

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

DIRECT TESTIMONY

OF

JAMES LUDWIG

WESTAR ENERGY

DOCKET NO. 08-WSEE-1041-RTS

I. INTRODUCTION

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Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. James Ludwig, 100 N. Broadway, Suite 800, P. O. Box 208,
Wichita, Kansas, 67201.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. Westar Energy, Inc. I am Executive Vice President, Public Affairs
and Consumer Services.

**Q. PLEASE DESCRIBE YOUR ELECTRIC UTILITY EXPERIENCE
AND YOUR EDUCATION.**

A. I started at Westar in June 1989 as an Information Specialist. Later
that year, I was appointed Director, Government Affairs and served
in that capacity until mid-1995. From then until I resigned from
Westar in October 2001, I was Director, Regulatory Affairs. I
returned to Westar at the beginning of 2003 as Vice President,

1 Public Affairs. In March 2006, I became Vice President, Regulatory
2 and Public Affairs and served in that role until I assumed my current
3 position beginning July 2007. I graduated summa cum laude from
4 the University of Kansas in 1980 with two Bachelor of Arts degrees,
5 one in classical languages and another in history.

6 **II. SUMMARY OF TESTIMONY**

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8 A. I will describe Westar's progress in energy efficiency, conservation
9 and demand side management (DSM). I will also describe the
10 current status of Westar's development of advanced metering
11 infrastructure (AMI) and meter data management (MDM).
12 Hereafter, I refer to energy efficiency, conservation and demand
13 side management generically as energy efficiency, unless the
14 context calls for more precision. Westar accepts the definitions of
15 various species of energy efficiency adopted by the Commission in
16 the generic dockets (Docket Nos. 08-GIMX-441-GIV and 08-GIMX-
17 442-GIV). I will also briefly describe several improvements we
18 have made in customer service since our last rate case, when we
19 filed testimony on our initiatives to improve customer service.
20 Caroline Williams also addresses improvements and ongoing
21 initiatives in customer service within her area of responsibility.

22 **Q. HAS WESTAR SPECIFICALLY REQUESTED RECOVERY OF**
23 **ENERGY EFFICIENCY OR AMI/MDM EXPENDITURES IN THIS**
24 **RATE CASE?**

1 A. Yes. However, the present costs associated with energy efficiency
2 and AMI/MDM that we seek to recover in this case are modest
3 compared with our incremental capital investments in new
4 generation resources. Westar expects expenditures for energy
5 efficiency and AMI/MDM to grow, especially once our programs are
6 fully underway and the Commission has established guidelines for
7 the programs it wishes to encourage and establishes methods of
8 cost recovery for these activities.

9 **Q. WHY THEN ARE YOU PROVIDING TESTIMONY ON THESE**
10 **TOPICS IF THE ASSOCIATED COSTS ARE STILL MODEST?**

11 A. Energy efficiency is integral to Westar's business plan, and
12 therefore it is important for us to bring it up in the context of a
13 request to increase our electric rates. Working together with our
14 customers to help them become wise energy consumers is
15 important to us. In the next few years, our investment in rate base
16 will double in order to meet our customers' growing needs for
17 electricity and increasingly stringent environmental regulations.
18 These additions to rate base will obviously cause our rates to
19 increase. Energy efficiency is a powerful way for our customers to
20 extract the most value they can from their energy expenditures in
21 an environment where not just their electricity but all energy costs
22 are escalating.

1 Many energy efficiency technologies can be deployed faster
2 and at lower cost than supply-side options. Accordingly, we view
3 energy efficiency as a likely addition, some may say alternative, to
4 building additional generation to meet customers' demands for
5 energy. For example, a well-designed demand response program
6 could be treated as a resource in Westar's dispatch order; the
7 demand response program would be triggered when it became the
8 most economic increment in the generation dispatch order to meet
9 customer demand. Another benefit of energy efficiency is that it
10 reduces greenhouse gas (GHG) emissions, first through direct load
11 reduction and second by deferring the need for new generation. If
12 we are entering a carbon-constrained future, which we believe is
13 likely, energy efficiency's value will rise. The virtues of energy
14 efficiency elevate it to a preferred option for electric utilities. Westar
15 is no exception. In our educational and communications plans, we
16 are promoting energy efficiency as a priority. It cannot answer the
17 entire electric resource need, either nationally or for our customers,
18 but it is an important step. Energy efficiency holds great promise.

19 Although they have many additional business applications
20 and benefits, AMI and MDM are necessary antecedents for broad
21 deployment of real-time pricing strategies and several extensive
22 DSM programs. Although still conjectural in many respects,
23 eventually AMI/MDM may become the foundation for a "smart grid,"

1 which has computer-programmed “intelligence” to take automatic
2 action on a transmission and distribution system, and can even go
3 “behind the meter” to help customers use electricity more wisely.
4 As I will discuss in more detail later, Westar would like to begin a
5 substantial pilot of AMI/MDM later this year because certain
6 benefits are not conjectural and are worth pursuing now. Before
7 going forward, we will afford the Commission an opportunity to
8 approve the pilot and indicate how it will be treated in rates. The
9 Commission will also recall that in the stipulation and agreement it
10 approved in Westar’s docket on the predetermination of rate
11 treatment of Emporia Energy Center, we agreed to a real-time
12 pricing (RTP) pilot. To better measure and verify the effects of an
13 RTP pilot, it is our preference to conduct this pricing pilot at the
14 residential and small commercial customer level as part of the
15 broader AMI/MDM pilot. AMI/MDM will facilitate better accuracy of
16 measurement and verification. Indeed, it is arguable that AMI/MDM
17 is a necessary antecedent to robust RTP.

18 **Q. YOU JUST MENTIONED EDUCATIONAL AND COMMUNICA-**
19 **TIONS PLANS. WHAT ROLE DO THEY PLAY?**

20 A. Consumer education and communication are critical. Hence, in the
21 beginning, customer education is at the top of our agenda to
22 promote energy efficiency. Westar has developed a media plan –
23 involving both broadcast and print – to educate customers about

1 the importance of energy efficiency and to motivate them to adopt
2 energy efficient behaviors. That media educational plan is being
3 implemented at the time of filing this rate case.

4 I emphasize that our media plan is not comprised of
5 promotional advertising, but rather broad consumer education to
6 prepare the way for consumer acceptance to inculcate the promise
7 of energy efficiency, make it sustainable in Kansas, and gain
8 acceptance of our specific energy efficiency initiatives. It is
9 appropriate and necessary, however, to make those pieces
10 attractive and interesting to viewers. Accordingly, I hope the
11 Commission finds as we do that these pieces present energy
12 efficiency in a favorable light and one suggestive of a spirit of
13 cooperation between customers and their utility. Without consumer
14 education, the promise of energy efficiency will not be attained, nor
15 will it become sustainable. Westar also already has a program
16 called School Connections to offer schools, among other things,
17 age-appropriate energy efficiency curricula. We have expanded
18 our efforts in schools in 2008.

19 Westar's website has energy efficiency pages to help
20 residential and commercial customers make wise energy decisions.
21 These website pages include "calculators" for customers to use to
22 estimate savings from many potential energy efficiency
23 investments, information for children and an energy efficiency

1 library for adults. Westar is also collaborating with other utilities,
2 environmental groups and the Kansas Energy Office to develop
3 consistent, accurate customer education materials. Westar has
4 also produced an instructional DVD for residential customers to
5 advise them how to make their homes more energy efficient. A
6 similar video is in production for commercial customers. Exhibit JL-
7 1 is a DVD of this video.

8 **Q. WHAT CHALLENGES DO YOU FORSEE WITH REGARD TO**
9 **EDUCATING CUSTOMERS ABOUT ENERGY EFFICIENCY?**

10 A. Although customers endorse energy efficiency and express a
11 desire for it, little evidence is found to show they have curbed their
12 ever-increasing consumption of energy. Certainly national data
13 concerning electricity consumption shows little if any reduction in
14 the growth of demand for energy. The Energy Information
15 Administration (EIA) forecasts electricity consumption to increase at
16 an average annual rate of 1.3% through 2030. It is reasonable to
17 assume the electricity usage by Westar customers will largely
18 parallel this growth trend. The challenge we face in achieving
19 reductions in energy usage – or even reductions in the rate of
20 growth – is not so much one of technology, but rather one of public
21 acceptance, consumer behavior and actual technology adoption.
22 For this reason, and probably others, opinions vary widely on
23 energy efficiency's potential effect on demand and savings

1 associated with it. Much depends on accurately predicting the
2 vagaries of human behavior and, harder yet, changing consumer
3 behavior.

4 Energy efficiency is not achieved merely by the actions of
5 electric utilities. To succeed, policymakers will have to align
6 incentives for utilities and their customers – and begin to take a
7 visible role in convincing the public that energy efficiency is a public
8 priority. This means serious consideration must be given to
9 regulatory mechanisms to make energy efficiency a sustainable
10 business model for utilities. That includes determining the potential
11 of demand response options like real-time pricing. The cost of
12 electricity, at least in Westar's case, is low relative to consumer
13 income. Moreover, some longstanding cost allocation and rate
14 setting practices have served to disguise price signals and have
15 sometimes maintained rates at artificially low levels. As a result,
16 consumers have had few prompts to change their behaviors – or
17 perceptions. Innovative ratemaking approaches for implementing
18 energy efficiency programs such as real-time or time-of-use pricing,
19 targeted incentives, incorporating DSM in rate base and decoupling
20 all merit Commission evaluation. These approaches are not
21 exclusive of one another – nor is this list exhaustive.

22 Customers have expressed a desire, in various ways, but
23 particularly in our customer satisfaction surveys, for Westar to help

1 them get more value out of their energy dollars. This phenomenon
2 appears to be counter-intuitive. Our customers seem to appreciate
3 that as we help them consume less electricity, our profits fall and
4 their rates could increase. Nonetheless, they desire or even expect
5 that we, as the energy expert, can help them become more energy
6 efficient. We take this as a positive sign that may bode well for
7 customer acceptance of a new regulatory policy that allows utilities
8 to earn on energy efficiency programs.

9 Technology now enables energy efficient practices that are
10 convenient to customers, practices that do not connote a pejorative
11 meaning of “sacrifice” or “self-denial.” Westar faces requirements
12 for unprecedented investment in new sources of power to meet
13 growing electricity demands and in our “wires” infrastructure to
14 continue to provide reliable service. Given these investment
15 requirements, it is imperative to pursue energy efficiency so
16 customers can make choices that enable them to extract more
17 value from their energy purchases. At national, state and local
18 levels of government, the policy environment is ripe for energy
19 efficiency initiatives, even those that may cause higher costs but
20 are deemed worthwhile to protect the environment. The wisest
21 energy choices may also lead to higher reliance on electricity than
22 on other energy sources.

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III. CUSTOMER SERVICE IMPROVEMENTS

Q. WHAT HAS WESTAR DONE TO IMPROVE CUSTOMER SERVICE AND SATISFACTION SINCE YOUR 2005 RATE CASE?

A. Although my list is not exhaustive, the following are examples of service improvements that have been especially well received by our customers. Over time, we expect to observe improvements in customer satisfaction, based on these and other customer service efforts.

1. In April 2007, we began accepting bill payment by credit card. Customer payment by this method has steadily increased since we began. By April of this year, we had received approximately 144,000 credit card payments, averaging \$113 per payment.
2. We have provided our customers more options on our interactive voice response system (IVR) and our website to transact business and request services. Year-to-date, our IVR system has handled slightly more than 50% of customer calls, up from 43% in 2007. More and more customers are selecting “self-care” options via IVR and resolving their needs without the intervention of a customer service representative. Likewise, customers performing web or fax transactions have increased more than 13% year-to-date over 2007. We expect that percentage to increase during

1 the rest of 2008. From 2006 to 2007, these transactions
2 increased 35%.

3 3. Customer use of our website for new educational material on
4 energy matters, particularly on energy efficiency, continues
5 to grow. Overall website traffic has increased more than 9%
6 year-to-date over 2007. Visits to our Apogee Educational
7 Energy pages have increased more than 30% year-to-date
8 over 2007.

9 4. In December 2007, we changed our call center hours to
10 schedule more customer service representatives to be
11 available during peak periods for customer calls. Customer
12 service representatives are still available on a 24-hour basis
13 for emergencies.

14 5. In June 2006, we refined our account analysis of payment
15 history to avoid making unnecessary trips to customers to
16 shut off service for non-payment. This analysis allows us to
17 focus on accounts that are habitually unpaid, as opposed to
18 those that are occasionally late in payment. From inception,
19 we have avoided nearly 60,000 truck trips and almost 45,000
20 mailings at an estimated savings of approximately \$380,000.
21 We have not adversely affected our collections, and we
22 believe we have avoided harming customer satisfaction by

1 avoiding disconnection notices being sent to 50% of our
2 residential customers who, by our analysis, are likely to pay.

3 We also believe it is important to admit when we make
4 mistakes in customer service and to learn and apply lessons. To
5 that end, we are developing a thorough methodology and database
6 to analyze the root cause of customer dissatisfaction in order to find
7 ways to improve service in the future. What we learn will then be
8 used to train employees how to deliver more satisfying service. We
9 expect to be able to begin this new initiative this summer.

10 **IV. DESCRIPTION OF WESTAR'S ENERGY EFFICIENCY,**
11 **CONSERVATION AND DSM INITIATIVES**

12 **Q. WHEN WESTAR FILED APPLICATIONS FOR PREDETER-**
13 **MINATION OF RATE TREATMENT FOR EMPORIA ENERGY**
14 **CENTER, DOCKET NO. 07-WSEE-616-PRE, AND FOR ITS 300**
15 **MW WIND POWER INITIATIVE, DOCKET NO. 08-WSEE-309-**
16 **PRE, WESTAR FILED TESTIMONY DESCRIBING FIVE AREAS**
17 **WHERE ENERGY EFFICIENCY AND DSM WERE BEING**
18 **PURSUED. ARE THOSE PLANS STILL IN PLACE?**

19 A. Yes, with minor adjustments in the second and third initiatives,
20 which had originally been premised on mandatory direct load
21 control (DLC). We believe that consumers are more likely to
22 participate in those programs if DLC is voluntary instead of
23 mandatory, and even if they decline DLC, they will still realize
24 benefits from high efficiency electric equipment.

1 **Q. PLEASE REMIND THE COMMISSION WHAT THOSE AREAS**
2 **ARE.**

3 A. The areas are:

- 4 1. residential and commercial DLC for central air conditioning,
5 electric water heaters, swimming pool pumps, and other
6 interruptible devices;
- 7 2. high efficiency heat pump initiatives with voluntary DLC;
- 8 3. high efficiency residential and commercial water heating
9 heat pump initiatives with voluntary DLC;
- 10 4. energy efficiency assistance to low-income households, and;
- 11 5. targeted energy audits to identify energy efficiency
12 opportunities for commercial and large residential
13 customers.

14 **Q. ARE THESE FIVE AREAS A COMPLETE LIST OF WESTAR'S**
15 **ENERGY EFFICIENCY, DSM AND CONSERVATION EFFORTS?**

16 A. No. I will also discuss additional efforts and progress in this
17 testimony. As I have also discussed, consumer education is an
18 essential antecedent to almost any progress in energy efficiency,
19 DSM and conservation.

20 **Q. PLEASE DESCRIBE SOME OF YOUR PROGRESS ON THE**
21 **FIVE GENERAL AREAS DESCRIBED ABOVE.**

1 A. Because the components of DLC and DSM programs are most
2 amenable to rapid progress, we have focused our initial efforts
3 here.

4 In April 2007, Westar issued a request to solicit proposals
5 from vendors of DLC and DSM. Three firms responded May 10,
6 2007. The responses included one proposal to provide demand
7 response services for commercial and industrial customers. Two
8 included responses to install direct load control thermostats in
9 residential customers' homes. After reviewing the initial responses,
10 in March we selected the preferred vendor for load control
11 thermostats and are currently in contract negotiations. On that
12 same day, we informed our commercial/industrial vendor to refresh
13 and refine its proposal and indicated that we would re-issue the
14 request for proposals to that firm and additional vendors.

15 The proposal to provide demand response services to
16 commercial and industrial customers initially appears to be cost
17 prohibitive. We have not, however, abandoned this effort. Rather,
18 we are seeking alternatives that will be more cost effective and
19 have issued another request for proposals (RFP) to solicit more
20 competitive responses. For example, we plan to expand our efforts
21 to recruit customers for whom it is appropriate to sign on to our
22 existing interruptible service rider (ISR), which I describe in more
23 detail later. Since the mid-1980s, the ISR has been a successful

1 DSM technique at Westar. This expanded effort at more demand
2 response will be in addition to our existing interruptible program
3 discussed below. The actual annual costs and amount of peak
4 shaving from this initiative are still being determined. Another
5 alternative may be to alter our existing ISR to make it available to a
6 larger number of customers.

7 Based on preliminary analysis, the proposals to provide DLC
8 thermostats pass the five standard tests: RIM; TRC; participant;
9 societal; and utility. The load control thermostats typically have a
10 communications device that can be used to adjust the thermostat
11 during periods of peak demand in order to shave peak. The
12 thermostats are also programmable, allowing customers to
13 conserve energy year round. Upon installation, the technician will
14 teach the customer how to program the unit and will program the
15 thermostat based on the customer's preferred temperatures.
16 Additionally, the customer can use a simple, secure website to
17 make temperature adjustments. These features overcome an
18 obstacle of many off-the-shelf thermostats that are often never
19 programmed by the customer. Westar is currently testing the
20 thermostats in several employees' homes. Once satisfied that the
21 program will work, gain consumer acceptance and not harm
22 customer satisfaction, Westar wants to begin program deployment
23 this year.

1 We are also studying whether deployment of DLC
2 thermostats should be done in conjunction with deployment of AMI.
3 The ideal situation would be where communications could be sent
4 to and received from DLC thermostats, integrated into AMI
5 technology, and actual peak shaving results from the thermostats
6 measured and verified in real time by AMI meters. Our decision on
7 when we deploy the DLC thermostats will hinge on the timing of
8 technology that makes them compatible with AMI. I discuss AMI in
9 more detail later.

10 In our testimony filed in the Emporia Energy Center and wind
11 power predetermination dockets, we promised the Commission an
12 opportunity to approve our initiatives before we launched them.
13 Accordingly, Westar has filed a request seeking the Commission's
14 approval and for an accounting authority order to defer the
15 programs' costs for recovery in accordance with the KCC's rulings
16 in its generic dockets on energy efficiency. Assuming a conducive
17 order being issued in time, we will deploy the DSM and DLC
18 programs yet this year.

19 **Q. HOW MUCH PROGRESS DO YOU BELIEVE IS POSSIBLE IN**
20 **2008?**

21 **A.** For the DLC thermostat program, unless we wait for AMI, we
22 expect to retain a firm to install 5,000 thermostats during the first 12
23 months. The number of installations possible this year depends on

1 when we gain Commission approval. Willing residential customers
2 would receive the thermostat and installation for free and would
3 benefit through the savings they derive by using less electricity
4 during peak periods and by programming the unit to use less
5 energy when the home or business is unoccupied.

6 Progress on DSM for our commercial and industrial
7 customers depends on the issues I have already discussed in my
8 previous answer, including the results of our renewed RFP process.
9 In concept, the program would permit Westar to reduce non-
10 residential customers' non-essential energy needs at peak demand
11 times of the year. The customer incentive has not been worked out
12 at this time.

13 **Q. HOW WILL YOU MEASURE AND VERIFY RESULTS FROM THE**
14 **DLC THERMOSTAT PROGRAM?**

15 A. In order to monitor our peak shaving results, we will randomly
16 install recording meters on several homes that have the DLC
17 thermostat. This will allow us to follow a customer's load profile to
18 verify load reduction after thermostats are activated during peak
19 periods. We preliminarily estimate that on average each thermostat
20 installation will yield slightly more than 1 kW of demand response.
21 If we wait to deploy the DLC thermostats concurrent with
22 deployment of AMI, the AMI meters will record the actual load
23 reduction.

1 **Q. WHAT IS INVOLVED IN IMPLEMENTING PROGRAMS FOR**
2 **HIGH EFFICIENCY HEATING AND COOLING EQUIPMENT?**

3 A. Because of the relatively long lives of heating, ventilation and air
4 conditioning (HVAC) capital stock, the sizable investments involved
5 in making long-term decisions about HVAC equipment, and the
6 purchasing relationships involving builders, architects, contractors
7 and homeowners, implementing these programs requires much
8 more customer education, building of alliances and a longer
9 planning horizon. For example, when a homebuilder chooses to
10 install a particular kind of HVAC system, that choice may last up to
11 two decades, until the equipment fails. At the time the equipment
12 fails, likely on a hot summer day, the homeowner's urgent concern
13 is replacing it quickly, not what would be the most efficient and cost
14 effective equipment for the next 20 years. Rarely does a residential
15 customer replace fully functioning HVAC equipment, even if it is old
16 and inefficient, especially because the rates paid by customers are
17 low compared to income. We need to find ways to reach these
18 consumers well in advance of the replacement decisions as well as
19 at the moment of decision.

20 Effective programs to promote high efficiency equipment
21 need to take these and many other factors into consideration.
22 Convincing customers to purchase high efficiency equipment
23 requires extensive consumer education, and we must develop

1 alliances with HVAC dealers, builders and architects. Some
2 customers are unaware of financial resources and tax incentives
3 available for investment in high efficiency equipment available
4 through government programs. Effective programs may need to
5 include financing packages, extended warranties, performance
6 guarantees, government grants, tax credits and other incentives.
7 To make more rapid progress, it may also be necessary to
8 encourage legislation or ordinances that require more energy
9 efficient building codes and standards for equipment and
10 appliances.

11 **Q. IN LIGHT OF THESE CHALLENGES, WHAT PROGRESS HAS**
12 **BEEN MADE?**

13 A. First, we have added extensive educational information to Westar's
14 website and have distributed other educational materials. Second,
15 our experience has shown that our employees and retirees can be
16 effective educators for our customers. Most of them live in the
17 communities we serve at retail, and our customers often consult
18 them on energy matters. We launched an employee and retiree
19 program to offer rebates for them to install high efficiency HVAC
20 equipment. Those who use the program become "ambassadors" to
21 our customers. Even those who are not ready to replace their
22 HVAC systems have become more conversant about the benefits
23 of high efficiency equipment by virtue of educational seminars we

1 are conducting for employees. An explanatory brochure was also
2 sent to employees and retirees. Third, we have hired employees
3 who are already developing alliances with HVAC dealers, builders,
4 architects, real estate agents and others who can influence
5 consumer choices of equipment.

6 **Q. WHAT PROGRESS HAVE YOU MADE ON THE ENERGY**
7 **EFFICIENCY PROGRAM FOR LOW-INCOME ASSISTANCE?**

8 A. We are developing “weatherization kits” to be given to low-income
9 customers. These kits will have basic products such as compact
10 fluorescent lights (CFLs), weather-stripping, caulking, insulation
11 wrap for water heaters, and other materials that can be used to
12 improve the thermal and energy efficiency of poorly insulated
13 housing. Westar intends to recruit employees, retirees, and civic
14 and faith-based organizations to help distribute and install these
15 kits in the homes of low-income customers who are elderly or
16 disabled. Westar has also has been engaged in constructive
17 meetings with state agencies and advocates for low-income
18 residents to find effective ways to address energy efficiency for
19 low-income customers. These groups are working to identify
20 homes in Westar’s service territory in most need of weatherization
21 and develop strategies to encourage landlords to make their rental
22 properties more energy efficient.

1 **Q. ARE YOU DEVELOPING PROGRAMS IN ADDITION TO THE**
2 **FIVE PROGRAMS ENUMERATED ABOVE?**

3 A. Yes.

4 1. We continue to evaluate ways we might modify or change
5 the way we operate our own systems to improve energy
6 efficiency. (Given the size and scope of our own system,
7 even modest improvements in efficiency have the potential
8 to create greater opportunities for energy efficiency than we
9 can ever hope to achieve with some of our customer-
10 focused initiatives.) For example, in February 2008, the
11 Kansas Department of Health and Environment approved
12 Westar's application for a permit in which, among other
13 things, we had sought permission to improve Jeffrey Energy
14 Center's thermal efficiency and modestly increase its output.
15 Although this is a longer-term goal and the outcome is not
16 certain, we can begin the engineering analysis to tell
17 whether it is feasible. We are also seeking ways to improve
18 the efficiency of our transmission and distribution systems.
19 An example is the use of infrared imaging to inspect
20 distribution equipment. These inspections not only can
21 detect likely failures before they occur (clearly a benefit to
22 customer satisfaction), but we are also able to identify and
23 change out equipment that is causing excessive line losses.

1 Our transmission department plans to rewire many sections
2 of our oldest transmission lines. Besides improving
3 reliability, these new conductors will reduce line losses, thus
4 improving efficiency.

5 2. In order to lead by example, Westar also recently adopted a
6 policy to adhere whenever possible to the LEED standards
7 when it builds a new office facility or makes major
8 renovations to an existing office space. LEED stands for
9 Leadership in Energy and Environmental Design, also
10 referred to as "Green Building Rating," and designates the
11 state-of-the art in energy efficient, environmentally sound
12 construction. For instance, we are renovating and
13 expanding Westar's service center in Lawrence to standards
14 that will qualify for LEED certification.

15 3. As I discuss in more detail below, Westar has distributed
16 thousands of CFLs, and has incorporated in its request for
17 an accounting authority order under the category of
18 consumer education an initiative to promote their use among
19 customers. Comparatively low-watt CFLs produce as much
20 light (lumens) as higher-watt incandescent bulbs. CFLs
21 produce 60 lumens per watt, while incandescent bulbs
22 produce only 15. For example, a 15-watt CFL produces 900
23 lumens, the same as a 60-watt incandescent bulb. By

1 simply replacing their incandescent bulbs with CFLs,
2 customers can make substantial progress in becoming more
3 energy-efficient consumers. In addition, the lower heat
4 output of CFLs can reduce air conditioning load.

5 4. In accordance with the Commission-approved agreement in
6 the Emporia Energy Center docket, Westar has discussed
7 with the KCC staff concepts for introducing a real-time pilot
8 program. Mr. Rohlf discusses this pilot in his testimony.

9 Price signals are among the most effective means of
10 stimulating energy efficient and DSM behaviors. Although
11 price elasticity may be muted because of Westar's relatively
12 low rates and because our customers' electricity bills have
13 steadily dropped as a percentage of their income, we are
14 nonetheless committed to testing real-time pricing. If real-
15 time pricing demonstrates significant price elasticity among
16 our customers, then we can offer (or the Commission may
17 require) widespread real-time pricing tariffs. On the other
18 hand, if most customers participating in the pilot do so
19 because their circumstances make it nearly certain they will
20 benefit by doing nothing except opting into the program, then
21 the pilot will fail. (Economists sometimes refer to such
22 consumers as "free-riders." These are customers who
23 already have an off-peak demand profile and would shift little

1 or no demand because of the pricing plan.) Even if we do
2 not gain energy efficiency by price signals, we may still
3 attract enough customers to at least be able to accomplish
4 an appreciable demand response, and thereby defer the
5 need to build additional peaking generation.

6 Westar, like many utilities in the United States, is a
7 “summer peaking” utility, meaning that demand is highest
8 during hot summer weather. Because we must size our
9 resources to meet peak demand, those same resources may
10 go unused during off-peak periods. By carefully designing
11 rates we can encourage customers to reduce their use
12 during times of peak demand, which keeps investment
13 down, but we also can encourage off-peak use, which allows
14 more efficient use of our facilities and keeps our unit costs
15 lower. Later, I discuss what Westar has done historically in
16 rate design to encourage our customers to use electricity
17 efficiently.

18 5. Westar is seeking to join with several local units of
19 government, neighborhood associations and not-for-profit
20 organizations to promote consumer education on energy
21 efficiency.

22 6. As I have mentioned and will discuss again later, Westar is
23 conducting a business case for AMI and MDM. Although it

1 has many other additional business applications and
2 benefits, AMI/MDM is a necessary antecedent for broad
3 deployment of time-of-use pricing strategies and several
4 extensive DSM programs.

5 **Q. IN THE WIND POWER PREDETERINATION FILING, YOU**
6 **TESTIFIED ABOUT THE ACTIVITIES OF WESTAR'S ENERGY**
7 **EFFICIENCY AND CONSERVATION TASK FORCE AND HOW**
8 **THE CREATION OF AN ENERGY EFFICIENCY DEPARTMENT**
9 **HAD SUPERCEDED IT. PLEASE UPDATE THE COMMISSION**
10 **ON THE STATUS OF THE ENERGY EFFICIENCY**
11 **DEPARTMENT.**

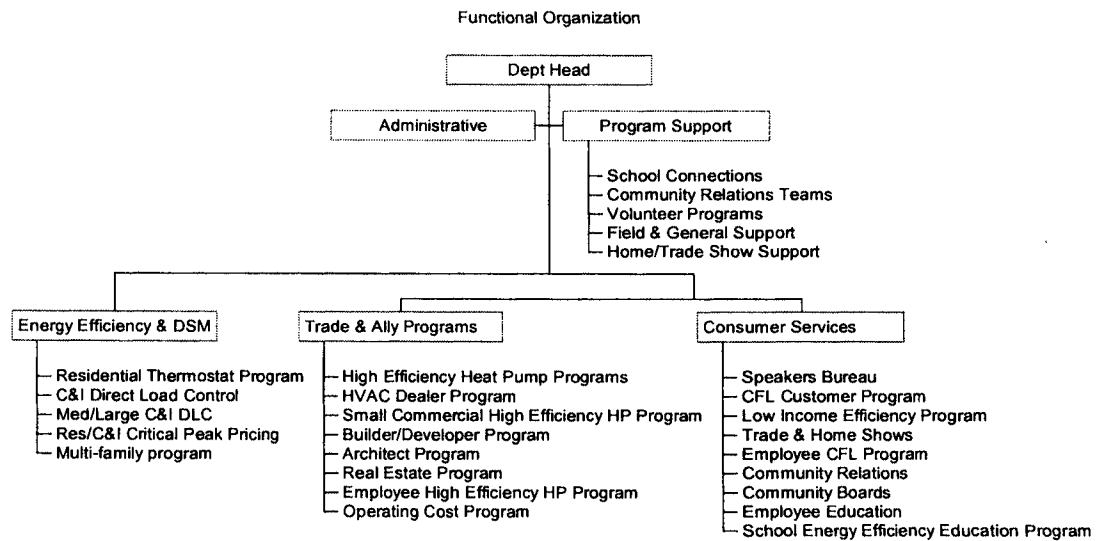
12 A. When I assumed my current position in July 2007, one of my first
13 actions was to establish an energy efficiency department at Westar,
14 formalizing and enhancing many of the functions previously
15 undertaken by the Energy Efficiency and Conservation Task Force.
16 Hence, the energy efficiency department was not created from thin
17 air or a radical departure from our usual business. Rather, it was a
18 natural development borne of our customers' expectations,
19 technological advances, long-term investment planning, and public
20 policy and environmental concerns.

21 I hired Randy Degenhardt to be the director of the
22 department. He has more than 30 years of experience at Westar,
23 with extensive experience in customer service, energy efficiency,

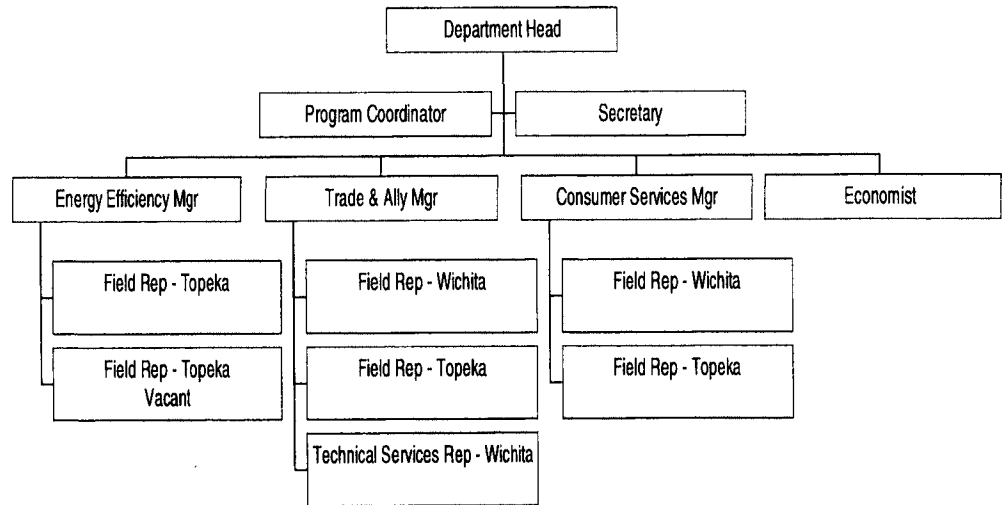
1 conservation and DSM. He has been instrumental in administrating
 2 Westar's long-standing demand management and response efforts
 3 and in advising customers about tariffs that encourage the wise use
 4 of electricity. I briefly discuss those efforts and rates below.

5 Mr. Degenhardt has hired the department staff. Below are
 6 both functional and organizational charts.

ENERGY EFFICIENCY DEPARTMENT FUNCTIONAL CHART



**ENERGY EFFICIENCY DEPARTMENT
ORGANIZATIONAL CHART**



1 **Q. PLEASE UPDATE AND SUMMARIZE THE ACCOMPLISHMENTS**
 2 **IN THE AREA OF ENERGY EFFICIENCY, DSM AND**
 3 **CONSERVATION AND THE 2008 GOALS OF WESTAR’S**
 4 **ENERGY EFFICIENCY DEPARTMENT.**

5 **A.** The table below enumerates the accomplishments of both the
 6 Energy Efficiency and Conservation Task Force and Energy
 7 Efficiency Department to date, plus lists goals to be accomplished
 8 yet this year.

9 The timeline below indicates both the sequence of customer
 10 education efforts and deployment of energy efficiency, DSM and
 11 conservation initiatives we want to accomplish this year.

Status	Expected Timing	Programs and Initiatives
☑	June 2006-June 2007 COMPLETED	Internal energy efficiency and conservation task force
☑	July 2006 COMPLETED	Consultant used to research DSM programs and potential impacts of this overall initiative
☑	Nov. 2006 COMPLETED	Appliance saturation survey
☑	Sept./Oct. 2006 COMPLETED	Review and select website service that provides energy efficiency and DSM tools
☑	Oct./Nov. 2006 COMPLETED	Review and revise Westar Energy's construction and remodeling program for Westar facilities
☑	June/Dec. 2006 COMPLETED	Implement dealer heat pump pilot program in Wichita and Topeka
☑	May 2007 COMPLETED	Employee/Retiree heat pump rebate program implemented
☑	July 2007 COMPLETED	Approval to proceed with energy efficiency focus and programs and create energy efficiency department
☑	May 2007 COMPLETED	Energy Efficiency presentations for school classrooms
☑	October 2007 COMPLETED	Design functional energy efficiency organization and hire management team
☑	Nov. 2007/Ongoing COMPLETED	Mini employee smart thermostat pilot program

<input checked="" type="checkbox"/>	February 2008 COMPLETED	Finalize Energy Efficiency department staff
<input checked="" type="checkbox"/>	Sept. 2007/Ongoing COMPLETED	Energy Efficiency customer education and speakers bureau – home shows
<input type="checkbox"/>	Nov. 2007/Ongoing	Commercial Demonstration project (one project to date)
<input type="checkbox"/>	April 2008	Employee/Retiree Heat pump referral program
<input type="checkbox"/>	April 2008	Builder new home heat pump program
<input type="checkbox"/>	April 2008	Heating/cooling contractor heat pump program
<input type="checkbox"/>	April 2008	Employee/Retiree CFL Program
<input type="checkbox"/>	Oct. 2008	Customer CFL program
<input type="checkbox"/>	Oct. 2008	Low Income/Senior energy audit program
<input type="checkbox"/>	Aug./Sept. 2008	Residential smart programmable thermostat load control company-wide employee pilot program (pending KCC approval)
<input type="checkbox"/>	Oct. 2008	Residential smart thermostat load control customer program (pending KCC approval)
<input type="checkbox"/>	July/Aug. 2008	Commercial / Industrial Direct Load control (pending KCC approval)

- 1 **V. DISCUSSION OF WESTAR’S LONGER-STANDING EFFORTS IN**
2 **THE AREA OF ENERGY EFFICIENCY AND CONSERVATION**
- 3 **Q. WHAT HAS WESTAR HISTORICALLY DONE TO ENCOURAGE**
4 **ITS CUSTOMERS TO USE ENERGY EFFICIENTLY?**
- 5 **A. We have proposed and implemented tariffs designed to encourage**
6 **the efficient use of energy. This is accomplished primarily through**

1 the use of summer/winter pricing differences. For example, the
2 winter residential rate encourages wise use of energy, particularly
3 for customers who are willing to supplement natural gas space
4 heating with high-efficiency add-on electric heat pumps. The
5 summer residential rate is higher than the winter rate thereby
6 encouraging energy conservation during those months when
7 demand for electricity is highest. The non-residential rate
8 schedules have seasonally differentiated prices and also use
9 demand ratchets to encourage off-peak usage and provide an
10 incentive to avoid establishing high peak demands in the summer
11 period. Pricing of the overall cost of energy designed to encourage
12 the wise use of energy can be found throughout Westar's tariffs.

13 **Q. DOES WESTAR HAVE AN INTERRUPTIBLE SERVICE**
14 **PROGRAM THAT ALLOWS CUSTOMERS TO ACCEPT**
15 **INTERRUPTIONS IN THEIR SERVICE IN EXCHANGE FOR**
16 **LOWER PRICES?**

17 A. Yes.

18 **Q. HOW DOES THIS REDUCE PEAK DEMAND?**

19 A. Westar has an active interruptible program with 73 customers
20 participating. The program is administered through clauses in
21 special contracts and three rate schedules approved by the
22 Commission for large industrial customers. We typically realize a
23 system peak demand reduction of approximately 200 MW as a

1 result. We called on our interruptible customers four days in
2 summer 2007 during peak conditions. Peak reduction during the
3 hours of interruption on those days ranged from 201 MW to 206
4 MW. In connection with this long-standing demand response
5 program, historically, we have had the option to call on
6 cogeneration units of two industrial retail customers during peak
7 periods.

8 **Q. CAN THE COMMISSION REQUIRE MUNICIPAL AND**
9 **COOPERATIVE UTILITIES TO IMPLEMENT THE SAME TYPES**
10 **OF ENERGY EFFICIENCY AND DEMAND REDUCTION**
11 **PROGRAMS THAT WESTAR HAS IMPLEMENTED AND PLANS**
12 **TO IMPLEMENT?**

13 A. As the Commission noted in the energy efficiency docket, its
14 jurisdiction over retail rates of municipal and small cooperative
15 utilities is limited. As a result, it is not likely that the Commission
16 could require municipal and small cooperatives to implement such
17 programs. However, Westar engages in wholesale business with
18 many Kansas municipal utilities and rural electric cooperatives, and
19 plans, whenever practical, to invite those same wholesale
20 customers to participate in our energy efficiency programs. For
21 example, though it will not be practical to include them in a retail
22 real-time pricing program, they could participate in a Westar DLC
23 thermostat program or in several Westar demand response

1 initiatives, provided they reimburse Westar for their allocable costs
2 and agree to the terms the Commission sets forth for the programs.
3 If their costs and contribution to Westar's margins match those
4 borne by our retail customers, we will avoid any cross-
5 subsidization.

6 **VI. DISCUSSION OF AMI/MDM**

7 **Q. YOU HAVE MENTIONED AMI/MDM SEVERAL TIMES. WHY DO**
8 **YOU BELIEVE IT IS AN IMPORTANT TOPIC NOW?**

9 A. Westar is conducting an extensive business case study on
10 AMI/MDM. Although much is left to be done to complete our study,
11 these emerging technologies hold promise for better service and
12 more effective energy efficiency, DSM and conservation for our
13 customers.

14 Advanced meter reading (AMR) has come a long way since
15 Westar ventured into the technology fifteen years ago. Our initial
16 AMR installations allowed a motor vehicle driving slowly through a
17 neighborhood to receive a signal from a meter giving a reading. It
18 was passive. The new generation of technology – AMI – is two-
19 way communication technology that engages the consumer for the
20 first time, offering many more options for customizing billing,
21 controlling usage by triggering DLC systems, and eventually
22 providing real-time information on pricing. A companion technology
23 – meter data management system (MDM) – stores time-stamped

1 consumption data and additional data gathered by automated
2 meters.

3 **Q. WILL CUSTOMERS BE THE ONLY BENEFICIARIES OF**
4 **AMI/MDM?**

5 A. Not at all. To name just a few, AMI/MDM offers these inherent
6 benefits to each stakeholder:

Regulators	<ul style="list-style-type: none">• Ability to precisely monitor and evaluate effects of energy efficiency initiatives (real-time pricing or demand response programs)
Customers	<ul style="list-style-type: none">• Choice of date to be billed• Option for twice-a-month billing• Pre-payment for electricity (and alerts for approaching limit)• Remote adjustment of thermostats over the Internet• Review usage patterns
Utility managers	<ul style="list-style-type: none">• Remote meter reading (with no meter readers in the field)• Remote service connection and disconnection• Faster restoration of service from outages and better intelligence about operating conditions

7 Although they have many additional business applications
8 and benefits, AMI and MDM are necessary antecedents for broad
9 deployment of real-time pricing strategies and several extensive
10 DSM programs. Eventually AMI/MDM becomes the foundation for
11 a “smart grid,” which has computer-programmed “intelligence” to

1 take automatic action on a transmission and distribution system,
2 and can even go “behind the meter” to help customers use
3 electricity more wisely. Although the concept of a “smart grid” is
4 admittedly conjectural, we believe that the benefits listed in the
5 table above can be realized with currently available technology, and
6 therefore a fairly substantial, robust demonstration pilot of
7 AMI/MDM is appropriate.

8 **Q. PLEASE SUMMARIZE THE STATUS OF WESTAR’S AMI/MDM**
9 **BUSINESS CASE ANALYSIS.**

10 A. The table below summarizes our progress to date and indicates the
11 next steps, including a pilot program, and, assuming our analysis
12 shows it is worthwhile, our preferred timing for full deployment.
13 This timeline is forward-looking and subject to change, contingent
14 on continuing evaluation.

Advanced Metering Infrastructure (AMI) and Meter Data Management System (MDMS)		
Status	Expected Timing	Key Initiatives
	<i>April / September 2007</i>	<i>Phase I</i>
<input checked="" type="checkbox"/>	COMPLETED	High Level Business Case
<input checked="" type="checkbox"/>	COMPLETED	Approval for Phase II
	<i>Sept. 2007 / July 2008</i>	<i>Phase II</i>
<input checked="" type="checkbox"/>	COMPLETED	Technical Requirements
<input checked="" type="checkbox"/>	COMPLETED	Requests for Proposals
	In progress	Evaluate RFPs
	In progress	Recommendation to Officers
	In progress	KCC Updates and Approval
	<i>2008 / 2009</i>	<i>Phase III</i>
		Pilot Implementation
	<i>2009 / 2012</i>	<i>Phase IV</i>
		Full Deployment (If deemed beneficial)

VII. CONCLUSION

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Q. DO YOU HAVE ANY CONCLUDING COMMENTS?

A. Yes. On October 10, 2007, the Commission issued an order in its generic docket on energy efficiency in which it recognized that Kansas' two largest electric utilities already have energy efficiency programs under way or planned. We are pleased the Commission

1 wishes to promote energy efficiency through a collaborative
2 process among utilities, consumers and government agencies.

3 Clearly, the Commission has ample authority over investor-
4 owned utilities to approve energy efficiency programs and adopt
5 innovative ratemaking mechanisms, including increases in rates of
6 return or other incentives, to advance the interests of both
7 customers and utilities. Given the Commission's express findings
8 and clear statements of intention, it appears to us that no statutory
9 hindrances exist. Westar has participated actively and
10 constructively in the two parallel investigations the Commission has
11 initiated to evaluate costs and benefits of energy efficiency
12 programs and to examine how the Commission will address
13 ratemaking treatment of energy efficiency programs. Now as
14 electric rates and other energy costs are increasing, we believe the
15 time is right to vigorously pursue energy efficiency in a collaborative
16 process with the Commission and our customers under a regulatory
17 framework that allows energy efficiency to become a sustainable
18 business activity for Kansas utilities.

19 **Q. THANK YOU.**