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AEP
AMERICAN ELECTRIC POWER

July 13, 2007

Mr. David Eichenlaub
Assistant Director, Economics
Division of Economics and Finance
State Corporation Commission
1300 East Main Street
Richmond, VA. 23218

Dear Mr. Eichenlaub,

Please find attached the initial comments of Appalachian Power Company in Case PUE-2007-00049. These comments are respectfully submitted in response to your letter of June 13, 2007 in this matter.

Appalachian looks forward to participating in the Working Group to address the issues of Energy Efficiency.

Best Regards,

Barry L. Thomas
Director Regulatory Services VA/TN

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

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Ex Parte: In the matter of determining a recommended mix of programs, including demand side management (DSM), conservation, energy efficiency, load management, real-time pricing, and consumer education, to be implemented in the Commonwealth to cost-effectively achieve the energy policy goals set in § 67-102 of the Code of Virginia to reduce electric energy consumption	)	CASE NO. PUE-2007-00049

INITIAL COMMENTS OF
APPALACHIAN POWER COMPANY

Appalachian Power Company (APCo or Company) submits these initial comments in response to the Commission's June 8, 2007 "Order Establishing Proceeding" and the Commission Staff's letter of June 13, 2007 soliciting input concerning demand side management (DSM), energy efficiency (EE) and related programs to reduce electricity consumption in the Commonwealth of Virginia. We appreciate the opportunity to provide comments in this evolving and important area. In response to the requests in the Staff's letter, these comments will first provide an overview of several points that the Company proposes for the body of the Commission's report. The Company's initial comments will address (1) our views about the process initiated by the Staff, (2) an overview of our views on key components of DSM/EE policy, (3) a discussion of utility-sponsored programs and non-utility programs and (4) our

opinion as to the role of PJM Interconnection, LLC, (PJM) in the offering of demand response programs. In addition, we have provided in attachments information on DSM/EE programs AEP has in place in Kentucky and Texas, as well as some national DSM/EE trends.

The Company submits that additional workshops will be needed to adequately address all the topics that we believe should be addressed. Topics to be addressed should include all of the subjects identified by Dave Eichenlaub in his letter of June 13, 2007. It is overly optimistic to assume that the workshop on July 19 (or even one additional workshop) can adequately cover everything mentioned (ideas regarding short-term and long-term strategies for program implementation, advancement of technologies, consumer education efforts, need and amount for incentives, measurement and verification of results, decreasing energy consumption within a rapidly growing demand for energy, and the associated costs and benefits of such programs). As Mr. Eichenlaub notes in his June 13 letter, the task at hand will be directed at determining a usable definition of the term "cost-effective," which is critical. Additionally, discussions at the workshops must include: (1) whether, and at what level, any goal can be achieved in a cost-effective manner and, if so, by whom (see discussion below regarding utility and non-utility sponsored programs), and (2) the nature of the goal set forth in the bill, e.g., whether it is an energy-only goal (kWh reductions) or includes some demand aspects (kW).

In terms of the achievability of the goal, we suggest that the Staff consider the use of a third-party to perform a market potential study. A market potential study would include an assessment of the technical, economic and achievable potential of new and existing electric DSM/EE programs in Virginia – both utility- and non-utility sponsored. The use of a third-party expert in this area would provide an objective opinion of what is achievable.

OVERVIEW

With the need for new generation, its cost, and the focus on the environment, addressing DSM/EE is important for states, utilities and consumers to do. In light of these changed circumstances, AEP is exploring a variety of options across its 11 state jurisdictions, including options proven effective in its own states and those outside its service territory – working toward a cost-effective implementation strategy for all AEP jurisdictions.

AEP believes a successful state DSM/EE policy should:

(1) Encourage adoption of DSM/EE through a variety of methods, such as marketplace energy efficiency, building standards, appliance efficiencies, and utility sponsored DSM/EE programs;

(2) Recognize that DSM/EE programs should be economically-justified and results-based;

(3) Provide, consistent with statute, that regulatory recovery of investments is a threshold requirement for implementation of utility programs;

(4) Recognize cost-effective DSM/EE should be important components of an Integrated Resource Plan; and

(5) Acknowledge primary responsibility for determining appropriate DSM/EE practices rests with the individual utility and state government officials and their staffs.

Energy efficiency is not strictly a utility issue. There are various ways to achieve reductions in energy usage and demand. In fact, programs with the biggest potential are not utility-implemented. Significant energy and demand savings can be gained by improving building codes and appliance standards and incenting consumers to upgrade to products with higher efficiency standards.

RTOs, including PJM, have addressed (or are in the process of addressing) demand response (DR) programs. PJM has been actively pursuing direct-to-customers RTO Load Response

Programs (LRPs) with industrial load within its footprint. AEP supports DR programs that are properly designed to address the needs of the markets they serve. AEP believes that while LRPs make sense for customers in competitive wholesale markets, they do not work effectively, as they are currently designed, for customers in regulated retail jurisdictions.

Virginia utilities and the Virginia State Corporation Commission (SCC) should work together to design appropriate DR programs for retail customers. Retail customers in regulated states should participate in demand response through the utility-sponsored, state approved programs that are consistent with state tariffs.

As Mr. Eichenlaub indicated, it will be important to address measurement and verification. A key to success of any DSM/EE program is keeping overhead costs low. The programs will not be effective if measurement and results reporting cost more than the actual benefits of the program. Accordingly, the policy around measurement and verification is important. Kentucky and Texas both use predetermined kW and kWh impacts (also called deemed savings) per participant for each program, for calculation of the program impacts. These predetermined impacts, generally based on industry norms, are then supported or modified with periodic sampling.

UTILITY-SPONSORED DSM/EE PROGRAMS

Historically utilities have been challenged to implement cost-effective and efficient DSM/EE programs. Program costs generally were higher than avoided cost of generation supply options, and they did not produce the expected reductions in demand and/or energy usage. AEP, however, continues to have in place today a number of demand-related programs, such as interruptible load and time of use tariffs. See Attachment 1 for a summary

of what APCo is doing today in terms of tariff offerings and energy saving education and tools.

AEP recognizes that with the growing challenges associated with the building of new generation/transmission/distribution infrastructure, DSM and EE need to take a more significant role in the Company's integrated resource planning (IRP). The Company has experience in DSM/EE activities in several jurisdictions.

AEP believes Virginia's process should consider the following types of programs to determine the optimum mix for the state:

- DSM/EE information campaigns
- Tariff offering information campaigns
- Residential programs such as weatherization/energy audits and appliance upgrade incentives
- Commercial programs, such as lighting and motor upgrade incentives
- Smart Grid enabled demand response programs

See Attachment 2 for information on the programs AEP has in place in its Kentucky and Texas jurisdictions. See Attachment 3 for a brief discussion of Smart Grid technology.

NON-UTILITY PROGRAMS

As previously mentioned, there are various ways to achieve reductions in energy usage and demand. In fact, programs with the biggest potential are not utility-implemented. Significant energy and demand savings can be gained by improving building codes and appliance standards. While federal and some state codes and standards exist, they have not forced much change. Available technologies and practices offer cost-effective opportunities

to reduce energy use in new and existing buildings by 30 - 70%. In 2004, only 8% of all new single family homes were certified as Energy Star® compliant (30% more efficient than standard heating and cooling codes). States can offer programs that incent the purchase of Energy Star® housing. In addition, some communities operate residential energy conservation ordinances (RECOs), which require homeowners or landlords to implement specific low-cost energy conservation measures at the time their house or rental property is sold or renovated. See Attachment 4 for a view of the level of Energy Star® qualified new homes across the nation. Also see www.energystar.gov for more information on the Energy Star® program.

DSM/EE product providers should develop programs that are more cost-effective and efficient than those historically provided by these entities. Effective progress requires cooperative effort from non-utility businesses and all classes of end-use consumers as well. For example, Phillips announced earlier this year its intent to eliminate incandescent lighting by 2015 and Wal-Mart recently opened its second high-efficiency superstore, with 20% less energy consumption than a standard store.

AEP has supported higher distribution transformer efficiency standards. The Company also is embarking on a comprehensive plan targeting energy conservation in our facilities, including evaluation and installation of a range of energy conservation measures. AEP is designing new service centers and office buildings consistent with principles in the L.E.E.D. (Leadership in Energy and Environmental Design) certification process.

State appliance standards typically do not surpass Federal levels except for states in the west and northeast that have experienced high electric rates for some time. However, states have taken actions to promote DSM and EE, including Tennessee, which recently passed a law setting

energy efficiency standards for appliances made and sold there. Other states have taken actions that are supportive of energy efficiency as well, including providing tax incentives to retailers who increase sales of Energy Star® appliances and to consumers who can verify purchases of Energy Star® appliances. Some states have set purchase quotas for state and local government agencies. Virginia has a statute requiring development of a state energy plan.

See Attachment 5 for further information on appliance standards.

RTO SPONSORED DEMAND RESPONSE PROGRAMS

AEP believes that while direct-to-customers RTO Load Response Programs ("LRPs") make sense for customers in competitive wholesale markets, as they are currently designed, they do not work effectively for customers in regulated retail jurisdictions. This is because these programs have not been designed to work in jurisdictions with embedded cost average rates. Customers in wholesale markets in deregulated states are subject to market prices for their supply. Market prices in organized energy markets can be expected to fluctuate according to supply and demand conditions, providing an incentive for buyers to control their usage when prices are high, allowing them to arbitrage between the market price at which they buy and the market price at which they sell. For example, under PJM's LRP, participating members are paid the prevailing locational marginal price ("LMP") -- a market price derived from the next highest cleared energy price bids in the security constrained dispatch. In these restructured markets, electric energy is viewed as a commodity with a value that is set by the market.

Utilities in regulated states, including APCo, have a statutory duty to serve their retail customers, including those who have been permitted by PJM to participate in RTO DR programs. These utilities' customers do not pay market prices for their supply; they pay demand

and energy rates that are based on the operating company's average embedded costs. These rates generally also reflect credits received by the utilities for sales in wholesale markets of excess power not used by native load customers. As a result of this rate structure, retail customers are not exposed to market forces. Further, state tariffs generally contain provisions that prohibit the resale of utility-provided energy, thereby creating conflict between the state tariffs and the PJM Open Access Transmission Tariff (OATT).

When a retail customer in a regulated jurisdiction is permitted to participate in RTO LRP programs, unintended consequences can result. Customers who participate in such RTO LRP programs buy energy from their host utility at a charge based on the average embedded cost of energy produced by their incumbent utility and then "resell" that energy at market prices by curtailing usage. Obviously, such customers will buy energy at cost-based rates as long as that price is below market, then receive market prices for their foregone energy usage when market prices are above cost and profit from such transactions. In short, they are able to benefit from the arbitrage between embedded average cost and market, and have no incentive to work with the utility within existing state tariffs to manage their load based on offerings from the vertically integrated utilities. This is done at the expense of other customers.

In summary, we believe that utilities and state commissions in regulated states should work together to design appropriate DR programs for retail customers. Retail customers in regulated states should participate in demand response through the utility-sponsored, state approved programs that are consistent with state tariffs. Utilities in regulated states then can participate in RTO DR programs on a wholesale basis.

CONCLUSION

The Company looks forward to participation in the work group and commenting further in writing as the Commission and the Staff may permit, and would be happy to respond to any questions the Staff may have.

What APCo Is Doing Today

- Time-of-use tariffs for all industrial/commercial/residential customers
- Energy price curtailment
- Interruptible contracts (230 MW)
- APCo "Saving Energy" website
  - Residential website
    - Home energy, appliance and lighting calculators
    - Energy tips
  - Commercial website
    - Energy calculators
    - Energy tips

Utility-Implemented Programs: What AEP Has Done (Kentucky)

- Residential, commercial & industrial sector surcharge recovery of DSM program costs, net lost revenues and incentives based on projected expenditures.
- Predetermined kW and kWh impacts per participant for each program, for calculation of net lost revenues and incentives.
- 3-year DSM collaborative approved program plan of **only cost-effective** programs (RIM or TRC based).
- DSM filings every 6 months with true-ups from projections to actuals.
- Opt-out provision for industrial customers with energy intensive processes, with proof of self-directed measures.

Utility-Implemented Programs: What AEP Has Done (KY, 1996 to 2006)

- **Types of Programs**
  - Residential Heat Pump
  - Residential Weatherization
  - Commercial/Industrial Motors
  - Commercial/Industrial Lighting
  - Commercial/Industrial HVAC
  - Currently the C/I programs are saturated. No further customer interest.
- **Program Costs**
  - To Date: $7,897,680
  - 2007 Budgeted: $737,500
- **Net Lost Revenues**
  - $3,026,958
- **Total Incentive**
  - $661,609
  - Efficiency and maximizing incentives.
- **Estimated energy savings**
  - kW: 4,133 summer, 18,405 winter
  - kWh: 320,131,146

Customer Participation Rates

Total 2007 customers:	175,000
Residential - To Date	14,136 customers (1996-2006)
Residential -2007	Budget 1,475 Customers
Commercial To Date (1996-2002)	2,397 customers
Commercial – 2007	None
Industrial - To Date (1996-1998)	65 customers
Industrial - 2007	None

Utility-Implemented Programs: What AEP Has Done (Kentucky)

- **Targeted Energy Efficiency Program**

  This program piggybacks the resources of not-for-profit agencies that provide weatherization services to low-income households. Energy audits, consultation, and extensive weatherization and energy conservation measures are provided to eligible low-income customers. Low-income customers who average 700 kWh per month are eligible.

- **High Efficiency Heat Pump – Mobile Home Program**

  KPCo provides a $400 incentive to mobile home customers who replace their resistant heat system with a high-efficiency heat pump. Eligible customers must live in a mobile home, have resistant heat and have service with KPCo for at least 12 months. For promoting the program, participating HVAC dealers receive a $50 incentive for each high efficiency heat pump installed.

Utility-Implemented Programs: What AEP Has Done (Kentucky)

- **Mobile Home New Construction Program**

  KPCo provides a $500 incentive to mobile home buyers who purchase a new home with Zone 3 insulation levels and a high efficiency heat pump. Participating manufactured housing dealers also receive a $50 incentive for promoting the program.

Modified Energy Fitness Program

The intent of the Modified Energy Fitness Program is to induce KPCo residential customers to have an energy audit and, where applicable, install appropriate energy saving measures. The audit and consultation pinpoints energy conservation measures that can be implemented by the customer and also educates the customer on the benefits of energy efficiency.

The primary target market is site-built and manufactured homes utilizing electric space heating and electric water heating, with a minimum monthly usage average of 1,000 kWh. The extent of services provided is dependent on the electrical products in the customer's home. All services are provided free-of-charge to eligible customers. Honeywell DMC Services is the implementation contractor for the program.

Utility-Implemented Programs: What AEP Has Done (Texas)

- Legal requirement: Utilities must provide through market-based standard offer programs (SOP) incentives sufficient to acquire at least 10 percent of the utility's annual demand growth.
- **Types of Programs**
  - Residential and Commercial
  - Low income
  - Industrial
- **2007 Program Costs***
  - Texas Central Co. (TCC): $6,082,450
  - Texas North Co. (TNC): $1,228,000
  - SWEPCO: $1,500,000
  - Total AEP Texas: $8,810,450

* Because Texas law requires that a utility contract its DSM programs through a third-party, it is impossible to determine whether these figures reflect the most cost-effective implementation possible.

Utility-Implemented Programs: What AEP Has Done (Texas)

Estimated Energy savings (2006)

– Residential	9,930 kW	28,243,000 kWh
– Commercial/Industrial	9,280 kW	25,781,000 kWh

- 2005 state report (http://www.texasefficiency.com/) indicates all utilities combined exceeded their statewide legislated energy efficiency objectives for three years in a row.
- As of Jan. 1, 2006, PUCT reports that all utilities combined had eliminated 592 MW of peak demand and 2,400 tons of NOx emissions since implementation of the law.

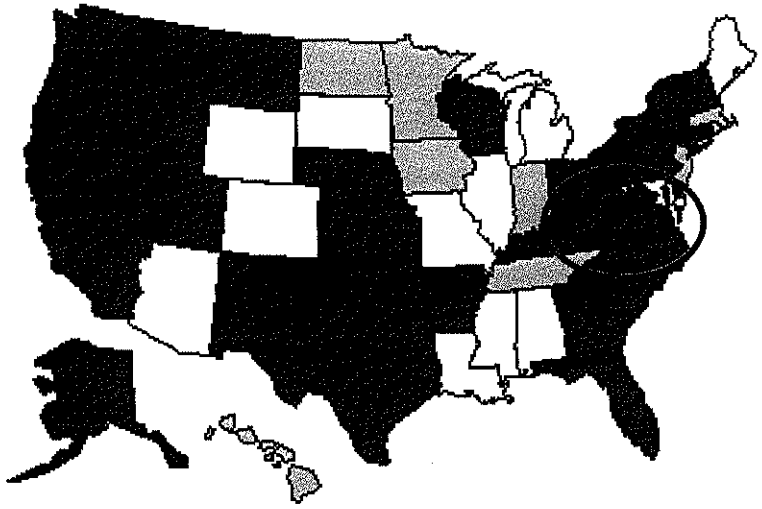
Utility-Implemented Programs: What AEP Has Done (Texas)

	SWEPCO	TCC	TNC
Large Commercial & Industrial Standard OP	X	X	X
Residential & Small Commercial SOP	X	X	X
Hard-to-Reach SOP	X	X	X
Energy Efficiency Improvement Program for Not-for-Profit Agencies	X	X	X
Home$avers	X		
TDHCA Low-Income Weatherization Program		X	X
Texas SCORE Pilot MTP	X		X
CitySmart Pilot MTP		X	

Smart Grid Technology

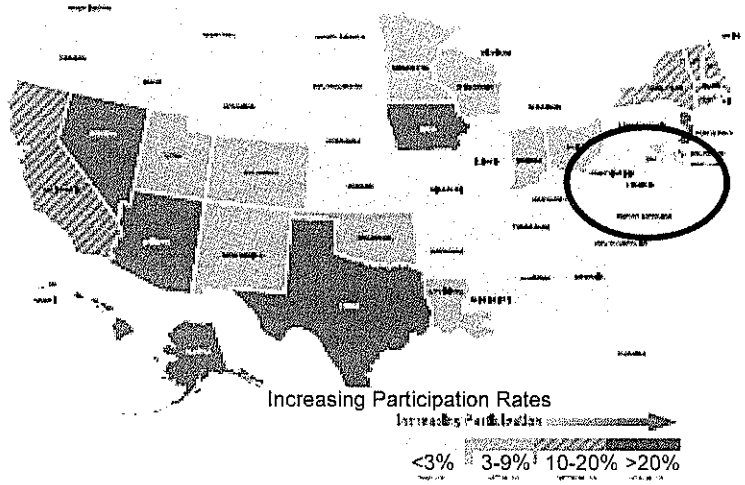
- Within a Smart Grid infrastructure the communication system will facilitate two-way communications to the meter.
- Such two-way communication will enable a variety of new service offerings such as direct load control of air conditioners, pool pumps and water heaters, etc. as well as expanded tariff offerings, e.g. time of use rates etc.

Energy Star® Qualified New Homes Gaining Market Share

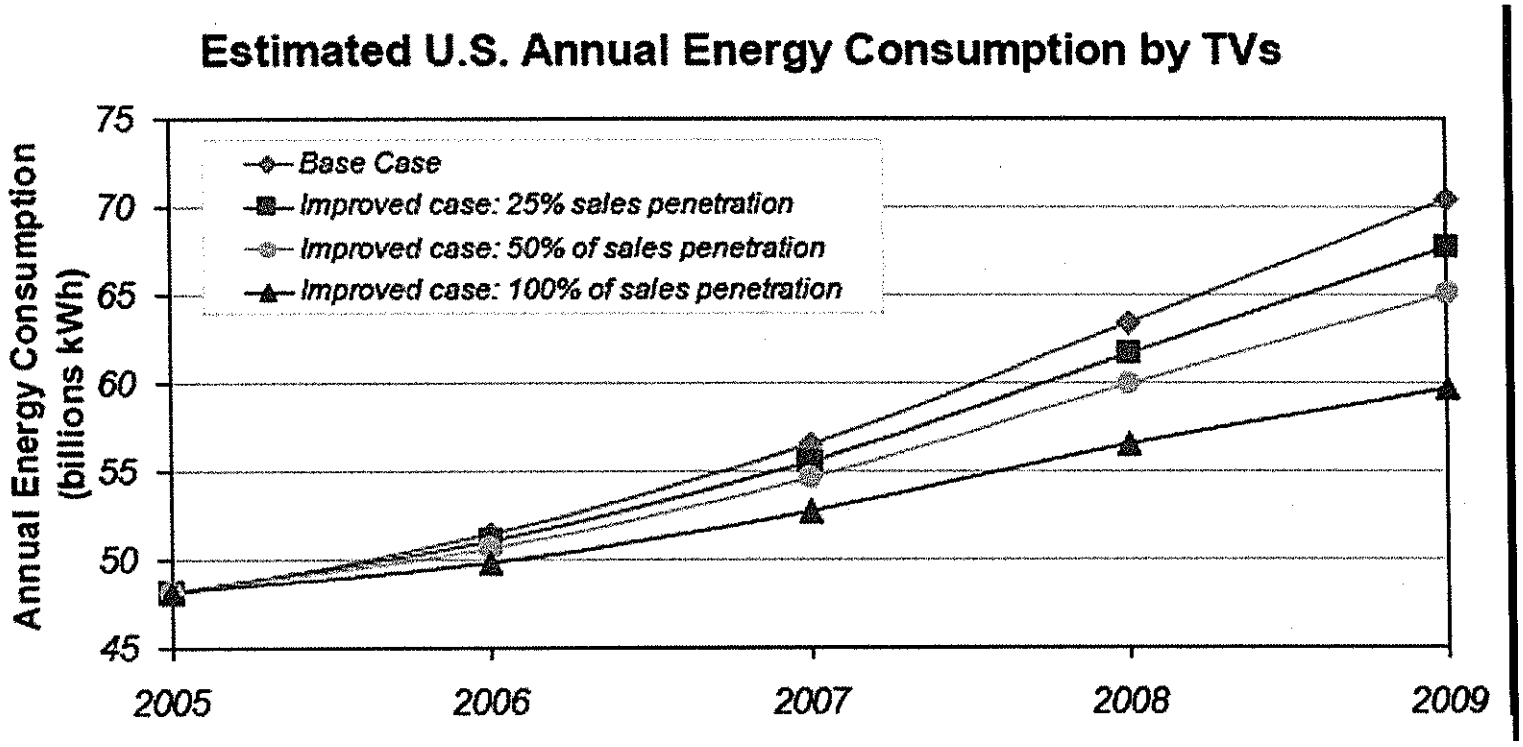


1998 IECC or Later (EPCA Compliant)

1997 IECC or Earlier (Not EPCA Compliant)



Impact of Increased Energy Star® Market Penetration

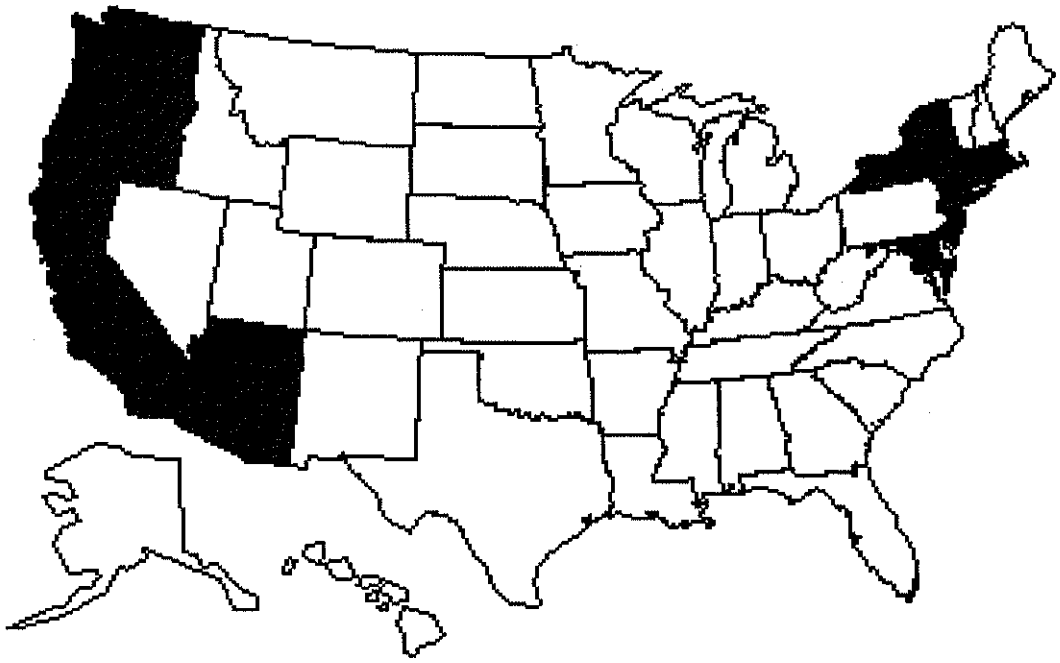


Source: Natural Resources Defense Fund

Non-Utility Implemented Programs: History of Appliance Standards

- **1970s:** several states adopt standards
- **1975:** Energy Policy and Conservation Act: Ineffective
- **1987:** National Appliance Energy Conservation Act established large appliance standards. TVs removed from list, 1995. DOE on schedule to review standards.
- **1992:** Energy Policy Act added more lamps, plumbing products, electric motors, commercial water heaters, and HVAC systems.
- **2005:** EPAct updated and added standards, ordered DOE to work on standards for transformers, lighting, battery chargers and power supplies.

State Appliance Standards Typically Do Not Surpass Federal Levels



Energy Efficiency Standards for Household and Commercial Appliances (beyond Federal standards)

Non-Utility Energy Star® Incentives

- Tax incentives for retailers who promote Energy Star® appliances and can quantify increased sales.
- One-time state tax incentives for consumers who can verify purchase of Energy Star® appliances over course of year.
- Mandatory purchase quotas for state and local government agencies.
- Energy Star® appliances use 30% less electricity than others.
- Life cycle kWh savings:
  - Air conditioning 59,437
  - Television 38,710
  - Clothes washer 2,970
  - Computer 1,870

Savings data from www.energystar.gov