



National Action Plan for Energy Efficiency
Vision for 2025:
Developing a Framework for Change

A RESOURCE OF THE NATIONAL ACTION PLAN FOR
ENERGY EFFICIENCY

NOVEMBER 2007

Letter from the Co-Chairs of the National Action Plan for Energy Efficiency

To all,

As you know, the National Action Plan for Energy Efficiency is playing a vital role in advancing the dialogue and the pursuit of energy efficiency in our homes, buildings, and industries—an important energy resource for the country.

With the commitment and leadership from more than 60 diverse organizations nationwide we have made great progress in a short time. We have:

- Developed five broad and meaningful recommendations for pursuing cost-effective energy efficiency.
- Brought together more than 100 organizations from 50 states around this common goal to take energy efficiency to the next level.

However, there is much more to do. We remain substantially underinvested in efficiency at a time when using energy wisely can help address rising energy costs, rising emissions of greenhouse gases, and our dependence on foreign fuel supplies.

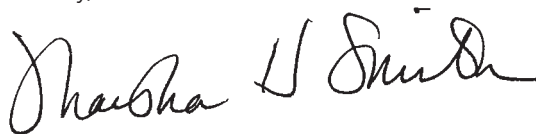
We need a concerted, sustained effort to overcome what are truly surmountable hurdles to making energy efficiency a larger part of our supply picture. To continue our progress we need to move from our initial Action Plan to implementation. We need a vision for where we want to be and a path for getting there.

Commensurate with that goal, we are pleased to offer this 2025 Vision for the National Action Plan. This Vision outlines what our long-term goals should be if we are to truly achieve all cost-effective energy efficiency. This Vision outlines what we consider are ten key implementation goals as well as the steps we need to take to achieve them. It is a framework for changing our course on energy efficiency.

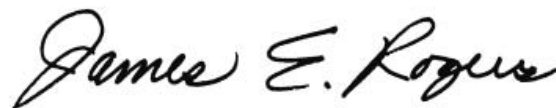
This Vision represents the thinking of many leading organizations nationwide. Importantly, we believe that this Vision is a living document that looks out to long-term needs and will be modified to reflect new information and changing conditions.

We thank the Leadership Group for its contribution to this document. It is a pleasure to work with this committed group to advance energy efficiency to address the critical energy and environmental issues facing the country.

Sincerely,

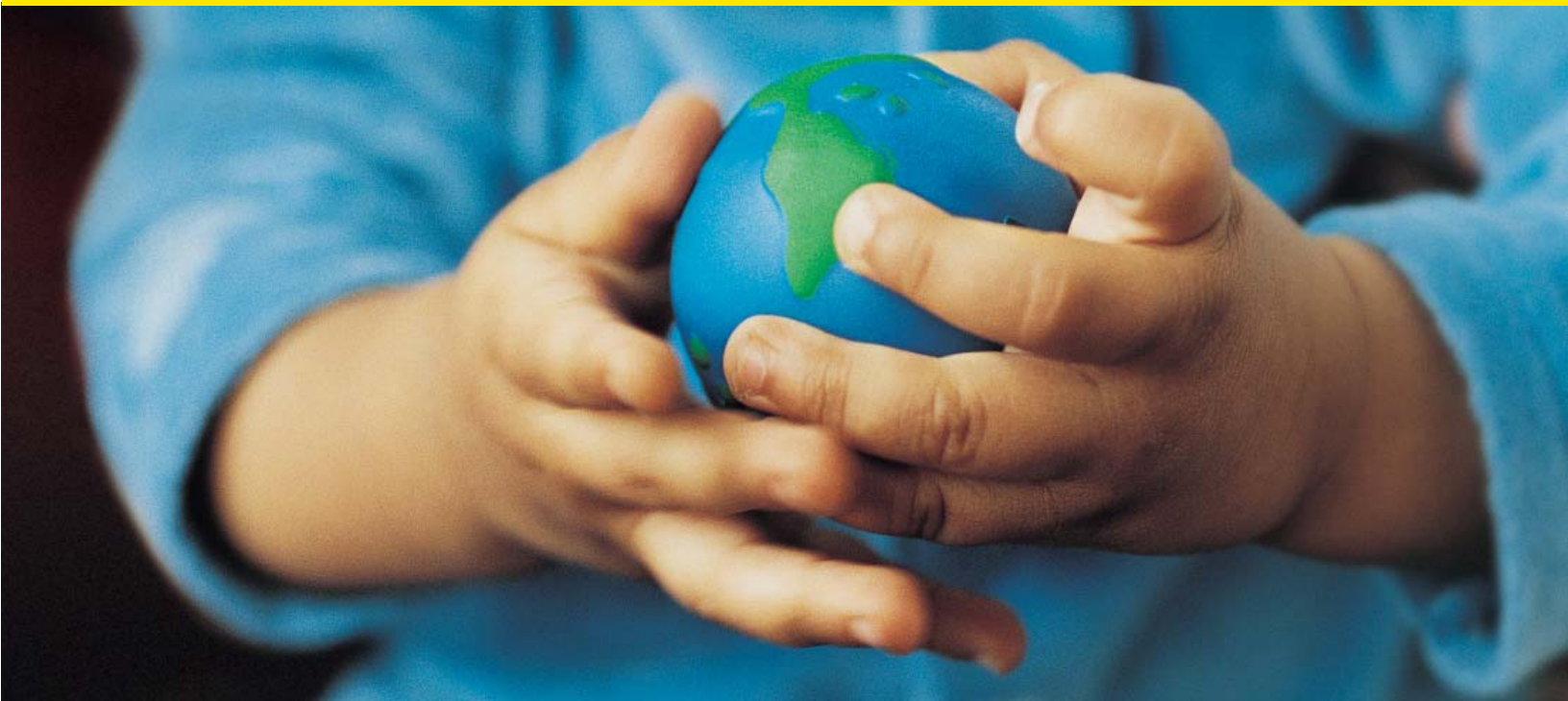


Marsha H. Smith
President, National Association
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The Vision is a product of the National Action Plan for Energy Efficiency Leadership Group and does not reflect the views, policies, or otherwise of the federal government. The role of U.S. DOE and U.S. EPA is limited to facilitation of the Action Plan.

This document was final as of December 2007 and incorporates minor modifications to the original release.

If this document is referenced, it should be cited as:

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For More Information

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Executive Summary



This Vision for the National Action Plan for Energy Efficiency establishes a goal of achieving all cost-effective energy efficiency by 2025; presents ten implementation goals for states, utilities, and other stakeholders to consider to achieve this goal; describes what 2025 might look like if the goal is achieved; and provides a means for measuring progress. It is a framework for implementing the five policy recommendations of the Action Plan, announced in July 2006, which can be modified and improved over time.

Background

Through the Leadership Group of the National Action Plan for Energy Efficiency (Action Plan), more than 60 diverse leading organizations recognized the importance of bringing greater emphasis to the role that cost-effective energy efficiency¹ can and should play in supplying our future energy needs. Improving the energy efficiency of homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the United States—is one of the most constructive, cost-effective ways to address the challenges of high energy prices, energy security and independence, air pollution, and global climate change in the near future. Energy efficiency can play a significant role in meeting our energy requirements, and it is a critical component of the overall modernization of utility energy systems worthy of the 21st century.

Despite the value that cost-effective energy efficiency offers, it is not achieving its full potential for a number of reasons. In July 2006, the Action Plan presented five key policy recommendations for fully developing the cost-effective energy efficiency resources in this country, building upon experiences in particular states and regions. It was a call to action to take investment in energy efficiency to the next level. As of November 2007, more than 100 organizations have endorsed these recommendations and/or made commitments to take energy efficiency to the next level within their spheres of influence.

As a next step, the Action Plan co-chairs challenged the Leadership Group to define a vision that would detail

the steps necessary to fully implement the Action Plan. The Vision presented in this document is the response to that challenge. It includes establishment of a long-term aspirational goal and ten key implementation goals. It also describes what 2025 could look like if the long-term goal were achieved and provides a means for measuring progress over time. The Vision is provided as a framework to guide the changing policies toward energy efficiency for natural gas and electricity; it can be modified and improved over time.

Achieve All Cost-Effective Energy Efficiency

The long-term aspirational goal for the Action Plan is to achieve all cost-effective energy efficiency by the year 2025. Based on studies, the efficiency resource available may be able to meet 50 percent or more of the expected load growth over this time frame, similar to meeting 20 percent of electricity consumption and 10 percent of natural gas consumption.² The benefits from achieving this magnitude of energy efficiency nationally can be estimated to be more than \$100 billion in lower energy bills in 2025 than would otherwise occur, over \$500 billion in net savings, and substantial reductions in greenhouse gas emissions.

Importantly, the energy efficiency resource's role in meeting load and load growth may vary across the country due to regional differences in growth patterns, costs of energy, and other factors. Furthermore, the long-term goal is not a statement about the need for new power

supply additions in the future, as new plants may be a critical component of the desired modernization of the energy supply and delivery system. However, the greater the energy efficiency savings, the greater the likelihood that efficiency gains can help replace older, less efficient power supply options, resulting in substantial environmental benefits.

Ten Implementation Goals

The Vision suggests that implementation of a number of policies will enhance the likelihood that the long-term goal will be achieved. Energy efficiency needs to be valued similarly to supply options. Utilities and investors need to be financially interested in saving energy. State activity is key in this transformation of natural gas and electricity supply and delivery, including updating and enforcing codes and standards to ensure that savings are captured as new buildings and products enter the system. Customers must also have the proper incentives to make investments in cost-effective energy efficiency. With such policies in place, cost-effective energy efficiency can be a key component of the modernization of the energy supply and delivery system and help to transform how customers receive and value energy services.

These policies are included in the following ten implementation goals. These goals provide a framework for implementing the recommendations of the Action Plan by outlining the key steps state decision-makers should consider to help achieve the 2025 Vision. The time line for achieving these implementation goals is by 2015 to 2020, so that the necessary policy foundation is in place to help ensure success of the 2025 Vision.

Goal One: Establishing Cost-Effective Energy Efficiency as a High-Priority Resource

Utilities³ and applicable agencies are encouraged to:

- Create a process to explore the energy efficiency potential in the state and commit to its full development.
- Regularly identify cost-effective energy efficiency potential in conjunction with rate making bodies.

- Set energy savings goals consistent with the cost-effective potential.
- Integrate energy efficiency into energy resource plans at the utility, state, and regional levels.

Goal Two: Developing Processes to Align Utilities Incentives Equally for Efficiency and Supply Resources

Applicable agencies are encouraged to:

- Work with utilities to implement revenue mechanisms to promote utility and shareholder indifference to supplying energy savings, as compared to energy generation options.
- Consider how to remove utility disincentives to energy efficiency such as by removing the utility throughput disincentive and exploring other rate making ideas.
- Ensure timely cost recovery in place for parties that administer energy efficiency programs.

Goal Three: Establishing Cost-Effectiveness Tests

Applicable agencies along with key stakeholders are encouraged to:

- Establish a process to examine how to define cost-effective energy efficiency practices that capture the long-term resource value of energy efficiency.
- Incorporate cost-effectiveness tests into rate making procedures going forward.

Goal Four: Establishing Evaluation, Measurement, and Verification Mechanisms

Rate making bodies are encouraged to:

- Work with stakeholders to adopt effective, transparent practices for the evaluation, measurement, and verification (EM&V) of energy efficiency savings consistent with establishment of rate making incentives.

Program administrators are encouraged to:

- Conduct EM&V consistent with these practices.

Goal Five: Establishing Effective Energy Efficiency Delivery Mechanisms

Applicable agencies are encouraged to:

- Clearly establish who will administer energy efficiency programs.
- Review programs, funding, customer coverage, and goals for efficiency programs; ensure proper administration and cost recovery of programs, as well as ensuring that goals are met.
- Establish goals and funding on a multi-year basis to be measured by evaluation programs established.
- Create public education programs for energy efficiency.
- Ensure that best practice information is shared regionally and nationally.

Goal Six: Developing State Policies to Ensure Robust Energy Efficiency Practices

Applicable agencies are encouraged to:

- Have a mechanism to review and update building codes.
- Establish enforcement and monitoring mechanisms of energy codes.
- Adopt and implement state-level appliance standards.
- Develop and implement lead-by-example energy efficiency programs at the state and local levels.

Goal Seven: Aligning Customer Pricing and Incentives to Encourage Investment in Energy Efficiency

Utilities and rate making bodies are encouraged to:

- Examine, propose, and modify rates considering impact on customer incentives to pursue energy efficiency.
- Create mechanisms to reduce customer disincentives for energy efficiency (e.g., financing mechanisms).

Goal Eight: Establishing State of the Art Billing Systems

Utilities are encouraged to:

- Work with large customers to develop methods of supplying consistent energy use and cost information across states, service territories, and the nation.

Goal Nine: Implementing State of the Art Efficiency Information Sharing and Delivery Systems

Utilities and other program administrators are encouraged to:

- In conjunction with their regulatory bodies, explore the development and implementation of state of the art efficiency delivery information, including smart grid infrastructures, data analysis, two-way communication programs, etc.
- Explore methods of integrating advanced technologies to help curb demand peaks and monitor efficiency upgrades to prevent equipment degradation, etc.
- Coordinate demand response and energy efficiency programs to maximize value to customers.
- Support development of an energy efficiency services and program delivery channel (e.g., quality trained technicians).

Goal Ten: Implementing Advanced Technologies

Applicable agencies and utilities are encouraged to:

- Review advanced technologies such as batteries, strategically integrated solar facilities, and other clean distributed generation forms; ensure their adaptation into the broader resource plans for efficiency achievements.
- Work collectively to review advanced technologies and determine rapid integration time lines.

The Energy System in 2025

An energy system in 2025 that would evolve with the suite of energy efficiency policies in place as outlined above and that captures all cost-effective energy efficiency will be different from the one we have today. Some of the key differences based on the effects that some of these policy changes are having in parts of the country, as well as expectations of some of the advantages that new technology and system modernization can bring, are highlighted below from the perspectives of the energy customer and society.

- **Customers** across the residential, commercial, and industrial sectors would have ready, uniform access to comprehensive energy efficiency services across the country. These services would bring a range of efficiency improvements to homes, buildings, and facilities and reduce customers' bills below what they would have been without these programs. Customers would also have clear information on the cost of energy and increased awareness of their total energy use. In addition, new efficient appliances and other equipment will help to control the peak demand of utility systems and give large customers greater flexibility in how they manage and control their own operations to reduce energy use, reduce costs, and increase their own competitive positions. New homes and buildings would meet up-to-date energy codes.
- **Society** would benefit from significantly modernized energy supply, transmission, and distribution systems and, with increased investment in cost-effective energy efficiency, would benefit from lower overall cost of energy supply, increased fuel diversity, and lower emissions of air pollutants and greenhouse gases. The low-income populations would benefit, in particular, from the lower energy bills resulting from a commitment to deliver energy efficiency to these customer classes. Society may also see economic benefits from the greater employment necessary to build an industry capable of delivering energy efficiency services at this broad scale, from a robust business in energy

efficiency products and services, and from using more capital locally.

Measuring Progress

Measurement of the progress toward full implementation by 2015 to 2020 is an important part of the Vision. Progress will be measured and reported on every few years. As of 2007, based on information collected from across the country, there is a strong basis of experience with these energy efficiency policies upon which to draw and to expand. For example, more than a dozen states that are looking to advance energy efficiency have:

- Established a policy to recognize energy efficiency as a high-priority resource.
- Identified the cost-effective, long-term potential for energy efficiency and established energy savings goals consistent with this potential.
- Established cost-effectiveness tests for energy efficiency consistent with the long-term benefits of energy efficiency.
- Established tailored energy efficiency programs for their various types of customers.
- Integrated the energy efficiency savings goals into state energy resource plans.

There is also more progress to make. For example, a few additional states have also looked to the following policy steps to advance energy efficiency:

- Aligned utility incentives with the delivery of cost-effective energy efficiency.
- Provided for stable (multi-year) funding for energy efficiency programs.

Beyond the adoption of the key policies and programs at the state level, progress will be measured in terms of:

- Energy expected to be saved through energy savings goals (kWh, kW, and therms).

- Energy that has been saved (kWh, kW, and therms).
- Reductions in emissions of carbon dioxide.
- Dollars invested in energy efficiency programs.
- Cost-effectiveness of energy efficiency program delivery.

Next Steps

This Vision is offered as a framework to assist change in energy efficiency and related policies and programs at the state level across the country, toward the goal of achieving all cost-effective energy efficiency in 2025. It presents a snapshot of where the country is in 2007 based on the collection and organization of available state-level information on the existing policy and program options. This snapshot, as well as other elements of the Vision, will be updated as new information becomes available and improved as information changes. People are encouraged to provide additional information and their comments for

how to refine this Vision to the Action Plan Leadership Group. Please send feedback to the Action Plan sponsors via Larry Mansueti, U.S. Department of Energy (lawrence.mansueti@hq.doe.gov, 202-586-2588) and Stacy Angel, U.S. Environmental Protection Agency (angel.stacy@epa.gov, 202-343-9606).

Notes

1. "Energy efficiency" refers to using less energy to provide the same or an improved level of service to the energy consumer in an economically efficient way. As used here, the term includes using less energy at any time, including at times of peak demand through demand response and peak shaving efforts.
2. The energy efficiency savings as a percent of load growth and savings depend on forecast assumptions used and vary by region. This magnitude of savings is consistent with the potential savings documented in a number of recent studies. See Appendix B for references for these studies.
3. "Utility" refers to any organization that delivers electric and gas utility services to end-users, including investor-owned, cooperatively owned, and publicly owned utilities.

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