BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy and Its Tariff Filing to Implement a General Rate Increase for Natural Gas Service.	**)** **)** **)** **)**	**Case No. GR-2009-0355**

STAFF'S REPLY BRIEF AND TRUE-UP BRIEF

COMES NOW the Staff of the Missouri Public Service Commission (Staff) and for its combined Reply Brief and True-Up Brief in this rate case, states as follows:

REPLY BRIEF

Cost of Capital

The four issues the Commission must determine in the area of cost of capital will necessarily have a significant impact on MGE's rates. MGE rate cases always present an unusual threshold question – what capital structure to use? Closely related is the question of cost of debt. The determination of ROE – profit -- is a hotly-contested issue for every utility and this case, like many others, includes proposed adjustments to reflect unusual risk, or the lack thereof. Staff has presented an integrated, carefully-researched and logically-consistent set of recommendations in the cost-of-capital area, supported by corroborating evidence.

Capital Structure

MGE is a division of Southern Union Company and its Missouri LDC operation is only a small part of its business. Unusually, Staff and the Company agree that the Commission should use a hypothetical capital structure to set MGE's rates because use of Southern Union's actual capital structure would be inappropriate. OPC, however, insists that the Commission use

Southern Union's actual capital structure in order to avoid paying a return to the Company on "phantom equity."

OPC points out, accurately, that Southern Union is overburdened by debt due to management decisions. In the past, the Commission has allowed those decisions to be reflected in rates. Why impute equity to MGE and thereby correct those decisions? The reason is because the public interest requires it.

Should the Commission set MGE's rates using Southern Union's actual capital structure and its associated actual cost of debt, Missouri ratepayers will be required unfairly to underwrite the capital costs of a natural gas collecting and transmission company, not those of an LDC.

SUMMARY OF PROPOSED CAPITAL COMPONENT RATIOS & COSTS			
	MGE	Staff	OPC
Long-Term Debt	41.06 – 6.080	42.07 – 5.89	56.16 – 6.258
Short-Term Debt	10.94 – 5.492	7.44 – 0.94	3.26 – 5.920
Preferred Equity	--	--	1.92 – 7.758
Common Equity	48.00 – 10.50	50.49 – 9.50	38.66 – 10.0
Rate of Return	8.137	7.34	7.722

The chart above provides a ready comparison of the capital component ratios and costs proposed by MGE, Staff and OPC. It is immediately apparent that the figures for long-term debt and common equity proposed by OPC are significantly different from the figures proposed by MGE and Staff. The effect of the difference is more marked when weighted costs are compared, as in the chart below:

SUMMARY OF PROPOSED CAPITAL COMPONENT WEIGHTED COSTS			
	MGE	Staff	OPC
Long-Term Debt	2.496	2.48	3.514
Short-Term Debt	0.601	0.07	0.193
Preferred Equity	--	--	0.149
Common Equity	5.040	4.80	3.866

Rate of Return	8.137	7.34	7.722

In summary, Southern Union Company is not an LDC and its capital structure is not characteristic of an LDC. Southern Union has significantly more business risk – as reflected by its low bond rating, just above junk – and significantly more financial risk – as reflected by its heavy debt load – than a stand-alone LDC. To require Missouri ratepayers to fund these unusual levels of risk would be unfair. Therefore, Staff urges the Commission to use a hypothetical capital structure, including component ratios and costs, in setting just and reasonable rates for MGE.

Return on Equity

The simple fact is that both MGE and OPC have proposed ROEs that are too high.

ROE Recommendations	
Analyst	ROE
Hanley (MGE)	10.50%
Lawton (OPC)	10.00%
Murray (Staff)	9.50%

It should be abundantly clear to the members of the Commission, as it is to this author, that learned financial analysts are able to manipulate their inputs and calculations to reach whatever result they desire. Thus, company recommendations are always oddly higher than those offered by other parties. It is for this reason that the Commission has adopted the practice of comparing recommendations to the national average, in order to provide some level of objectivity.

In the present case, all three recommendations fall within 100 basis points of the national average of awarded LDC ROEs of 10.11%. In this circumstance, great weight should therefore be accorded to the additional corroborating evidence presented by Staff expert witness David Murray. Murray's review of equity analysts' research reports on Staff's proxy companies

revealed projected ROEs ranging from 7.30% to 8.50%; while MOSERS, a large institutional investor, expects returns for large capitalization domestic equities of no more than 8.5%. These indicators reveal that Staff's proposed ROE of 9.50% is perhaps over generous.

MGE criticizes Staff and OPC's reliance on the DCF analysis, arguing that the Efficient Market Hypothesis requires the use of multiple analytical tools. Staff responds that this assertion is nonsense. Mr. Hanley's CAPM and Risk Premium analyses were badly flawed and added nothing to the reliability of his several recommendations. Staff continues to believe that the DCF model, when employed with appropriate inputs, provides the most reliable ROE figures.

In setting an ROE, the Commission must remember that it is calculating the return required by an investor to buy a share of MGE's common equity, if such a purchase were possible. In the present market, a return of 9.50% would be princely. MGE quotes the testimony of OPC's expert witness Daniel Lawton that "[e]very number from the bottom to the top is a reasonable estimate[.]"[1] If that is indeed the case, then it would be irresponsible, unjust and unreasonable to select any recommendation other than the lowest one offered by Mr. Murray.

Cost of Debt

The parties are not very far apart with respect to the cost of long-term debt. Staff's trued-up figure is 5.89%, MGE's figure is 6.080% and OPC's figure is 6.258%. Staff believes its recommended cost of long-term debt is to be preferred, based upon the average cost of its proxy group's long-term debt, grossed-up by 10% to reflect issuance costs.

More contentious is short-term debt. Staff's trued-up result, 0.94%, is significantly different from the figures endorsed by MGE and OPC, which are 5.42% and 4.367%, respectively. Because complete information on the proxy companies was lacking, Staff based its recommendation on two of the comparables with credit ratings equal to the average credit ratings

[1] MGE's Brief at p. 42 n. 37.

of the proxy group as a whole. As with ROEs, Staff expert witness David Murray produced corroborating evidence that showed that "natural gas companies continue to benefit from an environment of low cost of short-term debt."[2] Murray further pointed to SEC filings that reveal that five of Staff's comparable companies raise short-term capital through inexpensive issuances of commercial paper, as do seven of Hanley's nine proxies.[3] Staff repeats what it said in its initial brief -- there is no good reason to make Missouri consumers pay more than is necessary for short-term debt.

Risk

OPC believes that a risk adjustment is necessary to reflect the reduction of MGE's business risk if the SFV rate design is adopted. Staff opposes OPC's proposal because Staff witness Murray has already incorporated an appropriate risk adjustment in his ROE recommendation. To reflect MGE's reduced business risk, Mr. Murray recommended the lower half of the range produced by his DCF analysis. Consequently, Staff believes that no further risk adjustment is necessary.

Rate Design

The Staff recommends the Commission continue its policy of encouraging energy efficiency through decoupling to align a utility's financial incentives with the implementation of cost-effective energy efficiency and promotion of energy-efficiency investments. By doing so, the Commission's policy will remain consistent with the current energy policies established by NARUC in its National Action Plan,[4] and with the energy policies of this state and the federal government.

[2] Murray, True-up Rebuttal, p. 2 at lines 20-21.
[3] Murray Rebuttal, at p. 23.
[4] *See* attached Executive Summary of the National Action Plan for Energy Efficiency.

Policy

The Office of the Public Counsel urges the Commission to return to traditional rate design in which utilities have an inherent financial interest against any mechanism that would result in reduction in sales of gas. For the Commission to return to this rate design would be to act contrary to the findings of past Commission task forces, the current policy of administrations at the state and federal levels, all of which promote policies that align utility incentives with the delivery of cost-effective energy efficiency and ratemaking practices to promote energy efficiency.

Past rate design policies were intended to encourage utility companies to sell natural gas and promote its use by expanding to new customers and actively encouraging its customers to use more natural gas. The rate design accomplished this by tying a utility company's profit to natural gas consumption. This policy was fine so long as natural gas was plentiful and its cost low. While "the future is the hardest thing to forecast,"[5] it appears unlikely we will ever have $2.00 gas again, which means encouraging natural gas consumption is not in consumers' best interest. The traditional rate design does not reflect current realities, which are that a reduction in natural gas usage and promotion of energy efficiency is in the best interest of this state and of the nation, as reflected in the policies noted below. Under the traditional two-part rate design, the monthly charge recovers only a part of the utility's fixed costs, and the remainder of costs, including profit is recovered from gas charges which vary with usage. This dependence on sales naturally makes a utility reluctant to promote energy efficiency or embrace any plan that reduces sales.

Staff recommends Straight Fixed Variable Rate Design, which decouples the cost of transporting gas from the cost of the gas commodity itself as a rate design which accomplishes

[5] Attributed to Yogi Berra, as is: "The future ain't what it used to be."

several important goals. Under this rate design a utility no longer has an incentive to promote customer use of the highest possible level of gas volumes. The Staff's support is based on the significant benefits of promoting energy efficiency. Energy efficiency also addresses the ability of low-income customers to pay their bills by lowering bills, energy independence, and environmental concerns. The guiding principle for Staff is that this rate design aligns the interests of the Company and the customer in promoting energy efficiency. Promotion of natural gas energy efficiency benefits all of MGE's natural gas consumers.

Some on this Commission may remember Attorney General Nixon's investigation of high gas prices after the 2000-2001 heating season. After a cold December, Missourians were outraged with the high natural-gas bills they received. (Then) General Nixon conducted several public hearings. The Legislature called for Commissioners to be removed. As a result of his investigation, General Nixon called for a long-term solution which would allow utilities to recover their fixed distribution costs through a monthly charge rather than through volumetric charges.[6]

Moreover, promotion of efficient energy consumption is the policy of the current administrations not only at the state level, where energy regulation has historically occurred but also at the federal level. Some form of decoupling to align utility incentives with the delivery of cost-effective energy efficiency is supported nationally by EISA and the ARRA

Specifically this commission's policy should be guided by the energy policies of the federal government as discussed below as well as its own commitment to promotion of energy

---

[6] *See* Attorney General Nixon's February 27, 2001 press release. *Missouri's system of regulating natural gas prices needs overhaul, Nixon says.*

conservation. Accordingly the Commission should continue to support the Straight Fixed Variable Rate Design (SFV) as an effective means of promoting energy efficiency.

Promotion of efficient energy consumption is the national policy as reflected in the requirements of EISA. The Energy Independence and Security Act (P.L. 110-140, H.R. 6) is an energy policy law that consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy not only at the state level, where energy regulation has historically occurred but also at the federal level.

An issue in promoting efficient use of gas is that the profitability of gas utilities depends in large part on how much gas they sell. LDC's profits also increase with greater capital investment, such as distribution system installation. These utilities therefore have limited motivation to implement conservation programs that would slow or even reverse the growth of natural gas demand. Decoupling is one solution because it decouples growth in sales from profitability.

The federal energy policy is described in the Energy Investment and Security Act of 2007 which currently contains the following language:

§ 3203. Adoption of certain standards

(5) Energy efficiency Each natural gas utility shall—
(A) integrate energy efficiency resources into the plans and planning processes of the natural gas utility; and
(B) adopt policies that establish energy efficiency as a priority resource in the plans and planning processes of the natural gas utility.

(6) Rate design modifications to promote energy efficiency investments

(A) In general
The rates allowed to be charged by a natural gas utility shall align utility incentives with the deployment of cost-effective energy efficiency.

(B) Policy options

> In complying with subparagraph (A), each State regulatory authority . . .shall **consider**—
>
> **(i)** separating fixed-cost revenue recovery from the volume of transportation or sales service provided to the customer;
>
> **(ii)** providing to utilities incentives for the successful management of energy efficiency programs, such as allowing utilities to retain a portion of the cost-reducing benefits accruing from the programs;
>
> **(iii)** promoting the impact on adoption of energy efficiency as 1 of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives; and
>
> **(iv)** adopting rate designs that encourage energy efficiency for each customer class.

The ARRA

Section 410 (a)(1)[7] of the American Recovery and Reinvestment Act of 2009 seeks to promote energy efficiency by tying grant qualification in the ARRA to action by the states:

"*[t]he applicable State regulatory authority will seek to implement, in appropriate proceedings for each electric and gas utility, with respect to which the State regulatory authority has ratemaking authority a general policy that ensures that utility financial incentives are aligned with helping their customers use energy more efficiently and that provide timely cost recovery and a timely earnings opportunity for utilities associated with cost-effective measurable and verifiable efficiency savings, in a way that sustains or enhances utility customers' incentives to use energy more efficiently*. [ARRA Section 410(a)(1).]

While it is true that the requirement is broadly constructed and does not specifically mandate a particular ratemaking methodology, including "decoupling," decoupling is intended to provide recovery of lost revenue from energy efficiency programs, neutralize utility incentives to

[7] ARRA's § 410(a)(1) conditions apply to the funds authorized for State Energy Efficiency Grants authorized under Part D, Title III of the Energy Policy and Conservation Act (42 USC § 6321 et seq). This includes the way in which the governor is to "provide assurance" and the "Governor's Assurance Certification."

increase sales, and also reduce possible disincentives to implementing programs that could decrease sales.

It is also important to note that section 410(a)(1) of ARRA is different than the Public Utilities Regulatory Policies Act of 1978 as supplemented by the Energy Independence and Security Act of 2007 (EISA) standards, in that PURPA standards do not require that state commissions actually implement the relevant standard. The ARRA section, 401(a)(1) is different because this legislation requires states to "seek to implement" the policy stated in the paragraph in order to receive ARRA funding. This language indicates that a state commission must, at a minimum, consider whether and how to take steps to change their ratemaking practices to align utility incentives with helping their customers use energy more efficiently.

The question for decision is: Does the Commission want utility companies to depend on promoting sales of natural gas for in order to make a profit, or is there a better approach with a rate design policy that ensures that a utility's financial incentives are aligned with helping their customers use energy more efficiently? The SFV policy of decoupling meets the description of the ARRA paragraph above, although it is not the only available policy for this Commission, Staff recommends it as straight forward, simple and progressive method to promote energy efficiency.

National Action Plan and Policy

Another example of leadership in promoting energy efficiency is the Environmental Protection Agency's EPA's Clean Energy Program. Here, the EPA works with the US Department of Energy and a variety of entities including: state policy makers, electric and gas utilities, energy customers, and the National Association of Regulatory Utility Commissioners. The leadership group for this project is co-chaired by Marsha Smith, 2005 President of NARUC.

The goals of NAP are to: 1) recognize energy efficiency as a high-priority energy resource; 2) make a strong, long-term commitment to implement cost-effective energy resource; 3) broadly communicate the benefits of and opportunities for energy efficiency; 4) provide sufficient, timely, stable program funding to deliver energy efficiency where cost effective; and 5) modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency.[8]

Argument

Cost Causation

Public Counsel's position that the cost of serving individual Residential and new SGS customers are usage sensitive ignores the reality of the fixed costs of connecting to the distribution system: "This [traditional volumetric rate design] methodology recognizes that margin costs are usage sensitive; the more gas a consumer uses the more long-run distribution costs that consumer causes on the LDC"s system. (Ex 74, pp 18-20)" OPC Brief p. 2. Cost of service is not usage sensitive.

As discussed in Staff's Initial Brief, Public Counsel misapplies cost causation by twisting facts to support the proposition that volumetric rate design somehow captures different demand costs imposed on the system by low and high volume residential and new SGS customers. Public Counsel fails to recognize the true nature of the fixed costs incurred by the Company to serve an individual customer.

Staff and MGE extensively briefed there is only one level of service for residential and new SGS customers – connection to the distribution system. The cost of providing the connection to the system is fixed. Staff witness Ross relied extensively on the definition and

[8] *See Attached* Executive Summary of NAP energy efficiency goals and policies. Full information may be found at : http://www.epa.gov/cleanenergy/energy-programs/napee/index.html.

classification of fixed costs provided by Dr. James Bonbright, author of Principles of Public Utility Rates. MGE witness Feingold also supported in his prefiled testimony that the cost of providing service to individual residential and new SGS customers is fixed and the costs do not fluctuate with the volume of gas used by any individual customer.

Residential and new SGS customers fall within a small band of gas usage. Both Residential and SGS customer classes are homogenous in terms of their usage characteristics and each customer is served with the same equipment. The cost of providing a customer with 60 Ccf is the same cost of providing a customer with 160 Ccf. Both low and high volume Residential and SGS customers are connected to the system and they may lower or increase gas usage without causing or imposing new costs. MGE does not change its plant investment and does not change its distribution system equipment to serve the gas needs of any individual residential or new SGS customer.

SFV Rate Design

Public Counsel's proposal to go back to the old volumetric rate design is logically flawed because it is based on the assumption that the Company's cost of serving any individual customer varies with the amount of gas used by the customer. Such a misplaced premise runs afoul of the logic of the evidence on the true nature of the fixed costs of service presented by Staff and MGE. OPC incorrectly asserts: "this [volumetric] rate design assigns costs by recognizing that low volume users cause MGE to incur fewer costs than high volume users because a significant portion of distribution costs are based on demand. (Ex 73, pp. 13-14). Continuing to quote OPC Initial Brief: "the traditional rate design also provides a more accurate assignment of costs to individual consumers by including the direct costs to serve each customer

in the fixed charge, and by assigning the remaining distribution system costs to customer based on the volumetric demand those customers place on the system (Ex 73, p. 12)"

These statements are simply not accurate. Public Counsel takes the practice of allocating demand costs among customer classes – a practice that is done to develop the class cost of service study – and then misapplies the allocation of class demand costs to justify its assignment of 45% of an individual customer's payment for gas service to be collected in a volumetric charge. This means that Public Counsel unreasonably and arbitrarily links 45% of an individual customer's cost of service to demand (the highest amount of gas flowed to the customer) – with no logical or factual connection to the allocation of demand costs by customer class.

The more gas a customer uses – like in a severely cold winter - the more money that customer pays MGE to be connected to the system. This defies common sense. As initially briefed by Staff and the Company, the cost of an individual customer being connected to the system is fixed. In fact, that cost does not change with volume. There is no difference in the individual cost of delivery service, on average, within the Residential and SGS classes.

What is particularly troubling is that Public Counsel did not perform a class cost of service study. Public Counsel offers no support for its idea that the cost of serving individual Residential and SGS customers somehow changes based on gas usage differences between individual customers within the class. But yet, OPC asks individual customers to pay an arbitrary 45% volumetric charge that is to be applied to the amount of gas flowed to the customer. Public Counsel's traditional volumetric rate design unnecessarily exposes the Customer to overpaying the true cost of service.

Weather Risk

Public Counsel's volumetric rate design proposal is troubling for customers looking for truth and certainty in their billed costs because the cost of service is not connected to, and does not depend on the amount of gas flowed to the customer. Public Counsel's proposal to return to the past rate design creates serious cost impacts for Customers who must buy more gas to heat their homes in severely cold winters. If Public Counsel prevails in returning to the past, Customers will overpay for their cost of service and the Company will enjoy a windfall of profits as a result of the severely cold weather. The Commission should protect customers from such a consequence and retain the SFV rate design for individual Residential customers and adopt it for the new SGS class customers.

Public Counsel's affirmation that volumetric rate design favors low-use customers while penalizing high-use customers does not logically lead to OPC's conclusion that the Company and Customer share weather risk: "Low-use customers pay less [non-gas portion of their bill] than high-use customers and Company and customer share the risk associated with weather. (Ex 69, p3)" (OPC Brief p. 2.)

Indeed, both the Customer and the Company will bear the full brunt of weather risk if the Commission adopts OPC's proposal to go back to a volumetric rate design. There is no sharing of benefits and suffering under Public Counsel's proposal to return to the old volumetric rate design.

In warmer than normal winters, customers use less gas and enjoy paying less than their cost of service. But here's the problem. The Company must still recover its cost of service for it to continue providing safe, adequate and reliable service. If customers underpay because of warmer weather, the Company must file another rate increase to protect their shareholders from

further loss. Any short run benefit gained by the customer from underpaying as a result of warm winters will be quickly negated by new rate increase. Putting the Company in the position of not recovering its costs from warmer winters will ultimately cause the customer to pay higher rates. Warmer winters under OPC's proposed volumetric rate design cause Company shareholders to lose in the near term and Customers to lose in the long term.

In colder than normal winters, customers use more gas and suffer by overpaying the Company the cost of serving them. And that's not all. Under Public Counsel's proposal, the customer gets hit with a double shock. First, the customer pays more than the true cost of service because the customer is buying more gas in severe winters. Second, under OPC's proposal, the customer overpays the Company during the winter months – when the customer buys the most gas and can least afford overpaying the Company for cost of service.

Under the current SFV rate design, the Customer pays only for the cost of gas used in severe winters and one fixed delivery charge. Under SFV the Customer need not worry about overpaying the Company a weather-inflated cost of service. SFV rate design provides customers with the certainty of one level fixed gas delivery charge evenly spread throughout the year.

Severe cold winters cause customers to buy more gas, but, unlike what Public Counsel proposes, customers will never overpay their true cost of gas delivery service. And, the Company will never reap a windfall of profits from customers in severe winters under the current SFV rate design.

Appellate Decisions

Public Counsel points to two Courts of Appeals' decisions addressing the SFV rate design. The Southern District upheld MGE's SFV rate design and the Western District reversed and remanded Atmos' SFV rate design. In a footnote OPC inaccurately notes: "The

Commission's Atmos decision *on SFV* was reversed and remanded to the Commission by the Western District Court of Appeals, Case No. WD70219, whereas the Commission's MGE decision on SFV was sustained by the Southern District Court of Appeals, Case No.; SD29278." (OPC Brief p. 3 FN 1)(emphasis added.)

In the Western District's Atmos decision, the Court did not reject the SFV rate design on its merits. The Court, in reviewing the Commission's Report & Order, held the Commission did not support the SFV rate design by competent and substantial evidence in its Order: "Our holding should not be interpreted to discourage the Commission's adoption of alternative rate designs, including an SFV rate design, when supported by competent and substantial evidence." (FN 5, p. 15, Decision of the Western District Court Of Appeals, Case No. WD70219) (emphasis added).

SFV Properly Allocates the Cost of Service Within the Customer Class

Public Counsel ignores the class averaging of individual customer costs of gas service and hinges its volumetric rate design on the misguided notion that an individual customer that uses 160 Ccfs somehow imposes more costs on the distribution system than an individual customer using only 60 Ccfs: "Traditional rate design properly assign costs to more closely match an individual customer's bill with the costs that customer caused." OPC Brief p. 5

As discussed at length in its Initial Brief, the Staff has found no evidence to support the idea that the small volume differences between individual customers either create or cause different costs that are imposed on the gas distribution system.

Discussed above, the Company does not change its investment or distribution system equipment based on the end uses of individual Residential or new SGS customers. The cost of

connection to the system permits an individual customer to use gas for barbecue grills or for space and water heating, or one or all three or more end uses.

At hearing, Public Counsel witness Meisenheimer even agreed that, all things being equal, the cost of providing gas service to an individual customer located 5 miles from the city gate is more than the cost of serving an individual customer only 500 feet from the city gate. (Tr p 436, lns 2-8). Just as telling, Ms Meisenheimer agreed that no party to this case calculated the differences in cost of serving an individual customer 500 feet or 5 miles from the citygate and that no rate design, volumetric or SFV, collects this cost difference between individual customers. (Tr p 436 ln 13 to p 437 ln 3). Ms Meisenheimer averred that tailoring the cost causation factors by individual customers would be an enormously complex process and for that reason is not done. If that was done, each customer would pay an individualized cost of service. However "We don't calculate or we didn't develop rates based on each particular cost component…"(Tr p 439 – 440)

The point here is simple: There is only one cost for each individual customer – the cost of connecting to the distribution system – whether that customer lives 500 feet or 5 miles from the citygate. Individual customer cost causation factors are not separately tracked or billed. To do so would impose an enormous burden on the Company and the ratepayer. Moreover, there is no need to do so because there is no measurable difference in the Company's cost of serving an individual customer using 60 Ccfs and the customer using 160 CCfs. There is only one cost difference: the cost of the gas itself.

Under the SFV rate design, the only variable is the cost of gas used – not the cost of providing delivery service. The Company remains indifferent to the amount of gas sold because

its ability to collect its costs and to earn a return on its investment does not depend on maintaining or increasing its gas sales to its customers.

SFV Permits a Utility to Promote Energy Efficiency

Public Counsel's position that SFV discourages conservation and energy efficiency (OPC Brief p 7) overlooks the inconvenient truth that the cost of gas makes up 70% of the customer's total bill, and the cost of service only about 30%. Under Public Counsel's proposed old volumetric rate design, 55% of the remaining 30% that is billed for delivery service is put into a fixed charge and the remaining 45% of the 30% of the bill is based on an average weather-normalized gas volume. This means the dollars the customer pays for gas delivery varies with the volume of gas purchased.

The current SFV rate design eliminates the cost impact of the variability of the 45% (of the 30% of the total amount) of the customer's bill that is collected by the Company to recover its cost of delivering gas. Under SFV, only the amount of gas used by the customer is variable – or roughly 70% of the total amount of the customer's bill. Because the cost of gas represents nearly 70% or more of a customer's total bill, and because that 70% is the actual cost of gas consumed by the customer, simple logic requires one to accept that an individual customer's end use decisions and consumption behavior may be significantly influenced by the 70% of the total bill that is controlled by the customer. Said another way, a customer's ability to influence or control 70% of the total gas bill provides a significant incentive for the customer to conserve gas energy.

Public Counsel's argument that SFV harms low volume consumers (OPC Brief p. 10) falsely relies on the unproven and unsupported premise that the costs of connecting to the gas distribution system and taking gas delivery service depend on the amount of volume that flows to

the customer. This does not reflect the reality of the fixed nature of the costs incurred by the Company to provide gas delivery service to customers.

As discussed at length above and in the initial Briefs of Staff and MGE, the costs of providing gas delivery service are fixed and do not change with an individual customer's uses of gas at the point of delivery. The Company does not change its distribution equipment or make its investment decisions based on an individual customer's end use decisions. At the meter, the Company measures volume and that amount changes based on the individual consumption behavior and energy choices of the customer.

Public Counsel's argument that SFV harms low income consumers (OPC Brief p 13) seems to rely on two premises: 1) that a low income consumer is better off with a volumetric rate design that front loads gas delivery costs in the winter months and puts the consumer at risk of overpaying cost of delivery in severely cold winters, and 2) that low income consumers will do better under a volumetric rate design because they buy less gas than higher income consumers.

As previously discussed and briefed, the current SFV rate design provides Residential customers the stability of one level fixed gas delivery charge spread across the entire year. It is a charge that does not change with the weather or the amount of gas consumed. Surely there are some low income consumers that buy less gas than others of higher income. But that is not always the case. Some low income consumers have poor housing stock and inefficient furnaces and water heaters that cause them to consume more than the average amount of gas. There is a body of "Low income – High use" customers that would suffer if required to go back to Public Counsel's proposed volumetric rate design because they would overpay their cost of service. Public Counsel's proposal would have the cost of gas delivery service rise with the volume of

gas used – effectively front loading the year's delivery charges into the winter months, when customers can least afford it because that is when they buy most of their gas.

Under SFV, the Company is put in the position of not having to depend on the volume of gas it sells to recover its costs and to earn a return on investment for its shareholders. The interests of the Company are aligned with the interests of Customers. Under the current SFV rate design, the Company has no incentive to sell more gas because its ability to collect its cost of service does not depend on selling more gas. This means the Company can actively promote energy conservation and weatherization programs that directly benefit the Company's low income customers.

Under the current SFV rate design, MGE has become an active partner in encouraging energy conservation. Having the public gas utility support and promote energy conservation and helping customers to reduce their energy footprint make good public policy consistent with the objectives set forth at the state and federal levels of government.

Conclusions

Staff advises the Commission to adopt its cost-of-capital recommendations, which constitute an integrated, carefully-researched and logically-consistent package, supported by corroborating evidence. In contrast, the recommendations offered by both Mr. Hanley on behalf of MGE and Mr. Lawton for OPC are flawed and unreliable.

Continuation of SFV as a means of aligning utility incentives with promotion of cost-effective energy efficiency measures is a strong and positive step for the Commission to take to promote energy efficiency and doing so supports the state and federal energy policies noted above.

Initial Briefs of both the Company and Staff, and certainly the record evidence in this case provide the Commission an abundance of competent and substantial evidence in support of the Straight Fixed Variable rate design that is currently in effect for Residential customers and proposed for new SGS class customers.

TRUE-UP BRIEF

Staff's comments concerning Staff witness David Murray's true-up numbers and reasoning were included in Staff's Initial Brief in this case and will not be repeated here.

True-Up for Depreciation

Staff's opposes two of MGE's true up proposals as untimely and inappropriately raised as true-up items. MGE's objections to Staff's quantification of the Prepaid Pension Asset amount in rate base is untimely, and MGE's attempt to now include the Land Rights account in the depreciation expense computation is untimely, and neither item should not be considered for true-up. While depreciation expense was an item to be trued-up, MGE's should not be authorized to include a depreciation rate for Land Rights when that is not a depreciation account included in the list of covered accounts in the Partial Stipulation and Agreement (Agreement) filed November 5, 2009.

The Agreement signed by MGE was intended to resolve all issues in this proceeding except rate design, energy efficiency programs and cost of capitol. Schedule C to the Agreement, to which MGE agreed, contains the list of accounts to be included for purposes of calculating depreciation expense. MGE never raised the issue of inclusion of Account 374.2 before agreeing to the Agreement, nor did MGE raise the issue in Case No. GE-2010-0030, decided earlier this year, in which specific depreciation accounts were ordered by the Commission. In raising the issue inclusion of Account 374.2 in true-up MGE is attempting to

receive a higher rate increase than what their previous commitment to the Agreement and to it attached Schedule C would permit.

Mr. Noack attempts to rely on inclusion of this account in a schedule to the January 3, 2007 Partial Nonunanimous Stipulation and Agreement Concerning Depreciation in its previous rate case, Case No. GR-2006-0422 (2006 Agreement), as the basis for including this account in True-Up in this case. The 2006 Agreement contains the following provision:

> This Nonuanimous Stipulation and Agreement is being entered into solely for the purpose of settling the identified issue in this case. None of the signatories to this Partial Nonunanimous Stipulation and Agreement shall be deemed to have approved or acquiesced in any ratemaking or procedural principle, including, without limitation, any method of cost determination or cost allocation or revenue related methodology, and none of the signatories shall be prejudiced or bound in any manner by the terms of this Partial Nonunanimous Stipulation and Agreement in this or any other proceeding whether this Partial Nonunanimous Stipulation and Agreement is approved or not, except as otherwise expressly specified herein.

Accordingly Staff did not acquiesce in any ratemaking principle for any other case or agree that any particular account would be included in any subsequent case. In fact, Staff intentionally did not include this account in its depreciation expense proposals in Case No. GE-2010-0030 and in this case. No other major gas utility in this jurisdiction has this account in its authorized depreciation rates. (Tr. 983).

As Mr. Noack admits in the following colloquy with Commissioner Davis, the issue of this account was never raised until True-Up from page 950:

13 BY COMMISSIONER DAVIS:

14 Q Okay. Mr. Noack, let me see if I've got this

15 straight here. You've got two issues with Staff. It's

16 the -- it's the prepaid pension issue and this property --

17 what do we call it? Property -- 374.2, that's property

rights, not necessarily property or --

A Land rights.

Q Okay. And on the -- on the plan -- on the planned rights or whatever they are, Staff's not saying it's a -- an illegitimate expense. They're just saying you shouldn't have waited until the true-up hearing to try to -- to try to sneak this in on them, that you should have raised it in your -- in your case in chief. Is that

951

-- is that a --

A They're saying the asset land rights is not an issue. They're saying that they told MGE early in the case that they were recommending changing the depreciation rate from the authorized rate of 2.09 to zero percent.

Q Okay. And is that anywhere in the direct rebuttal, surrebuttal, or was that an issue in the hearing? Because I'm just not remembering it at this point. I'm going to need a little help here.

A No. It wasn't an issue. It's not really addressed in anybody's testimony. It was -- it first was made evident in the schedule attached to the Order in the waiver case, I believe. It showed up in Staff's accounting exhibits as a zero percent depreciation rate, a

15 change from -- from the authorized rate of 2.09. And then
16 it was also on the schedule -- it was left off of the --
17 the schedule to the Stipulation and Agreement, which
18 listed the depreciation rates.
19 Q Okay. So is it going to be in their -- in their
20 true-up direct accounting schedules and -- . . .
23 A -- zero percent depreciation rate on Schedule 5,
24 page 1.

At no time in this proceeding, including the filing of its direct testimony in August 2009, did the Staff ever include account 374.2, Land Rights, in its list of accounts for which depreciation rates were recommended. (Exhibit 110, Oligschlaeger True-up Rebuttal, pp. 6-7). MGE had the normal opportunity in its rebuttal testimony filed in October 2009 to address this exclusion and bring any disagreement before the Commission in the initial evidentiary hearings. Not only did MGE fail to do this, but in November they subsequently stipulated to a list of accounts to which authorized depreciation rates were to be applied that did not include the Land Rights account. . For this reason alone, the Commission should not include MGE's Land Rights account in the list of authorized depreciation raters for this Company.

Prepaid Pension Asset

Based on the categorizations throughout the prefiled and live testimony offered during the true-up phase of this case, this discussion will separate the true-up Prepaid Pension Asset (PPA) issue into two sub-issues for the Commission's decision: 1) whether for ratemaking purposes the amortization of the PPAs created in MGE Rate Case Nos. GR-2004-0209 and GR-2006-0422 should begin the month after the established PPA balance was "frozen", or the month

after the effective date of the Report and Order in each of the prior cases; and 2) whether the Commission should adopt the Staff's application of a capitalization ratio to the PPA determined in this case, noting that the Staff advanced both the capitalization ratio and the PPA amounts during its case in chief without objection. The Company should not be allowed to "save" issues that are fully apparent in the initial stages of a rate proceeding for last-minute litigation in the true-up phase of the case.

Amortization of PPA

To refrain from duplication, this brief will not set out verbatim the admitted true-up testimony provided by Keith Foster[9] for the Commission's consideration in regard to the start date for PPA amortization. However, it is important to note certain aspects of the testimony that lend to the Commission's adoption of the Staff's approach. The Staff asserts amortization of the PPA should begin when the asset is "frozen", meaning the date by which accumulation of the PPA amount ends. For Case No. GR-2004-0209 ("the 2004 case"), April 30, 2004, the end of the true-up period, froze the accumulation of the PPA in that case. For GR-2006-0422 ("the 2006 case"), the PPA/regulatory asset tracker balance established in that case froze the accumulation of the PPA as of June 30, 2006.

For most cases, once a Company stops accumulating an asset subject to amortization, the amortization of the asset balance should begin immediately. In contrast, for the current case the Company proposes to begin the amortization of the PPA created in the 2004 rate case in October 2004, based on the October 2, 2004 effective date of the Commission's Report and Order. The Company's current proposal is in spite of the well-documented facts and admissions within the live testimony that the Company actually began amortization of the PPA on April 30, 2004 for purposes of the 2006 case. The Company proposes to begin the amortization of the PPA created

[9] Ex. 113, EFIS Item No. 345

as a result of the 2006 rate case in April 2007, based on the March 30, 2007 effective date of the Commission's Report and Order. Considering the rate implications of the diverging treatments, adoption of the Staff's approach prevents the Company from over-recovering amortization expenses through customer rates by its timing of expenses so as to maximize its rate recovery in a rate case proceeding. The implications of this approach become readily apparent by comparing the Staff's valuation of the PPA balance at $14,008,810, compared to the Company's proposed value of $18,430,238 for inclusion in Rate Base.

While the rate implications support the Staff's position, perhaps the nail in the coffin for the Company's argument on the timing issue is that the Staff's position is not only consistent with the past treatment of this issue with the Company, but that the Company's own workpapers filed with its direct testimony initiating the current rate case support the Staff's timing position. The Company's initial PPA workpaper, of which Mr. Foster attached to his true-up rebuttal testimony, details the month-by-month amortization for both the 2004 and 2006 case asset balances beginning with the month following the establishment of each balance in the respective rate case. (See Ex. 113, Page 4, Lines 14-23 and Page 5, Lines 1-7).

Further, during the true-up hearing, the Company's witness, Mr. Noack, identified certain portions of his direct and rebuttal testimony filings in the 2006 case as his own work-product which he caused to be filed. (See True-Up Transcript, Page 940, Lines 21-23, Page 941, Lines 1-25, Page 942, Lines 1-25, and Page 943, Lines 1-25). The following summarizes each of these work-products for the 2006 case filed by Mr. Noack and referenced in the transcript:

1. Direct Testimony of Michael R. Noack (See GR-2006-0422 EFIS Item No. 181, Exhibit 4) Schedule E-5, Prepaid Pension for the twelve months ending December 31, 2005 (the test year period). Line 1 shows a balance at April 30, 2004 of

$7,975,181, which is the amount of the PPA established in the 2004 case. Line 2 shows a monthly amortization of $94,943, which is the monthly rate for amortizing the 2004 case PPA over seven years, or 84 months. Line 3 shows an amortization since GR-2004-0209 of $1,898,853. The $1,898,853 divided by $94,943 is approximately 20, representing the number of months of amortization. The number of months from April 30, 2004 to December 31, 2005 is exactly 20.

2. Updated Direct Testimony of Michael R. Noack (See GR-2006-0422 EFIS Item No. 182, Exhibit 5) Schedule E-5, Prepaid Pension updated through June 30, 2006 (the update period). Like in his direct testimony, Line 1 shows a balance at April 30, 2004 of $7,975,181 for the 2004 PPA and Line 2 shows a monthly amortization of $94,943. Line 3 shows an amortization since GR-2004-0209 of $2,468,508. This number divided by the monthly amortization amount is approximately 26, representing the number of months of amortization. The number of months from April 30, 2004 to June 30, 2006 is exactly 26.

3. Rebuttal Testimony of Michael R. Noack (Case No. GR-2006-0422 EFIS Item No. 183, Exhibit 6) Schedule E-5, Prepaid Pension updated through June 30, 2006 (the update period). This shows no differences in the 2004 PPA calculations than what was included in Mr. Noack's Updated Direct Testimony mentioned in paragraph two (2) above. However, it does establish the new 2006 PPA balance at June 30, 2006 of $4,016,500. That, added to the 2004 PPA balance of $5,506,673 established a total PPA balance of $9,523,173.

The above-identified testimony shows that the Company implemented Staff's PPA timing position for the established 2004 PPA balances in the 2006 case, namely a starting point for the

amortization of April 30, 2004. Taking this one step further, the 2006 case true-up testimony of Mr. Noack (Case No. GR-2006-0422 EFIS Item No. 185, Exhibit 8) Schedule E-5, shows Prepaid Pension updated through October 31, 2006 (the true-up period), as consistent with the three aforementioned testimonies, with a Line 1 balance at April 30, 2004 of $7,975,181 for the 2004 PPA and a monthly amortization of $94,943 at Line 2. Line 3 shows an amortization since GR-2004-0209 of $2,848,279. This number divided by the monthly amortization amount is approximately 30, representing the number of months of amortization. The number of months from April 30, 2004 to October 31, 2006 is exactly 30. This makes the balance of the 2004 PPA at October 31, 2006 $5,126,902. This schedule also includes the new 2006 PPA balance at June 30, 2006 of $4,016,500, which did not change from the schedule in Mr. Noack's testimony as cited above in paragraph three (3). The sum of these two PPA balances gives a total PPA balance as of October 31, 2006 of $9,143,402, which is exactly the value of the PPA in the Staff's true-up direct Accounting Schedule 2-1, filed the same day as the Company's testimony. (See Case No. GR-2006-0422, EFIS Item No. 159).

Though MGE has attempted to portray the Staff's position on this issue as being inconsistent with the treatment afforded the PPA rate base amount in its prior cases, the evidence cited above taken directly from MGE's own filed evidence in its 2006 rate case clearly show that it is MGE's position on the PPA amortization starting point that is at variance with its prior stance.

The Staff has taken a consistent position on the starting point for the PPA amortization in all of its filings in this case, starting with its direct filing on August 21, 2009. Despite being on notice of the Staff's proposed methodology much earlier, the Company chose to reserve the airing of its objection until the final stages of this case. Additionally, the Company signed a

Partial Stipulation and Agreement for the purpose of settling many issues, one being the timing of the PPA amortization. The Stipulation and Agreement signed by the Company and filed on its behalf on November 5, 2009, binds all signatories and non-objecting parties to the agreements within. (See 4 CSR 240-2.115). Legal consequences flow with such agreements and it is up to each signatory to understand its terms and how it affects particular interests prior to signing. After agreeing to certain PPA treatment, the Company cannot have another bite at the apple and challenge the Staff's methodology in the true-up hearing on the chance a better result may occur.

Capitalization Ratio

The Company asserts that the Staff should not assign any part of the difference between the Company's ongoing actual level of pension contributions and the amount of pension costs it recovers in rates to the construction account for capitalization. This position is not only inconsistent with how the Company treats pension costs that are not deferred through a tracker mechanism, but also an untimely objection to the Staff's application of an Operations & Maintenance (O&M) factor to the PPA. Despite the Staff's consistent approach in the calculation of the PPA balance between its direct testimony filing on August 21, 2009, and Mr. Mark Oligschlaeger's true-up direct filing on November 24, 2009, the Company voiced no concern over the Staff's calculation methodology. In fact, the Company signed a Partial Stipulation and Agreement in this case which adopted the Staff's methodology in determining the PPA amount. Mr. Noack testified on behalf of the Company that it was aware of the Staff's methodology prior to signing the November 5, 2009 Partial Stipulation and Agreement, and that the agreement was signed with the intent to be bound by the terms of the document. (See True-Up Transcript, Page 929, Lines 20-25, Page 930, Lines 1-8, Pages 938-939).

In considering that the Company signed the Partial Stipulation and Agreement, the Company has expressed no reason why the Company could not have raised the concerns on the O&M PPA issue prior to the true-up hearing. None of the Company's testimony indicates its position is based on information only available as a result of the Staff's true-up audit. The primary purpose of a true-up audit is to update a utility's financial results using the same methods employed in the initial phase of the case, so it should be considerably rare that new issues arise in this phase of a rate case. To continue with the compressed true-up schedule as a workable process, it is crucial for the Commission to continue to hear contested issues during the case in chief, while disallowing a party to hold a contested issue until the true-up phase.

Rate Case Expense

As with the Amortization issue, to refrain from duplication this brief will not set out verbatim the admitted true-up testimony provided by Keith Foster[10] for the Commission's consideration in regard to rate case expense. However, it is important to note certain aspects of the testimony that lend to the Commission's adoption of the Staff's position. It is Staff's position that the Commission should allow an update of rate case expense for the Company's costs incurred after September 30, 2009, on legal representation and outside consultants since expenses would be incurred for hearings scheduled after that date including the true-up hearings in December 2009.

The Office of Public Counsel ("OPC") was a signatory to the Partial Stipulation and Agreement ("Stipulation") entered into by the parties on November 5, 2009. Commission Rule 4 CSR 240-2.2115 provides that the Stipulation is a binding agreement that the Commission may use to resolve all or any issues of a contested case. Based on Mr. Robertson's testimony, filed on behalf of the OPC, the OPC asserts the Company should not recover estimates for rate case

[10] Ex. 113, EFIS Item No. 345

expenses incurred after the true-up date of September 30, 2009. As noted in Mr. Foster's true-up rebuttal, this position is inconsistent with the unambiguous language of the Stipulation at Page four (4), Item 8.b, which reads "the following items will be part of the true-up in this case in regard to total operating expenses:" "iii. Rate case expense (to be updated through September 30, 2009 and to include an estimate for remainder of the case)."

Staff's position on the inclusion of an estimate for rate case expense after the true-up cut-off date is supported by several theories, with both the Commission's rule on Stipulations and Agreements and interpretation of unambiguous contract language ideas cited directly above. In addition, while the Commission's jurisdiction does not extend to the direct management of a utility, the Commission may allow prudently incurred costs as part of a Company's revenue requirement. While Mr. Robertson's testimony asserts the Company should use more internal resources in its rate case filings, no studies or comparisons are provided by OPC to support its contention that MGE's use of outside resources in conducting its case is imprudent. As part of the case in chief, the Staff reviewed the rate case expense, only disallowing small amounts of expense incurred by outside consultants. The Staff found the costs prudent and in line with the costs of not only other Companies, but the costs in the Company's previous two rate cases. Finally, the Staff has included an allowance for rate case expense incurred after the true-up date in previous cases, a practice that the Commission has previously adopted. Under the theory of retroactive ratemaking, if the Company does not recover an estimate of rate case expense in this case, it will be precluded from recovering the expense in the next rate case.

Respectfully submitted,

/s/ Lera L. Shemwell
Lera L. Shemwell
Missouri Bar #43792

Kevin A. Thompson
Missouri Bar #36288

Robert S. Berlin
Missouri Bar #51709

Jennifer Hernandez
Missouri Bar #59814

Attorneys for the Staff of the
Missouri Public Service Commission
P. O. Box 360
Jefferson City, MO 65102
(573)751-7431(Phone)
(573)751-6514(Phone)
(573) 751-9285 (Fax)
kevin.thompson@psc.mo.gov
bob.berlin@psc.mo.gov
lera.shemwell@psc.mo.gov
jennifer.hernandez@psc.mo.gov

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronically mailed to all counsel of record this 5th day of January 2010.

/s/ Lera L. Shemwell

National Action Plan for Energy Efficiency

A PLAN DEVELOPED BY MORE THAN 50 LEADING ORGANIZATIONS IN PURSUIT OF ENERGY SAVINGS AND ENVIRONMENTAL BENEFITS THROUGH ELECTRIC AND NATURAL GAS ENERGY EFFICIENCY

JULY 2006

The goal is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations.

Improving energy efficiency in our homes, businesses, schools, governments, and industries—which consume more than 70 percent of the natural gas and electricity used in the country—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.

The U.S. Department of Energy and U.S. Environmental Protection Agency facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency.

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, utility regulators, 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 regard to the U.S. energy system. Energy demand continues to grow despite historically high energy prices and mounting concerns over energy security and independence as well as air pollution and global climate change. 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 natural gas and electricity 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 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 underutilized in the nation's energy portfolio.[3] 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 two decades of experience with successful energy efficiency programs, broaden and expand these efforts, and capture the savings that energy efficiency offers. Much more can be achieved 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®. Efficiency of new buildings and those already in place are both important. Many homeowners, businesses, and others in buildings and facilities already standing today—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 (ESCOs), and others. It will require education on the opportunities, review of existing policies, identification of barriers and their solutions, assessment of new technologies, and modification and adoption of policies, as appropriate. Utilities,[4] regulators, and partner organizations need to improve customer access to energy efficiency programs to help them control their own energy costs, provide the funding necessary to

deliver these programs, and examine policies governing energy companies to ensure that these policies facilitate—not impede—cost-effective programs for energy efficiency. Historically, the regulatory structure has rewarded utilities for building infrastructure (e.g., power plants, transmission lines, pipelines) and selling energy, while discouraging energy efficiency, even when the energy-saving measures cost less than constructing new infrastructure.[5] And, it has been difficult to establish the funding necessary to capture the potential benefits that cost-effective energy efficiency offers.

This National Action Plan for Energy Efficiency is a call to action to bring diverse stakeholders together at the national, regional, state, or utility level, as appropriate, and foster the discussions, decision-making, and commitments necessary to take investment in energy efficiency to a new level. The overall goal is to create a sustainable, aggressive national commitment to energy efficiency through gas and electric utilities, utility regulators, and partner organizations.

The Action Plan was developed by a Leadership Group composed of more than 50 leading organizations representing diverse stakeholder perspectives. Based upon the policies, practices, and efforts of many organizations across the country, the Leadership Group offers five recommendations as ways to overcome many of the barriers that have limited greater investment in programs to deliver energy efficiency to customers of electric and gas utilities (Figure ES-1). These recommendations may be pursued through a number of different options, depending upon state and utility circumstances.

As part of the Action Plan, leading organizations are committing to aggressively pursue energy efficiency opportunities in their organizations and assist others who want to increase the use of energy efficiency in their regions. Because greater investment in energy efficiency cannot happen based on the work of one individual or organization alone, the Action Plan is a commitment to bring the appropriate stakeholders together—including utilities, state policy-makers, consumers, consumer advocates, businesses, ESCOs, 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 as follows.

Figure ES-1. National Action Plan for Energy Efficiency Recommendations

- **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, timely, and stable program funding to deliver energy efficiency where cost-effective**.
- **Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.**

The United States Faces Large and Complex Energy Challenges

Our expanding economy, growing population, and rising standard of living all depend on energy services. 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 (EIA, 2006). 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 and limited supplies of natural gas, heating oil, and other fuels. These issues present 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 overburdened in places. Overburdened systems limit the availability of low-cost electricity and fossil fuels, raise energy prices in or near congested areas, and potentially compromise energy system reliability. High fuel prices also contribute to higher electricity prices. In addition, our demand for natural gas to heat our homes, for industrial and business use, and for power generation 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 energy efficiency, new power plants, gas rigs, transmission lines, pipelines, and other infrastructure, notwithstanding the difficulty of building new energy infrastructure in dense urban and suburban areas. In the absence of investments in new or expanded capacity, existing facilities are being stretched to the point where system reliability is steadily eroding, and the ability to import lower cost energy into high-growth load areas is inhibited, potentially limiting economic expansion.

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 burden is particularly harmful for low-income households. Higher energy bills for industry can reduce the nation's economic competitiveness and place U.S. jobs at risk.

Growing energy demand challenges attainment of clean air and other public health and environmental goals. Energy demand continues to grow at the same time that national and state regulations are being implemented to limit the emission of air pollutants, such as sulfur dioxide (SO_2), nitrogen oxides (NO_x), 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 about new investments. New infrastructure is being planned in the face of uncertainties about future energy prices. For example, high natural gas prices and uncertainty about greenhouse gas and other environmental regulations, impede investment decisions on new energy supply options.

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 delivering energy efficiency to their customers. These programs can provide valuable models, upon which more states,

Benefits of Energy Efficiency

Lower energy bills, greater customer control, and greater customer satisfaction. Well-designed energy efficiency programs can provide opportunities for customers of all types to adopt energy savings measures that can improve their comfort and level of service, while reducing their energy bills.[6] These programs can help customers make sound energy use decisions, increase control over their energy bills, and empower them to manage their energy usage. Customers are experiencing savings of 5, 10, 20, or 30 percent, depending upon the customer, program, and average bill. 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. In some states, well-designed energy efficiency programs are saving energy at an average cost of about one-half of the typical cost of new power sources and about one-third of the cost of natural gas supply (EIA, 2006).[7] When integrated into a long-term energy resource plan, energy efficiency programs could help defer investments in new plants and lower the total cost of delivering electricity.

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

Significant energy savings. Well-designed energy efficiency programs are delivering annual energy savings on the order of 1 percent of electricity and natural gas sales.[8] These programs are helping to offset 20 to 50 percent of expected growth in energy demand in some areas without compromising the end users' activities and economic well-being (Nadel et al., 2004; EIA, 2006).

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 can be 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 (Kushler et al., 2005; NYSERDA, 2004). Many energy efficiency programs create construction and installation jobs, with multiplier impacts on 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 (Innovest, 2002).

Energy security. Energy efficiency reduces the level of U.S. per capita energy consumption, thus decreasing the vulnerability of the economy and individual consumers to energy price disruptions from natural disasters and attacks on domestic and international energy supplies and infrastructure. In addition, energy efficiency can be used to reduce the overall system peak demand or the peak demand in targeted load areas with limited generating or transport capability. Reducing peak demand improves system reliability and reduces the potential for unplanned brown-outs or black-outs, which can have large adverse economic consequences.

utilities, and other organizations can build. Experience shows that energy efficiency programs can lower customer energy bills; cost less than, and help defer, new energy infrastructure; provide energy savings to consumers; improve the environment; and spur local economic development (see box on Benefits of Energy Efficiency). Significant opportunities for energy efficiency are likely to continue to be available at low costs in the future. State and regional studies have found that adoption of economically attractive, but as yet untapped, energy efficiency could yield more than 20 percent savings in total electricity demand nationwide by 2025. Depending on the underlying load growth, these savings could help cut load growth by half or more compared to current forecasts (Nadel et al., 2004; SWEEP, 2002; NEEP, 2005; NWPCC, 2005; WGA, 2006). Similarly, savings from direct use of natural gas could provide a 50 percent or greater reduction in natural gas demand growth (Nadel et al., 2004).

Capturing this energy efficiency resource would offer substantial economic and environmental benefits across the country. Widespread application of energy efficiency programs that already exist in some regions could deliver a large part of these potential savings.[9] Extrapolating the results from existing programs to the entire country would yield annual energy bill savings of nearly $20 billion, with net societal benefits of more than $250 billion over the next 10 to 15 years. This scenario could defer the need for 20,000 megawatts (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 (CO_2), 50,000 tons of SO_2, and 40,000 tons of NO_x annually.[10] These significant economic and environmental benefits can be achieved relatively quickly because energy efficiency programs can be developed and implemented within several years.

Additional policies and programs are required to help capture these potential benefits and address our substantial underinvestment in energy efficiency as a nation. An important indicator of this underinvestment is that the level of funding across the country for organized efficiency programs is currently less than $2 billion per year while it would require about 4 times today's funding levels to achieve the economic and environment benefits presented above.[11, 12]

The current underinvestment in energy efficiency is due to a number of well-recognized barriers, including some of the regulatory policies that govern electric and natural gas utilities. These barriers include:

- *Market barriers,* such as the well-known "split-incentive" barrier, which limits home builders' and commercial developers' motivation to invest in energy efficiency for new buildings 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 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, state, and regional planning barriers,* which do not allow energy efficiency to compete with supply-side resources in energy planning.

- *Energy efficiency program barriers,* which limit investment due to lack of knowledge about the most effective and cost-effective energy efficiency program portfolios, programs for overcoming common marketplace barriers to energy efficiency, or available technologies.

While a number of energy efficiency policies and programs contribute to addressing these barriers, such as building codes, appliance standards, and state government leadership programs, organized energy efficiency programs

provide an important opportunity to deliver greater energy efficiency in the homes, buildings, and facilities that already exist today and that will consume the majority of the energy used in these sectors for years to come.

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 (DOE) and the U.S. Environmental Protection Agency (EPA), 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 recognizes that utilities and regulators play critical roles in bringing energy efficiency programs to their communities and that success requires the joint efforts of customers, utilities, regulators, states, and other partner organizations.

Under co-chairs Diane Munns (Member of the Iowa Utilities Board and President of the National Association of Regulatory Utility Commissioners) and Jim Rogers (President and Chief Executive Officer of Duke Energy), the Leadership Group members (see Table ES-1) have developed the National Action Plan for Energy Efficiency Report, 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.
- 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

The National Action Plan for Energy Efficiency is a call to action to utilities, state utility regulators, consumer advocates, consumers, businesses, other state officials, and other stakeholders to create an aggressive, sustainable national commitment to energy efficiency.[1] The Action Plan offers the following recommendations as ways to overcome barriers that have limited greater investment in energy efficiency for customers of electric and gas utilities in many parts of the country. The following recommendations are based on the policies, practices, and efforts of leading organizations across the country. For each recommendation, a number of options are available to be pursued based on regional, state, and utility circumstances (see also Figure ES-2).

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 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. Based on jurisdictional objectives, energy efficiency can be incorporated into resource plans to account for the long-term benefits from energy savings, capacity savings, potential reductions of air pollutants and greenhouse gases, as well as other benefits. The explicit integration of energy efficiency resources into the formalized resource planning processes that exist at regional, state, and utility levels can help establish the rationale for energy efficiency funding levels and for properly valuing and balancing the benefits. In some jurisdictions, these existing planning processes might need to be adapted or even created to meaningfully

incorporate energy efficiency resources into resource planning. Some states have recognized energy efficiency as the resource of first priority due to its broad benefits.

Make a strong, long-term commitment to implement 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. Confidence in long-term stability of the program will help maintain energy efficiency as a dependable resource compared to supply-side resources, deferring or even avoiding the need for other infrastructure investments, and maintain customer awareness and support. Some steps might include assessing the long-term potential for cost-effective energy efficiency within a region (i.e., the energy efficiency that can be delivered cost-effectively through proven programs for each customer class within a planning horizon); examining the role for cutting-edge initiatives and technologies; establishing the cost of supply-side options versus energy efficiency; establishing robust measurement and verification (M&V) procedures; and providing for routine updates to 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 benefits are not fully documented nor recognized by customers, utilities, regulators, or policy-makers. 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 (1) reducing customers' bills over time, (2) fostering financially healthy utilities (e.g., return on equity, earnings per share, and debt coverage ratios unaffected), and (3) 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 policies such as building codes, appliance standards, and tax incentives.

Promote sufficient, timely, 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 have 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 long-term funding to recover program costs and implement the energy efficiency measures that have been demonstrated to be available and cost effective. A number of states are now linking program funding to the achievement of 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 manner that encourages the delivery of energy efficiency as part of a balanced portfolio of supply, demand, and transmission investments. Historically, regulatory policies governing utilities have more commonly compensated utilities for building infrastructure (e.g., power plants, transmission lines, pipelines) and selling energy, while discouraging energy efficiency, even when the energy-saving measures might cost less. Within the existing regulatory processes, utilities, regulators, and stakeholders have a number of opportunities to create the incentives for energy efficiency investments by utilities and customers. A variety of mechanisms have already been used. For example, parties can decide to provide incentives for energy efficiency similar to utility incentives for new infrastructure investments, provide rewards for prudent management of energy efficiency programs, and incorporate energy efficiency as an important area of consideration within rate design. Rate design offers

Figure ES-2. National Action Plan for Energy Efficiency Recommendations & Options

Recognize energy efficiency as a high priority energy resource.

Options to consider:

- Establishing policies to establish energy efficiency as a priority resource.
- Integrating energy efficiency into utility, state, and regional resource planning activities.
- 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 implement cost-effective energy efficiency as a resource.

Options to consider:

- Establishing appropriate cost-effectiveness tests for a portfolio of programs to reflect the long-term benefits of energy efficiency.
- Establishing the potential for long-term, cost-effective energy efficiency savings by customer class through proven programs, innovative initiatives, and cutting-edge technologies.
- Establishing funding requirements for delivering long-term, cost-effective energy efficiency.
- Developing long-term energy saving goals as part of energy planning processes.
- Developing robust measurement and verification (M&V) procedures.
- Designating which organization(s) is responsible for administering the energy efficiency programs.
- Providing for frequent updates to energy resource plans to accommodate new information and technology.

Broadly communicate the benefits of and opportunities for energy efficiency.

Options to consider:

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

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

Options to consider:

- Deciding on and committing to a consistent way for program administrators to recover energy efficiency costs in a timely manner.
- Establishing funding mechanisms for energy efficiency from among the available options such as revenue requirement or resource procurement funding, system benefits charges, rate-basing, shared-savings, incentive mechanisms, etc.
- Establishing funding for multi-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.

Options to consider:

- Addressing the typical utility throughput incentive and removing other regulatory and management disincentives to energy efficiency.
- Providing utility 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 by not increasing costs as customers consume more electricity or natural gas.
- Adopting rate designs that encourage energy efficiency by considering the unique characteristics of each customer class and including partnering tariffs with other mechanisms that encourage energy efficiency, such as benefit sharing programs and on-bill financing.

opportunities to encourage customers to invest in efficiency where they find it to be cost effective and participate in new programs that provide innovative technologies (e.g., smart meters) to help customers control their energy costs.

National Action Plan for 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 have been developed:

National Action Plan for Energy Efficiency Report. This report details the key barriers to energy efficiency in resource planning, utility incentive 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 simplified framework to demonstrate 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. The calculator can be adapted and applied to other scenarios.

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. 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 be drawn from utilities, state utility regulators, state energy offices, third-party energy efficiency program administrators, consumer advocacy organizations, ESCOs, and others. These resources will be available in fall 2006.

DOE and EPA are continuing to facilitate the work of the Leadership Group and the National Action Plan for Energy Efficiency. During winter 2006–2007, the Leadership Group plans to report on its progress and identify next steps for the Action Plan.

Table ES-1. Members of the National Action Plan for Energy Efficiency

Co-Chairs

Diane Munns	Member President	Iowa Utilities Board 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
William Flynn	Chairman	New York State Public Service Commission
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 Haynes	Executive Vice President, Supply Technologies, Renewables, and Demand Side Planning	Southern Company
Mary Healey	Consumer Counsel for the State of Connecticut	Connecticut Consumer Counsel
Helen Howes	Vice President, Environment, Health and Safety	Exelon
Chris James	Air Director	Connecticut Department of Environmental Protection
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 Migden-Ostrander	Consumers' Counsel	Office of the Ohio 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, National Property Management	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 Interconnection
Jim West	Manager of *energy right* & Green Power Switch	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	President	National Association of Energy Service Companies
Chuck Gray	Executive Director	National Association of Regulatory Utility Commissioners
John Holt	Senior Manager of Generation and Fuel	National Rural Electric Cooperative Association
Joseph Mattingly	Vice President, Secretary and General Counsel	Gas Appliance Manufacturers Association
Kenneth Mentzer	President and Chief Executive Officer	North American Insulation Manufacturers Association
Christina Mudd	Executive Director	National Council on Electricity Policy
Ellen Petrill	Director, Public/Private Partnerships	Electric Power Research Institute
Alan Richardson	President and Chief Executive Officer	American Public Power Association
Steve Rosenstock	Manager, Energy Solutions	Edison Electric Institute
Diane Shea	Executive Director	National Association of State Energy Officials
Rick Tempchin	Director, Retail Distribution Policy	Edison Electric Institute
Mark Wolfe	Executive Director	Energy Programs Consortium

Notes

1 Energy efficiency refers to using less energy to provide the same or improved level of service to the energy consumer 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 only on electricity and natural gas systems.

3 This effort is focused on energy efficiency for regulated energy forms. Energy efficiency for unregulated energy forms, such as 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.

4 A utility is broadly defined as an organization that delivers electric and gas utility services to end users, including, but not limited to, investor-owned, publicly-owned, cooperatively-owned, and third-party energy efficiency utilities.

5 Many energy efficiency programs have an average life cycle cost of $0.03/kilowatt-hour (kWh) saved, which is 50 to 75 percent of the typical cost of new power sources (ACEEE, 2004; EIA, 2006). The cost of energy efficiency programs varies by program and can include higher cost programs and options with lower costs to a utility such as modifying rate designs.

6 See Chapter 6: Energy Efficiency Program Best Practices for more information on leading programs.

7 Data refer to EIA 2006 new power costs and gas prices in 2015 compared to electric and gas program costs based on leading energy efficiency programs, many of which are discussed in Chapter 6: Energy Efficiency Program Best Practices.

8 Based on leading energy efficiency programs, many of which are discussed in Chapter 6: Energy Efficiency Program Best Practices.

9 These estimates are based on assumptions of average program spending levels by utilities or other program administrators, with conservatively high numbers for the cost of energy efficiency programs. See highlights of some of these programs in Chapter 6: Energy Efficiency Program Best Practices, Tables 6-1 and 6-2.

10 These economic and environmental savings estimates are extrapolations of the results from regional program to a national scope. Actual savings at the regional level vary based on a number of factors. For these estimates, 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. These assumptions vary by region based upon situation-specific variables. Reductions in capped emissions might reduce the cost of compliance.

11 This estimate of the funding required assumes 2 percent of revenues across electric utilities and 0.5 percent 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 million British thermal units (MMBtu), which are higher than the costs of many of today's programs.

12 This estimate is provided as an indicator of underinvestment and is not intended to establish a national funding target. Appropriate funding levels for programs should be established at the regional, state, or utility level. In addition, energy efficiency investments by customers, businesses, industry, and government also contribute to the larger economic and environment benefits of energy efficiency.

13 One example of energy efficiency's ability to meet load growth is the Northwest Power Planning Council's Fifth Power Plan which uses energy conservation and efficiency to meet a targeted 700 MW of forecasted capacity between 2005 and 2009 (NWPCC, 2005).

References

American Council for an Energy-Efficient Economy [ACEEE] (2004). *A Federal System Benefits Fund: Assisting States to Establish Energy Efficiency and Other System Benefit Programs*. Washington, DC.

Innovest Strategic Value Advisors [Innovest] (2002, October). *Energy Management & Investor Returns: The Real Estate Sector*.

Kushler, M., Ph.D., York, D., Ph.D., and Witte, P., M.A. (2005, January). *Examining the Potential for Energy Efficiency to Help Address the Natural Gas Crisis in the Midwest*. Washington, DC: American Council for an Energy-Efficient Economy [ACEEE].

Nadel, S., Shipley, A., and Elliott, R.N. (2004). *The Technical, Economic and Achievable Potential for Energy Efficiency in the U.S.—A Meta-Analysis of Recent Studies*. Washington, DC: American Council for an Energy-Efficient Economy [ACEEE].

New York State Energy Research and Development Authority [NYSERDA] (2004, May). *New York Energy $mart[SM] Program Evaluation and Status Report, Report to the System Benefits Charge Advisory Group, Final Report*. Albany.

Northeast Energy Efficiency Partnerships [NEEP] (2005, May). *Economically Achievable Energy Efficiency Potential in New England*. Optimal Energy.

Northwest Power and Conservation Council [NWPCC] (2005, May). *The 5th Northwest Electric Power and Conservation Plan*. <http://www.nwcouncil.org/energy/powerplan/default.htm>

Southwest Energy Efficiency Project [SWEEP] (2002, November). *The New Mother Lode: The Potential for More Efficient Electricity Use in the Southwest*. Report for the Hewlett Foundation Energy Series.

U.S. Energy Information Administration [EIA] (2006). *Annual Energy Outlook 2006*. Washington, DC.

Western Governors' Association [WGA] (2006, June). *Clean Energy, a Strong Economy and a Healthy Environment*. A Report of the Clean and Diversified Energy Advisory Committee.

For More Information

Stacy Angel
U.S. Environmental Protection Agency
Office of Air and Radiation
Climate Protection Partnerships Division
Tel: (202) 343-9606
E-mail: angel.stacy@epa.gov

Larry Mansueti
U.S. Department of Energy
Office of Electricity Delivery and Energy Reliability
Tel: (202) 586-2588
E-mail: lawrence.mansueti@hq.doe.gov

Or visit *www.epa.gov/cleanenergy/eeactionplan*

Funding and printing for this report was provided by the U.S. Department of Energy and U.S. Environmental Protection Agency in their capacity as co-sponsors for the National Action Plan for Energy Efficiency.

Recycled/Recyclable—Printed with Vegetable Oil Based Inks on 100% (Minimum 50% postconsumer) Recycled Paper