State of California

M e m o r a n d u m

Date: June 28, 2006

To: The Commission
(Agenda Distribution List)

From: **Nilgun Atamturk**
Advisor to Commissioner Grueneich

Subject: Discussion and Possible Action Adopting the California Memorandum of Understanding in Support of the National Action Plan for Energy Efficiency

The draft California Memorandum of Understanding (MOU) pledges the support of the State of California for developing, promoting, and implementing the National Action Plan for Energy Efficiency. The proposed signatories to the MOU are Arnold Schwarzenegger, the Governor of the State of California, California Public Utilities Commission (CPUC), California Energy Commission, investor-owned utilities (IOUs), Los Angeles Department of Water and Power, and Sacramento Municipal Utility District. The State of California has already shown its commitment to energy efficiency by undertaking the actions listed in the MOU. Commissioner Grueneich thus requests that the CPUC join in the MOU in order to further the CPUC's leadership role in the area of energy efficiency. Commissioner Grueneich is coordinating the CPUC's adoption of the MOU with the Governor's Office, IOUs, and other parties.[1]

[1] The final language of the MOU may change from the draft, but the intent will remain as stated.

The National Action Plan for Energy Efficiency is developed by the Leadership Group, consisting of over 50 organizations, and presents policy recommendations to create a strong national commitment to energy efficiency. The Leadership Group is co-chaired by Diane Munns, Member of the Iowa Utilities Board and President of the National Association of Regulatory Utility Commissioners (NARUC) and Commissioner Grueneich represents the CPUC on the Leadership Group.

The National Action Plan for Energy Efficiency will be released on July 31, 2006 as part of the opening plenary session of the NARUC Summer Meeting in San Francisco. The California MOU along with MOUs from other states and regions will also be released.

Attachments:

1. Draft Memorandum of Understanding
2. Fact Sheet on the National Action Plan for Energy Efficiency
3. National Action Plan Executive Summary

ATTACHMENT 1

Draft Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING PLEDGING THE SUPPORT OF THE STATE OF CALIFORNIA FOR THE NATIONAL ACTION PLAN FOR ENERGY EFFICIENCY

WHEREAS,

- Cost-effective energy efficiency, conservation and demand response resources are reliable, least cost, energy resource options with proven capability for helping meet the country's energy needs. Significant investment in cost-effective energy efficiency, conservation and demand response resources can help to stabilize energy prices, enhance electric system reliability, reduce pollution emissions from power plants, reduce natural gas demand, and provide significant cost savings to customers. Despite these substantial benefits, energy efficiency, conservation and demand response options remain critically underutilized resources in much of the nation's overall energy portfolio;

- Recognizing that a great portion of the country's energy efficiency potential remains untapped, the United States Environmental Protection Agency and the United States Department of Energy joined together to sponsor the development of a National Action Plan for Energy Efficiency;

- The goal of the National Action Plan for Energy Efficiency is to create a sustainable, aggressive commitment to energy efficiency by gas and electric utilities, utility regulators, and partner organizations to help meet the nation's energy needs;

- To kick-off the development of the National Action Plan for Energy Efficiency, the United States Environmental Protection Agency and the United States Department of Energy brought together representatives from more than 50 leading organizations representing key stakeholder perspectives in setting policy for electricity and natural gas services to form a Leadership Group for the National Action Plan. The members of the Leadership Group join with each other to promote increased national investment in energy efficiency resources and the widespread adoption of best practices through the development and implementation of the collaboratively-created National Action Plan for Energy Efficiency;

- When forming the Leadership Group, the United States Environmental Protection Agency and the United States Department of Energy invited the California Energy Commission, the California Public Utilities Commission, the Natural Resources Defense Council, Pacific Gas and Electric Company, Sacramento Municipal Utility District, and Southern California Edison Company to join other stakeholders from around the country to collaboratively develop the National Action Plan. By signing this MOU, the Governor of the State of California, Los Angeles Department of Water and Power, San Diego Gas and

Electric Company and Southern California Gas Company [*Note: New signatories will be added to this section in alphabetical order*] now also join with their energy efficiency Leadership Group colleagues from California, the other western states and across the nation to participate in the ongoing collaborative development, roll-out and implementation of the National Action Plan;

- The Leadership Group for the National Action Plan for Energy Efficiency:
    - Recognizes that utilities and regulators have critical roles in creating and delivering energy efficiency programs to their communities;
    - Understands that success requires the joint efforts of the customer, utility, regulator, and partner organizations;
    - Commits to work across their spheres of influence to remove barriers to cost-effective energy efficiency and to take action within their own organizations to increase attention and investment in energy efficiency; and,
    - Supports policy recommendations for creating a sustainable, aggressive national commitment to energy efficiency through electric and gas utilities and partner organizations;
- At the same time that the National Action Plan for Energy Efficiency was being developed, California's energy leadership was also working with its counterparts in the Western Governors' Association to develop the Western Governors' Clean and Diversified Energy Initiative;
- In its January 2006 Energy Efficiency Task Force Report, the Clean and Diversified Energy Advisory Committee found that it would be feasible to cost effectively reduce electricity use 20% from projected levels in 2020 through full deployment of best practice policies and programs. The best practices identified in the Western Governors' Clean and Diversified Energy Advisory Committee report include many of the same policies and practices identified in the National Action Plan for Energy Efficiency, and already adopted or currently under consideration in California. These best practices include the integration of cost effective energy efficiency into resource planning and procurement, the establishment of energy savings targets, and the decoupling of energy sales and revenues in combination with the creation of performance incentives that reward utilities for implementing effective DSM programs;
- Consistent with its participation in these national and regional initiatives, the energy policy leadership of the State of California has steadfastly demonstrated its commitment to the pursuit of cost-effective energy efficiency, conservation, and demand response options as the resource of first choice for meeting the State's energy needs, including through the following actions:

- California Law – The Governor and Legislature recently codified energy efficiency as the State's top priority resource, requiring that each electric and natural gas utility "first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible";

- California's Energy Action Plan – In California's Energy Action Plan, the California Public Utilities Commission and the California Energy Commission have designated cost-effective energy efficiency and demand response options as first in California's "loading order" of resources to meet the State's growing energy needs. The California Energy Action Plan affirms the value of integrating energy efficiency, conservation, and demand response programs (as well as renewable resources) into overall resource planning and procurement;

- Green Building Action Plan Executive Order – Governor Schwarzenegger's 2004 Executive Order S-20-04 calls for aggressive action to:
  - reduce State building energy usage by undertaking all cost-effective measures described in the Green Building Action Plan in facilities owned, funded or leased by the State, and to encourage cities, counties and schools to do the same,
  - reduce grid-based energy purchases for State-owned buildings by 20% by 2015,
  - adopt Department of General Services guidelines to enable and encourage schools built with State funds to be resource and energy efficient,
  - provide California Public Utilities Commission support for investor-owned utilities' information and commercial building efficiency programs,
  - propose a benchmarking methodology and building commissioning guidelines by the California Energy Commission,
  - undertake all California Energy Commission actions within that agency's authority to increase efficiency in new construction,
  - target resource efficient buildings for California Public Employees Retirement System and State Teachers Retirement System real estate investment, and
  - request participation by State government entities not under the Governor's direct executive authority;

- California's Building and Appliance Codes and Standards – The California Energy Commission has set the nation's strongest energy efficiency codes and standards for new buildings and appliances. California keeps these codes and standards updated approximately every three years through a public process;

- California's Statewide Marketing and Outreach – Under the oversight of the California Public Utilities Commission, California's investor-owned utilities promote and support a statewide marketing and outreach campaign that educates consumers about energy efficiency, conservation and demand response opportunities. California's statewide marketing and outreach efforts are designed to support the U.S. Environmental Protection Agency and Department of Energy's "ENERGY STAR" efforts and provide information about programs available for California consumers. California's current statewide marketing and outreach campaign offerings include the "Flex Your Power" and "Flex Your Power Now" general awareness campaigns, as well as associated Spanish-language media and rural community outreach campaigns;

- California's Investor-Owned Utilities' Investment in Cost-Effective Energy Efficiency and Demand Response Resources – California's investor-owned utilities (Pacific Gas and Electric Company, San Diego Gas and Electric Company, Southern California Edison Company, and Southern California Gas Company) continue their longstanding active commitment to pursuing all cost-effective energy efficiency, conservation, and demand response resources. The investor-owned electric utilities are putting these demand-side resources first in their resource planning and procurement "loading order" for meeting their customers' energy needs and the gas utilities are pursuing all cost-effective energy efficiency resources to reduce natural gas demand. Working collaboratively with the California Public Utilities Commission, California's investor-owned utilities have secured the nation's highest program funding levels to mount the most aggressive energy efficiency and demand response campaign in California's – and the country's – history;

- California's Municipally-Owned Utilities' Demonstrated Commitment to Energy Efficiency, Conservation, and Demand Response Resources – California's municipally-owned utilities have sustained their commitment to energy efficiency, conservation and demand response resources over many years as a key resource strategy and customer service value, and that commitment will continue as municipal utilities pursue with renewed vigor all opportunities for cost effective investment in innovative programs and technologies to meet customers' energy and service needs, accelerate market adoption of emerging technologies, and potentially develop new measures which may be considered for future adoption into California's energy efficiency codes and standards;

- As a direct result of California's wise energy policies, aggressive actions and long-standing commitment to the pursuit of capturing the benefits of energy efficiency, conservation, and demand response resources, California's per capita energy use has remained approximately flat over the past 30 years, while per

capita electricity consumption in the U.S. has increased by nearly 50 percent. This remarkable accomplishment is attributable to the combination of the State's continued progress in cost-effective building and appliance standards and the ongoing success of the energy efficiency programs of California's utilities and other entities. California's results have been validated through careful analyses of program potential and cost-effectiveness, as well as rigorous measurement, verification and reporting of program results to substantiate that consumers are receiving the benefits of their investment in demand-side resources;

NOW, THEREFORE, THE SIGNATORIES TO THIS *MEMORANDUM OF UNDERSTANDING PLEDGING THE SUPPORT OF THE STATE OF CALIFORNIA FOR THE NATIONAL ACTION PLAN FOR ENERGY EFFICIENCY* DO HEREBY PLEDGE:

- Active support for the development, promotion and implementation of the National Action Plan for Energy Efficiency, including:

    - Supporting the ongoing development of the National Action Plan for Energy Efficiency by reviewing the working group reports and considering their recommendations for adoption;

    - Participating in the national roll-out of the National Action Plan for Energy Efficiency (scheduled for July 31, 2006, at the NARUC Summer Committee meetings in San Francisco, California) by issuing a press release on that date stating the signatory's support for recommendations from the National Action Plan for Energy Efficiency and pledging specific continuing and expanded commitments to the promotion, funding and implementation of energy efficiency in California;

    - Providing resources to promote recommendations from the National Action Plan for Energy Efficiency at speaking engagements and other educational opportunities, including participation in "buddy system" outreach efforts in which the signatories engage fellow political leaders, regulators, utilities and other stakeholders to inform them about the National Action Plan for Energy Efficiency's best practice findings and recommendations; and,

    - As appropriate for each signatory, continuing to model California's best practices and policies identified in the National Action Plan for Energy Efficiency, including:

        - designation of energy efficiency as a high priority resource option;
        - adoption of targets for energy efficiency;
        - pursuit of energy efficiency resources under a long-term resource planning and procurement framework;
        - institution of a regulatory framework that encourages utility investment in energy efficiency; and
        - sharing California's successes with others interested in energy efficiency and learning from others' successes in the planning and delivery of cost-effective energy efficiency programs.

IN WITNESS WHEREOF, WE, THE UNDERSIGNED, AS ENERGY LEADERS IN THE STATE OF CALIFORNIA, PLEDGE OUR INDIVIDUAL AND COLLECTIVE SUPPORT FOR THE NATIONAL ACTION PLAN FOR ENERGY EFFICIENCY.

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Arnold Schwarzenegger
Governor of the State of California

_____ Michael R. Peevey President California Public Utilities Commission	_____ [TBD] Chairman California Energy Commission
_____ Geoffrey F. Brown Commissioner California Public Utilities Commission	_____ Arthur H. Rosenfeld Commissioner California Energy Commission
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ATTACHMENT 2

Fact Sheet on the
National Action Plan for Energy Efficiency

National Action Plan for Energy Efficiency

Fact Sheet

The National Action Plan for Energy Efficiency presents policy recommendations for creating a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities and partner organizations. Such a commitment could save Americans many billions of dollars on energy bills over the next 10 to 15 years, contribute to energy security, and improve our environment. The Action Plan was developed by more than 50 leading organizations representing key stakeholder perspectives. These organizations pledge to take specific actions to make the Action Plan a reality.

Leadership Group

The Leadership Group consists of over 50 leading private, public, and cooperatively-owned electric and gas utilities, utility regulators, state agencies, large end-users, consumers advocates, energy service providers, and environmental/energy efficiency organizations. The goal of this group is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations. The Leadership Group agreed on this goal recognizing that utilities and regulators have critical roles in creating and delivering energy efficiency programs to their communities and that success requires the joint efforts of the customer, utility, regulator, and partner organizations.

The Leadership Group is co-chaired by Diane Munns, Member of the Iowa Utilities Board and President of the Natural Association Regulatory Utility Commissioners, and Jim Rogers, President and Chief Executive Officer of Duke Energy. The U.S. DOE and U.S. EPA facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency.

National Release

The National Action Plan for Energy Efficiency will be released on July 31, 2006 as part of the opening plenary session of the National Association of Regulatory Utility Commissioners Summer Meeting in San Francisco. During the release, Leadership Group members will announce a set of recommendations and their own commitments for action. Draft recommendations currently include:

- Recognize energy efficiency as a high priority energy resource
- Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource
- Broadly communicate the benefits of and opportunities for energy efficiency
- Promote sufficient and stable program funding to deliver energy efficiency where cost-effective
- Review and adopt policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments

The Leadership Group will also release a number of tools and resources to assist themselves and others in making and fulfilling commitments to energy efficiency, including a National Action Plan for Energy Efficiency Report, Energy Efficiency Benefits Calculator, and expert/resource lists. The Action Plan report details the key barriers to energy efficiency in resource planning, utility revenue requirement mechanisms, rate design, and the design and implementation of energy efficiency programs. It reviews program and policy solutions that have been employed across the country for overcoming these barriers and presents key recommendations for moving forward.

During Winter 2006-07, the Leadership Group plans to report on their progress and identify next steps for the Action Plan.

ATTACHMENT 3

National Action Plan Executive Summary

Executive Summary

This National Action Plan for Energy Efficiency (Action Plan) presents policy recommendations for creating a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities and partner organizations. Such a commitment could save Americans many billions of dollars on energy bills over the next 10 to 15 years, contribute to energy security, and improve our environment. The Action Plan was developed by more than 50 leading organizations representing key stakeholder perspectives. These organizations pledge to take specific actions to make the Action Plan a reality.

A National Action Plan for Energy Efficiency

We currently face a set of serious challenges with the U.S. energy system. Energy demand continues to grow despite historically high energy prices, mounting concerns over energy security and independence, and concerns about air pollution and global warming. The decisions we make now regarding our energy supply and demand can either help us deal with these challenges more effectively, or complicate our ability to secure a more stable, economical energy future.

Improving the energy efficiency[1] of our homes, businesses, schools, governments, and industries – which consume more than 70 percent of the energy used in the country -- is one of the most constructive, cost-effective ways to address these challenges.[2] Increased investment in energy efficiency in our homes, buildings, and industries can lower energy bills, reduce demand for fossil fuels, help stabilize energy prices, enhance electric and natural gas system reliability, and help reduce emissions or air pollutants and greenhouse gases.

Despite these benefits and the success of energy efficiency programs in some regions of the country, energy efficiency remains critically under-utilized in the nation's energy portfolio.[3] Years of manageable energy prices, combined with a policy emphasis on energy price competition, have led to a dampening in, or shifting away from, policies and programs that encourage greater investments in energy efficiency in parts of the country.

Now we simultaneously face the challenges of high prices, the need for large investments in new energy infrastructure, environmental concerns and security issues. It is time to take advantage of more than a decade of experience with successful energy efficiency programs, broaden and expand these efforts, and capture the savings that energy efficiency offers. Much more can be done in concert with ongoing efforts to advance building codes and appliance standards, provide tax incentives for efficient products and buildings, and promote savings opportunities through programs such as ENERGY STAR. Many homeowners, businesses, and others in buildings and

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[1] Energy efficiency refers to using less energy to provide the same or improved level of service to the energy consumer, and to shifting the time of use of energy in an economically efficient way. The term energy efficiency as used here includes using less energy at any time, including at times of peak demand through demand response and peak shaving efforts.

[2] Addressing transportation-related energy use is also an important challenge as energy demand in this sector continues to increase and oil prices hit historical highs. However, transportation issues are outside the scope of this effort which is focused on our electricity and natural gas systems.

[3] This effort is focused on energy efficiency for regulated energy forms. Energy efficiency for unregulated energy forms, fuel oil, for example, is closely related in terms of actions in buildings, but is quite different in terms of how policy can promote investments.

facilities that are already standing today – and which will represent the vast majority of the nation's buildings and facilities for years to come – can realize significant savings from proven energy efficiency programs.

Bringing more energy efficiency into the nation's energy mix to slow demand growth in a wise, cost-effective manner – one that balances energy efficiency with new generation and supply options -- will take concerted efforts by all energy market participants -- customers, utilities, regulators, states, consumer advocates, energy service companies and other stakeholders. It will require education on the opportunities, review of existing policies, identification of barriers and their solutions, including the potential of new technologies, and modification and adoption of policies, as appropriate. We need to improve the access that energy customers have to energy efficiency programs that can help them control their energy costs, provide the funding necessary to deliver these programs, and examine our policies governing energy companies to assure these policies facilitate, not impede, energy efficiency, where appropriate.[4] Historically we have rewarded these organizations more for building infrastructure (e.g., power plants, transmission lines, pipelines, etc) and selling energy than we have rewarded them for helping their customers use energy wisely even when the energy-saving measures may cost less.[5]

This National Action Plan on Energy Efficiency is a call to action to bring these stakeholders together at the regional, state, or utility level, as appropriate, and to have the discussions necessary to take investment in energy efficiency to a new level with an overall goal of creating a sustainable, aggressive national commitment to energy efficiency.

Based upon the policies, practices, and efforts of many leading organizations across the country, the Leadership Group offers the following recommendations as ways to overcome many of the barriers that have limited greater investment in energy efficiency as delivered to customers of electric and gas utilities in parts of the country. These recommendations represent both options and opportunities and each can be pursued in a number of different ways.

- **Recognize energy efficiency as a high priority energy resource,**
- **Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource,**
- **Broadly communicate the benefits of and opportunities for energy efficiency,**
- **Promote sufficient and stable program funding to deliver energy efficiency where cost-effective,**
- **Review and adopt policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.**

As part of the Action Plan, leading organizations are committing to make more energy efficiency happen in their organizations and to assist others who want to increase their efforts in energy efficiency in their regions. As greater investment in energy efficiency can not happen based on

[4] Utility is broadly defined as an organization that delivers electric and gas utility services to end-users, including, but not limited to, investor-owned, municipals, cooperatives, and third-party energy efficiency utilities.
[5] Many energy efficiency programs have an average lifecycle cost of $0.03/kWh saved, which is 50-75% of the typical cost of new power sources (ACEEE 2004, EIA 2005).

the work of one individual or organization alone, this is a commitment to bring the appropriate stakeholders together -- including utilities, state policy makers, consumers, consumer advocates, energy services companies, and others – to be part of a collaborative effort to take energy efficiency to a new level. As energy experts, utilities may be in a unique position to play a leading role.

The reasons behind the National Action Plan for Energy Efficiency, the process for developing the Action Plan, and the final recommendations are summarized in greater detail below.

We Face Large and Complex Energy Challenges

Our expanding economy, growing population, and rising standard of living all depend on energy use. Current projections anticipate U.S. energy demands to increase by more than one-third by 2030, with electricity demand alone rising by more than 40 percent.[6] At work and at home we continue to rely on more and more energy consuming devices. At the same time the country has entered a period of higher energy costs for natural gas, heating oil, and other fuels. These issues present us with many challenges:

- **Growing energy demand stresses current systems, drives up energy costs, and requires new investments.** Events such as the Northeast electricity blackout of August 2003 and Hurricanes Katrina and Rita in 2005 increased focus on energy reliability and its economic and human impacts. Transmission and pipeline systems are becoming over-burdened in some places, limiting availability of low-cost electricity and fossil fuels, and potentially compromising energy system reliability and raising energy prices in or near congested areas. High fuel prices also contribute to higher electricity prices. In addition, our demand for natural gas to heat our homes, for industrial and business purposes, and for power plants is straining the available gas supply in North America and putting upward pressure on natural gas prices. Addressing these issues will require billions of dollars in investments in new power plants, gas rigs, transmission lines, pipelines, and other infrastructure, notwithstanding the difficulty of building new energy infrastructure in dense urban and suburban places.

- **High fuel prices increase financial burdens on households and businesses and slow our economy.** Many household budgets are being strained by higher energy costs, leaving less money available for other household purchases and needs; this is particularly harmful for low-income households. Higher energy bills for industry are reducing the nation's economic competitiveness and placing U.S. jobs at risk.

- **Environmental issues.** Energy demand continues to grow as national and state regulations are being implemented to significantly limit the emissions of air pollutants such as sulfur dioxide, nitrogen oxides, and mercury to protect public health and the environment. In addition, emissions of greenhouse gases continue to increase.

- **Uncertainties in future prices and regulations raise questions on new investments.** New infrastructure is being planned in the face of uncertainties that can affect future energy prices.

[6] EIA Annual Energy Outlook 2006.

For example, high natural gas prices and uncertainty about greenhouse gas and other environmental regulation, make investment decisions on new energy supply options difficult.

- **Our energy system is vulnerable to disruptions in energy supply and delivery.** Natural disasters such as the hurricanes of 2005 exposed the vulnerability of the U.S. energy system to major disruptions, which have significant impacts on energy prices and service reliability. In response, national security concerns suggest that we should use fossil fuel energy more efficiently, increase supply diversity, and decrease the vulnerability of domestic infrastructure to natural disasters.

Energy Efficiency Can Be a Beneficial Resource in Our Energy Systems

Greater investment in energy efficiency can help us tackle these challenges. Energy efficiency is already a key component in the nation's energy resource mix in many parts of the country. Utilities, states and others across the United States have decades of experience in bringing energy efficiency to their customers upon which more states, utilities, and others can build. Experience shows that energy efficiency programs can lower customer energy bills, cost less than and help defer new energy production, contribute energy savings to consumers, provide environmental benefits and spur local economic development (see Box).

Energy efficiency is also likely to continue to be available in relevant quantities and at low costs in the future. Many state and regional studies have found that adoption of economically attractive, but as yet untapped, energy efficiency could yield more than 20% savings in total electricity demand nationwide by 2025. These savings could help cut load growth by half or more compared to current forecasts.[7] Savings in direct use of natural gas could similarly provide a 50% or greater reduction in natural gas demand growth.[8]

Capturing this energy efficiency resource would offer substantial economic and environmental benefits across the country. Widespread energy efficiency programs, such as the ones already ongoing in certain regions,[9] could deliver a large part of these potential savings. Extrapolating the savings of leading programs to the entire country yields annual energy bill savings of nearly $30 billion, with net societal benefits of more than $300 billion over the next 10 to 15 years. These programs would avoid the need for 20,000 MW or 40 new 500 MW-power plants as well as reduce U.S. emissions from energy production and use by more than 200 million tons of carbon dioxide, 50,000 tons of sulfur dioxide, and 40,000 tons of nitrogen oxides annually.[10]

However, across the nation, we do not have the programs and policies in place to capture these benefits. Based on the experience of leading energy efficiency programs about $9 billion per year

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[7] Nadel et al. 2004, SWEEP 2002, NEEP 2005, NWPCC 2005

[8] Nadel 2006

[9] The Program Best Practices chapter highlights some of these programs in Tables 1-1a and 1-1b.

[10] These economic and environmental savings estimates are national in scope. Savings at the regional level may vary based on a number of regional factors. Avoided capacity value is based on peak load reductions de-rated for reductions that do not result in savings of capital investments. Emissions savings are based on a marginal on-peak generation fuel of natural gas and marginal off-peak fuel of coal; with the on-peak period capacity requirement double that of the annual average. Reductions in capped emissions may reduce the cost of compliance.

in energy efficiency funding would be required,[11] or 5 times the funding levels for organized efficiency programs available today of less than $2 billion per year. This underinvestment in energy efficiency is due to a number of well recognized barriers to energy efficiency, including ones present in the policies used to govern electric and natural gas utilities, including:

- **Market barriers** which can make energy efficiency seem unfeasible, such as the well-known "split-incentive" barrier, which limits home builders' and commercial developers' motivation to invest in new building energy efficiency because they do not pay the energy bill, and the transaction cost barrier, which chronically affects individual consumer and small business decision making.

- **Customer Barriers** such as lack of information on energy saving opportunities, lack of awareness of how energy efficiency programs make investments easier, and lack of availability of necessary funding to invest in energy efficiency.

- **Public Policy Barriers**, which can present prohibitive disincentives for utility support and investment in energy efficiency in many cases;

- **Utility and State Planning Barriers,** which do not allow energy efficiency to compete with supply-side resources in energy planning; and

- **Program Design and Implementation Barriers,** which limit investment due to lack of knowledge about the most effective and cost-effective energy efficiency program portfolios, programs for overcoming common market place barriers to energy efficiency, or available technologies.

[11] This estimate of the funding required assumes 2% of revenues across electric utilities and 1% across gas utilities. The estimate also assumes that energy efficiency is delivered at a total cost (utility and participant) of $0.04 per kWh and $3 per MMBtu, costs that are higher than the costs of many of today's programs.

Benefits of Energy Efficiency

Lower energy bills, greater customer control, and greater customer satisfaction. Well-designed programs can provide opportunities for customers of all types to adopt energy savings measures and reduce their energy bills.[1] These programs can help customers make sound energy use decisions, increase their control over their energy bills, and empower them to manage their energy usage. Customers are experiencing savings of 5, 10, 20, or 30 percent, dependent upon the customer and program. Offering these programs can also lead to greater customer satisfaction with the service provider.

Lower cost than supplying new generation only from new power plants. Well-designed energy efficiency programs are saving energy at an average cost about one-half of the typical cost of new power sources and about a third of the cost of natural gas supply.[2] When integrated into a long-term energy resource plan and deferring investments in new plants, these resources lower the energy system's total effective cost.

Modular and quick to deploy. Energy efficiency programs can be ramped up over a period of 1 to 3 years to deliver sizable savings. These programs can also be targeted to congested areas with high prices to bring relief where it may be difficult to deliver new supply in the near term.

Significant energy savings. Well-designed energy efficiency programs are delivering energy savings on the order of 1 percent a year of electricity and natural gas sales.[3] These programs are helping to offset 20-50 percent of expected growth in energy demand in some areas without compromising the end users' activities and economic well-being.[4]

Environmental benefits. While reducing customers' energy bills, cost-effective energy efficiency offers environmental benefits related to reduced demand such as lower air pollution, reduced greenhouse gas emissions, lower water use, and less environmental damage from fossil fuel extraction. Energy efficiency is an attractive option for utilities in advance of requirements to reduce greenhouse gas emissions.

Economic development. Greater investment in energy efficiency helps build jobs and improve state economies. Energy efficiency users often redirect their bill savings toward other activities that increase local and national employment, with a higher employment impact than if the money had been spent to purchase energy.[5] Many energy efficiency programs create construction and installation jobs, with multiplier impacts on other employment and local economies. Local investments in energy efficiency can offset imports from out-of-state, improving the state balance of trade. Lastly, energy efficiency investments usually create long-lasting infrastructure changes to building, equipment and appliance stocks, creating long-term property improvements that deliver long-term economic value.[6]

Energy security. As energy efficiency reduces the level of U.S. per capita energy consumption, we will decrease our economy's and individual consumers' vulnerability to energy price disruptions from natural disasters and attacks upon domestic and international energy supplies and infrastructure.

[1] See Program Best Practices chapter for more information on leading programs
[2] EIA Annual Energy Outlook 2006 new power costs and gas prices in 2015 compared to electric and gas program costs based on leading energy programs, many of which are discussed in the Program Best Practices chapter
[3] Based on leading energy efficiency programs, many of which are discussed in the Program Best Practices chapter
[4] Nadel and York 2006; and EIA Annual Energy Outlook 2006
[5] ACEEE 2005 and NYSERDA 2004
[6] Innovest Strategic Value Advisors 2002

The Leadership Group and National Action Plan for Energy Efficiency

Recognizing that energy efficiency remains a critically underutilized resource in the nation's energy portfolio, more than 50 leading electric and gas utilities, state utility commissioners, state air and energy agencies, energy service providers, energy consumers, and energy efficiency and consumer advocates have formed a Leadership Group, together with the U.S. Department of Energy and the U.S. Environmental Protection Agency to address the issue. The goal of this group is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations. The Leadership Group agreed on this goal recognizing that utilities and regulators have critical roles in creating and delivering energy efficiency programs to their communities and that success requires the joint efforts of the customer, utility, regulator, and partner organizations.

Under co-chairs Diane Munns, Member of the Iowa Utilities Board and President of the National Association Regulatory Utility Commissioners, and Jim Rogers, President and Chief Executive Officer of Duke Energy, the Leadership Group members (full list follows) has developed this National Action Plan for Energy Efficiency, which:

- Identifies key barriers limiting greater investment in energy efficiency,
- Reviews sound business practices for removing these barriers and improving the acceptance and use of energy efficiency relative to energy supply options, and
- Outlines recommendations and options for overcoming these barriers.

The members of the Leadership Group have agreed to pursue these recommendations and consider these options through their own actions where appropriate, and to support energy efficiency initiatives by other industry members and stakeholders.

Recommendations

This National Action Plan for Energy Efficiency is a call to action to utilities, state utility regulators, consumer advocates, consumers, other state officials, and other stakeholders to create an aggressive, sustainable national commitment to energy efficiency.[12] The Action Plan offers the following recommendations, based upon the policies, practices, and efforts of leading organizations across the country, as ways to overcome many of the barriers that have limited greater investment in energy efficiency as delivered to customers of electric and gas utilities in parts of the country. These recommendations represent both options and opportunities and each can be pursued in a number of different approaches. A menu of available options is shown in Figure 1.

- **Recognize energy efficiency as a high priority energy resource**. Energy efficiency has not been consistently viewed as a meaningful or dependable resource compared to new supply

[12] Energy efficiency refers to using less energy to provide the same or improved level of service to the energy consumer. Energy efficiency includes using less energy at any time, including at times of peak demand through demand response efforts.

options, regardless of its demonstrated contributions to meeting load growth.[13] Recognizing energy efficiency as a high priority energy resource is an important step in efforts to capture the benefits it offers and lower the overall cost of energy services to customers. Energy efficiency can be incorporated into resource plans, based on long-term benefits from energy savings, capacity savings, reduced emissions of air pollutants and greenhouse gases, and others, based on jurisdictional objectives. Some states have recognized energy efficiency as the resource of first priority due to its broad benefits.

- **Make a strong, long-term commitment to cost-effective energy efficiency as a resource.** Energy efficiency programs are most successful and provide the greatest benefits to stakeholders when appropriate policies are established and maintained over the long-term. This helps to maintain energy efficiency as a dependable resource relative to supply-side resources, deferring or even avoiding the need for other infrastructure investments, and it maintains customer awareness and support of efficiency efforts. Key steps include establishing the potential for cost-effective energy efficiency within a region -- the energy efficiency that can be delivered cost-effectively through proven programs and cutting edge initiatives and technologies for each customer class within a planning horizon. They also include establishing the avoided costs for supplying energy to which the costs of delivering energy efficiency would be compared and providing for routine updating of information on energy efficiency potential and key costs.

- **Broadly communicate the benefits of and opportunities for energy efficiency.** Experience shows that energy efficiency programs help customers save money and contribute to lower cost energy systems. But these impacts are not fully documented nor recognized by customers, utilities, regulators and policymakers. More effort is needed to establish the business case for energy efficiency for all decision-makers and to show how a well-designed approach to energy efficiency can benefit customers, utilities, and society by (a) reducing customers bills over time, (b) fostering financially healthy utilities (ROE, earnings per share, debt coverage ratios unaffected), and (c) contributing to positive societal net benefits overall. Effort is also necessary to educate key stakeholders that although energy efficiency can be an important low-cost resource to integrate into the energy mix, it does require funding just as a new power plant requires funding. Further, education is necessary on the impact that energy efficiency programs can have in concert with other energy efficiency programs and policies such as building codes, appliance standards, and tax incentives.

- **Promote sufficient and stable program funding to deliver energy efficiency where cost-effective.** Energy efficiency programs require consistent and long-term funding to effectively compete with energy supply options. Efforts are necessary to establish this consistent long-term funding. A variety of mechanisms has been and can be used based on state, utility, and other stakeholder interests. It is important to ensure that the efficiency programs providers have sufficient program funding to recover energy efficiency program costs and to implement the energy efficiency that is available cost-effectively over time. A number of states are now linking program funding to the achievement of the energy savings.

- **Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.** Successful energy efficiency programs would be promoted by aligning utility incentives in a

[13] For example, the Northwest Power Planning Council's Fifth Power Plan includes energy conservation and efficiency to meet a targeted 700 MW between 2005 and 2009, see http://www.nwcouncil.org/energy/powerplan/default.htm.

manner that encourages the delivery of energy efficiency as well as supply-side resources. Historically, our policies governing utilities have rewarded them more for building infrastructure (e.g., power plants, transmission lines, pipelines, etc) and selling energy than for helping their customers use energy wisely even when the energy-saving measures may cost less. Within existing regulatory process, utilities, regulators and stakeholders have a number of opportunities to better align the incentives for energy efficiency investments by the utility and by the customer, and a variety of mechanisms has been and can be used. For example, parties can decide to provide incentives for energy efficiency similar to returns on investments in new infrastructure, to provide rewards for prudent management of energy efficiency programs, and to incorporate energy efficiency as an important area of consideration within rate design. Rate design offers opportunities to encourage customers to invest in efficiency where they find it to be cost-effective and to participate in new programs that bring them innovative technologies (e.g., smart meters) to help them control their energy costs.

National Action Plan from Energy Efficiency: Next Steps

In Summer 2006, members of the Leadership Group of the National Action Plan on Energy Efficiency are announcing a number of specific activities and initiatives to formalize and reinforce their commitments to energy efficiency as a resource. To assist the Leadership Group and others in making and fulfilling their commitments, a number of tools and resources are being developed, as listed below:

- **National Action Plan for Energy Efficiency Report**. This report details the key barriers to energy efficiency in resource planning, utility revenue requirement mechanisms, rate design and the design and implementation of energy efficiency programs. It also reviews and presents a variety of policy and program solutions that have been used to overcome these barriers as well as the pros and cons for many of these approaches.

- **Energy Efficiency Benefits Calculator**. This calculator can be used to help educate stakeholders on the broad benefits of energy efficiency. It provides a framework for analyzing the business case for energy efficiency from the perspective of the consumer, the utility, and society. It has been used to explore the benefits of energy efficiency program investments under a range of utility structures, policy mechanisms, and energy growth scenarios. It can be adapted and applied to many more.

- **Experts and resource materials on energy efficiency**. A number of educational presentations on the potential for energy efficiency and various policies available for pursuing the recommendations of the Action Plan will be developed drawing upon the National Action Plan for Energy Efficiency Report. In addition, lists of policy and program experts in energy efficiency and the various policies available for pursuing the recommendations of the Action Plan will be developed. These lists will highlight experts with experience in energy efficiency programs and the policies that help facilitate greater investment in energy efficiency. They will be drawn from utilities, state utility regulators, state energy offices, third-party energy efficiency program administrators, consumer advocacy organizations, energy service companies and others.

The U.S. DOE and U.S. EPA are continuing to facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency. During Winter 2006-07, the Leadership Group plans to report on their progress and identify next steps for the Action Plan.

Figure 1. National Action Plan for Energy Efficiency Recommendations and Options

Recognize energy efficiency as a high priority energy resource. Consider

- ☐ Policies to establish energy efficiency as a priority resource
- ☐ Integrating energy efficiency into resource planning proceedings
- ☐ Quantifying and establishing the value of energy efficiency, considering energy savings, capacity savings, and environmental benefits, as appropriate

Make a strong, long-term commitment to cost-effective energy efficiency as a resource. Consider

- ☐ Establishing the potential for long-term, cost-effective energy efficiency savings by customer class through proven programs, innovative initiatives and cutting edge technologies
- ☐ Establishing appropriate cost-effectiveness tests for a portfolio of programs to reflect the long-term benefits of energy efficiency
- ☐ Establishing funding requirements for delivering long-term, cost-effective energy efficiency
- ☐ Developing long-term energy saving goals as part of energy planning processes
- ☐ Providing for frequent updates to energy plans to accommodate new information

Broadly communicate the benefits of and opportunities for energy efficiency. Consider

- ☐ Establishing and educating stakeholders on the business case for energy efficiency at the state, utility, other appropriate level addressing customer, utility, and societal perspectives
- ☐ Communicating on the role of energy efficiency in lowering customer energy bills and system costs over time and lowering risk
- ☐ Communicating on the role of building codes, appliance standards, and tax incentives

Provide sufficient and stable program funding to deliver energy efficiency where cost-effective. Consider

- ☐ Deciding on and committing to a consistent way for program administrators to recover energy efficiency costs
- ☐ Establishing funding mechanisms for energy efficiency from among the available options such as system benefits charges, rate-basing, etc,
- ☐ Establishing funding for multiple year periods

Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments. Consider

- ☐ Addressing the typical utility throughput incentive and removing other regulatory and management disincentives to energy efficiency.
- ☐ Providing incentives for the successful management of energy efficiency programs
- ☐ Including the impact on adoption of energy efficiency as one of the goals of retail rate design, recognizing that it must be balanced with other objectives.
- ☐ Eliminating rate designs that discourage energy efficiency (e.g., declining block rates or high fixed charges) that do not increase costs as customers consume more electricity or natural gas.
- ☐ Adopting rate designs that encourage energy efficiency, considering the unique characteristics of each customer class.
- ☐ Partnering tariffs with other mechanisms that encourage energy efficiency such as benefit sharing programs and on-bill financing.

Figure 2. Members of the National Action Plan for Energy Efficiency

Co-Chairs

Diane Munns Member, Iowa Utilities Board President, National Association of Regulatory Utility Commissioners	Jim Rogers President and Chief Executive Officer, Duke Energy

Leadership Group

Barry Abramson	Senior Vice President	Servidyne Systems, LLC
Angela S. Beehler	Director of Energy Regulation	WAL-MART Stores, Inc
Bruce Braine	Vice President - Strategic Policy Analysis	American Electric Power
Jeff Burks	Director of Environmental Sustainability	PNM Resources
Kateri Callahan	President	Alliance to Save Energy
Glenn Cannon	General Manager	Waverly Light and Power
Jorge Carrasco	Superintendent	Seattle City Light
Lonnie Carter	President and Chief Executive Officer	Santee Cooper
Mark Case	Vice President for Business Performance	Baltimore Gas and Electric
Gary Connett	Manager of Resource Planning and Member Services	Great River Energy
Larry Downes	Chairman and Chief Executive Officer	New Jersey Natural Gas (New Jersey Resources Corporation)
Roger Duncan	Deputy General Manager Distributed Energy Services	Austin Energy
Angelo Esposito	Senior Vice President Energy Services and Technology	New York Power Authority
Jeanne Fox	President	New Jersey Board of Public Utilities
Anne George	Commissioner	Connecticut Department of Public Utility Control
Dian Grueneich	Commissioner	California Public Utilities Commission
Blair Hamilton	Policy Director	Vermont Energy Investment Corporation
Leonard Hayes	Executive Vice President Supply Technologies Renewables and Demand Side Planning	Southern Company
Mary Healey	Consumer Counsel for the State of Connecticut	CT Consumer Counsel
Helen Howes	Vice President Environmental Affairs	Exelon
Chris James	Air Director	Connecticut Department of Environmental Protection
Mary Kenkel		Duke Energy
Ruth Kinzey	Director of Corporate Communications	Food Lion
Peter Lendrum	Vice President – Sales and Marketing	Entergy Corporation
Rick Leuthauser	Manager of Energy Efficiency	MidAmerican Energy Company
Mark McGahey	Manager	Tristate Generation and Transmission Association Inc.
Janine Midgen-Ostrander	Consumers' Counsel	Office of the OH Consumers' Counsel
Richard Morgan	Commissioner	District of Columbia Public Service Commission
Brock Nicholson	Deputy Director Division of Air Quality	North Carolina Air Office

Pat Oshie	Commissioner	Washington Utilities and Transportation Commission
Douglas Petitt	Vice President Government Affairs	Vectren Corporation
Bill Prindle	Deputy Director	American Council for an Energy-Efficient Economy
Phyllis Reha	Commissioner	Minnesota Public Utilities Commission
Roland Risser	Director Customer Energy Efficiency	Pacific Gas and Electric
Gene Rodrigues	Director Energy Efficiency	Southern California Edison
Art Rosenfeld	Commissioner	California Energy Commission
Jan Schori	General Manager	Sacramento Municipal Utility District
Larry Shirley	Division Director	North Carolina Energy Office
Michael Shore	Senior Air Policy Analyst	Environmental Defense
Gordon Slack	Energy Business Director	The Dow Chemical Company
Deb Sundin	Director Business Product Marketing	Xcel Energy
Dub Taylor	Director	Texas State Energy Conservation Office
Paul von Paumgartten	Director Energy and Environmental Affairs	Johnson Controls
Brenna Walraven	Executive Director	USAA Realty Company
Devra Wang	Director, California Energy Program	Natural Resources Defense Council
Steve Ward	Public Advocate	State of Maine
Mike Weedall	Vice President Energy Efficiency	Bonneville Power Administration
Tom Welch	Vice President External Affairs	PJM
Jim West	Manager of energy right	Tennessee Valley Authority
Henry Yoshimura	Manager Demand Response	ISO New England Inc.
	Observers	
James W. (Jay) Brew	Counsel	Steel Manufacturers Association
Roger Cooper	Executive Vice President Policy and Planning	American Gas Association
Dan Delurey	Executive Director	Demand Response Coordinating Committee
Roger Fragua	Deputy Director	Council of Energy Resource Tribes
Jeff Genzer	General Counsel	National Association of State Energy Officials
Donald Gilligan	Predicate LLC	National Association of Energy Service Companies
Chuck Gray	Executive Director	NARUC
John Holt	Senior Manager of Generation and Fuel	NRECA
Kenneth Mentzer	President and Chief Executive Officer	NAIMA
Christina Mudd	Executive Director	National Council on Electricity Policy
Ellen Petrill	Director of Public/Private Partnerships	Electric Power Research Institute
Alan Richardson	President and Chief Executive Officer	APPA
Steve Rosenstock	Manager Energy Solutions	Edison Electric Institute
Diane Shea	Executive Director	National Association of State Energy Officials
Peggy Welsh	Senior Vice President	Consumer Energy Council of America
Mark Wolfe		National Energy Assistance Directors' Association