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September 10, 2019

MEMORANDUM

TO: Council Members

FROM: Kevin Smit, Senior Analyst

SUBJECT: Status of Federal Energy Efficiency Standards

BACKGROUND:

Presenter: Tom Eckman

Summary: In preparation for the 2021 Power Plan, it is important to understand the status of federal appliance efficiency standards. New standards that have taken effect since the Seventh Power Plan are accounted for in the Council's load forecast and result in a reduction of forecasted regional loads. Appliance efficiency standards also provide baselines for the Council's energy efficiency supply curves. The presentation will provide a status of the federal appliance efficiency program and summarize standards that will impact the 2021 Power Plan.

Relevance: The Council has been an active participant with the Department of Energy in the development and review of federal energy efficiency standards for many years. These appliance efficiency standards play an important role in achieving our energy efficiency goals in the Northwest by acquiring significant efficiency resources in an equitable and low-cost manner.

Mr. Tom Eckman, former Energy Efficiency Manager and Power Division director at the Council will provide an update of the DOE standards program. After retiring from the Council, Mr. Eckman has continued to support The Council's efforts in this area. Mr. Eckman will show how the Northwest continues to benefit from appliance standards, provide an

update on what is happening (or not happening) with the program at DOE, the status of specific standards, and a brief review of a current standard revision effort for Variable Refrigerant Flow Systems.

Workplan: A.1.1 – Develop cost and availability of energy efficiency
C.1.1 – Develop base load forecast
B.1.1 – Coordinate with regional entities to ensure regional goals are achieved.

More Info: Chapter 12 (page 12-19) and Appendix F of the Seventh Power Plan provide background for how Federal Appliance Efficiency Standards are included in the power planning process.

Federal Standards and You

What's Happened
What's Happening Now
Going Forward - Chickens and Pigs

Tom Eckman
September 17, 2019



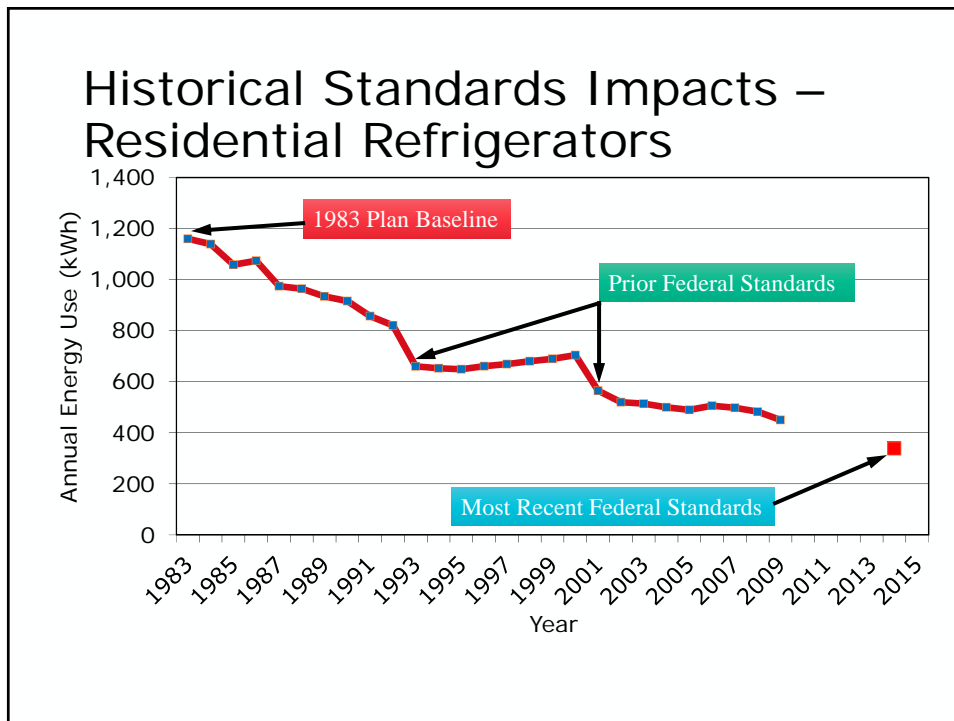
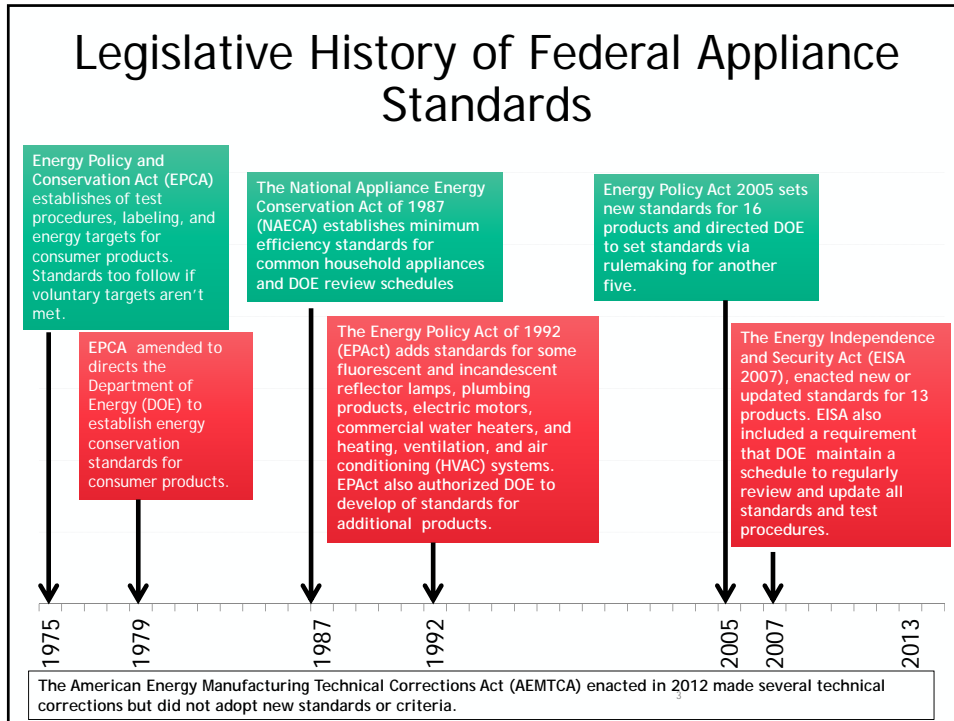
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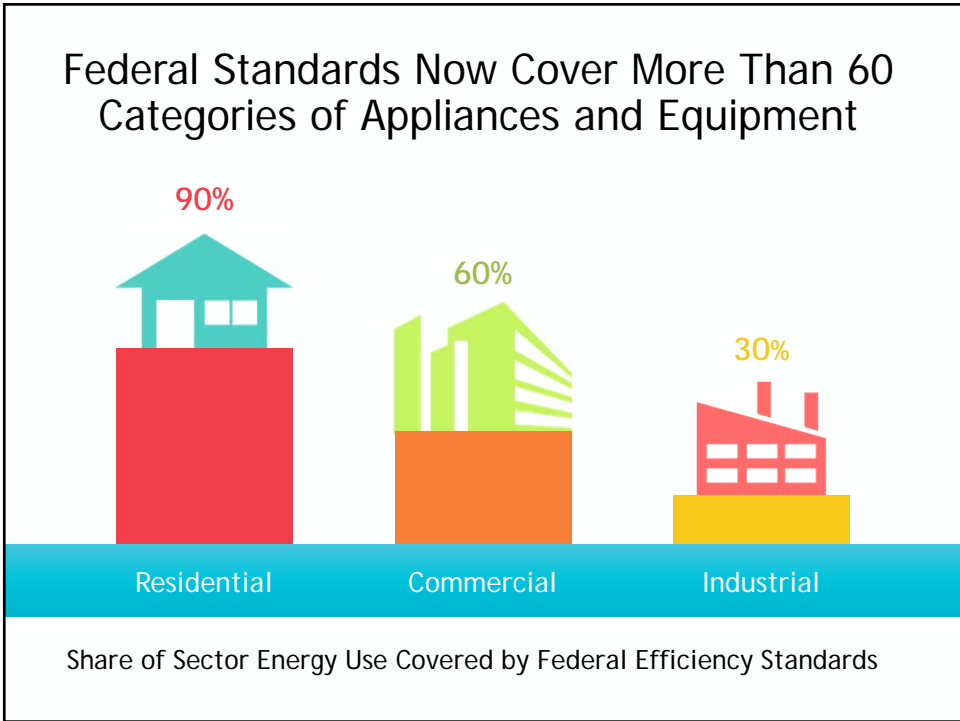
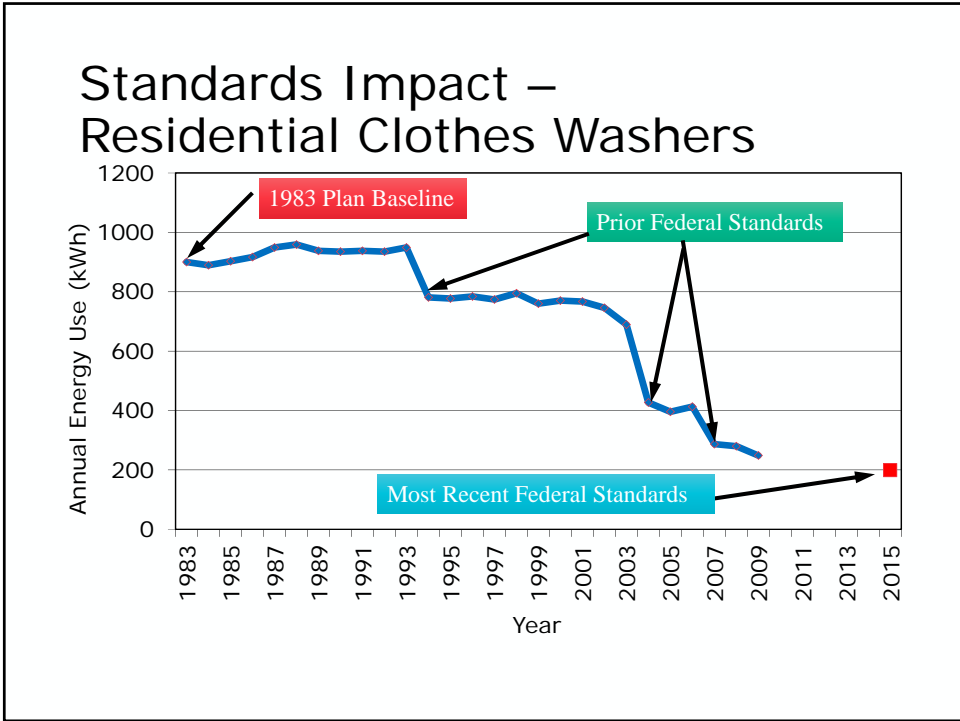
Today's Presentation

- Short history and “primer” on federal efficiency standards for appliances, equipment and lighting
- Why standards are important mechanism for capturing savings
 - Historical impact of federal efficiency standards on regional loads
 - Forecast Impacts (from 7th Plan)
- Current Status
 - Rulemakings
 - Negotiations
 - Waivers
 - “Rollbacks” and Lawsuits
- Future - Pigs or Chickens?



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Foundational Legislative Directives for Standards

- **“Cost Effective Max Tech”** - Any new or amended shall be designed to achieve the *maximum improvement* in energy efficiency which the Secretary determines is *technologically feasible* and *economically justified*.
- **Anti-back sliding** - Amended standards cannot increase the maximum allowable energy use, or decreases the minimum required energy efficiency of a covered product.



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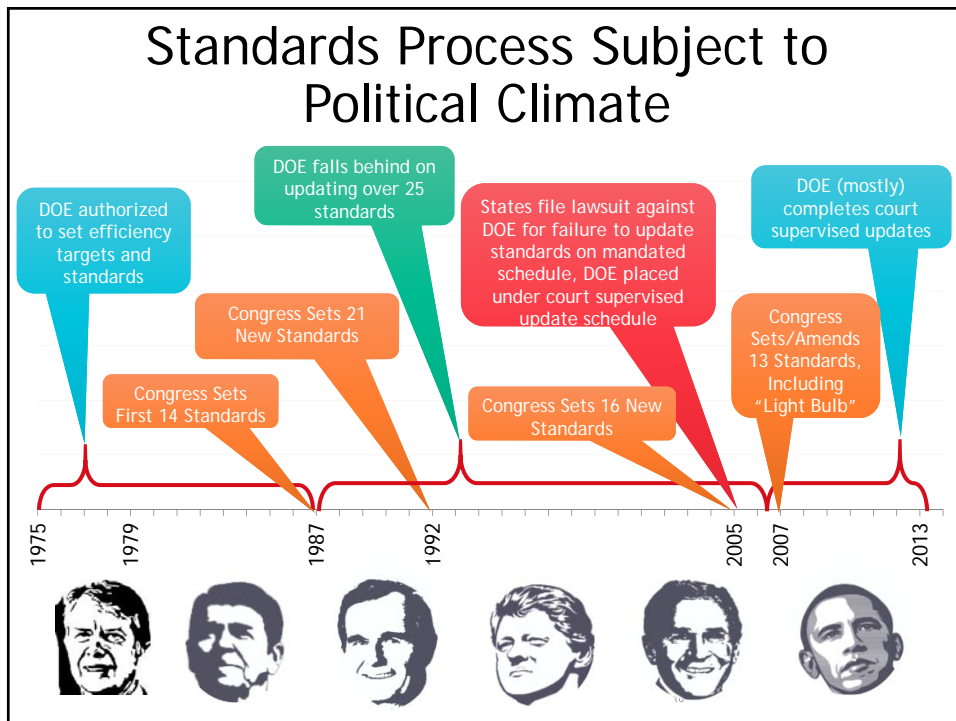
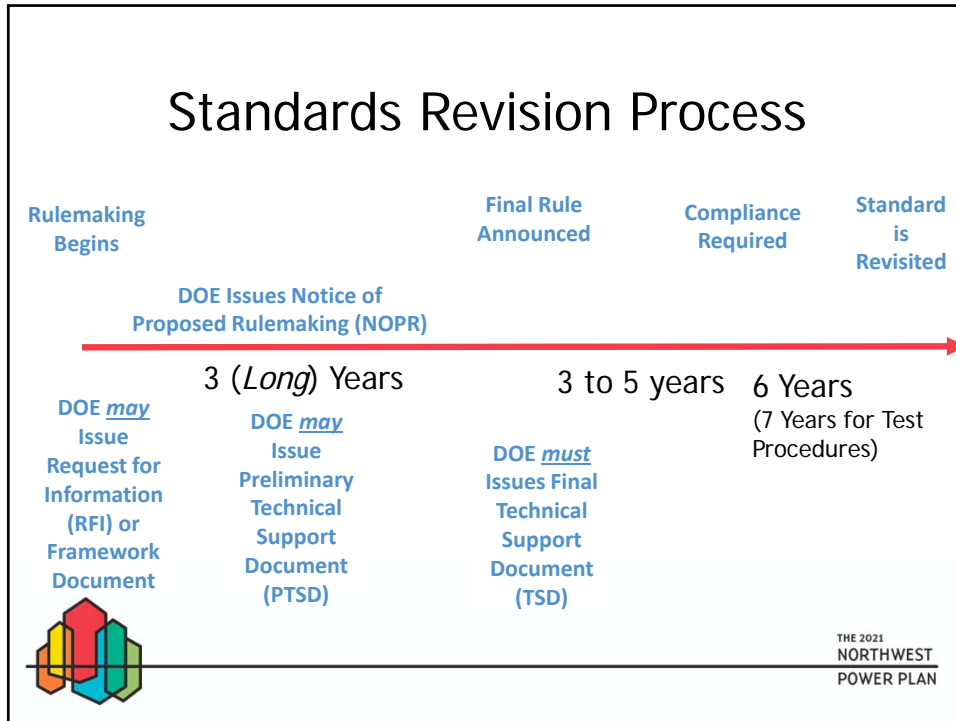
DOE Must Consider Seven Factors When Determining Standards

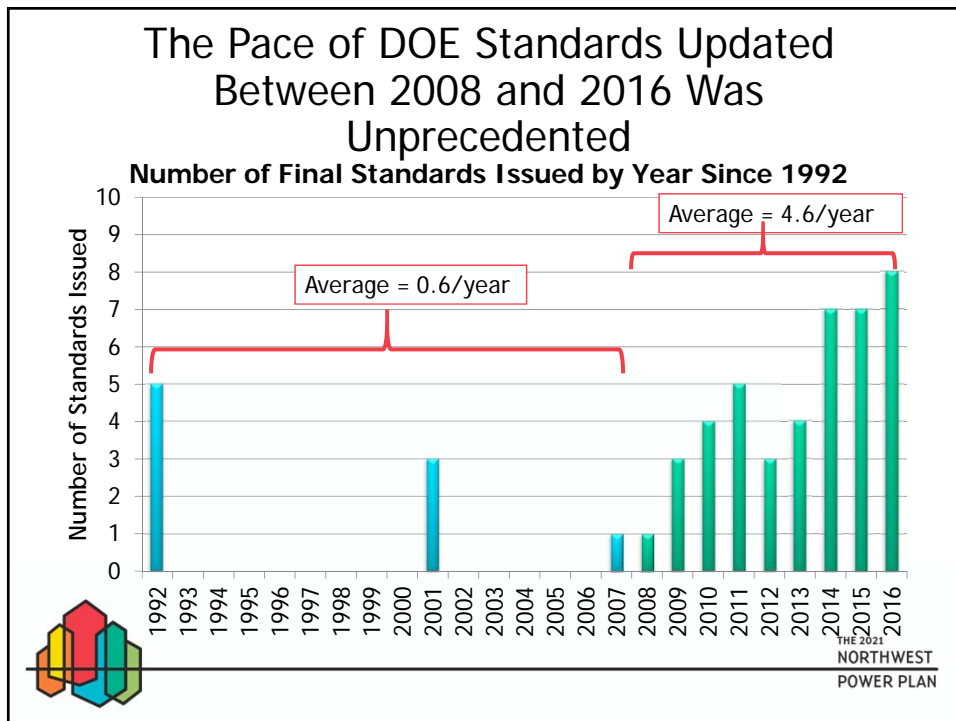
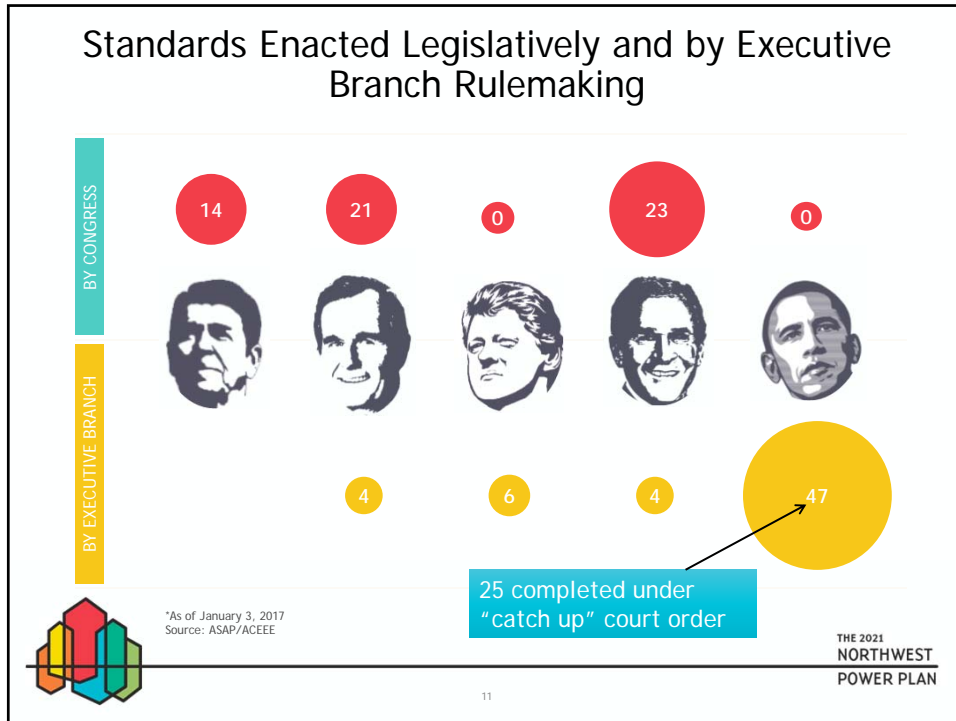
- The economic impact on the *manufacturers* and on the *consumers*;
- The *savings in operating and maintenance costs* throughout the estimated average life of the product *compared to any increase in the price*;
- The total energy savings from the standard;
- Any *lessening of the utility or the performance* resulting from the imposition of the standard;
- The impact of any *lessening of competition*, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;
- The need for national energy conservation; and
- Other factors the Secretary considers relevant.

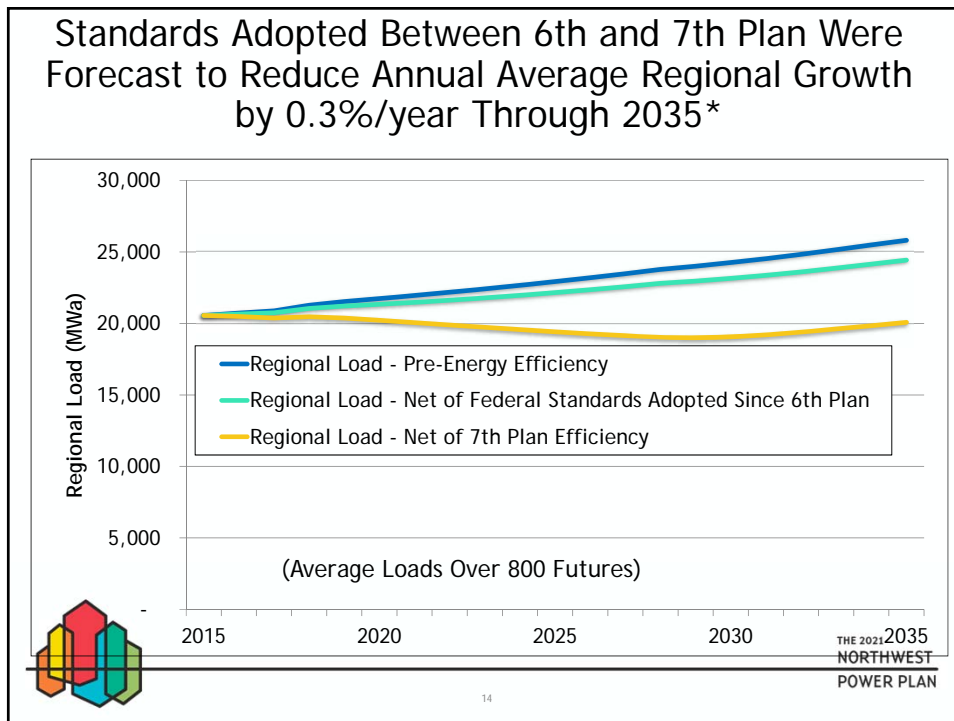
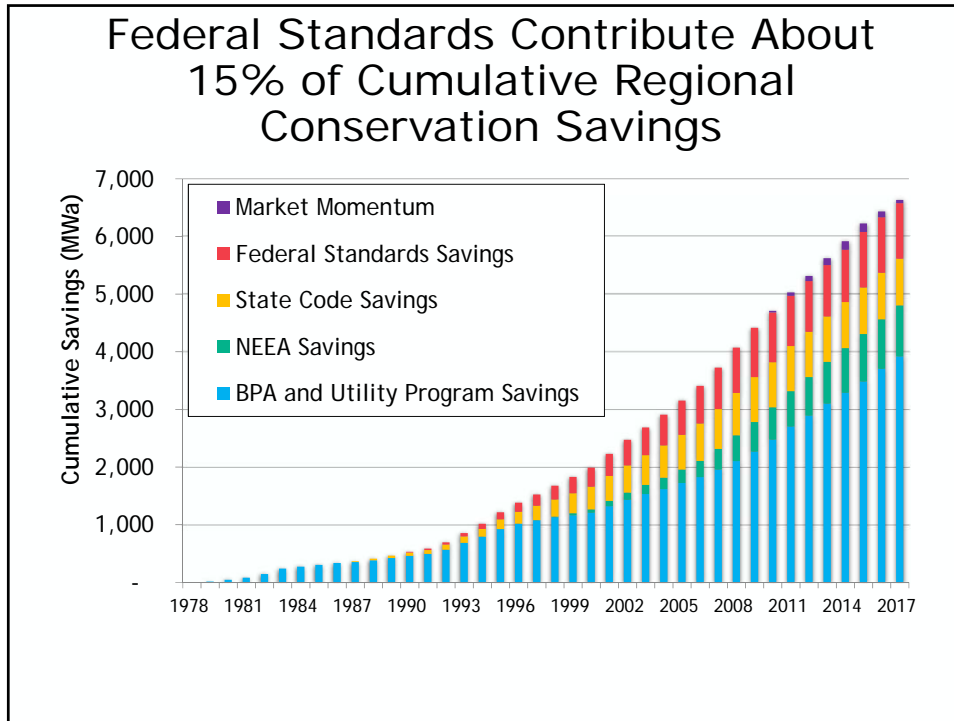


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Federal Standards Finalized Post-Completion of the Seventh Plan

Product Covered	Published Date	Compliance Date	Estimated Savings 2016-2021 (aMW)
Battery Chargers	2016	2018	1.3
Ceiling Fans	2017	2020	3.6
Ceiling Fan Light Kits	2016	2020	0.4
Central Air Conditioners and Heat Pumps (Residential)	2017	2023	-
Central Air Conditioners and Heat Pumps (Commercial)	2016	2018	10.2
Computer Room AC Equipment	2018	2021	0.3
Dehumidifiers	2016	2019	0.3
Miscellaneous Refrigeration Products (Wine Coolers)	2016	2019	1.6
Pre-Rinse Spray Valves	2016	2019	0.2
Pool Pumps	2017	2021	0.2
Pumps, Commercial and Industrial	2016	2020	0.9
Variable Refrigerant Flow (Standard Pending)	2018*	2023	-
Vending Machines	2016	2019	0.2



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Recent Movement on Standards



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Missed Deadlines

- By statute (EISA 2007) DOE is required to review standards every six years and test procedures every seven years.
- Based on its review DOE can decide to retain the current standard or increase the minimum efficiency requirement. However, DOE is legally prohibited from relaxing the minimum efficiency requirement
- Since 2017, the Department of Energy has missed statutory deadlines for reviewing 22 standards and 17 test procedures
- While the slowdown in federal standards efforts does not have a marked effect on savings in the near-term, a persistent slowdown could have significant impact on long-term goals and increase the cost to utilities to achieve all cost-effective conservation



DOE's Says It Will: "Get Right with the Law" (again)



- DOE plans to publish 18 actions related to energy conservation standards before the end of 2019, including *two final rules*.
- Additionally, DOE plans to publish 11 actions related to test procedures before the end of 2019.



Source: 23rd Semi-Annual Report to Congress on Appliance Energy Efficiency Rulemakings --
Implementation Report: Energy Conservation Standards Activities July 2019.
<https://www.energy.gov/sites/prod/files/2019/07/f65/rtc-july-2019.pdf>

Going Dark on Lights

- DOE recently released two rules that effectively reverse prior light bulb energy efficiency standards.
- A *final rule* rolls back a 2017 light bulb definition that would expand the standards to cover the full range of bulb shapes and sizes, that eliminates efficiency standards for about half of the six billion light bulbs used in US homes and businesses.
- A *proposed determination* eliminates EISA’s “backstop” 2020 standards for “A-lamps,” the pear-shaped bulbs that make up the other *half of light bulbs used in US homes*.



There Will Be ~~Light~~



Lawsuits

- Parties who commented in opposition to DOE’s proposed *final rule regarding definition of general purpose lamps*, including Attorney’s General from 16 states and the City of New York are expected to litigate*
- Major issue is whether proposal violates “anti-backsliding” provisions of EPCA



*Including Oregon and Washington

Implications for Council Plan and Planning

- DOE's recent actions (and inaction) on standards
 - *Increases* the range of load forecast uncertainty, since “enacted standards” can no longer be assumed to be final and “update schedules” are not predictable
 - *Increases* the remaining energy efficiency potential that is *cost-effective* (because standards typically capture the cheapest savings) to acquire through utility and NEEA programs
 - *Reduces* ability to rely on federal standards as mechanism for achieving regional savings



Progress Through Ongoing Negotiated Rulemaking



- AHRI (American Heating and Refrigeration Institute) petition DOE's Appliance Standards and Rulemaking Federal Advisory Committee (ASRAC) to negotiate test procedure and standards for “Commercial Variable Refrigerant Flow Air Conditioners and Heat Pumps” – aka “VRFs”



The “Neg Reg” Process

- Must be done under Federal Negotiated Rulemaking statute
- ASRAC asked for nominations and selects participants in Working Group that does negotiations
- Consensus (as defined by Working Group) is required
- ASRAC votes “up or down” on final terms of agreement
- DOE and its consultants provide technical support to Working Group, but do not dictate outcome
- *DOE has indicated that it will issue a NOPR based on negotiated agreement, not a “Direct Final Rule” (DFR)*



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VRF Negotiation – Major Issue

- Manufacturers (and DOE) assumed that industry developed test procedure (AHRI 1230) would require minor “tweaks” before adoption by Work Group
- California IOUs & NEEA presented test data showing that AHRI 1230 test did not provide realistic efficiency rating
 - Performance of unit tested in lab was 50% below manufacture’s published rating
 - This result was supported by additional field and lab testing by EPRI
- Problem – AHRI 1230 allows manufactures to test at “optimized” control settings, which may not be what the equipment’s control logic does or even can do.
- So – New “Controls Verification Procedure” has been developed for incorporation in AHRI 1230



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VRF Negotiations – What Remains

- **September: Agree on final test procedure, including controls verification test**
 - Major gain, due to concerted effort by CA IOUs, NEEA, Council and ACEEE to ensure test procedures gives realistic efficiency ratings
 - Sets precedents for other “controls-based” efficiency technologies
- **October – December: Negotiate standard levels**
 - New test procedure expected to result in significant “de-rating” of some VRF equipment (marketing issue for OEMs)
 - Since VRF efficiency is primarily driven by “sensors and software” cost of efficiency gains may place less of a role than “market competitiveness” – i.e., VRF cost compared to competitive systems



Past Role of the Council in Federal Standards Process

- Staff (me) and Council contractor (also me) committed to participating in Federal Standards processes, starting in early 1990's
 - Attended and testified public meetings/hearings
 - Reviewed technical material & submitted written comments
 - Collected and submitted PNW research data to support “fact based” standards
 - Coordinated with other parties (CEC, CA IOUs) with goals of advancing cost-effective energy efficiency
 - Participated in multiple private standards negotiations and ASRAC sanctioned negotiations
- Council supported these activities
 - But there were trade-offs
- The VRF negotiations are my “swan song”



Future Role of the Council in Federal Standards Process



Will it be like the Pig?
Or Chicken?



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Thanks you for your support!



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