NorthWestern Energy

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June 19, 2009

Patty VanGerpen
Executive Director
SD Public Utilities Commission
500 E. Capitol
Pierre, SD 57501

RE: Docket EL08-028 – In the Matter of the Consideration of the New PURPA Standards

Dear Patty:

NorthWestern Corporation, d.b.a. NorthWestern Energy (NWE), appreciates this opportunity to submit comments in response to questions received from Staff regarding Docket EL08-028. Attached are NWE's responses for the Commission's consideration.

I also request that any further written communications directed to NorthWestern Energy regarding this docket proceeding also include Sara Dannen, Corporate Counsel, at the above address, in addition to myself.

Please do not hesitate to contact me with any questions you or Staff may have regarding the responses presented by NorthWestern Energy in the attached document. We look forward to further opportunity to work with Staff and the Commission as it completes its consideration of the new PURPA standards presented in the Energy Independence and Security Act of 2007.

Thank you.

Sincerely,

Pamela A. Bonrud
Director – SD/NE Government and Regulatory Affairs

Cc: Sara Dannen, Corporate Counsel
Patrick Corcoran, VP – Government and Regulatory Affairs

Integrated Resource Planning (IRP)

1. *Are you currently required to go through an IRP process in any of your regulated jurisdictions?*
   Yes

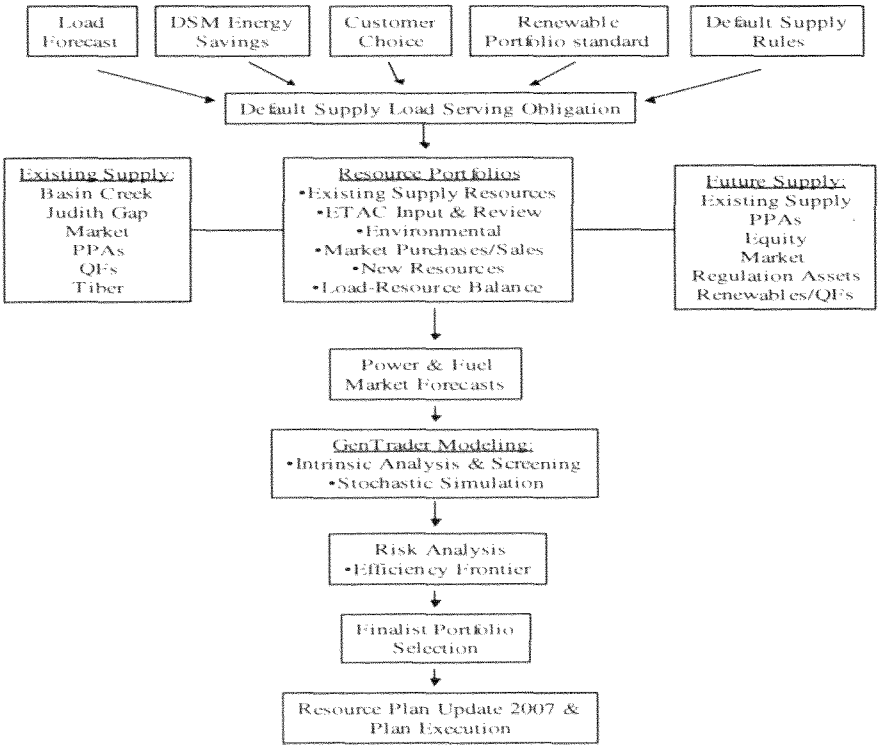
   If yes:

   a. *Which jurisdiction(s)?*
      NorthWestern Energy in Montana is required under statute and Montana Public Service Commission ("MPSC") Administrative Rules (38.5.8226) to follow a process similar to IRP.

   b. *How long has this been required?*
      The Rules have been in effect since 1992.

   c. *Explain the input process.*
      NorthWestern Energy develops a Plan that has as its primary goals the procurement of an adequate, reliable supply of electricity that is stable and reasonably priced at the lowest long-term total cost. The Plan sets forth an action plan that describes future activities the utility proposes to undertake to best serve supply customers. Upon submittal of the Plan to the MPSC, it receives MPSC and stakeholder review and the MPSC also provides comments to the utility on the Plan, which further guide utility actions.

Resource Procurement Planning Process



The figure above provides a conceptual diagram of the process undertaken to develop the Plan. The basic analytical steps involved in developing this Plan are:

- Forecasting the load to be served over the next twenty years;
- Decreasing the forecast by the estimated energy conservation for the Demand Side Management (DSM) planning horizon;
- Developing a market price forecast for electricity, based in part on a market forecast for natural gas – modified to reflect the effects of the imposition of a future CO2 tax;
- Accumulating a data set of resources and their corresponding characteristics including costs and operating functions that are used as model inputs;
- Developing low, medium, and high CO2 tax scenarios;
- Creating various portfolios of resources (to represent the feasible resources that NorthWestern could pursue);
- Identifying and subsequently analyzing key risks to the supply portfolio including electricity and natural gas price risk and carbon tax risk;
- Analyzing the costs of the various portfolios and selecting the best options (considering the costs and major risk factors inherent in each);
- Selecting and performing a qualitative analysis of the best portfolios; and,
- Creating an Action Plan with items for NorthWestern to undertake over the next three years and beyond.

d. *How often is the plan revised/reviewed?*
A new Plan, per MPSC Rules, is developed every other year.

e. *Historically, have you followed the resulting plans?*
The Plan provides guidance and identifies risks for various resource acquisition paths. Thus it provides the MPSC and stakeholders a view on how the utility intends to proceed. The Plan coupled with MPSC comments, sets a basis or framework for evaluating NorthWestern Energy's procurement actions and provides expectations of cost recovery so long as the utility's actions are consistent with the Plan and the Commission's comments. That said, the Plan is not intended to set in stone the utility's actions. The planning for and the acquisition of resources are very dynamic, in some cases over a very short time frame. When actions do deviate from the Plan, those actions are fully documented including an explanation of why such deviations occurred.

f. *Explain how energy efficiency resources have been integrated into this process.*
MPSC Rules require the development of energy efficiency as part of the portfolio. In this process NorthWestern Energy first assesses an achievable potential for cost-effective energy efficiency measures, compared to the avoided cost of the portfolio. Measures with a minimum benefit/cost ratio using a total resource cost test are selected for further analysis to determine a total achievable cost-effective energy efficiency potential, and to develop annual program targets and budgets. The estimated achievable energy efficiency quantity, over the 20-year planning horizon, is then deducted from the yearly forecast of electricity demand.

g. *Please provide an analysis of the costs and benefits associated with the current process.*
The planning effort results in a rigorous analytical process that involves stakeholders early and continuously throughout the effort. This is beneficial because at the time the Plan is final, there is a better understanding by all stakeholders and the Commission of key risks and the value of those risks that the utility plans on incorporating into its future evaluations of resource alternatives. This greatly narrows the number of issues to be debated at the time a resource is actually brought to the Commission for prudent consideration.

The IRP process is less suited for laying out a specific list of resources that the utility commits to purchasing over the three-year action plan. Actual resource acquisition

opportunities frequently differ from those set forth in the planning document. Rather, the preferred resources in the Plan are more indicative of the characteristics that the utility believes best meet the goals of the IRP – that is the inputs and their values that the utility uses in evaluating potential resources are what are most helpful.

2. *Were you previously required to go through an IRP process in another jurisdiction that no longer requires it?*
   An IRP was done in SD in 1995 by NorthWestern Energy but we are not sure if it was required by the PUC or if we did it on our own volition. It was completed by an outside consultant and has not been formally updated. NorthWestern does conduct a periodic internal review for planning purposes related to generation needs.

   If yes:
   a. Which jurisdiction(s)?
   b. Explain the input process.
   c. Historically, how close did you follow the resulting plans?
   d. How often was the plan revised/reviewed?
   e. Explain how energy efficiency resources were integrated into this process.
   f. Please provide an analysis of the costs and benefits associated with the current process.
   g. Why was the IRP discontinued?
   h. How did this decision impact your operations?

3. *Should the commission adopt an IRP process? Explain.*
   No. It is NorthWestern Energy's opinion that requiring smaller utilities to undertake a required or mandated IRP process by the PUC is difficult to justify from a cost effectiveness point. NorthWestern believes that the current process we use in SD works very well and gives the PUC a good understanding of what the utility is doing in regards to generation resource planning. The ten-year plan that is updated on a biannual basis is cost effective and easy to manage from the utility perspective. We have also effectively used regular, informal personal updates with staff and commissioners as another mechanism for keeping the Commission apprised of our plans for generation resource integration.

4. *If the commission adopted an IRP process in South Dakota:*

   a. *How should energy efficiency resources be integrated?*
      NWE is open to adding a section to our current ten-year plan document, with biannual updates, on how its potential DSM will benefit generation resource needs.

   b. *How often should the plan be revised/reviewed?*
      Once every ten years is sufficient.

   c. *How would this benefit you?*
      From the perspective of what it costs the utility to undergo a mandated IRP process, we cannot see a benefit to the utility, PUC, or our customers.

   d. *How would you be negatively affected?*
      Again, from NorthWestern's perspective, a mandated IRP process would be expensive and would not give us any greater benefit to how we adjust our generation resources through planning than what we currently do at this time.

Rate Design Modifications to Promote Energy Efficiency Investments

(Please note: In this section, the terms "Demand Side Management (DSM) programs" and "energy efficiency programs" are used interchangeably.)

1. *If a federal or state energy efficiency resource standard is established, what is the best way to meet the target? Or will several programs need to be employed? If so, what are those programs?*

Regulators must accept certain realities about energy efficiency. Efficient energy use and conservation usually rely on some kind of voluntary customer choice or behavior, and there are numerous and, in many cases, rather significant barriers that customers face (either real or perceived) to energy efficiency. Consumers are often reluctant to take even simple steps to save energy. And, despite theorizing by economists about the effectiveness of proper price signals that will surely induce energy efficient behavior, past utility experience with DSM programs tells us this is not always true. Consumers cannot be forced into energy efficient choices or behaviors if they are unwilling or unable for a variety of reasons. The only exception to this generalization is where building/appliance codes and standards result in limiting consumer choices to only energy efficient products and facilities.

There likely is no single "best" way to meet the target. It is clear from experience that several different kinds of DSM programs are needed to make substantial progress toward any kind of goals. There are numerous energy end uses that can be improved, consumer behavior that can be modified through information and education, building modifications that are possible, and other factors that affect the rate and ultimate levels of DSM that can be acquired. Consumers respond to different types of incentives, and some consumers do not respond to any kinds of incentives. Consumers have differing levels of interest and motivation with respect to energy efficiency and they have differing amounts of discretionary capital to spend on DSM projects. There are a myriad of obstacles and barriers to DSM and there is simply not a "one-size-fits-all" program or approach to DSM that will work.

A portfolio of DSM programs is the best approach. Because all customers will fund DSM programs, this portfolio should include program offerings for all customer groups (if possible) and should have an individual incentive/rebate program for each major energy end use or major DSM opportunity. Examples of this are specific programs for:

- Efficient lighting
- Efficient space heating/cooling equipment
- Improved building thermal shell (insulation, air sealing, etc.) in both existing construction and new construction
- Electric motors
- Major energy using appliances (refrigerators, laundry, dishwashers, etc.)
- Information, Communications and Entertainment (ICE) equipment
- Other as cost-effective and appropriate.

In addition to rebates and cash incentives, low-interest or no-interest financing options should be considered for offering if it becomes clear that access to capital is a major barrier to DSM.

The portfolio should also include a customer education component. This most often takes one or two forms (preferably both):

- Home/business energy audit
- Education/Outreach – a steady stream of information through all major forms of media (radio, print, TV, web, etc.) that seeks to educate about energy efficient and available programs, and motivate consumers into action.

The utility should not be viewed as solely responsible for acquiring DSM. Government buildings and facilities are major energy users, and government's responsibility should include informing citizens about the benefits of energy efficiency, building and operating its own portfolio of DSM programs, and making its buildings and facilities as efficient as possible (within cost-effective limits).

Private firms can also help the effort. Programs can be designed and offered either by government or the utility to solicit bids for incremental amounts of DSM resources that the private firms are then responsible to develop and deliver according to contractual terms and conditions.

These considerations and realities matter most when regulators make decisions about DSM goals that are reasonable and achievable, and make judgments about progress toward meeting those goals. The DSM potential and the ability to successfully capture it in a cost-effective manner, whether through utility DSM programs or efforts by other entities, is not entirely within the control of regulators, planners and/or DSM program operators.

2. *Some states have created an independent organization, funded through a charge to customers based on a percentage of sales, which develops and monitors energy efficiency programs. What are your thoughts on an independent organization administering energy efficiency programs? What percent of sales should customers contribute if that benchmark is employed? How would large differences among utilities' sales affect programs? Should there be a baseline standard for programs and then an "adder" based on percentage of revenue?*

Ratepayer-funded energy efficiency program administration falls into two general categories: utility administration and non-utility administration. Both utility and non-utility administrative structures—and in some cases, a combination—are presently being implemented in several states and regions. Utility administration is the most common arrangement, with most states employing a regulatory body that oversees the utilities administering the programs. Non-utility administration is less common, and may include government organizations, such as those in New York and Wisconsin, as well as independent third-party organizations, such as those found in Oregon and Vermont. Each administrative structure has advantages and disadvantages when addressing the fundamental goals of any energy efficiency program, such as:

- Compatibility with public policy goals
- Effectiveness of incentive structures
- Ability to realize economies of scale and scope
- Contribution to the development of energy efficiency service sector and markets.

Utility Administration

Utilities are well suited to administer energy efficiency programs. The utilities maintain close relationships with their customers and have detailed knowledge of their energy consumption patterns. Energy efficiency discussions can flow as natural extensions through current relationships, and the utility is well-positioned to address not only the energy consumption needs of its customers, but their energy conservation options as well. Utility administration also allows easy incorporation of energy efficiency resources into integrated resource plans. The utility can consider energy efficiency alongside traditional supply-side resources and optimize resource allocation by acquiring the least-cost resources. The same regulatory bodies currently supervising utilities can then extend their supervision to energy efficiency when it is considered a resource.

Utility administration also helps shield the ratepayer's funds from being used for other purposes by state governments. Funds collected for DSM programs—whether collected prospectively through a system benefits charge or retrospectively through cost recovery

mechanisms—can be directly deployed in energy efficiency program implementation. In states with non-utility administration, such as Maine and Wisconsin, funds held in state accounts have been reapportioned for general state needs. Utility administration does not guarantee that the funds will remain safe, but should provide a greater shield than alternatives. Utility administration does not alter the throughput disincentive to DSM implementation inherent in most utility ratemaking practices.

Non-Utility Administration

Non-utility administration also allows a single independent or state organization to run a consistent set of programs and deliver a uniform message statewide. Utility-administration can result in a patchwork of programs and messages in states with several utilities, and non-utility administration offers a way around this problem. Non-utility administration also allows the state to create a single organization that can develop energy efficiency expertise and attract personnel specifically interested in this purpose, unlike utility administration that can cast employees in roles they did not originally intend to fill. Non-utility administration suffers from several key weaknesses. Although non-utility administration avoids the direct throughput disincentive, it does not remove the disincentive for the utilities. Utilities retain an incentive in increased sales, which may have a tendency to counterbalance energy efficiency efforts, which could possibly diminish the results achievable under non-utility administration. The utilities would have no incentive to introduce their customers to an independent energy efficiency organization, which would have to develop its own customer and market connections, rather than simply leveraging existing mature relationships.

In the area of planning, non-utility administration—by removing energy efficiency from the utility's purview—creates a disconnect in the integrated resource planning process, which seeks to optimize the balance of supply-side and demand-side resources. If non-utility administrators conduct demand-side planning in isolation of or in parallel to utility resource planning, then optimal resource allocation can be expected to suffer and accountabilities may be diminished. California's regulators found that requiring the IOUs to accept forecasts and resource projections from a third-party administrator, as proposed by the ORA/TURN Coalition, is incompatible with an integrated resource planning approach that places full accountability and responsibility with the IOUs themselves.

Non-utility administration also typically requires a transfer of funds from the system benefits charge collected by the utility to the third-party organization. Such a transfer, in many states, may require statutory authority, which may cause unnecessary delays in the availability of funding of programs. In addition, funds are at risk of being poached by state governments during the interim period between collection and distribution.

NorthWestern believes the general rationale for utility administration to be compelling, particularly the reasoning that integrated resource forecasting, planning, and implementation responsibilities and accountabilities reside clearly in the hands of a utility entity, with public oversight through an established regulator.

Funding an Independent Organization through a Percentage of Sales

The funding that customers should contribute to the independent administrator's budget depends on the cost of the chosen energy efficiency programs. The cost to operate energy efficiency programs depends in large part on the quantity of energy efficiency (kilowatt hours of savings for example) to be acquired and on the schedule over which it is to be acquired (kilowatt hours acquired by year for example). In general, the more energy efficiency one wants to acquire the more expensive the programs will be and also, the more quickly one wants to acquire the energy efficiency, the more expensive the programs will be.

Greater quantities of energy efficiency require that more end uses be targeted for efficiency

improvements through the programs. Certain energy efficiency technologies are less expensive relative to the energy they save than others. For example, a compact fluorescent lamp is relatively inexpensive, while a window replacement is far more costly relative to the energy it will save. As a result, customer economics associated with various technologies differ. More expensive technologies, like a window replacement, will require a greater customer incentive than will a compact fluorescent light bulb, in order to make the customer economics compelling. Generally, the greater the overall quantity of DSM desired, the greater the number of end uses that must be targeted for efficiency upgrades and the greater the average cost of the measures relative to the energy they save. It follows that average customer incentives are also greater in such circumstances; therefore, the greater the incentives, the more costly the programs.

The schedule on which one desires to acquire energy efficiency also impacts cost. Establishing and meeting energy efficiency targets on a more aggressive schedule is more expensive. In order to encourage a greater number of customers to participate in the programs more quickly, a more focused promotional effort and/or relatively higher average incentives will likely be required.

Unless energy efficiency targets and acquisition schedule are first defined, it is not practical to attempt to determine the level of funding required.

So long as funding is based on percentage of sales, large differences among utilities' sales should not materially affect implementation of DSM programs. Utilities with small sales would have relatively fewer customers and therefore, programs should be less.

3. *What alternative mechanisms besides decoupling would promote energy efficiency investment? How do they compare to decoupling?*

Decoupling does not promote energy efficiency in the sense of providing incentives to utilities. Rather, decoupling severs the link between a utility's revenues and volume/quantity based sales such that decreases in sales due to DSM programs do not reduce utility margins. In theory, the utility is indifferent to pursuing DSM under decoupling. Another way to say this is that decoupling removes the disincentive for the utility to pursue DSM. Lost Revenue Adjustment Mechanisms (LRAM) attempt to make utilities indifferent to pursuing DSM through direct calculation of the revenues that are lost due to DSM program savings and a mechanism designed to enable collection of the calculated lost revenues. NorthWestern uses an LRAM approved by the Montana Public Service Commission in conjunction with its energy efficiency programs in Montana.

Higher fixed delivery service or customer charges also reduce the disincentive to implementing DSM programs. At the extreme, if all revenues were collected through a fixed monthly charge, the utility would be indifferent to pursuing DSM programs because revenues would not decrease as the result of customer reducing their energy usage.

Several incentives may be used to encourage utilities to promote energy efficiency investments. Examples of possible incentives are briefly described below.

A. Replace rate-base earnings with retail sales margins for energy efficiency services.
B. Add "virtual" rate base (capitalize DSM investments). Consider extra Return on Equity (ROE) on the DSM capital investment (ROE "kicker").
C. Share the DSM program related cost savings between ratepayers and shareholders. This cost savings is equal to the difference between supply-side resource costs and the cost of energy savings associated with DSM programs (program net benefits).
D. Adjust ROE and/or net utility income based on the utility achieving DSM targets.
E. Unbundle supply-side energy and energy efficiency and either sell new energy services with a cost markup or permit customers to sell energy efficiency to the utility.

F. Adopt performance-based "management fees" based on a percentage of total program costs and performance.

4. *Energy efficiency can occur in a number of ways including utility programs and improvements made solely by customers. How should credit be given appropriately for efficiency improvements? How can such credit be determined? Without such a determination can the commission treat all parties fairly?*
Improvements solely made by customers with no participation in utility DSM programs cannot be tracked. It can be inferred from load forecasts compared to recorded metered sales, but it cannot be specifically identified.

   If a utility DSM program "touches" customers' actions that result in energy savings, the utility DSM program should be credited with acquiring the energy savings. That means, if utility incentives and rebates are claimed, they count toward the utility DSM program. Also, if the utility gives away free DSM measures (CFLs, weatherization kits, etc.) they also count and should be credited to the utility DSM program. Finally, customer education (through home energy audits, fairs, distribution literature, various other marketing and informational campaigns) that creates energy savings should also be counted toward the utility DSM program success. The effects of customer education are determined through regular independent program evaluations (see item 6 below).

   The gross "reported" energy savings from utility program activity is then properly reduced through gross-to-net adjustment factors that are determined by the independent evaluation firm. These adjustment factors reduce gross energy savings (by about 15%) and account for various things like free riders, free drivers, take-back, change of building use, etc.

5. *What forum should be used to adjust rates for new consumption patterns?*
NWE believes that rate adjustments should ultimately be proposed, reviewed and approved in contested case proceedings before the Commission. Such proceedings ensure due process for all interested parties and result in the creation of a robust record upon which the Commission can make informed decisions. Collaboration/negotiations between interested parties prior to or, when they can be accommodated, during such proceedings may be valuable in the sense that they can potentially better define and perhaps narrow the issues before the Commission.

   In any event, to the extent a utility feels that consumption patterns have changed, such that it is not receiving expected revenues, it has the opportunity to make an application before the Commission to propose rate adjustments.

6. *What methods can be used to determine if a sales decline was due to energy efficiency or other possible factors (weather, economy, loss of large customer, etc.)?*
This can be done through regular DSM program evaluations by a qualified independent firm that specializes in this type of work. This is standard practice in the DSM industry and there are many firms offering this service. The methods used typically apply the following techniques to statistically valid samples of past program participants and individual DSM projects of representative size and scope:
   - Surveys and interviews;
   - On-site inspections;
   - Engineering calculations;
   - Sub-metering;
   - Computer model simulations (base case/change case);
   - Review and verification of utility program records, assumptions and calculation methodologies; and,

- Normalization for exogenous variables (weather, economy, loss of large customer, etc.).

Comprehensive and detailed DSM program records and documentation are critical to enabling this evaluation approach to produce meaningful results.

7. *Can a decoupled rate promote electricity usage efficiency, or perhaps reduce electricity usage through a transfer of energy usage from the customer to another entity, or from fuel switching? In effect, could rate design induce greater overall energy usage even through electricity usage is reduced?*

As discussed in 3 above, decoupling does not provide incentives to utilities to encourage energy efficiency. Rates can be designed to encourage customers to adopt energy efficiency measures. While fuel switching from electric to natural gas space heat, for example, would reduce electricity usage it would also result in greater energy usage at the customer's meter. However, because there is also inefficiency associated with conversion of fuel to electricity at the generation plant, there may not be an increase in overall energy usage.

8. *Describe in detail how the Commission should proceed in reviewing (i) through (vi) below, including any options for doing so. What questions should be asked in each category to obtain information which should be part of the Commission's consideration? Be specific for each category.*

NorthWestern Energy's suggestion is that the Commission should evaluate these policy options on an individual basis in relation to DSM or rate case filings made by rate-regulated utilities in South Dakota. This would allow the Commission and affected utilities to decide how the various policies may be best suited or not suited for the company and its customer needs.

(B) POLICY OPTIONS. In complying with subparagraph (A), each State regulatory authority and each nonregulated utility shall consider:

i. removing the throughput incentive and other regulatory and management disincentives to energy efficiency;

LRAM

What is the preferred approach to remove the throughput incentive - decoupling, LRAM (as described briefly in 3 above), or some other mechanism? Will evaluation of DSM program results be accomplished by third parties and robust enough to support an LRAM? Or, would formal evaluation of DSM programs occur anyway?

Decoupling

Number of customers is commonly used to recouple. Is number of customers appropriate for utilities in SD? Should a pilot decoupling program be considered as opposed to blanket adoption of decoupling? Should decoupling apply to all rate classes? Will decoupling cause significant year-to-year variances between allowed versus actual revenues that result in unacceptable rate adjustments? Should the variance be tracked and collected/returned on a class-by-class basis? Will decoupling cause utilities to seek rate adjustments less often, all else equal?

ii. providing utility incentives for the successful management of energy efficiency programs;

Refer to Staff's question 3 above for a discussion of potential incentive mechanisms.

For purposes of providing incentives, how is "success" defined? At what level do incentives become significant to substantially impact management decisions?

iii. including the impact on adoption of energy efficiency as one of the goals of retail rate design, recognizing that energy efficiency must be balanced with other objectives;

How should the following Bonbright objectives of sound rate design proposals be considered, weighted and balanced with the desire to encourage energy efficiency through rate design?

- What are the related practical attributes of simplicity, understandability, public acceptability and feasibility of application?
- Freedom from controversies as to proper interpretation
- Effectiveness in yielding total revenue requirements under a fair-return standard
- Revenue stability from year-to- year
- Stability of the rates themselves, with a minimum of unexpected changes seriously adverse to existing customers
- Fairness of the specific rates in the appointment of total cost of service among the different customers
- Avoidance of "undue discrimination" in rate relationships
- Efficiency of the rate class and rate structures in discouraging wasteful use of service while promoting all justified types and amounts of use

iv. adopting rate designs that encourage energy efficiency for each customer class;
Please refer to 8(iii) and Staff's Question 3 above.

v. allowing timely recovery of energy efficiency-related costs; and
NorthWestern presumes the Commission intends to allow for the timely recovery of such costs. Should energy efficiency related costs be expensed or capitalized? If expensed, should cost recovery occur in the year in which the expense occurs (i.e., tracking mechanism). If capitalized, what is the life over which the costs should be amortized?

vi. offering home energy audits, offering demand response programs, publicizing the financial and environmental benefits associated with making home energy efficiency improvements, and educating homeowners about all existing Federal and State incentives, including the availability of low-cost loans, that make energy efficiency improvements more affordable.
Are each of these activities cost effective? To the extent utilities are required to offer all of the above, are related costs appropriately considered, energy efficiency related, and fully recoverable in a timely manner? Refer to all related questions above.

Directed Smart Grid Testimony for IOU's

1. *What are your organization's goals relative to smart grid technology?*
   NorthWestern continues to develop an appropriate strategy for the emergence of smart grid technology in the energy arena. Investment in smart grid technology should provide increased customer value through increased system reliability, stabilizing operating costs, increasing utility asset performance, or improving customer service. NWE has been implementing numerous aspects of smart grid technology when upgrading our facilities. Examples of such technology upgrades include remote monitoring of large distribution transformers at our substations and utilizing strategically placed peaking generators throughout our system also known as distributive generation.

   Current aspects of Smart Grid technology being investigated by NWE include:
   - Advanced metering;
   - Improved distribution automation;
   - Improved equipment monitoring;
   - Improved communications networks;
   - Improved distributive generation;
   - Investigation of demand response capabilities;
   - Improved energy efficiency programs;
   - More efficient street lighting;
   - Residential home area networks; and,
   - Energy management programs for large commercial customers.

2. *What is the value of each smart grid goal to your utility?*
   NorthWestern believes that:
   - Advanced Metering will reduce operating costs, improve customer satisfaction and provide better system monitoring.
   - Distribution Automation will improve reliability metrics and provide quicker customer restoration during outage conditions while equipment monitoring improves asset utilization, maintenance cycles and reliability performance.
   - Communication networks provide the backbone for two-way data transfers and distributive generation improves overall system performance deferring large system upgrades because of peak time system constraints.
   - Demand response capabilities decreases system peak demands through load reductions and defers investments of new generation capabilities.
   - Energy efficiency programs can reduce overall system energy requirements which defers system investments requirements and generations needs.
   - Efficient street lighting technology will lead to reduced energy consumption. Residential home area networks improve customer satisfaction through better consumer awareness of energy usage that should correlate to lower system energy peaks and defer future generation investments.
   - Energy management programs for large commercial customers improve customer satisfaction through better consumer awareness of energy usage that should correlate to lower system energy peaks and defer future generation investments.

3. *What is the value of each smart grid goal to your consumers?*
   - Advance metering improves customer usage information, immediately notifies NWE of system problems, and gives NWE the potential to customize rate designs to meet the needs of its customers.
   - Distribution Automation will improve reliability metrics and provide quicker customer restoration during outage conditions.

- Equipment monitoring improves asset utilization, maintenance cycles and reliability performance that correlate to lower operating costs.
- Communication networks provide for two way data transfers and improved reliability.
- Distributive generation improves overall system performance and defers large system upgrades because of peak time system constraints and reduces pressure of long-term rates.
- Demand response capabilities decreases system peak demands through load reductions and defers investments of new generation capabilities which correlates to lower long-term rates and provides customer benefits for those who are willing to adapt their usage patterns.
- Energy efficiency programs can reduce overall energy usage by customers.
- Street lighting efficiency reduces energy consumption.
- Residential home area networks improve customer satisfaction through better consumer awareness of energy usage and allow the potential reduction in energy usage.
- Energy managements programs for large commercial customers improve customer satisfaction through better consumer awareness of energy usage and potential reduction in energy usage.

4. *What smart grid technology does your organization see using to achieve its goals?*
Please see above answers. In addition, NWE plans to implement a smart metering pilot project in the Lake Andes area in 2009. NWE completed a vendor review in the first half of 2009 and will select a vendor by the end of June. Implementation of the metering, communications and metering software systems will occur in the third quarter of 2009 with "go live" scheduled before the end of 2009. With this pilot, NWE can assess the value of two-way metering systems for our South Dakota operations.

5. *What short term impacts do you see smart grid technology having on rates?*
NorthWestern anticipates that the short term impacts on rates should not be that significant because we currently implement smart grid applications as we refurbish existing facilities. A smart grid implementation on the entire distribution system would produce upward pressure on rates. At this time, NWE has not conducted an overall system smart grid study.

6. *What long term impacts do you see smart grid technology having on rates?*
A smart grid implementation on the entire distribution system would produce upward pressure on rates. At this time, NWE has not conducted an overall system smart grid study. From the perspective of long-term impacts of an entire implementation of smart grid technology, NorthWestern believes that as a utility begins to change existing automation and metering assets to a technology life cycle, it has been shown to be less costly than changing mechanical assets. This change in asset life cycle would put upward pressure on rates.

7. *What types of rate design would you need to invest in smart grid technology?*
At this time NWE has not completed an entire smart grid implementation plan for South Dakota so NWE has not addressed this issue.

8. *How does the planned IEEE standard on smart grid impact your decision making on smart grid technology?*
NWE has incorporated most IEEE standards as company standards. Generally speaking, the majority of equipment vendors currently used by NWE accept IEEE standards.

9. *What system benefits do you see from investing in smart grid technology, for example, shorter outages, etc.?*
   Technology has the ability to reduce operation costs related to meter reading, outage response times, remote switching, data collection requirements, and equipment maintenance cycles. Other benefits include improving system optimization and overall system energy management through better demand response capabilities and individual circuit management that can defer large capital improvements.

10. *What options do you see to ensure interoperability?*
    NWE investigates all new technology with this in mind and works with vendors to ensure their products follow current industry standards and protocol that helps to ensure their compatibility with other components of the smart grid technology platform. At this time most smart grid technology vendors continue to work on standard equipment protocols. Not all areas of smart grid technology have developed an accepted industry standard. In these areas, NWE tends works with vendors and other utilities to adopt an approach that most utilities plan to use. Under certain conditions, NWE may choose to postpone the implementation of available technology until the industry standards are more fully developed. Because technology continues to change rapidly, interoperability poses a risk.

11. *What time frame do you see for implementation of smart grid systems?*
    NWE has already begun implementing smart grid systems on our system. For example, NWE installed remote transformer monitoring equipment on its new large substation transformers. NWE uses distribution automation on our 34.5 kV system, distributive generators as peaking facilities, and smart meters in Lake Andes. NWE has circuit monitoring capabilities and electronic reclosers at most of its urban substations. Installing a system wide smart grid application will require a detailed study of the price vs. value proposition.

12. *What options do you see for preventing rapid obsolescence of smart grid investments?*
    Technology life cycles can be significantly shorter than current mechanical equipment life cycles. Obsolescence has a tendency of being driven by equipment manufacturing product cycles so selecting vendors that have a proven record of supporting previous products can be one way of extending equipment life. This has been a topic that NWE has brought up during our vendor discussions.

13. *What costs do you see associated with the smart grid technologies you may invest in?*
    Costs associated with smart grid technology have not been completely developed at this time for complete implementation in our South Dakota operations. On an individual comparison, a smart grid meter can be as much as 1.5 to 3 times that of a conventional meter. Other smart grid technology costs can be comparable, such as line reclosers. One challenge of moving to a smart grid system can be replacing existing assets that have not been fully utilized with new technology and the added costs of doing this.

14. *How do you plan to balance value against cost for each of your smart grid goals/investments?*
    NWE will evaluate smart grid components as it has with other technology. NWE generally utilizes a pilot program to test the effectiveness of the implementation of new technology and then quantifies the value achieved by the new technology verses the cost of implementation. If the technology works in the pilot project, NWE investigates whether a system wide implementation should be done or whether the technology should be incorporated when existing facilities require upgrades because of system changes or the asset wears out.

15. *How will your smart grid investments be split among:*
    a. *Metering*
    b. *Automated switches*

c. *Substation controls*

NWE has not completed a detailed study of a system wide implementation but will provide the following estimates:

Metering	30% to 40%
Automated Switches	10% to 20%
Substation Controls	10% to 20 %
Communications	20% to 30%
IT hardware/software	20% to 30%
Other	10%-15%

16. *Will you implement smart grid in other states you serve before or after South Dakota?*
NWE plans to implement smart grid components in Montana and South Dakota by utilizing different pilot projects so it can test a variety of components and evaluate the cost/benefit to NWE and our customers.

17. *What impact will smart grid technology have on your portfolio of generation facilities, i.e., will the fuel sources shift, etc.?*
At this time, NWE has not fully investigated the overall impacts of smart grid technology on our generating facilities in both respects of what generation resources might be needed in the future or the overall impact on our generation facilities/resources.

Smart grid technology has the potential to impact generation facilities through the use of more distributive generation (wind, solar, etc.) and demand response capabilities that have the potential to postpone the need to invest in new generating facilities or the potential to change the kind of generating facilities that are needed.

18. *How should investments made obsolete by smart grid technology be recovered by utilities?*
NWE believes that investments made obsolete by new technology should be recovered in rates through the regulatory process. If NWE continues with its current approach, most facilities are upgraded at the end of their useful life. Using this approach, the benefits of existing facilities have been achieved by everyone.