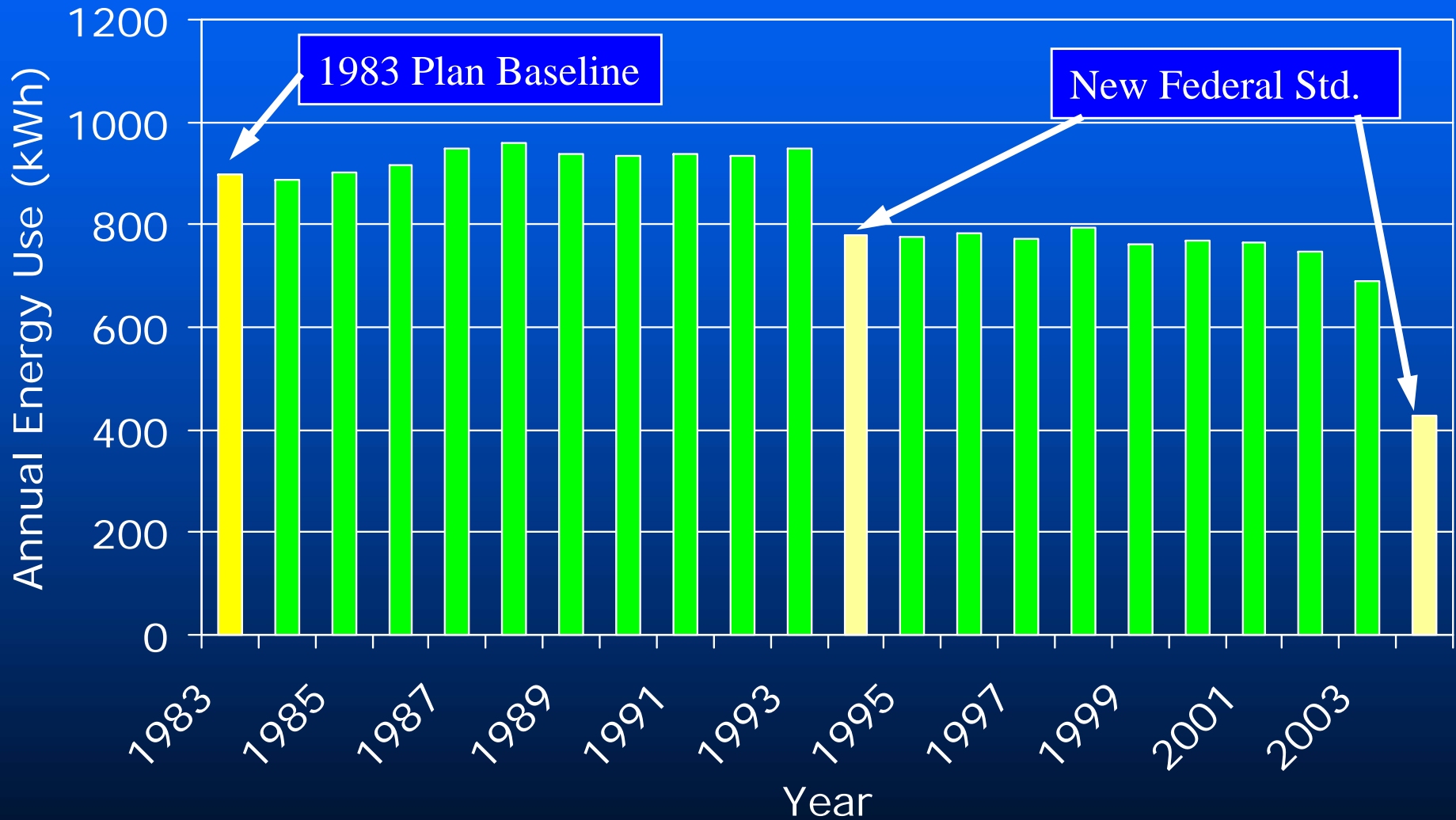
Standards Impact – Residential Freezers



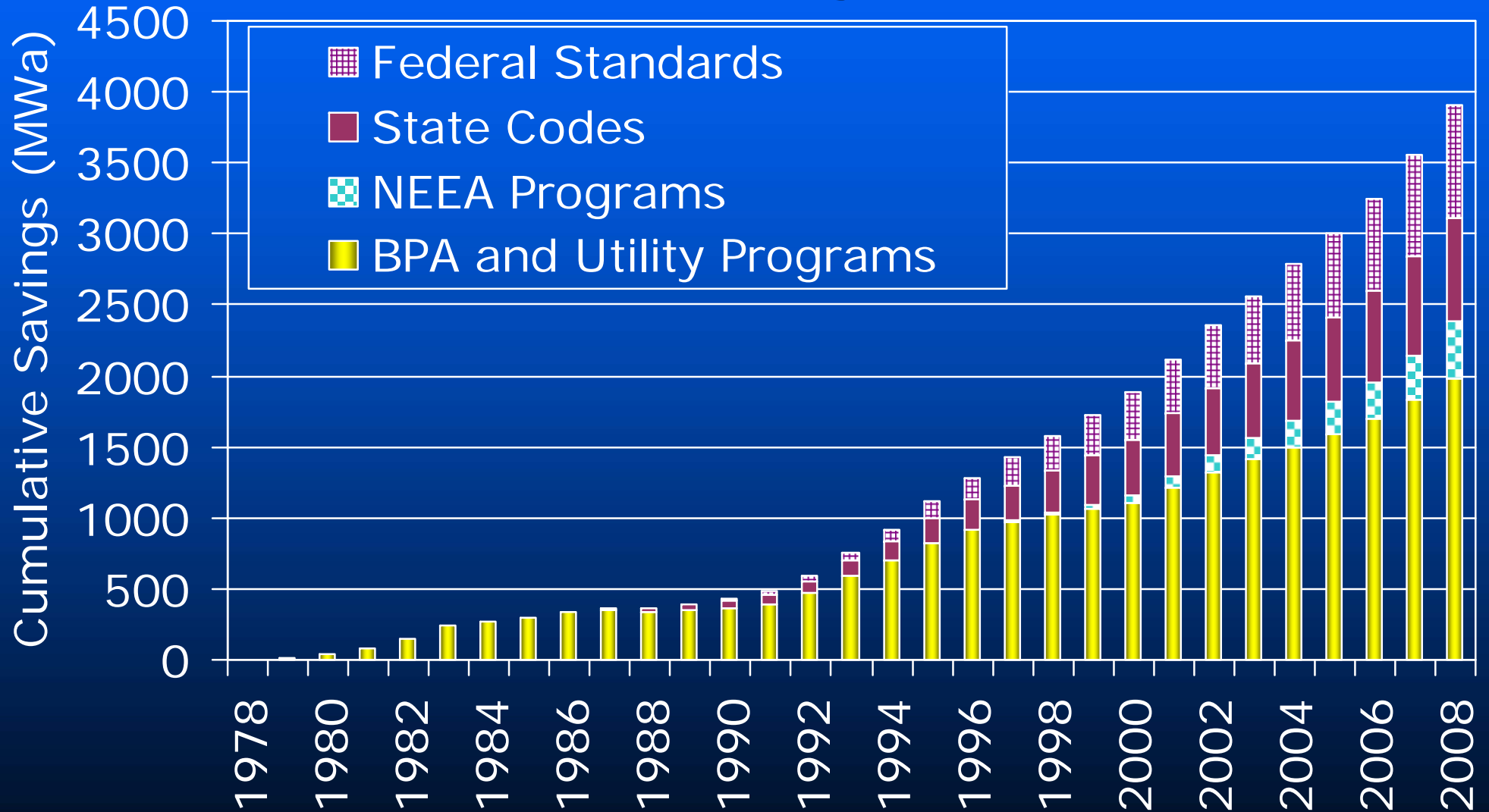
Standards Impact – Residential Dishwashers



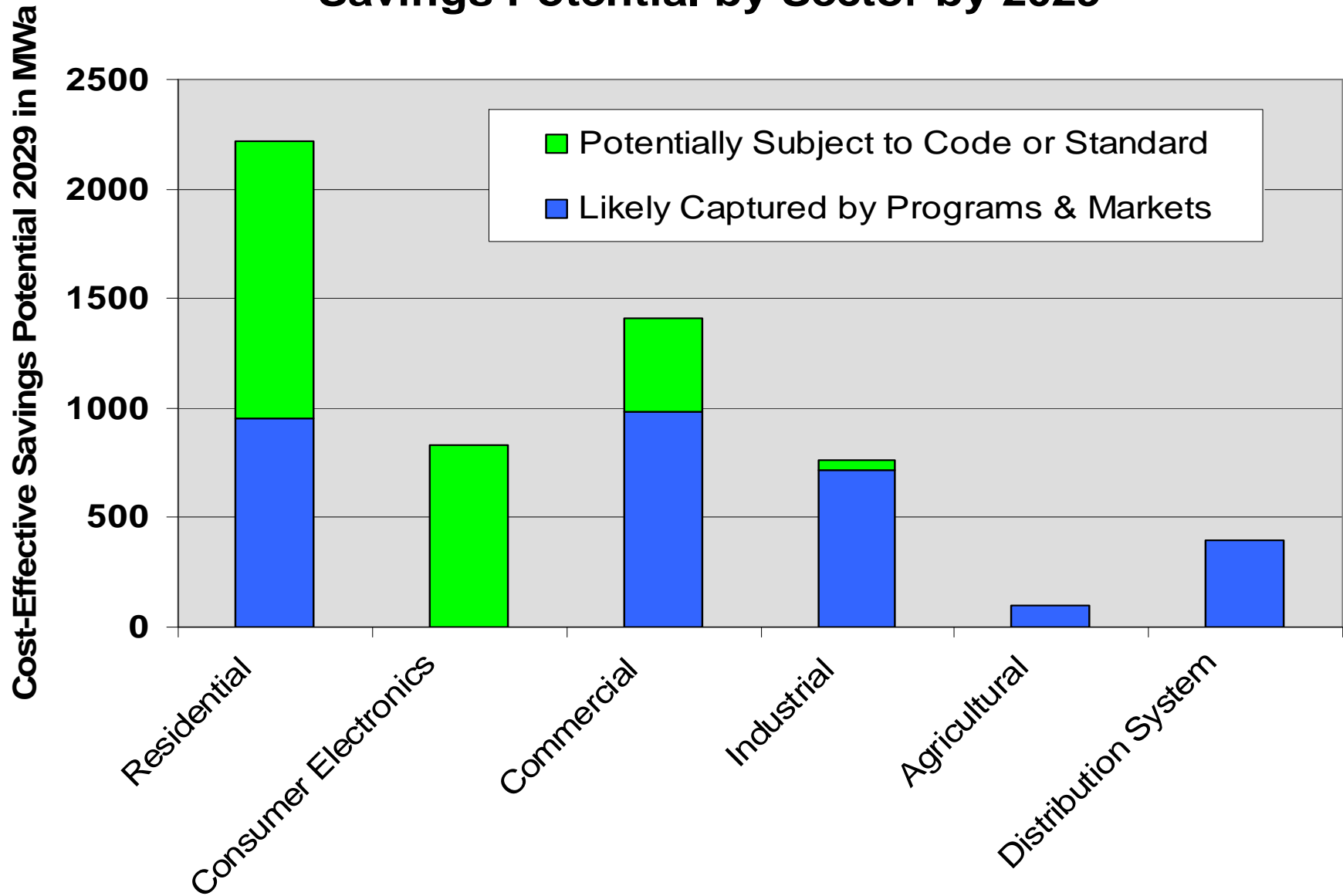
Standards Impact – Residential Clothes Washers



Federal Standards Contribute 20% of Cumulative Regional Conservation Savings

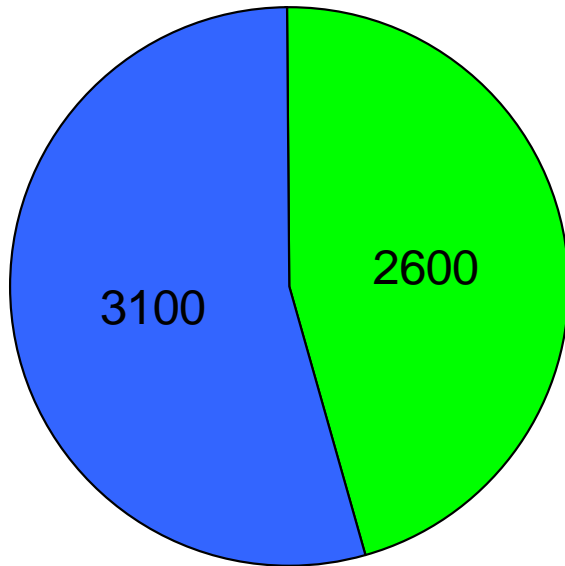


Savings Potential by Sector by 2029



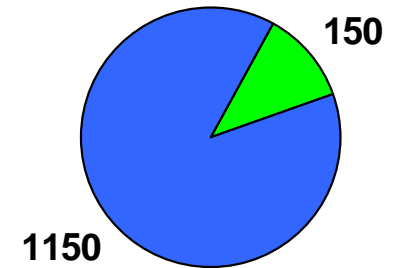
Timing Matters

By 2029



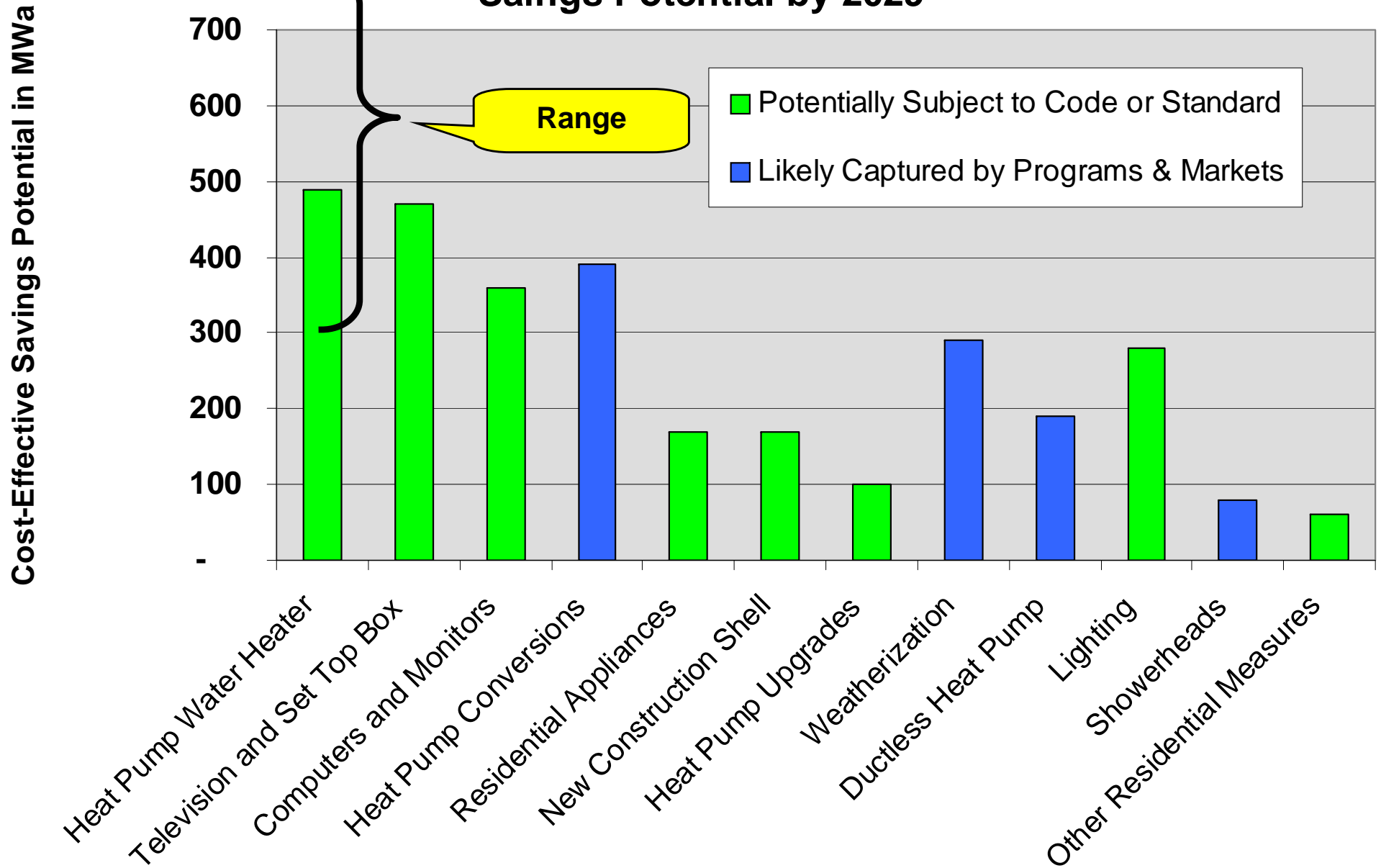
- Potentially Subject to Code or Standard
- Likely Captured by Programs & Markets

By 2014

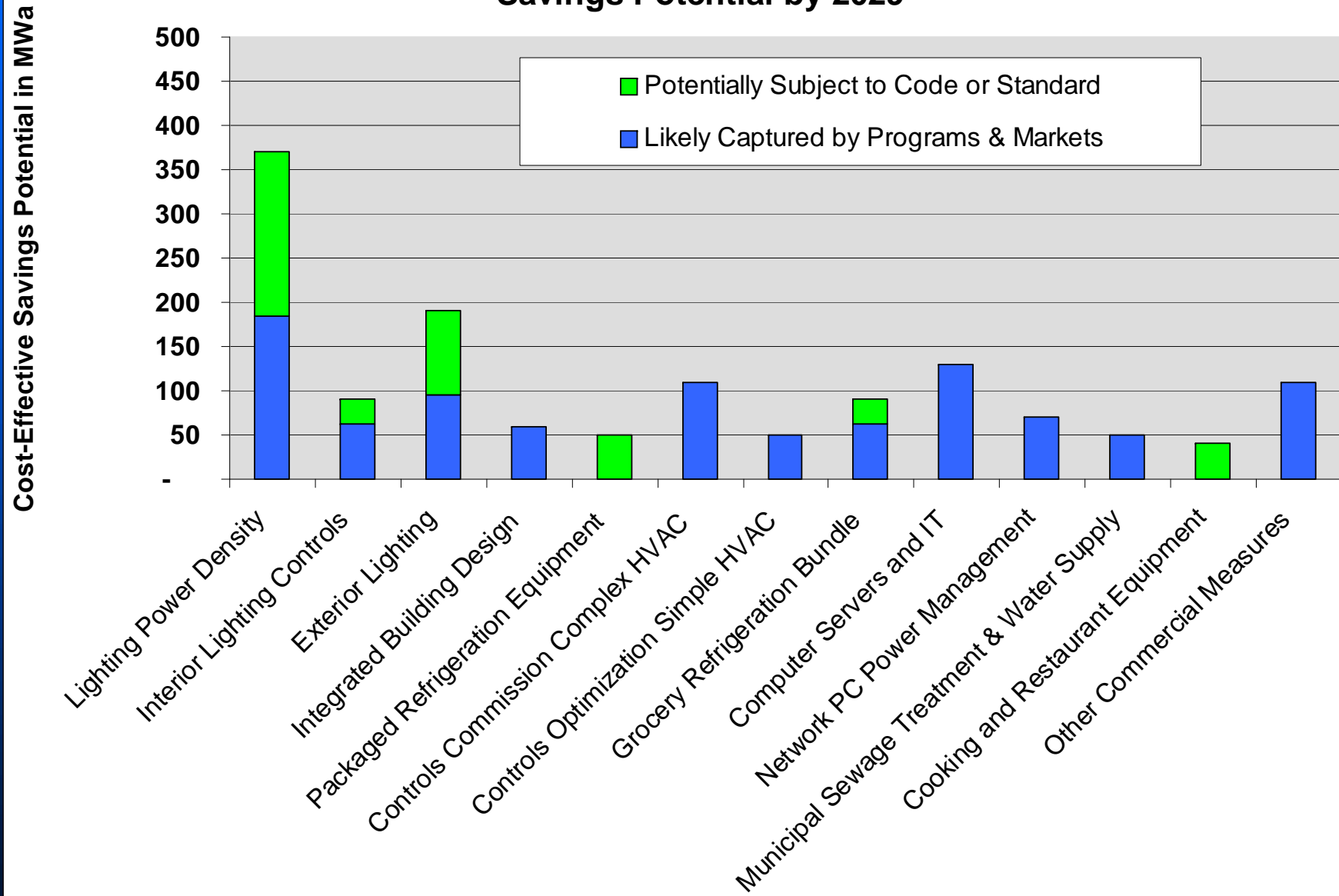


- Potentially Subject to Code or Standard
- Likely Captured by Programs & Markets

Select Residential Measure Groups Savings Potential by 2029



Select Commercial Measure Groups Savings Potential by 2029



The Standards Update Process

- Prior to Energy Policy Act of 2005 (EPACT 2005), DOE had a product backlog consisting of past statutory requirements from NAECA and EPACT 1992
- The backlog included:
 - 25 energy conservation standards rulemakings
 - 18 products – appliances and commercial equipment
 - 2 determination analyses from EPACT 1992
- The Energy Policy Act of 2005 Amendments
 - Added new residential products and commercial / industrial equipment
 - Prescribed 15 new energy conservation standards
 - Set 11 test procedures “based on” industry standards and methods
 - Directed DOE to develop 10 new standards for 6 different products
- *By December 2005 DOE was behind schedule for setting 35 standards and/or adopting test procedures for 24 different products*

DOE Is Under Court Supervised Order to Eliminate the Backlog*

- In January 2006, DOE adopted a 5-year plan to address both the backlog and new EPCACT 2005 rulemakings.
- DOE will issue one standard for all backlog products by June 2011, while meeting all the EPCACT 2005 deadlines.
 - 18 products plus small electric motors (a positive determination)
- Plan reflects a 6-fold increase over average of previous 18 years – the highest-ever level of standards activities

*In July of 2005, 15 States and 3 public interest groups, including NRDC sued DOE for failure to comply with Congressionally mandated standards deadline. In December of 2005 DOE signed a consent degree placing it under a court supervised consent schedule to eliminate its backlog within 5 years

DOE's Standards Update Schedule: Q1 - 2010

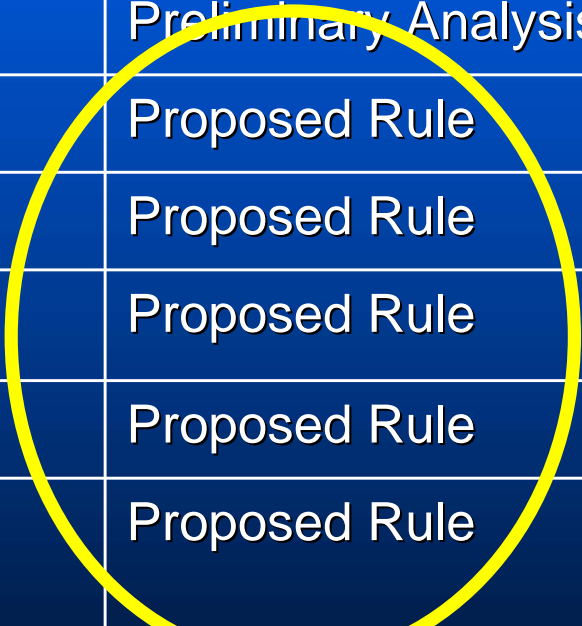
Date	Product	Rulemaking Stage
January	Metal Halide Lamp Fixtures	Framework Workshop
	Clothes Dryers and Room AC	Preliminary Analysis
	Central A/C and Heat Pump	Preliminary Analysis
	Fluorescent Lamp Ballast	Preliminary Analysis
	Commercial Refrigeration Equipment	Framework Workshop
	Electric Motors	Framework Workshop
February	Small Electric Motors	Final Rule
March	Water Heaters, Direct Heaters and Pool Heaters	Final Rule
	Battery Charges and External Power Supplies	Preliminary Analysis
	ER, BR and Small Diameter Incandescent Reflector Lamps	Framework Workshop

DOE's Standards Update Schedule: Q2 - 2010

Date	Product	Rulemaking Stage
April /May	Residential Refrigerators and Freezers	Proposed Rule
June	Residential Clothes Washers	Preliminary Analysis
	HID Lamps	Final Determination
	Microwave Ovens - Standby and Off Mode	Supplemental Proposed Rule
	ER, BR and Small Diameter Incandescent Reflector Lamps	Framework Workshop
	Televisions	Framework Workshop

DOE's Standards Update Schedule: Q3/Q4 – 2010

Date	Product	Rulemaking Stage
July	Walk-In Coolers and Freezers	Preliminary Analysis
August	Metal Halide Lamp Fixtures	Preliminary Analysis
September	Residential Furnaces	Proposed Rule
October	Central A/C and Heat Pump	Proposed Rule
	Clothes Dryers and Room AC	Proposed Rule
November	Fluorescent Lamp Ballast	Proposed Rule
December	Battery Charges and External Power Supplies	Proposed Rule



Council Involvement

- Council testified before Congress in support of National Appliance Energy Conservation Act (NAECA) which established federal standards
- Council has actively participated in standards setting process since passage of NAECA in 1987 by supporting standards at efficiency levels consistent with those found to be cost-effective in its Plans
 - Staff participates in technical rulemaking hearings and submits technical comments
 - Staff works with regional utilities and NEEA to inform and encourage their participation in standards rulemaking processes (e.g., solicited letters of support from utilities for distribution transformer efficiency standards)
 - Executive Director “signs-off” on Council comments on proposed final rules and letters of support for levels of efficiency consistent with Council Plan

Backup Slides

DOE Rulemaking Schedule

Table 2. Multi-Year Schedule to Issue One Standard for Each Product in the Backlog, and to Develop One Standard for Each Product per EPACT 2005 and EISA 2007

Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, EISA 2007, Other	Approx. Rule Initiation Date	Final Action Date*
Heating Team	Standards	<ul style="list-style-type: none"> • Water Heaters (Residential) [Backlog Cycle 2] • Direct Heating Equipment [Backlog Cycle 1] • Pool Heaters [Backlog Cycle 1] 	Backlog Backlog Backlog	FY2006, Q4	March 2010
		<ul style="list-style-type: none"> • Furnace Fans 	EISA 2007	FY2010, Q2	December 2013
		<ul style="list-style-type: none"> • Small Furnaces • Mobile Home Furnaces • Residential Furnaces • Residential Boilers 	Voluntary Remand Voluntary Remand Voluntary Remand Voluntary Remand	FY2010, Q1	May 2011
	Test Procedures	<ul style="list-style-type: none"> • Furnaces and Boilers, Standby Mode and Off Mode 	EISA 2007	FY2009, Q1	September 2010*
		<ul style="list-style-type: none"> • Furnace Fans 	EISA 2007	FY2010, Q2	December 2012
		<ul style="list-style-type: none"> • Water Heaters (Residential), Standby Mode and Off Mode • Direct Heating Equipment, Standby Mode and Off Mode • Pool Heaters, Standby Mode and Off Mode 	EISA 2007 EISA 2007 EISA 2007	FY2009, Q1	March 2010
Transformers and Motors	Standards	<ul style="list-style-type: none"> • Small Electric Motors 	Backlog	FY2007, Q3	February 2010
		<ul style="list-style-type: none"> • Electric Motors, 1-500 hp 	EISA 2007	FY2010, Q2	December 2012

* Final action dates followed by an asterisk represent a change from the last semi-annual implementation report. For further detail, consult the Progress Reports of Appliance Product Teams (By Product) in the Implementation Update section of the report to Congress.

DOE Rulemaking Schedule

Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, EISA 2007, Other	Approx. Rule Initiation Date	Final Action Date*
		<ul style="list-style-type: none"> Distribution Transformers 	Settlement Agreement	FY2010, Q1	October 2011 / October 2012 ⁴
	Test Procedures	<ul style="list-style-type: none"> Electric Motors, 1-500hp 	7-Year Review	FY2009, Q1	September 2010
Lighting Team	Determination Analysis	<ul style="list-style-type: none"> High-Intensity Discharge Lamps 	Backlog	FY2007, Q3	June 2010
	Standards	<ul style="list-style-type: none"> Fluorescent Lamp Ballasts [Backlog Cycle 2] 	Backlog	FY2008, Q1	June 2011
		<ul style="list-style-type: none"> Metal Halide Lamp Fixtures 	EISA 2007	FY2009, Q2	January 2012
		<ul style="list-style-type: none"> General Service Fluorescent Lamps [Revision 2] Incandescent Reflector Lamps [Revision 2] 	EPACT 1992 EPACT 1992	FY2011, Q2	June 2014*
		<ul style="list-style-type: none"> General Service Incandescent Lamps Compact Fluorescent Lamps General Service LED General Service OLED 	EISA 2007 EISA 2007 EISA 2007 EISA 2007	FY2014, Q2	January 2017
		<ul style="list-style-type: none"> ER, BR, and Small Diameter Incandescent Reflector Lamps 	EPACT 1992	FY2010, Q1	December 2011*
	Test Procedures	<ul style="list-style-type: none"> Fluorescent Lamp Ballasts 	7-Year Review	FY2010, Q1	June 2011
<ul style="list-style-type: none"> Metal Halide Lamp Ballasts 		EISA 2007	FY2008, Q3	February 2010*	
Home Appliance Team	Standards	<ul style="list-style-type: none"> Clothes Washers (Commercial) [Revision 2] 	EPACT 2005	FY2011, Q2	January 2015
		<ul style="list-style-type: none"> Microwave Ovens 	6-Year Review	FY2009, Q3	March 2011

⁴ DOE will conduct a review of the standards for distribution transformers and publish by October 1, 2011, either: (1) a determination that standards do not need to be amended, or (2) a NOPR proposing amended standards. If DOE determines amended standards are warranted, DOE will publish the final rule no later than October 1, 2012.

DOE Rulemaking Schedule

Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, EISA 2007, Other	Approx. Rule Initiation Date	Final Action Date*
		<ul style="list-style-type: none"> • Clothes Dryers (Residential) [Backlog Cycle 2] • Room Air Conditioners [Backlog Cycle 2] 	Backlog Backlog	FY2008, Q1	June 2011
		<ul style="list-style-type: none"> • Dishwashers 	EISA 2007	FY2012, Q2	January 2015
		<ul style="list-style-type: none"> • Refrigerators (Residential) 	EISA 2007	FY2008, Q2	December 2010
		<ul style="list-style-type: none"> • Clothes Washers (Residential) 	EISA 2007	FY2009, Q1	December 2011
		<ul style="list-style-type: none"> • Kitchen Ranges and Ovens [Revision 2] 	EISA 2007	FY2014, Q1	March 2017
	Test Procedures	<ul style="list-style-type: none"> • Clothes Dryers, Active Mode, Standby Mode and Off Mode • Room Air Conditioners, Active Mode, Standby Mode and Off Mode 	EISA 2007, 7-Year Review EISA 2007, 7-Year Review	FY2008, Q2	October 2010*
		<ul style="list-style-type: none"> • Refrigerators (Residential) 	7-Year Review	FY2008, Q3	May 2010
		<ul style="list-style-type: none"> • Microwave Ovens, Standby Mode and Off Mode 	EISA 2007	FY2008, Q2	March 2011
		<ul style="list-style-type: none"> • Clothes Washers (Residential), Active Mode, Standby Mode and Off Mode 	EISA 2007, 7-Year Review	FY2009, Q1	September 2011*
		<ul style="list-style-type: none"> • Dishwashers (Residential), Standby Mode and Off Mode • Ranges and Ovens (Electric and Gas), Standby Mode and Off Mode • Dehumidifiers (Residential), Standby Mode and Off Mode 	EISA 2007 EISA 2007 EISA 2007	FY2009, Q3	March 2011
		<ul style="list-style-type: none"> • Central Air Conditioners and Heat Pumps (Residential) [Backlog Cycle 2] 	Backlog	FY2008, Q2	June 2011
Space Cooling Team	Standards	<ul style="list-style-type: none"> • Packaged Terminal Air-Conditioners and Heat Pumps 	EISA 2007	FY2013, Q2	September 2016
		<ul style="list-style-type: none"> • Central Air Conditioners and Heat Pumps 	7-Year Review	FY2009, Q3	June 2011

DOE Rulemaking Schedule

Rulemaking Team	Rule Type	Product(s)	EPACT 2005, Backlog, EISA 2007, Other	Approx. Rule Initiation Date	Final Action Date*
Commercial Refrigeration Team	Standards	• Commercial Refrigeration Equipment [Revision 2]	EPACT 2005	FY2010, Q2	January 2013
		• Automatic Ice Makers (Commercial) [Revision 1]	EPACT 2005	FY2011, Q3	January 2015
		• Walk-In Coolers and Freezers	EISA 2007	FY2009, Q1	January 2012
	Test Procedures	• Walk-In Coolers and Freezers	EISA 2007	FY2009, Q1	September 2010*
Battery Chargers, External Power Supplies, and Televisions Team	Determination Analysis	• External Power Supplies (non-Class A)	EPACT 2005, EISA 2007	FY2007, Q1	December 2010*
	Standards	• Battery Chargers • External Power Supplies (Class A)	EISA 2007 EISA 2007	FY2008, Q2	July 2011
		• Televisions	EPCA	FY2010, Q2	June 2013*
	Test Procedures	• Battery Chargers • External Power Supplies (Class A) • External Power Supplies (non-Class A)	7-Year Review 7-Year Review 7-Year Review	FY2009, Q1	July 2011

