

Approved: 03/18/08

Date

MINUTES OF THE SELECT COMMITTEE ON ENERGY & ENVIRONMENT FOR THE FUTURE

The meeting was called to order by Chairman Don Myers at 1:30 PM on March 11, 2008, in Room 784 of the Docking State Office Building.

All members were present except:

Jason Watkins, Excused

Committee staff present:

Melissa Doeblin, Revisor of Statutes Office  
Raney Gilliland, Kansas Legislative Research Department  
Mary K. Galligan, Kansas Legislative Research Department  
Ryan Hoffman, Kansas Legislative Research Department  
Barbara Lewerenz, Committee Assistant

Conferees appearing before the committee:

Earl Watkins, President and CEO, Sunflower Electric Power Corporation  
Jim Ludwig, Exec. Vice President, Public Affairs and Consumer Services, Westar Energy  
Larry Holloway, Chief of Energy Operations, Kansas Corporation Commission  
John Grimwade, Senior Director of Strategic Planning and Development,  
Kansas City Power and Light  
Nancy Jackson, Executive Director of the Climate & Energy Project of the Land Institute  
Margaret Thomas, Kansas Natural Resource Council

Others attending:

See attached list.

Chairman Myers opened the hearing on **HB-2949 - Kansas energy plan act.**

**Proponents**

Chairman Myers recognized Earl Watkins, Sunflower Electric Power Corporation. (Attachment 1). Sunflower generally supports the bill with reservations regarding specific provisions regarding the proposed fuel mix percentages in the absence of guidance for achievability. Mr Watkins emphasized that for long range planning, certainty in regulatory rules is necessary; reliability of power is the key to the future.

Chairman Myers recognized Jim Ludwig, Westar Energy (Attachment 2). Mr. Ludwig stated that a sound energy policy must include a reliable source of energy that is cost effective and protects the environment. Westar is experiencing an annual increase in demand of about 1.5 per cent. Future costs that include transmission and environmental plants, as well as replacing and maintaining existing facilities, are expected to rise from \$2.5 billion in 2005 to \$5 billion by 2016. He cautioned against designating specific future fuel mix percentages in **HB-2949**.

**Neutral**

Chairman Myers recognized Larry Holloway, Kansas Corporation Commission (Attachment 3). Mr Holloway stated that the KCC does not oppose or support **HB-2949**. While the bill states that the State Corporation Commission testified before the Committee on February 20, 2008, the reference was provided as a summary of data from the Energy Information Agency of the U. S. Department of Energy and information available from the Southwest Power Pool. It did not reflect any policy statement or opinion of the State Corporation Commission itself. Section 5 of the bill attempts to provide guidance for policy makers regarding the fuel mix of future electric generation in Kansas. The language does not clearly provide the intent of the policy.

## CONTINUATION SHEET

MINUTES OF THE Select Committee on Energy & Environment for the Future at 1:30 PM on March 11, 2008, in Room 784 of the Docking State Office Building.

Chairman Myers recognized John Grimwade, Kansas City Power and Light (Attachment 4). Mr. Grimwade stated that there has never been a period where energy planners have faced more uncertainty regarding rules and regulations concerning global climate change, environmental emission standards, the long-term sustainability of fossil fuels and availability of a skilled work force; plus the traditional uncertainties of fuel and commodity pricing. Although current and future technology should help address some of these issues, planners and policy makers must work together for an energy plan capable of performing without failure under a wide range of conditions.

Chairman Myers recognized Nancy Jackson, Climate & Energy Project of the Land Institute (Attachment 5). Ms. Jackson stated that CEP is in agreement with the goal of **HB-2949** to develop a balanced energy approach by continued development of all energy sources including renewable energy; as well as policies to increase transmission and promote market-driven solutions. However, CEP is concerned that the generation mix of Section 5 (b)(3) will double nuclear generation, reduce coal generation and all but eliminate natural gas for base-load by 2028. CEP supports postponing the determination of fuel mix for future generation until more information is available.

### Opponent

Chairman Myers recognized Margaret Thomas, Natural Resource Council (Attachment 6). Ms Thomas stated that our Kansas energy plan must focus on wind, sun and energy efficiency. Until the problems of coal and nuclear generation are resolved, they should not be included in our state's plan for new energy generation.

Chairman Myers concluded the hearing for March 11, 2008 and announced continuation would resume on March 12, 2008. The Chairman provided copies of an article entitled, "Running Out of Power," which addresses expected power shortages over the next ten year (Attachment 7).

Discussion followed that included the estimated cost of a nuclear plant at five to seven billion dollars. Retrofitting existing plants has resulted in more electricity generation. Technology has been developed to remove about 80 to 90 per cent of the mercury in coal by the use of activated carbon. Energy efficiency programs are being implemented for both residential and commercial customers. Base-load, intermittent and peak generations are industry terms and may be used differently by various companies.


Moved by Representative Olson, seconded by Representative Proehl for approval of the Minutes of the House Select Committee on Energy and Environment for the Future held March 5 and March 6. Motion Carried

Meeting adjourned at 2:50 p. m..





# SUNFLOWER ELECTRIC POWER CORPORATION

A Touchstone Energy® Cooperative 

**Before The Select Committee  
on Energy and Environment For The Future  
Statement of Earl Watkins, President & CEO,  
On House Bill 2949**

**March 11, 2008**

Thank you, Mr. Chairman, and members of the committee, for allowing me to speak to you this morning concerning House Bill 2949. My name is Earl Watkins and I am the President and CEO of Sunflower Electric Power Corporation. I appreciate the opportunity to testify on this bill.

Sunflower generally supports the bill under consideration by this Committee, but we do have reservations about some specific provisions, so we are offering suggestions about these provisions.

First let me say that investment in production facilities for electric energy is very capital intensive and sensitive to many factors that influence the capital markets.

As you probably already know, the projected capital investment for the proposed Holcomb expansion project is over \$3.6 billion for the generation assets and over \$500 million for related transmission assets.

Any increase in the cost of steel, concrete or other commodities can significantly increase or decrease the cost of our project. I should also add that recent declines in borrowing costs are having a positive impact since small shifts in interest rates dramatically lowers the cost of these facilities.

Select Committee on Energy &  
Environment for the Future  
3/11/08  
Attachment # 1

Sunflower is, by nearly any description, a small utility company. As the world expands around us, the cost of doing business, especially the cost of fuel, makes it more difficult for small companies to access capital markets to construct needed generation facilities.

So, just like other cooperatives, and investor owned utilities for that matter, we have worked for nearly eight years to participate with other companies in major projects in order to gain the economies of scale that make it possible for us to stay abreast of current technologies and to limit our financial exposure that results from these large capital investments.

Sunflower's Member cooperatives will only own 200 MW of this project at a cost of about \$500 million. If we were to build a coal unit of that size our estimates are that it would cost \$800 million to meet Sunflower and Midwest Energy's direct need for power. As you can see, \$300 million is the capital cost benefit that flows to Kansas utilities from this large-scale project. We would also be importing the equivalent of \$25 million for 30 years, or approximately \$750 million, into Kansas to reduce the costs that our Kansas customers will pay for our services. As a not-for-profit utility, those numbers are huge for us.

The business decisions we have made in the increasingly complex power generation business, and the public policy decisions you make here, will substantially influence the lives of our Member's customers and, accordingly, the future well being of everyone living in central and western Kansas.

I would be remiss if I didn't point out to you that the vast majority of people who have spoken against our project will continue to benefit from similar investments made by utilities serving consumers from Salina, to Wichita, to

Topeka, Lawrence and Kansas City. These consumers will receive the vast majority of their power supplies from coal and nuclear plants for decades to come, yet these opponents think it inappropriate for us to build cleaner, more efficient coal-fired electric generation plants, but rather wind and much more expensive gas plants. From my perspective, that is patently unfair, no matter how you look at it.

Because our industry is so capital intensive, we have long been committed to finding the most accurate means by which we can forecast our future energy requirements. Much of this bill seeks to address, indeed it provides some guidance as to the expectations of the legislature, as to how we should approach our obligations to provide electricity to our Member's customers.

I would like to speak about the proposed fuel mix percentages expressed in Section 5. First, as written, it would be very difficult, if not impossible, to achieve the numbers written in lines 13, 14 and 15. While the bill indicates the State would encourage these ratios, there really is no guidance for how that would be achieved.

For instance, the last plant built by Utility A would affect the generation choices available to the rest of the utilities in Kansas if policy targets were to be met. In Sunflower's case, in fact I would assert that no utility, standing alone, can ever hope to build a nuclear plant at today's cost and with today's uncertainties. Just like our coal project, any nuclear plant will have to have many owners; otherwise, the project just couldn't be handled by any of us in Kansas. I would add that I do believe the State of Kansas could own a large nuclear facility and apportion shares of this plant to all generating companies in the State. I believe that while this may seem like a wild idea, it is the only chance we will ever have to benefit from a nuclear facility. So I encourage

you to broaden the charge to investigate the feasibility of KETA, or a similar organization, to construct and own the next nuclear facility in the state, or to do so in partnership with the state's utilities.

Long range planning, perhaps by all the utilities in Kansas acting in concert with one another and the State is a method we think could bring benefits to all of us. But I would point out one very important point: all of us would have to have certainty in our regulatory rules that would influence that planning. Otherwise, we might as well just stick our fingers up in the air to see what initiatives are in favor at any given moment.

As we have learned, it takes up to 10 years to plan, develop and construct new base-load facilities. In fact, we have been trying to develop the proposed Holcomb expansion project since 2000. We assume now that the unit could not begin operation before 2012 or 2013. A look at our future load responsibility as it appeared in 2000 compared to how it looks in 2008 provides insight into how fluid the planning task is.

Additionally, the sudden appearance, and now the almost complete disappearance of natural gas fired generating units from the planning process, coupled with the almost complete absence of wind resources in 2000 compared to their prevalence today, further indicate how economics and public policy seems to shift.

Coal has experienced a cycle where more than a hundred projects were planned, but only 26 are under construction and 16 others are permitted for construction. Public discussion about nuclear facilities are being discussed, albeit they are just beginning and we don't yet know how many facilities

may be constructed though we anticipate a 15-20 year span before one could be planned, permitted and constructed.

It is my belief that much of this apparent shift of public policy results from a failure on our part to recognize that while companies are different, and while the various publics served are different, we seem to try to fit the same solution into each situation. For instance, we have far less coal/nuclear in our resource mix and more wind than other Kansas utilities, but we are being told coal is a bad choice for our next generation resource. It may be for one utility, but not necessarily for all.

The bill you are hearing today clearly identifies that more than one generation technology will be needed to meet the future electric demands of utility ratepayers. We suggest that you may want to refrain from identifying the expected capacity factor of intermediate and peaking resources, as this performance indicator will vary with time in each utility and with changing use patterns that may be experienced as more people and companies begin to incorporate energy efficiency and demand side management solutions to their energy use patterns. In other words, what is a peaking resource today may become an intermediate resource tomorrow and a base load resource after that depending on the availability of other new resources.

One specific element which may be missing from the bill is a general recognition of the problems attendant with integrating intermittent resources into an electric system where statutes, rules and regulations, and expectations from administrators, regulators, consumers, and legislators have resulted in the combined generation, transmission, and distribution grid we have today.



Renewable resources, whether they are wind, solar, or other, will almost certainly result in changes which need to be accepted by the various publics we serve. I have attachments with which I hope to be able to identify how these challenges might be manifest in the coming years.

To be sure we have to look no further than the electric emergency episode in Texas on Tuesday (March 4, 2008) for an example. While the investigation has not yet concluded, it is clear that the expectations of the stakeholders involved do not agree on who was at fault with regard to this incident. This problem resulted from the paradigm shift associated with the wide utilization of intermittent power resource supplies. In this situation, according to a statement (attached) published by the Electric Reliability Council of Texas, an organization similar to the Southwest Power Pool in Kansas, over 1,400 MW of wind generation was lost in a three-hour period of time. While this was an unfortunate event, the system actually worked by disconnecting large users from the system who knew that if this situation ever occurred they could be disconnected. What we need to know is if, after this event, they still want to be subjected to interruptible power supplies. History has shown that "interruptible" customers only like the price associated with the label but if actually interrupted, they demand service.

We think that which must be included in that specific debate relates to whether emergency, industrial, commercial, residential publics expect to be interrupted when sudden loss of any resource, but especially intermittent resources, occur. It is now certain that interruptions, load rejection, preferential load-shedding, and other factors must be evaluated when deciding just how we will meet our growing electrical demand.

I would encourage the Committee to heed the words of Dr. Ralph Gamble of the Docking Institute at Fort Hays University who has encouraged the legislature to recognize that if sound energy policy cannot be set that recognizes the reality of load growth, aging existing generating plants, and the difficulty of building new base load units, the legislature should adopt rules and regulations that provide for allocating the resources we have, similar to rationing rules during World War II.

If policies, rules and regulations are not in place that provide certainty for the construction of new facilities in an economical and timely manner, we should have the courage to provide for rationing rules that address the issue of who gets the limited and scarce resources we have available.

Will hospitals come first and business or residential load last? Will schools be interrupted early in the process because school days can be made up? What industries are essential and which can be interrupted?

In the world we live in today, Dr. Gamble's ideas could become a reality. The reality is without sound energy policy we are on a path that will not guarantee us the stable electrical supply system Kansans have enjoyed for more than a century.

I believe serious consideration of the potential need for rationing this scarce resource is necessary and I encourage you to make provisions for a study of this issue in your final language.

One other suggestion I would have is that you consider directing the KCC to study the feasibility and appropriateness of retrofitting the natural gas-fired generating units with dual fuel capability since many of them were

constructed in this manner in the 1970s. That dual fuel capability was removed from many units under the mistaken belief that natural gas would always be an abundant fuel source.

HB 2949 provides that there will be an expected electric load increase in the coming years, an increase which, for some, will be quite different than that which is forecast as a state-wide average. In our case an expected expansion due to the increased demand for bio-fuels will almost certainly mean larger percent load increases for our Members. Our energy/demand growth the last two years has been 5.5%/6.9% for 2006 and 3.3%/1.8% for 2007 and the 2007 data reflects 6 weeks when the system was largely down because of the January 1 ice storm over much of our service territory. So a target in this bill must not be seen as a limitation, rather as a broad expectation that will almost certainly be wrong, since there is no average company.

We further expect that the charge to the KCC indicated in Section 3 needs to be broad enough so as to not limit their vision as to how increasing load demands might be met. As I mentioned earlier, the recognition, as evidenced in the enabling statute whereby the Kansas Electric Transmission Authority (KETA) was created, may need to be extended into the generation area as well. Expanding KETA's authority would subject the State to the costs and the risks associated with ownership of generation and transmission facilities, however, we should not forget that the private sector, whether investor or consumer-owned, has performed pretty well in the 100+ year history of the utility business in Kansas.

The recognition of the need to replace existing generating resources, whether they are fueled by coal, nuclear, or natural gas, with newer more modern resources is also important.

One element which may have been overlooked in discussion of this bill is the large number of small municipal-owned generation resources in Kansas. It is not reasonable to expect some of these resources to continue to be maintained and used to meet future load demands.

Many of them are now operated only as backup or on very hot summer days. Many will be evaluated for replacement in the not too distant future, but their replacement is increasing difficult for smaller municipal governments to manage. In our area alone, they constitute 300 MW of generation that will be replaced or retired in the next 20 years. Here again state financing of these replacements might have some advantage.

We also find that increasing demands for rapid advancement of technology, particularly those from environmental groups, place an additional handicap on financing new power projects. State-financing for more cutting-edge technology may be required, or should at least be considered in the broad energy supply category, especially if we are going to discourage or prohibit out of state utilities from participating in Kansas resources and providing revenue for funding such technology research and development.

While the bill does not specifically target transmissions resources, it is important to recognize that it is not possible to isolate transmission decisions from those involving generating resources. Transmission resources must support, accompany, or enable generation resources. New baseload

generation additions build transmission which, in turn, makes possible the addition of renewable or intermittent resources, not the other way around.

Mr. Chairman, I applaud you and the members of this Committee for engaging in this important discussion. We face a difficult struggle if the Legislature feels the need to make specific targets applicable to all utilities. Simply put, Sunflower, as a small generating company, can never hope to have the flexibility available to larger firms. Our only hope to keep our costs low, generally, is to partner with other utilities to lower costs. That is what you've seen us attempt to accomplish with our Holcomb Expansion project.

In the end, I hope the influential parties in this discussion will never lose sight of the most important responsibility all of us have—the Kansas electric ratepayer. Any policy that is not made in their interest is a policy not made in the best interest of Kansas.

Thank you for the opportunity to speak. I would be happy to answer your questions.



## **ERCOT Demand Response Program Helps Restore Frequency Following Tuesday Evening Grid Event**

The Electric Reliability Council of Texas (ERCOT) implemented the second stage of its emergency grid procedures Tuesday evening following a sudden drop in the system frequency.

Preliminary reports indicate the frequency decline was caused by a combination of events including a drop in wind energy production at the same time the evening electricity load was increasing, accompanied by multiple power providers falling below their scheduled energy production. In addition, the drop in wind energy led to some system constraints in moving power from the generation in the north zone to load in the west zone, resulting in limitations of balancing energy availability. The wind production dropped from over 1700 megawatts (MW) three hours before the event, down to 300 MW at the point the emergency procedures were activated.

By moving directly to the second stage of the emergency procedures, the system operators were able to activate ERCOT's demand response program known as Loads Acting as Resource (LAARs), which added approximately 1,100 megawatts of resources within a 10-minute period. LAARs are typically large industrial and commercial users who are paid to curtail their electricity use as needed for reliable grid operation. Most of the interruptible loads were restored after approximately an hour and a half.

Other than the interruptible loads, no other customers in the ERCOT region lost power due to the event.


The emergency procedures were declared at 6:41 pm and ended at 9:40 pm.

ERCOT operations will be preparing a more detailed and quantitative report on this event in the next few weeks.



## Combined Generation Facilities and Transmission

(Includes facilities operated for Mid-Kansas Electric Company, LLC)

<p><b>Smoky Hills Wind Farm</b> PPA: 50 Megawatts Fuel: Wind Type: Intermittent Placed into service: 2008</p>		<p><b>Gray County Wind Farm</b> PPA: 50 Megawatts Fuel: Wind Type: Intermittent Placed into service: 2001</p>	
<p><b>Holcomb 1</b> Capacity: 360 Megawatts Fuel: PRB Coal Type: Baseload Placed into service: 1983</p>		<p><b>Jeffrey Energy Center</b> PPA: 177 Megawatts Fuel: PRB Coal Type: Baseload Placed into service: 1978</p>	
<p><b>Fort Dodge 4</b> Capacity: 145 Megawatts Fuel: Natural Gas Type: Load Following Placed into service: 1968</p>		<p><b>Cimarron River 1</b> Capacity: 61 Megawatts Fuel: Natural Gas Type: Intermediate/Co-Gen Placed into service: 1963</p>	
<p><b>S-2</b> Capacity: 98 Megawatts Fuel: Natural Gas Type: Intermediate Placed into service: 1973</p>		<p><b>Great Bend 3</b> Capacity: 98 Megawatts Fuel: Natural Gas Type: Intermediate Placed into service: 1963</p>	
<p><b>Clifton 1</b> Capacity: 73 Megawatts Fuel: Natural Gas Type: Peaking Placed into service: 1974</p>		<p><b>S-5</b> Capacity: 53 Megawatts Fuel: Natural Gas Type: Peaking Placed into service: 1979</p>	
<p><b>S-4</b> Capacity: 51 Megawatts Fuel: Natural Gas Type: Peaking Placed into service: 1976</p>		<p><b>Cimarron River 2</b> Capacity: 15 Megawatts Fuel: Natural Gas Type: Peaking Placed into service: 1967</p>	
<p><b>S-3</b> Capacity: 14 Megawatts Fuel: Natural Gas Type: Peaking Placed into service: 1968</p>		<p><b>GC-3</b> Capacity: 9 Megawatts Fuel: Natural Gas Type: Intermediate Placed into service: 1962</p>	
	<p align="center"><b>Combined Transmission System</b></p> <p>345-kV Line - 221 Miles    115-kV Line - 1,691 Miles 230-kV Line - 192 Miles    69-kV Line - 120 Miles 138-kV Line - 86 Miles    73 Substations</p>		

Sunflower/MKEC Generating Facilities (including Municipals) in Balancing Control Area														
Station Name	Holcomb	JEC <sup>2</sup>	Fort Dodge	Great Bend	Cimarron River		Clifton		Garden City					Municipals <sup>3</sup>
Unit Designation <sup>1,2</sup>	1	1, 2, 3	4	3	1	2	1	2 <sup>1</sup>	GC3 <sup>1</sup>	S2	S3 <sup>1</sup>	S4	S5	153 <sup>3</sup>
Min Capability (MW)	90	0	28	26	20	5	5	2	5	25	5	5	5	0
Max Capability MW)	360	174	145	96	57	14	70	2	10	90	13	50	50	215
Ramp Rate (MW/min)	4	N/A	3	1	1	5	8	N/A	N/A	3	2	6	6	N/A
Fuel	Coal	Coal	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas	Nat Gas
Backup Fuel	45 days	45 days	none	none	none	none	none	none	none	none	none	none	none	Varies
Fuel Cost (\$/mmBtu) (3/6/08)	1.50	N/A	8.75	9.25	9.12		10.19		none	none	none	none	none	--
Year in Service	1983	1977-79	1968	1963	1963	1967	1974	--	1962	1973	1968	1976	1979	--
Unit Age (years)	25	30	40	45	45	41	34	--	46	35	40	32	29	Varies
Expected Unit Life (years) <sup>4</sup>	60	N/A	60	60	60	50	50	--	50	60	50	50	50	35-60
Estimated Retirement Date	2043	2019 <sup>2</sup>	2028	2023	2023	2017	2024	--	2012	2033	2018	2026	2029	2025-35

<sup>1</sup>Clifton 2, Garden City GC3, and S3 units are emergency use and black start units (nat gas fuel) that are not normally dispatched

<sup>2</sup>174 MW purchase power agreement (expires 2019) from Jeffrey Energy Center (JEC) (coal fuel) is not dispatchable but is the energy is scheduled from it the day before utilization

<sup>3</sup>Municipal generating units within balancing area are not dispatchable, but may be scheduled similar to those for JEC - they are shown for completeness

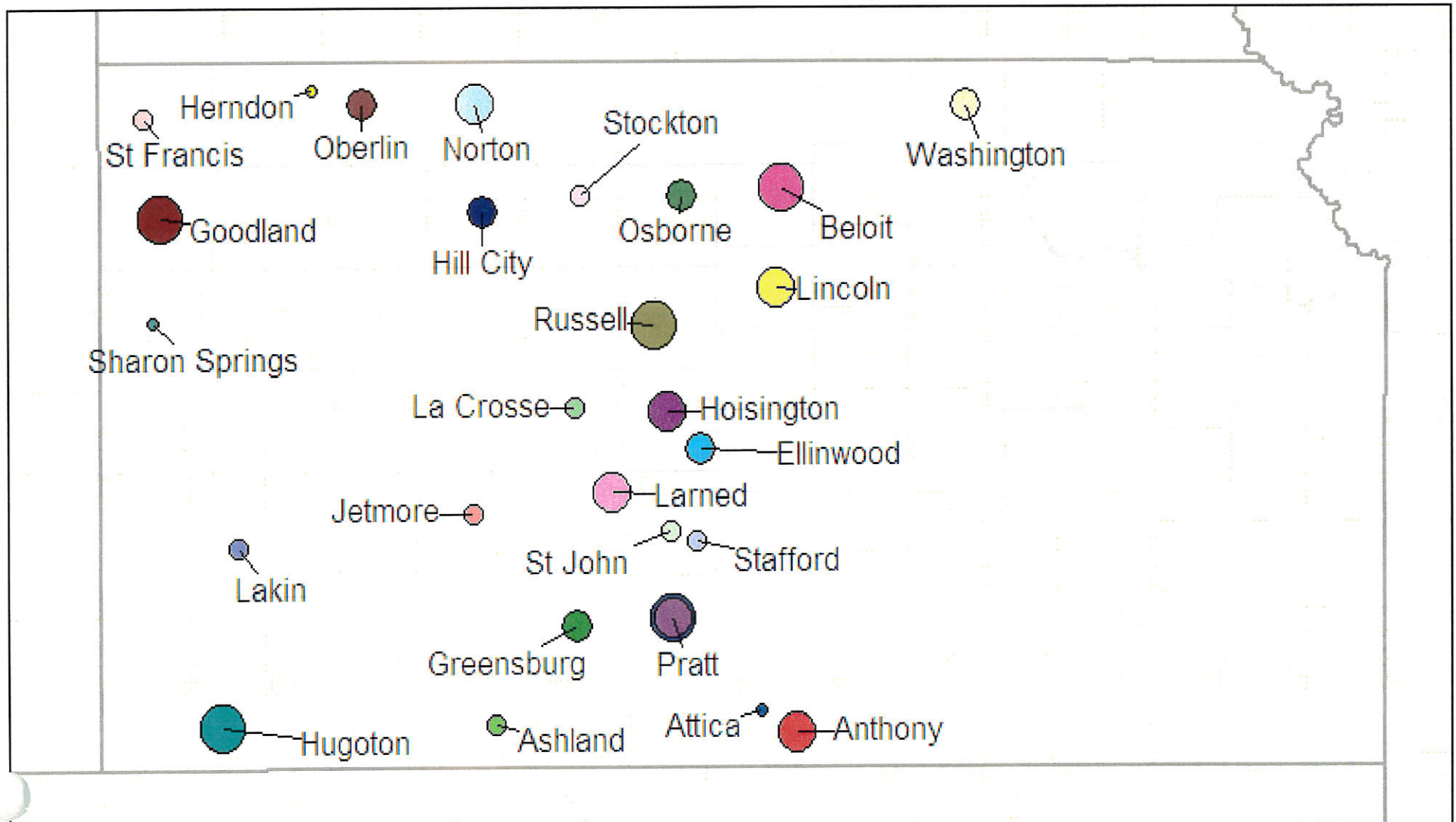
<sup>4</sup>Steam units - 60 years; combustion turbines - 50 years; combustion engines - 50 years, depending upon design, service life, and maintenance cost.



# Sunflower/MKEC Municipal Generating Facilities

1-14

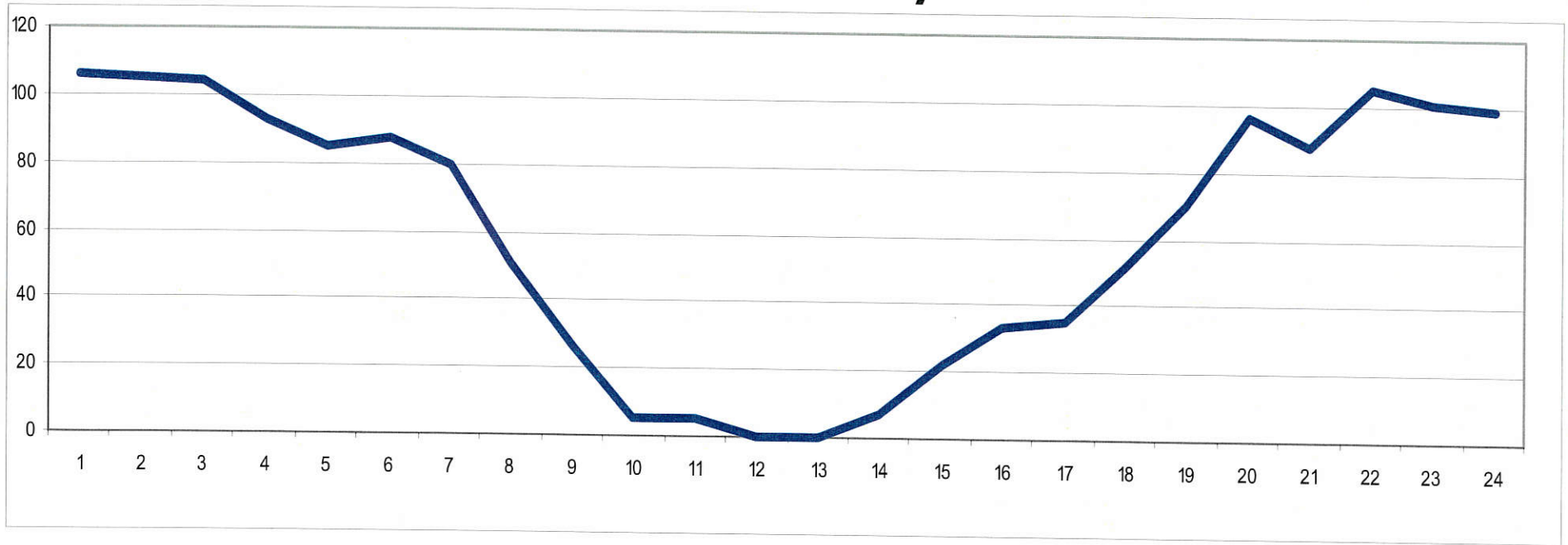
Total No. of Generating Units - 153  
Average Unit Age - 37.0 years  
Median Unit Age - 41.2 years  
Total Name Plate Capacity - 313 MW



# Gray Co. Wind Output

1-15

## Common Day

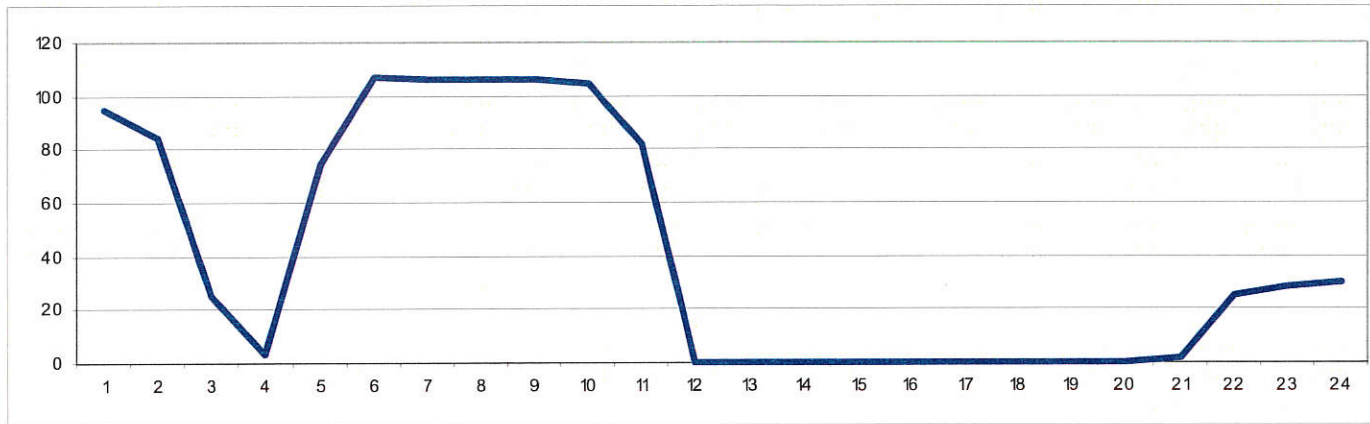




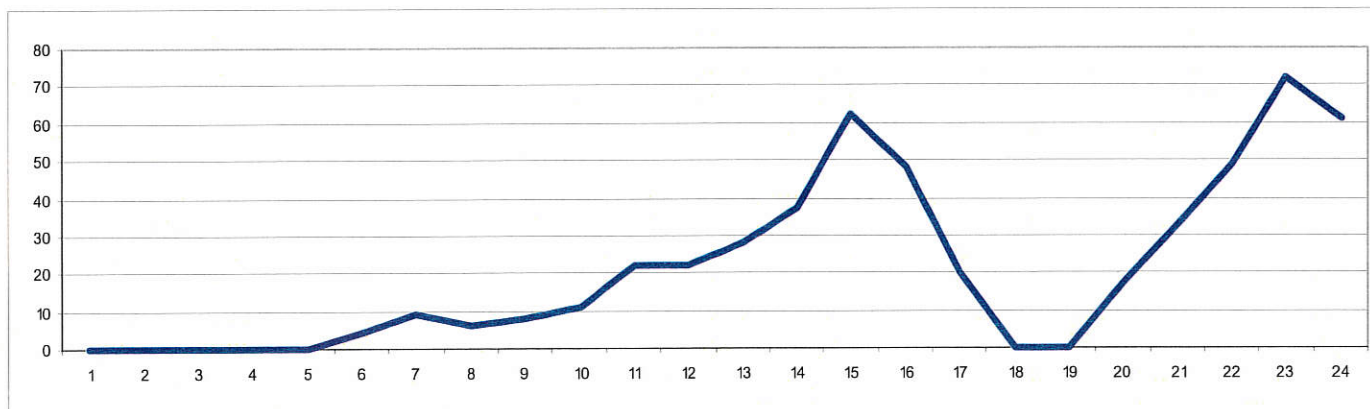
# Gray Co. Wind Output

9-16

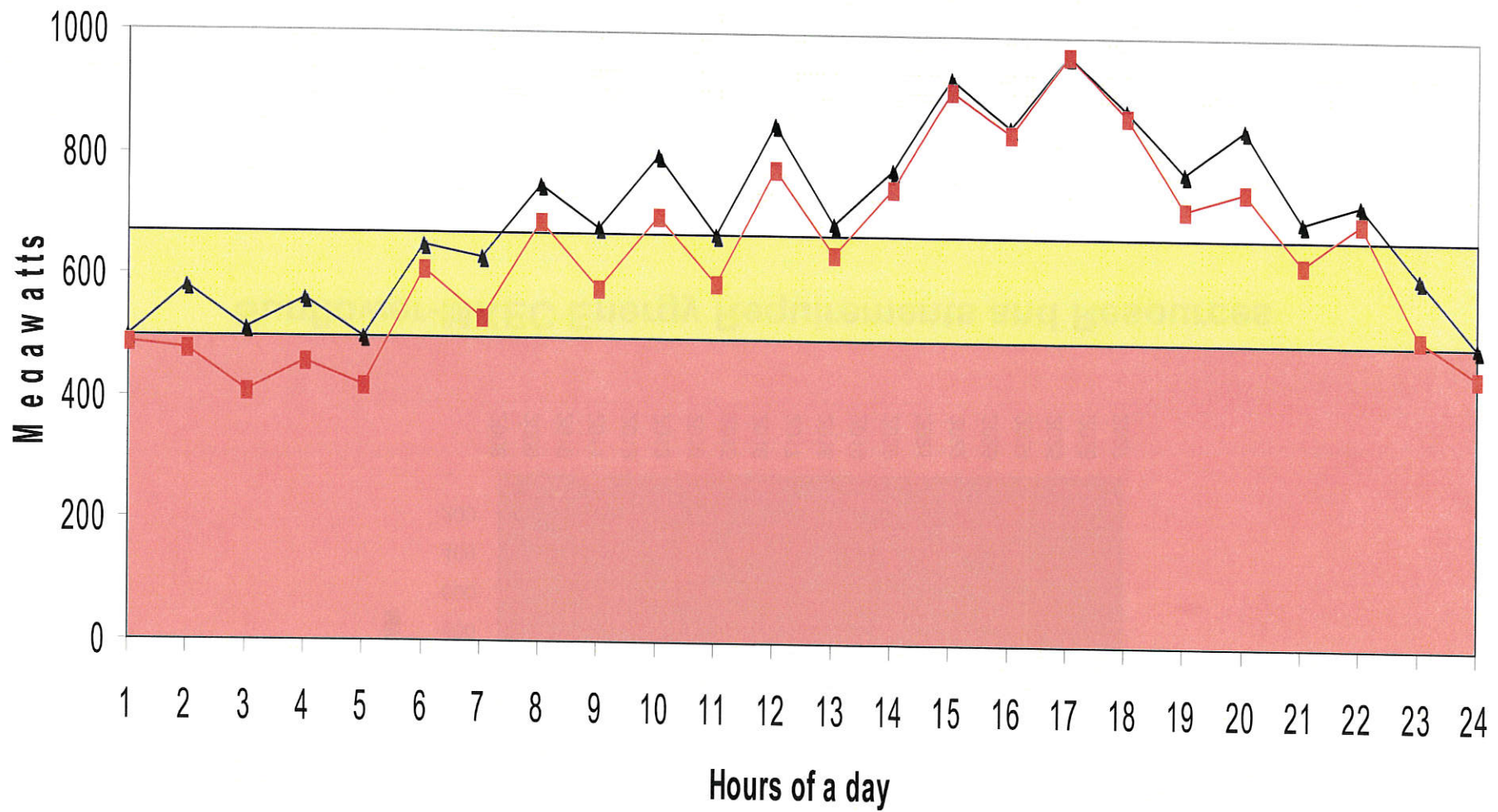
## Early Morning Spikes



## Evening Spikes

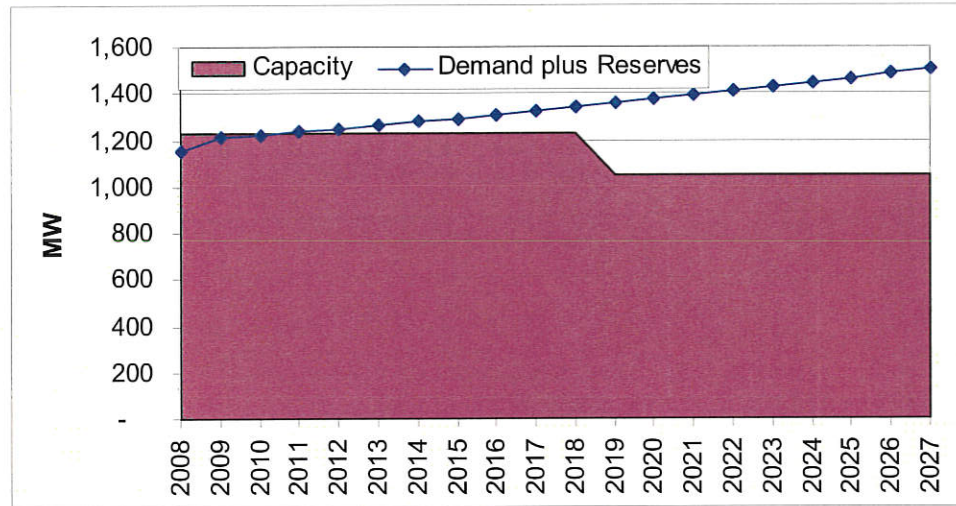


### Load and Resource Graph

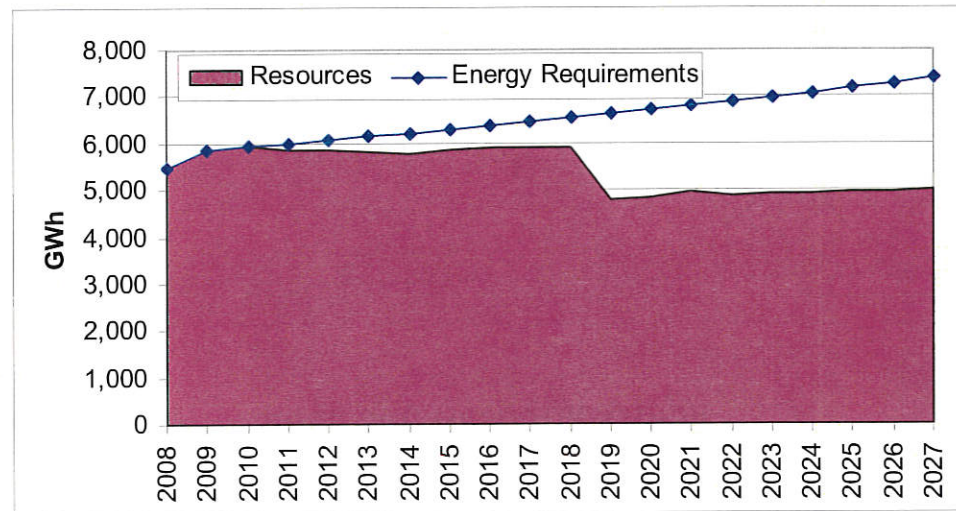


Baseload Generation Intermediate Generation Load Net Load (w / Wind)

## Sunflower-MKEC Summer Demand plus Reserves and Capacity



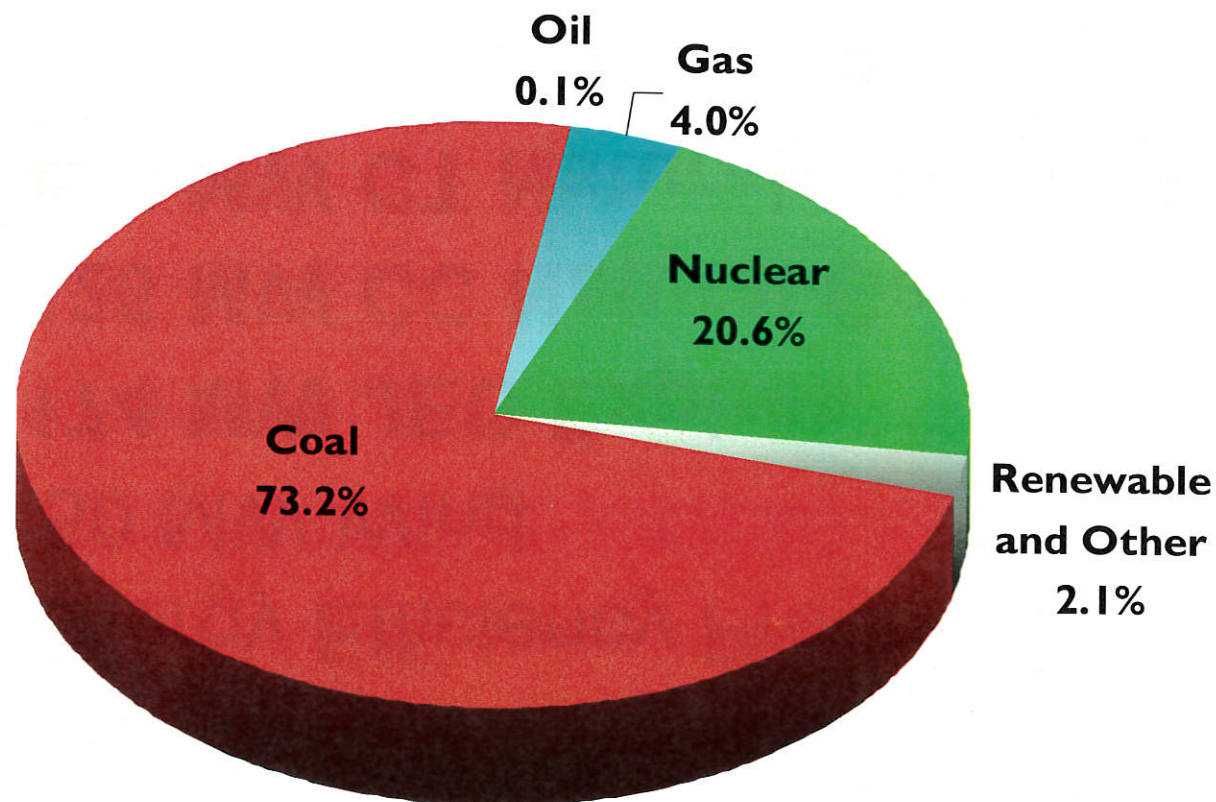
## Sunflower-MKEC Energy Requirements and Resources





# Kansas Electricity Generation Fuel Shares 2006

1-19



Source: Global Energy Decisions / Energy Information Administration

Updated: 2/08

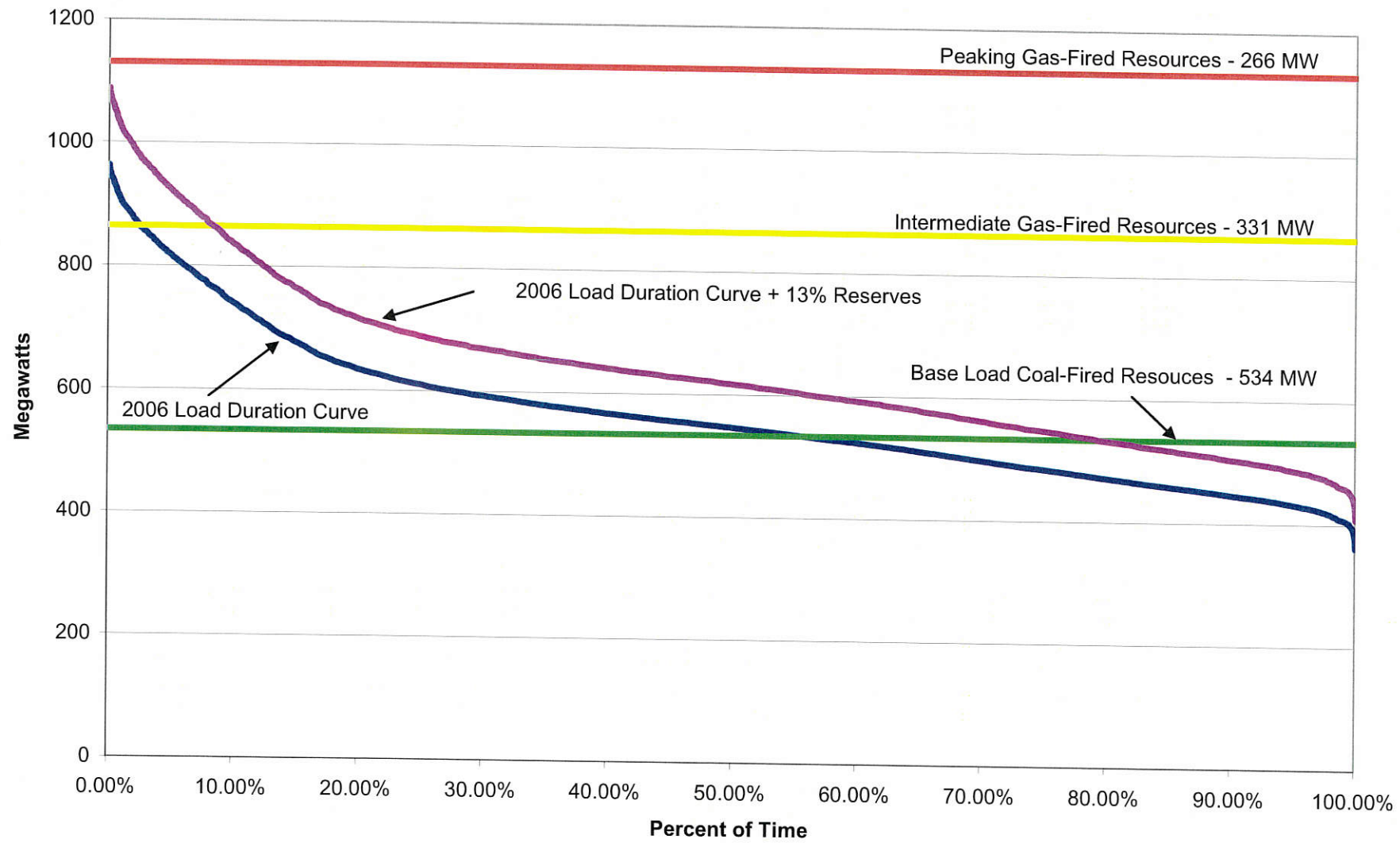
# Sunflower/MKEC Future Energy Resources – w/o coal or nuclear

1-20

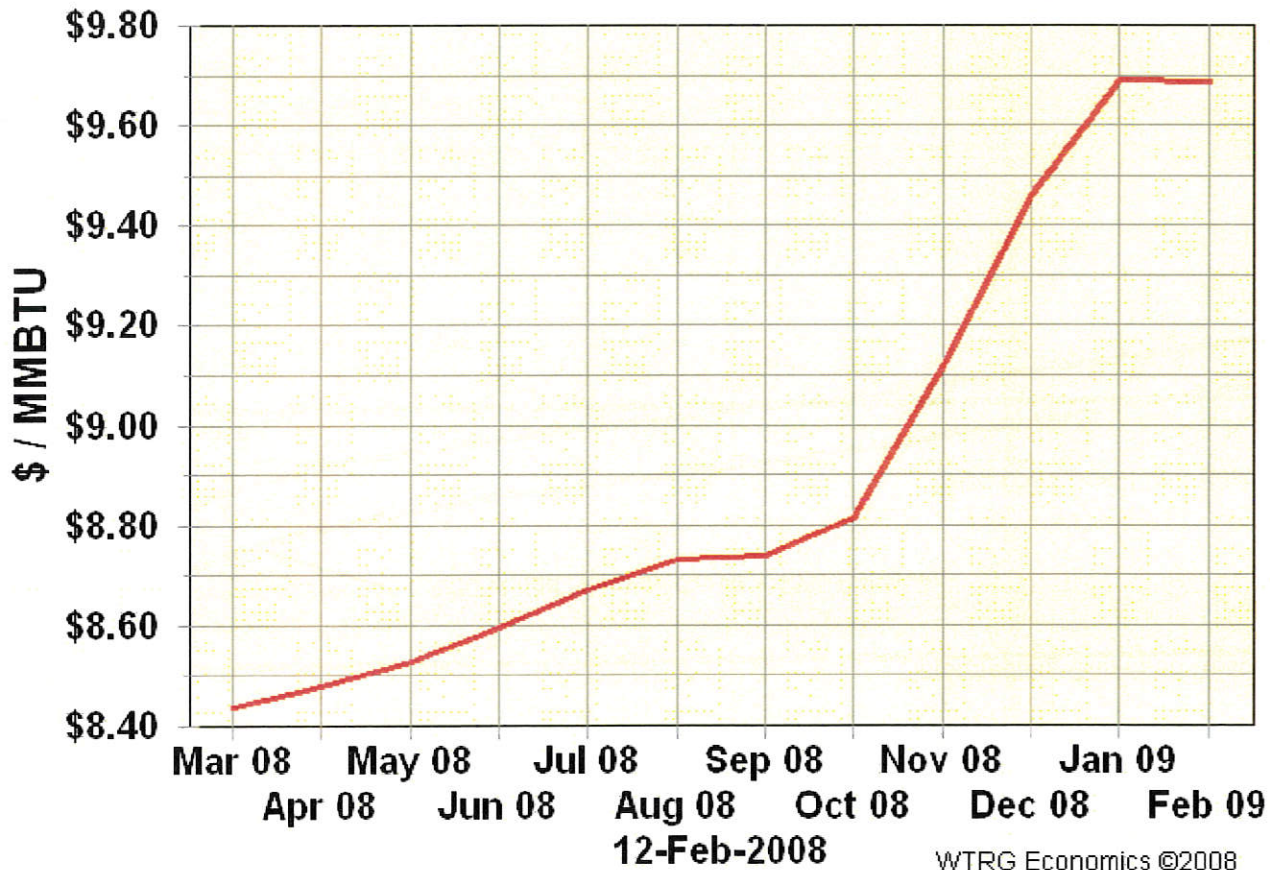
- 2013 - 125 MW PC (Holcomb Expansion)
- 2009 - Energy Efficiency Programs
- 2015 - 50 MW Wind
- **2019 - 174 MW JEC Expires**
- **2019 - 125 MW CC Natural Gas**
- **2019 - 125 MW CT Natural Gas**
- 2025 - 100 MW CT Natural Gas
- **Total - 475 MW**



# Sunflower-MKEC 2006 Load Duration Curve



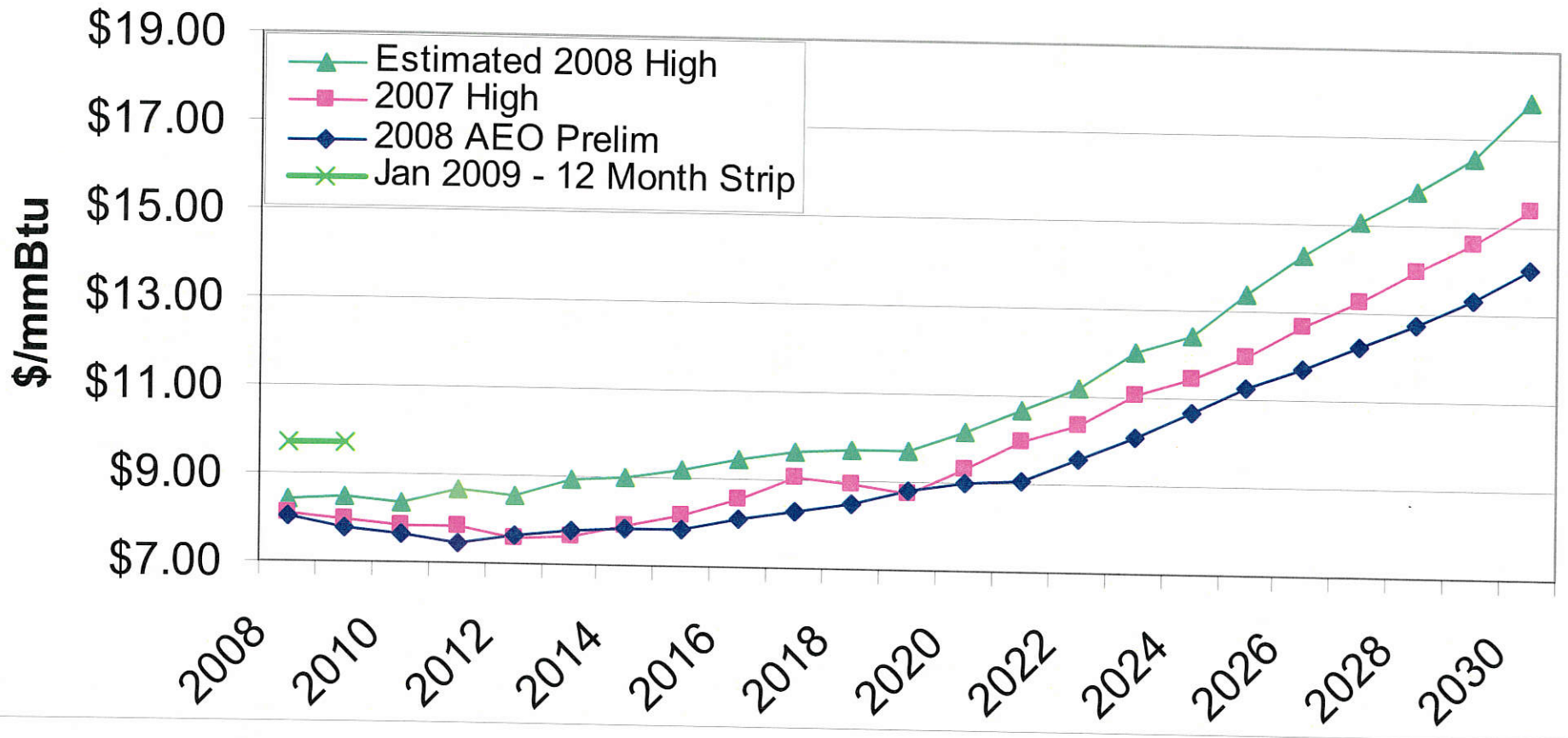
### Futures Strip Natural Gas Henry Hub



12 - month average \$8.91

WTRG Economics ©2008  
www.wtrg.com  
(479) 293-4081

# Natural Gas Projection



Source: DOE — EIA Annual Energy Outlook for 2007



## Meeting Our Customers' Energy Needs

### A Strategic Plan For Uncertain Times

#### ***Our Mission***

*Westar Energy provides safe, reliable, high quality electric energy service at a reasonable price to all customers.*

Select Committee on Energy &  
Environment for the Future  
3/11/08  
Attachment 2

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## Introduction — Planning in an Uncertain Era

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Westar Energy has been engaged in a comprehensive planning effort to develop and refine investment choices and operational initiatives to serve the future energy needs of our Kansas customers. We worked from the premise that any plan must (a) be consistent with our resolve to succeed as an electric-only public utility and (b) fit within the broader context of evolving public sentiment about energy and environmental policy. The velocity and magnitude of technological, market and policy change affecting the industry is unprecedented and, as a consequence, the effort has not been routine. Matters we considered include:

- Just in the last two years, the estimated price of a baseload coal plant has nearly doubled — from about \$1,200-\$1,500 per kW to as much as \$2,400-\$2,900 per kW.
- During the same period, the monthly average price of natural gas has slumped as low as \$3.65 per MMBtu and soared as high as \$15.41 per MMBtu.
- The uncertainty is not just financial; during late 2005 and much of 2006, Westar experienced serious challenges in obtaining timely coal deliveries.
- Concern that there might be a correlation between greenhouse gases (GHG) and global warming has moved from a polarizing debate to mainstream belief, leading to calls for urgent and fundamental change in energy production and consumption.
- The public increasingly is drawn to the allure of "clean coal," even though the requisite technologies have not yet proved themselves in commercial applications.
- A growing body of the public and policy-makers across the country is poised to reconsider long-held anxieties about nuclear generation in exchange for its promise of carbon-less power.
- A lack of consistency in how states and federal agencies are addressing air quality issues is creating enormous uncertainty about future operational and financial burdens on existing and future fossil-fuel generation.
- While energy efficient appliances give consumers the ability to reduce their electric usage, the ever-expanding array of energy-hungry appliances pushes demand steadily upward as electricity becomes an ever-more integral part of our modern, high-tech lives.

A utility planning process, by its very nature, is designed to achieve a reasonable level of certainty and reasonably assured outcomes. However, Westar sees seismic

***Good utility planning traditionally has sought to minimize the variables and to make reasoned judgments based upon well-accepted rules of the game. Given the velocity and magnitude of change in our industry, what characterizes good planning now is the ability to embrace uncertainty. It is perilous to do anything less.***

shifts in the assumptions shaping our industry that have convinced us that this is not a time to be satisfied with conventional thinking, nor, when so much is at stake, is it right to manufacture a clarity around these issues that does not exist. Our planning efforts have identified fundamental uncertainties affecting our business: volatility in fuel and construction costs; technological advances in how electricity is generated, delivered and metered; new imperatives for energy efficiency; and evolving environmental policies and standards. We believe what characterizes good planning is to embrace these uncertainties and to acknowledge our limited capability to predict future outcomes.

Accordingly, Westar has chosen a strategy that creates and preserves as many options as possible, avoids over-commitment to a single dominant approach, and maintains diversity through flexible supply planning and cost-effective demand management.

Significant elements of our strategy have been shared publicly, presented to the Kansas Corporation Commission (Commission), and are now being reviewed or implemented. They include the environmental upgrades at the Jeffrey Energy Center and other coal plants, construction of the Emporia Energy Center, the development of major wind generation capability, and the building and upgrading of transmission facilities. Westar has also publicly advised of our intention to invest significant additional resources to enhance our distribution system, and develop multiple energy efficiency programs and supporting infrastructure. Although each project is discrete — and may be proposed in individual filings to the Commission — each is also an essential component of our overall strategy. Our intent in this paper is to lay out the rationale and context for this broader strategy and to explain the implications of various options.

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### **Guiding Principles of Westar's Strategy**

- Be flexible, adapt as conditions change
  - Preserve options
  - Maintain diversity
  - Avoid over-commitment to one course
- 

Westar's management believes in the inherent value of openness and transparency — so that our customers, investors, and regulators know what we are doing, why we are doing it, and what we anticipate the costs and benefits to be. It is our



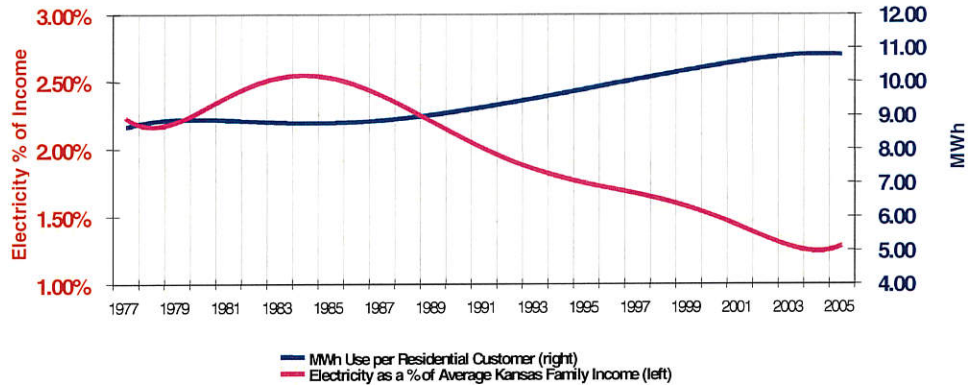
hope that this paper will facilitate the continued development of a collaborative and cooperative approach to addressing Kansas' and the industry's energy challenges.

The paper is also intended as an invitation to open discussion with the Commission and other policy-makers regarding both the uncertainties and the foundational shifts in the energy picture. While, of course, respecting the independence of the Commission in its regulation of Westar, we believe that having a shared understanding of industry conditions provides worthwhile context for future decisions.

## The Fundamentals of our Strategy

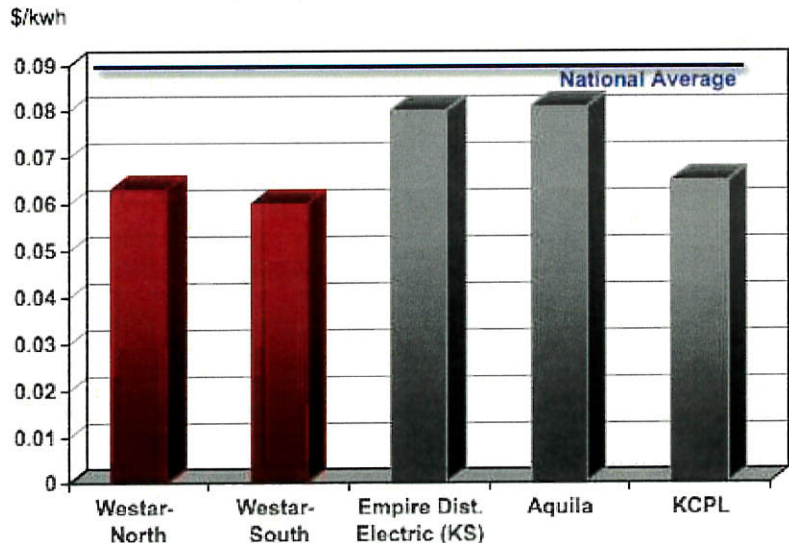
Westar's customers have enjoyed reliable electric service at prices that are very low in both absolute and relative terms. Electricity cost as a percentage of household income for our residential customers has declined significantly over the last 30 years. (Figure 1) Notably, this decline has occurred in the face of rising household electricity consumption.

**Figure 1**  
Average Electricity Usage and  
Cost as a % of Household Income



Westar compares very favorably with electric rates in Kansas but, even more notably, *our rates, at \$.06/kWh on average, are more than 30% below the national average of approximately \$.09/kWh.* (Figure 2) Equally important for Westar is that our customers in both our north and south regions now have virtually identical tariff structures and legacy rate differentials have been significantly narrowed.<sup>1</sup> Future cost increases and infrastructure investment will necessarily mean higher

**Figure 2**  
Kansas Electric Rates



<sup>1</sup> We are now approaching the time when the tariff structures and rate schedules for Westar North and South should be fully consolidated.

prices for customers. Nonetheless, we believe that our approach will afford a solid means to preserve a continuing relative price advantage for our customers well into the future, even as absolute prices increase.

Like many other utilities, Westar typically would be expected to meet increased customer demand by building peaking units until overall load grew to a point where baseload plant economics would prevail. If we were to follow that approach, we would be building a baseload coal plant, similar to those at LaCygne or Jeffrey, to become commercially operational in the middle of the next decade. A confluence of events, however, indicates that such an approach brings greater risk for Westar and its customers than it did in the past:

- rapidly rising costs for construction materials, equipment, and labor for baseload generating facilities;
- rapidly growing opposition to using coal to generate electricity, fueled by the intense policy debate regarding carbon dioxide emissions and GHG effects;<sup>2</sup>
- notable improvements in wind technology, coupled with abundant Kansas wind resources; and
- evolving state and federal policies encouraging the development of transmission plant, renewable energy sources, and a focus on energy efficiency.

These factors lead us to pursue a strategy that respects these uncertainties and seeks to navigate a path for the next few years that will help us control risks and continue to assess the changing landscape of our industry and its impact on our long-term strategy and investments.

The evaluation of options that once seemed either obvious or undesirable may change. For this time, however, we have concluded that Westar should:

1. ***Attempt to bridge the gap in emerging generation technologies*** and satisfy environmental concerns through a combination of:
  - energy conservation and efficiency programs;
  - wind generation;
  - high efficiency, quick starting natural gas combined and simple cycle turbines;
  - transmission network enhancements;
  - enhancements to the productivity of *existing* coal plants; and
  - extending the operating life of our *existing* nuclear plant.

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<sup>2</sup> Natural gas is also a fossil fuel, but only emits about 40% of the carbon dioxide that coal generation emits.

2. Continue to make **significant investments in environmental upgrades** at existing coal plants.
3. Continue to study and **remain flexible** with respect to traditional baseload coal, nuclear, and emerging baseload technologies.
4. **Construct new (and improve existing) high-voltage transmission facilities** that will enhance reliability, improve the ability of Kansas utilities to move economic energy into and across the state, and facilitate the development of wind generation.
5. **Defer** as long as we reasonably can the addition of a **conventional baseload pulverized coal plant**.
6. Maintain focus on **improving the reliability of our distribution system** for our retail customers.
7. **Deploy advanced metering** infrastructure to:
  - Enable energy efficiency programs;
  - Improve service reliability;
  - Increase customers' service options and control over their energy service; and
  - Improve customer satisfaction.

Our plans do not mean that Westar will not need baseload plants in the future. Long-term trends in customer demand all suggest that, at some point, Westar will again have to invest in baseload generation. However, we believe there is great value to Westar and its customers from deferring a commitment to a conventional coal plant — especially at a time when the cost may be \$2 billion and there are so many questions being raised about the environmental impact of continued development of this conventional technology.<sup>3</sup> It is our expectation that, while we pursue a more diverse and flexible approach to supply planning, greater clarity will emerge regarding future environmental policy. We also expect that information regarding the commercial availability and costs of the emerging baseload technologies, particularly related to "clean coal," will become more certain.

These strategies reflect an evolution, not a departure, from our track record of ensuring Kansas has low-cost, reliable power — in fact, we believe they are consistent with our commitment to ensure that our investments are aligned with a clear view of emerging technology, market needs and public policy. The departure is the shift from the norms that have characterized our industry for decades. We are now entering an era where environmental considerations will weigh heavily in shaping the understanding

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<sup>3</sup> Westar does not engage in climate change debate in this paper. Rather, we address that subject as an acknowledged political and social reality around which we must plan to meet our customers' needs. In September 2007, Westar issued a policy statement with regard to its position on climate change. This policy statement is attached as Appendix A.



of and policy for energy development in our country. It is still very much a work in progress.

## **What Guides us to our Strategy**

We are committed to openly sharing with policy-makers the process we went through to arrive at our strategy, as well as the considerations we weighed. We also believe the rhetoric that characterizes some of the debates in our industry should yield to thoughtful analysis and a dispassionate view of the facts. In that spirit, we will outline here the overall planning approach we employed, followed by our evaluation of possible energy supply and demand resources. In this evaluation, we categorize options as core or complementary elements of our comprehensive strategy — and also identify options that are not now part of our strategy, but should continue to be studied. We will detail how we evaluated each supply and demand resource and how we arrived at the core and complementary elements of our strategy. Finally, we will discuss why we believe we should not eliminate some potential options that could become more viable as circumstances change.

In preparing our strategy, we have continued to work with experts from Black & Veatch, LLP (B&V) regarding generation needs and alternatives. The B&V studies provided a foundation for our decisions and the associated Commission filings for the Emporia Energy Center and wind generation. The studies also constituted important inputs into our development of an overall supply and demand strategy. The forecast peak demand used in our current planning studies utilizes a methodology that was jointly developed by KCC staff and Westar.

Following are the key areas of our planning addressed in this paper:

### **Generation Considerations**

The generation component of our plan now contemplates:

- completion of the natural gas peaking units at the Emporia Energy Center;
- development of wind generation by year end 2008;
- when necessary, reliance on an additional natural gas peaking unit; and
- the subsequent construction of an intermediate duty combined cycle natural gas-fired plant.

There are several factors that will influence our plans for these generation additions:

- customer response to our energy efficiency and demand side initiatives;
- the availability of options to acquire existing generating capacity in the region;

- the future status of long-term wholesale power supply sales contracts;
- our ability to contract for and import power over the transmission grid;
- the results of turbine and other upgrade efforts undertaken in conjunction with environmental investments at our coal plants; and
- our ability to extend the operating life of the Wolf Creek nuclear plant.

A significant contribution to our ability to defer a new baseload plant and aggressively pursue wind generation is the existence and continued long-term use of our high quality and highly reliable baseload coal and nuclear stations, and our plans to continue to improve the productive capability of these stations.

Generation planning is a continuing process, however, so we fully expect to make adjustments to our construction schedule as conditions change and we revise our assumptions accordingly.

### **Energy Efficiency and Demand Side Management Initiatives**

Westar will propose several energy efficiency initiatives and the enabling technologies that can be deployed to make energy efficiency a more integral part of the Kansas energy mix. We will explain how these technologies, including what are referred to as advanced metering infrastructure and meter data management systems (AMI/MDM), can assist customers in using energy more efficiently and in reducing peak demands on our system. These technologies also offer service-related benefits such as improved outage responses, better-informed reliability planning, and enhanced customer satisfaction.

### **Transmission Enhancements**

The transmission section of this paper will show how major transmission enhancements are integral to our strategy. Our focus will be to improve the capability and efficiency of our system. This will permit us to maximize access to generation resources, as well as to prepare for the greater integration of wind power into the state's generation mix.

### **Environmental Issues and Projects**

Continuing our focus on ensuring our existing assets are operating in an environmentally responsible way, we will discuss the environmental considerations in our plan, including environmental retrofits at the Jeffrey, Lawrence and Tecumseh Energy Centers and LaCygne Station, and anticipated additional costs necessary to ensure compliance with applicable government requirements.



## **Reliability Initiatives**

The reliability of our distribution system is another essential part of our plan, and in this section we will detail the initiatives such as performance measures and objectives and associated programs and plans (e.g., vegetation management and preventive maintenance) we are undertaking to assure reliable service to customers.

## **Financing and Rate Implications**

The magnitude of, and the risks associated with, the investments being discussed here carry implications for rates and the credit standing of the company. We will address long-term financing plans and rate implications associated with these significant infrastructure investments. We start from a position of a very strong price advantage for our customers and a restored credit standing for the company. Our intent is to preserve those foundations at a time when increasing energy costs are a fact of life and the climate for investment is uncertain.

## **Regulatory Plan**

The final section of the report provides an overview of anticipated regulatory filings and approvals associated with implementation of the various components of our strategy.

## Overall Planning Approach

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Starting in late 2006, it became apparent that in almost any direction we focused, we saw unprecedented change. At first it was subtle: rising materials prices; contractors seemingly less hungry for business; the hiring of skilled labor taking a bit longer. Then we saw others in the industry announcing upward revisions to their cost estimates on major projects. Almost immediately after we agreed to purchase the Spring Creek peaking plant in Oklahoma, we noticed that prices paid to purchase existing merchant power plants starting to increase — making our effective cost of \$175/kW a tremendous bargain compared with the rising tide of the market.<sup>4</sup> We then experienced rising costs for our environmental retrofit projects at LaCygne Station and Jeffrey Energy Center. We also observed much higher demands being placed on the rail system, including incidences of longer cycle times for coal deliveries continuing from late 2005.

In recent years, public interest in utility-related environmental matters has grown significantly. Until recently, announcements pertaining to new coal plants did not attract much opposition.<sup>5</sup> Now, an announcement of a coal plant anywhere in the United States seems to attract vigorous opposition and intense scrutiny. At the same time, national policy leadership began to project a more urgent and concerned tone about climate change and the role the United States ought to play in addressing it. Today, the debate seemingly is no longer about whether climate change is happening, but rather about who pays for supposed remedies.

Today, we see proposed coal plants either being postponed or canceled. Examples of this are the eight TXU coal plants canceled in Texas, the rejection of the Florida Power and Light Company's (FPL) proposed Glades County coal plants by the Florida Public Service Commission and the North Carolina decision to scale back Duke Energy's planned coal expansion from two to one unit. It was in this still-developing context that Westar announced in December 2006 that it was deferring a decision on its potential plans and possible sites for a future baseload coal plant. Of course, closer to Westar, regulators have more recently denied coal plants in Oklahoma and western Kansas.

These events — coming in such swift succession and with such mounting force — caused us to step back from our traditional approach to planning. No longer could we count on the market following a sustained direction for any reasonable period of time. No longer could we count on predictable costs for labor or materials. In fact, there are

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<sup>4</sup> Recent reports indicate that construction costs for a new gas turbine peaking unit may exceed \$550/kW — approximately three times the acquisition cost of Spring Creek.

<sup>5</sup> Indeed, when Westar announced in May 2005 that it was initiating a search for the site of a future coal plant, reaction was generally supportive. Proponents from several areas of the Kansas enthusiastically sought to have a coal plant located in their vicinity.



now so many influential and uncontrollable variables — including public and political sentiments about the choices we face as a society on energy and climate concerns — we concluded that we must start finding a way to reflect them in our thinking.

First, we determined that we must look at the potential impact of these variables, including evolving public opinion, on our future investments in generation. When we objectively considered these influences, our analysis led us to conclude that these debates would inject significant uncertainty into the normally more stable planning process. We determined that the right path was not to try to predict the outcome of such turmoil, but rather to embrace the uncertainty as a reality and use it as context — rather than as a threat — to our planning. Accordingly, we approached our strategy with the aim of preserving flexibility and options as long as possible, maintaining diversity in our energy supply portfolio, and avoiding the over-commitment to what could turn out to be "fragile" or even "bet-the-company" energy supply strategies that might also harm our customers' interests.

In our planning process, we looked at the attributes of potential elements of an energy supply portfolio under various scenarios. We then classified each potential supply source:

CLASSIFICATION	DEFINITION
<b>Robust</b>	useful and valuable in almost any imaginable circumstance
<b>Flexible</b>	likely can be added, deleted, or adapted to fit many changing circumstances
<b>Fragile</b>	while potentially valuable in a narrow set of circumstances, might create huge liabilities in other circumstances

## The Planning Landscape

As an initial step in the planning process, we considered the reasons behind the advantages that our customers presently enjoy: reliable service and low prices. Those benefits stem largely from long-term decisions made with regard to our power portfolio, namely the decisions to build baseload coal plants, a nuclear plant, and to use natural gas sparingly. We also considered our use of wholesale sales as a means of balancing the economies of energy supply with changing demand, both over the short and long run. We then looked at the overall landscape to determine what might be the best way to maintain (and even extend) these advantages for our customers, and to consider the heightened concerns about environmental stewardship, which we now believe take on a level of importance

***We believe environmental stewardship has now taken on a level of importance akin to that of reliability and price.***

akin to that of reliability and price. Would the best approach be to do more of the same? Or would advantage come from doing something different?

The drivers in these analyses included such things as natural gas supplies and price volatility. We considered evolving environmental regulations; opportunities for us and the industry to increase production from existing plants; and the developmental state of generation technologies. In particular, we looked at generating technologies in the context of environmental concerns and the degree to which emerging technologies have been proved and commercially demonstrated. An economic overlay included factors such as the global demand and price trends for industrial materials, engineering services and skilled labor. We researched the potential for conservation and energy efficiency. We also considered assumptions about variability in future customer demand. Our conclusions follow.

## Generation

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### Natural Gas Generation

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Natural gas is a proven fuel source for peak generation — it is generally efficient, its capital costs are relatively low and it has lower carbon emissions than coal-fired baseload generation. While natural gas serves well for peak generation, it is a poor substitute for baseload generation for the industry as a whole. The significant negatives we observed included rapidly declining production curves and high and volatile prices. Moreover, if there are delays in the construction of baseload coal or nuclear plants, the demand for natural gas likely will be even greater than it is today, driving prices higher still.

But when we looked specifically at Westar, we saw another factor. Because of our prior management's decisions to build baseload plants in the 1970s and 1980s, only a small portion of Westar's electric generation — about 3%-6% — is fueled with natural gas. This compares with 19% on average for the nation. Accordingly, where other utilities might be putting their customers at undue risk to take on any more exposure to natural gas prices, Westar could generate additional electricity from natural gas and still use proportionately far less gas than many other utilities.<sup>6</sup> For example, FPL has stated that if it has to build natural gas fired plants in lieu of its proposed, but recently rejected, coal plants, FPL will be 70% dependent on gas-fired generation by 2016.

From these observations we drew four conclusions:

1. Our existing gas fleet, even though having been in service for many years, performs well and serves as a dependable base giving us great flexibility in choosing ways to expand our generation resources.
2. The use of our existing gas plants, coupled with new turbines, can be an effective complement to intermittent wind generation.
3. The combination of gas and wind provides a hedge to mitigate potential carbon taxes and other related costs.
4. Although not a substitute for long-term baseload plants, more reliance on natural gas, when combined with wind generation over the next few years, should allow us to span the present period of uncertainty with respect to developing technologies and environmental policy.

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<sup>6</sup> While there may be narrow circumstances in which more reliance on natural gas is appropriate, *i.e.*, the unique circumstances Westar describes in this report, Westar believes that due to the decreasing availability of supplies and the cost and volatility of natural gas, it should not be considered widely as a regional or national substitute for needed baseload generation.



Our proposed plan suggests that we may increase our percentage of generation from natural gas from approximately 6.0% in 2007 to 10% or 11% in 2017. Although this likely will cause our costs to rise from their current levels, other new sources of generation also would cause prices to rise, and perhaps by much more. Moreover, we believe using a bit more natural gas is a responsible trade-off when one considers the huge and unknowable risks associated with alternative strategies to meet customer demand — particularly the risks of moving ahead on a conventional coal or nuclear plant or on a commercially unproven technology.

### **Existing Baseload Coal**

We concluded that our existing baseload coal assets must continue to be a core element of our supply strategy. Our coal fleet today provides about 79% of our electric generation. With solid predictive maintenance practices, coal generation will continue to be an essential resource for Westar and its customers. We believe maintaining and maximizing the use of these existing assets is a prudent course of action. Accordingly, we are upgrading the environmental controls at these existing plants, and, as provided in the permit application we recently submitted to the Kansas Department of Health and Environment (KDHE), we are seeking to make environmental modifications that also allow us to increase the production and efficiency of these assets. It is important to note that one factor enabling Westar to pursue wind generation as aggressively as we have is the existence of our highly reliable baseload coal and nuclear plants and our plans to use them well into the future.

### **New Baseload Coal**

Even though so much of our electricity already comes from coal, given cost and environmental concerns about additional coal plants, we concluded that deferring (for as long as we responsibly can) a commitment to a new baseload coal plant was a prudent course of action.

In arriving at this conclusion, we considered a number of factors. The first was cost uncertainty as to both fixed and variable costs. Although the cost of coal as a fuel source has been much less volatile than natural gas or purchased power prices, because coal plants emit more than twice the CO<sub>2</sub> of modern natural gas-fueled plants, a carbon tax or cap and trade program could make the variable cost of producing electricity from coal much less attractive.

There were also the capital costs to consider. The size and complexity of coal stations, coupled with the global demand for engineering services, industrial material and skilled labor have driven the cost of building coal plants to record high levels. As stated in our opening of this paper, we estimate that the cost of constructing a baseload coal plant has about doubled in just the last couple of years. Moreover, given that the optimum economic size of such a plant is as much as 800 MW or more, a single generating plant can cost as much as \$2 billion. This exceeds the \$1.9 billion combined

net book value of all of Westar's existing generating plants. We also considered the enormous concentration of risk associated with having \$2 billion of investment concentrated in a single generating unit.

If one considers the possibility of having to extract and sequester carbon from such a plant with technology that does not yet exist (at least on a commercially-proven basis for utility-scale applications), the risks are magnified. Moreover, it is possible that emerging carbon regulations may provide some relief relating to existing assets through a "grandfathering" protocol. It seems less likely that new plants would be afforded any such relief. In our planning we considered the possibility of having to make extensive and expensive modifications to a brand new \$2 billion plant to equip it with some as yet unknown form of carbon capture and storage capability.

Accordingly, we came to the conclusion that it is prudent to avoid a commitment to a new baseload coal plant for as long as we can without impairing reliability. This does not mean that we will never need to build another baseload coal plant or that a baseload plant will not clearly be in the best interests of our customers. Our decision is to defer, not to completely avoid, construction of such a plant. Moreover, circumstances will change, and they could potentially change quickly in the direction of an opposite conclusion. Nevertheless, we see deferral, for as long as is responsible, as the appropriate course of action at this time.

With regard to the future of baseload capacity in our plan, our approach is to remain flexible.<sup>7</sup> An illustration of what this means is that we will continue to study the feasibility of constructing a coal plant, or potentially acquiring rights in a plant that might be developed by another. We may ask the Commission in a future application to approve the cost recovery of such ongoing studies, even if they do not result in the actual construction of a new plant. Our studies to date suggest that there may be only a very few suitable sites in Kansas for a new coal plant. It is prudent for us to spend modest amounts to preserve this option for the future. In addition, we remain flexible with regard to potentially co-owning coal capacity developed by another utility or even acquiring capacity in an existing coal plant.

## **Nuclear Power**

If carbon dioxide and other greenhouse gases continue to be the concern they are today, and absent some unforeseen break-through technology, the United States must again embrace nuclear power. Nuclear power produces virtually no greenhouse gases. Today, approximately 19% of our nation's electricity comes from nuclear power.

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<sup>7</sup> For example, in the event of significant customer response to our energy efficiency initiatives that actually reduces demand and leaves Westar with excess generating capacity, our current plan would permit us to address this circumstance by retiring our older, less efficient gas-fired generating facilities. If, instead of maintaining this flexibility we had moved ahead to construct a large baseload plant, then we and our customers would be confronting more constrained and much more expensive options for addressing such an eventuality.

Over the past 15 years, the improvements in the output of existing United States nuclear plants have provided the energy equivalent of building about 20 more plants. Wolf Creek is an example of this type of improvement. During its first five fuel cycles, it operated at an average capacity factor of 74%. For the last five fuel cycles, it has operated at an average capacity factor of 91%. Moreover, Wolf Creek's owners and Wolf Creek Nuclear Operating Corporation have undertaken efforts to increase the plant's peak capacity from 1,150 MW to 1,200 MW. Combined, the improvements in operations and capacity reflect the equivalent of about a 28% increase in annual MWh production. Westar has benefited to the extent of its 47% share of the plant. In addition, every nuclear plant that has sought re-licensing has had its petition granted. Westar and its co-owners have requested a 20-year life extension and expect a ruling from the Nuclear Regulatory Commission late this year. Unfortunately, the achievement of these remarkable gains in productive output means that further gains of such magnitude cannot be replicated.

Simply replacing existing nuclear plants as they are retired will require a huge commitment to nuclear power. If we are to meet new demand, or supplant existing demand that today is met by fossil fuels, a much greater commitment to nuclear power is required.

Nevertheless, there are tremendous obstacles to any renaissance in nuclear power. First, until October 2007, no license for a new nuclear power plant had been sought in the United States for over 30 years. Second, there exist substantial obstacles to long-term spent fuel storage. Finally, because no nuclear plant has been built in the past decades in the United States, no one knows what a plant will cost or how long it will take to bring one on-line.

We believe the appropriate place in our supply plan for nuclear energy is to maintain, and where possible, expand Wolf Creek's productive capability, and to remain vigilant and flexible with regard to potential interest in another station — some day. Wolf Creek is on a site originally designed for two units.<sup>8</sup> It is possible that another unit might some day be developed along side of it. It is also possible that the current owners of Wolf Creek might seek to own some or all of such a unit. Until some important questions are answered, however, we believe it is more prudent for us and our customers to be in a position of being a "fast follower" rather than an "early adopter" with regard to new nuclear plants.

As indicated in the case of new baseload coal, we believe a responsible approach to new nuclear power is to continue to study it and maintain a position of readiness. It is possible that in a future application Westar might request Commission authority to recover costs associated with the ongoing study related to expanding Wolf Creek's present capacity, or potentially acquiring an interest in additional nuclear capacity at the Wolf Creek site or elsewhere.

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<sup>8</sup> Because Wolf Creek operates at substantially higher capacity factors than originally anticipated, it also requires more cooling water than originally anticipated. Accordingly, Wolf Creek's existing water rights are not likely to be adequate for two units of Wolf Creek's design, size, type, and performance.



## Clean Coal Technologies

Westar is keenly interested in the prospects for "clean coal" technologies, but it is important to our discussions that there be a shared understanding of what "clean coal" is — the term is not very definitive in the public debate, nor even in the industry. The term can embrace a range of technologies – Rankine-style<sup>9</sup> super-critical or ultra super-critical steam, oxy-fired coal, CO<sub>2</sub> capture and sequestration and coal gasification.

<b>Type of System</b>	<b>Characteristics</b>	<b>Benefits/issues</b>
<b>Rankine Super-critical or Ultra super-critical steam</b>	A variation on the conventional steam power cycle in which system pressure operates in excess of the critical point (3300 psi).	Rankine Supercritical/ Ultra supercritical cycle is more efficient than conventional subcritical Rankine cycle. A 3500 psi supercritical unit with double reheat is about 4% more efficient than the subcritical Rankine.
<b>Oxy-fired coal</b>	Oxygen-firing of pulverized fuel (PF) in boilers involves the combustion of pulverized coal in a mixture of oxygen and recirculated flue gas in order to reduce the net volume of flue gases – compared with the normal pulverized coal combustion in air.	Increases the CO <sub>2</sub> concentration in the off-gases from about 15% for PF up to a theoretical 95% and thus creates a gas stream thought to be more conducive to capturing and sequestering carbon.
<b>Flue gas carbon capture and sequestration</b>	Processes by which CO <sub>2</sub> is extracted from the flue gas as it exits the boiler or turbine (i.e., post-firing), with the CO <sub>2</sub> subsequently transmitted to a place or state in which it can be stored.	CO <sub>2</sub> is prevented from becoming a GHG; a challenge is extracting the CO <sub>2</sub> from a low-pressure gas stream in which it reflects only about 10%-15% of the volume.
<b>Coal gasification with carbon capture and sequestration</b>	Extracts and sequesters the carbon dioxide before combustion, leaving more pure "syngas" to be burned in traditional combined cycle gas turbine.	Seeks to capture carbon, before it is combusted, from a gas stream in which CO <sub>2</sub> may represent about 50% of the gas volume.

Unfortunately, with the exception of the Rankine system, the discussion of these technologies is well ahead of commercial reality. For example, for all of the talk about

<sup>9</sup> This involves a thermodynamic process by which heat is converted into work through the production of steam that is then used to drive a turbine. The steam is produced by applying an external heat source to a working fluid in a closed loop.



carbon capture and sequestration, there exists no utility-scale flue gas carbon capture from a coal-fired electric power plant anywhere in North America. As for utility-scale integrated coal gasification combined cycle plants, only two of them exist in the entire United States, both of which required years of effort to achieve reasonable capacity factors, burn primarily pet coke rather than coal, and do not sequester any carbon. As evidence of the challenges of building new coal plants, Tampa Electric Company (TECO) and PacifiCorp (a subsidiary of MidAmerican Energy Holdings), both recently announced the withdrawal or deferral of plans to construct integrated gasification combined-cycle technology (IGCC) plants. In making its announcement, TECO cited continued uncertainty related to CO<sub>2</sub> regulations, particularly capture and sequestration issues, and the potential for related project cost increases. Even with \$133.5 million in federal tax credits available to TECO for the project, TECO stated that with regulatory uncertainty and related potential cost increases, IGCC "may not be the most cost-effective technology to use at this time."<sup>10</sup>

As appealing as these technologies may be — and as much as they may be the focus of media attention and public and political fascination in the global warming debate — they are no panacea in their current form. We believe it prudent to insulate our customers from risky ventures, which may be better suited to larger companies with greater financial resources and with larger customer bases over which to recover the potentially ballooning costs. While some may characterize companies exercising such caution as "dragging their feet" in the future, we believe a "fast follower" approach is reasonable, prudent and best serves the long-range interests of our state. We are committed to remain active in our study of these developments, and nimble enough that we can quickly adopt technologies once they are commercially proven. It is possible that at some future date we would propose specific projects or research and development efforts for which we would seek appropriate cost recovery in rates, including participating in broad-scale research with other utilities or the Electric Power Research Institute. In the interim, we welcome confirmation of our plan to continue to study clean coal technology, and, for the time being, to avoid major commitments to it.

## **Wind Power**

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Wind is the most readily available renewable generation resource in Kansas — and with a new generation of technology and a wave of popular support, it has come into its own as a viable option for utilities seeking to close the gap between growing electricity usage and the pressures on traditional fossil fuel power plants. With the right understanding of how wind can augment the supply of power — and appreciating its practical limitations — wind can play a valuable and essential role in our future energy resources in Kansas.

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<sup>10</sup> On January 30, 2008, the U.S. Department of Energy announced that it was abandoning the FutureGen project. FutureGen was intended to be an experimental clean-coal project employing carbon capture and sequestration technology. The 275 MW plant was estimated to cost \$1.8 billion at the time of abandonment or over \$6,500/kW.

In its favor, wind power has been propelled most recently by significant advances in the size and efficiency of wind turbines — from less than a megawatt each only a few years ago to 3 MW or more today. Additionally, there is greater confidence that new turbine designs and materials can lead to better long-term reliability (although because of the technology's relative infancy, that optimism has not yet been established in long-term applications).

The availability of wind compared with other forms of renewable energy in Kansas is supported by Westar's experience with the request for proposals (RFP) we issued in February 2007. Our RFP was open to all forms of renewable energy. However, all the responses we received were for wind energy.

At the same time, we must recognize that wind cannot supplant baseload generation over the long term. Baseload power is controllable and — absent a forced outage — can be relied upon to consistently deliver electricity when needed. By contrast, wind production may founder in the still air of a hot summer day. Where wind works best is when it is matched with a controllable peak power source like natural gas combustion turbines that can be ramped up or down to respond to the vicissitudes of nature.

Although wind power still carries risks (some of which are often overlooked in the public debate), we are confident that wind power has earned a place in the mix of power resources in Kansas. We are committed to move forward with investments in this area and anticipate the commercial operation of three Kansas wind farms totaling nearly 300 MW of generation by year-end 2008.

## **The Appropriate Supply Plan**

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A number of significant factors can influence the propriety of a supply plan — among them are social considerations, geopolitical influences, regulation, technology, and economic conditions. These factors and others, working together and against one another, create an endless number of possible outcomes and conditions that can create both modest and extreme, and sometimes unpredictable, results.

Given the nature of Westar, its investor base, and the essential nature of the public service we provide, we set about developing a strategy that we expect will substantially reduce the probability of extreme outcomes. In essence, instead of focusing all of our efforts in an area that might have a huge payoff (for us and/or our customers) in very limited circumstances — but could put the company and its service at risk if those narrow circumstances do not occur — we instead focused on maintaining more diversity in our planning. This approach decreases the likelihood of extreme outcomes — essentially by trading off the chance for very positive (but improbable) outcomes for the assurance that we were not putting our customers or investors at undue risk. We believe this approach to be fully consistent with our strategy of being a pure electric utility; a strategy that we announced five years ago and one that we have continued to execute.

In forming Westar's strategy, we looked comprehensively at potential supply and demand resources. This included a review of our existing resources: coal plants; Wolf Creek; transmission investments; gas steam plants; gas turbines; purchased power; and demand side management. We also looked at resources we do not presently have in our portfolio, including: wind; potential new baseload or nuclear plants; emerging clean coal technologies; advanced metering and meter data management systems; new energy efficiency programs; and other forms of renewable energy.

### **Evaluation of Potential Supply and Demand Resources**

We evaluated the fitness of each resource for our supply plan by considering whether the resource held a position of advantage, disadvantage, or uncertainty with regard to important factors. From that, we determined a recommended course of action with respect to the resource. As described earlier in this report, we sought to gauge in what ways each resource was robust, flexible or fragile — and assess how each option would allow us to achieve our "bridging" strategy in a way that had the least cost impact on our customers while delivering the highest value and reliability. (Table 1 set below) Following is our assessment of the advantages, disadvantages and uncertainties of each resource option:

**Table 1**

	ADVANTAGE	DISADVANTAGE	BOTH/NEITHER/ UNCERTAIN
<b>Wind Power</b>			
Political acceptance	•		
Path to cost recovery	•		
Portfolio diversity	•		
Synergy with transmission and gas generation	•		
Mitigates potential for more costly, less logical renewable mandates	•		
Cost		•	
Stability of technology/risk of rapid technological obsolescence		•	
Ability to estimate future costs			•
Purchased Power agreement (PPA) or ownership options			•
Operational learning curve			•
Future of production tax credits			•
<b>New Baseload (pulverized coal)</b>			
Proven, familiar technology	•		
Fits baseload profile	•		
Reliable	•		
Low operating cost (absent extreme carbon penalty)	•		
Local acceptance	•		
Emissions (carbon, sulfur, NOx, mercury)		•	
Water use		•	
Fuel delivery risk		•	
International public opposition		•	
Seen as "old" technology		•	
Rapidly rising costs		•	
Huge single shaft capital commitment		•	
<b>Clean Coal (IGCC, Oxy-Carbon capture)</b>			
Policy support (at least initially)	•		
No meaningful utility-scale experience		•	
Uncertain cost/impact on rates		•	
Uncertain development time		•	
Unproven carbon capture		•	
Unknown carbon penalty			•



**Table 1 (continued)**

	ADVANTAGE	DISADVANTAGE	BOTH/NEITHER/ UNCERTAIN
<b>Smart Grid</b>			
Scalable/modular	•		
Likely path to cost recovery	•		
Political acceptance	•		
Operational efficiency and excellence	•		
Customer education and acceptance		•	
Ability to firm up financial business case			•
Completing and changing technology/risk of obsolescence			•
Effectiveness			•
<b>Existing Gas Steam Plants</b>			
Very low net investment	•		
Pipeline access	•		
Lower carbon emissions	•		
Public acceptance	•		
Current under-utilized capacity	•		
Load following flexibility	•		
Exposure to gas prices		•	
High operating cost		•	
Age		•	
Thermal efficiency		•	
Ability to burn oil			•
<b>Gas Turbines (Existing &amp; Future)</b>			
Average age	•		
Pipeline access	•		
Geographical diversity	•		
Operational flexibility	•		
Modularity/shaft risk	•		
Lower carbon and water usage	•		
High availability to complement wind	•		
High operating costs		•	
High exposure to gas price volatility		•	
Thermal efficiency			•

Table 1 (continued)

	ADVANTAGE	DISADVANTAGE	BOTH/NEITHER/ UNCERTAIN
<b>Energy Efficiency</b>			
Political acceptance	•		
Flexible/scalable/ability to pilot test	•		
Internal (self help; e.g., heat rate projects) as well as external (customer) opportunities	•		
Ability to predict outcomes		•	
Path to cost recovery (e.g., customer investment and lost sales volumes)			•
Cost			•
Effectiveness as a generation substitute			•
Customer expectations			•
<b>Existing Coal Fleet</b>			
Low operating cost	•		
Reliable	•		
Retrofitting to latest environmental requirements	•		
Local political acceptance and support	•		
No present call to shorten their lives or curtail production	•		
Well-established proven technology	•		
Heavy carbon emitters		•	
Heavy water users		•	
Fuel delivery risk/cost of transportation		•	
JEC site suitable for future expansion			•
Age			•
PRB coal			•
<b>New Nuclear</b>			
Zero carbon emissions	•		
Growing public acceptance	•		
Low marginal cost	•		
Heavy water user		•	
Extreme capital commitment		•	
Lack of modularity/scalability		•	
Uncertain costs		•	
No long-term waste storage solution		•	
Uncertain construction schedule		•	
Operational flexibility		•	
Site suitability for another unit at Wolf Creek			•

**Table 1 (continued)**

	ADVANTAGE	DISADVANTAGE	BOTH/NEITHER/ UNCERTAIN
<b>Transmission Expansion</b>			
Consistency with policy mandates/directives	•		
Known technology	•		
Path to cost recovery	•		
Core competency	•		
Synergy with wind	•		
Degree of outside influence and control		•	
Lack of scalability/high cost		•	
Competition			•
<b>Purchased Power</b>			
Smaller on-balance sheet capital commitment	•		
Ability to plan with smaller or shorter term increments	•		
Discourages Kansas energy independence		•	
Exposure to sharp price volatility at the end of contracts		•	
Inability to earn a return on investment		•	
Impact on creditworthiness		•	
Less subject to oversight of KCC			•
Creditworthiness of counter parties			•
Reliability of counter parties			•
Flexibility			•
<b>Other Renewables (Solar/Landfill Gas/Hydrogen/Biomass)</b>			
Ability to pilot small scale	•		
Lack of meaningful scale		•	
No industry standards		•	
Immature technology		•	
Cost		•	
Geographic limitations of solar		•	
Future mandates			•

We concluded from the analysis of each resource type that:

- Wind generation, conservation and efficiency, new transmission investments, continued reliance on our existing baseload plants, and enhanced use of gas turbines should be core elements of our supply strategy — elements that we intend to pursue wholeheartedly.
- Implementation of smart grid technology, continued use of our older gas steam turbines, and purchased power have advantages, but that they also

have prevalent weaknesses or limitations. However, because they are flexible, we include them in our strategy as complements to the core items.

- With respect to new baseload coal plants, new nuclear plants, emerging clean-coal technologies or forms of renewable energy other than wind, we believe the appropriate course of action is to study them further, but not to pursue them today as part of our supply strategy.

The summary of our strategic assessment of options for meeting customer demand appears in Table 2.

**Table 2**

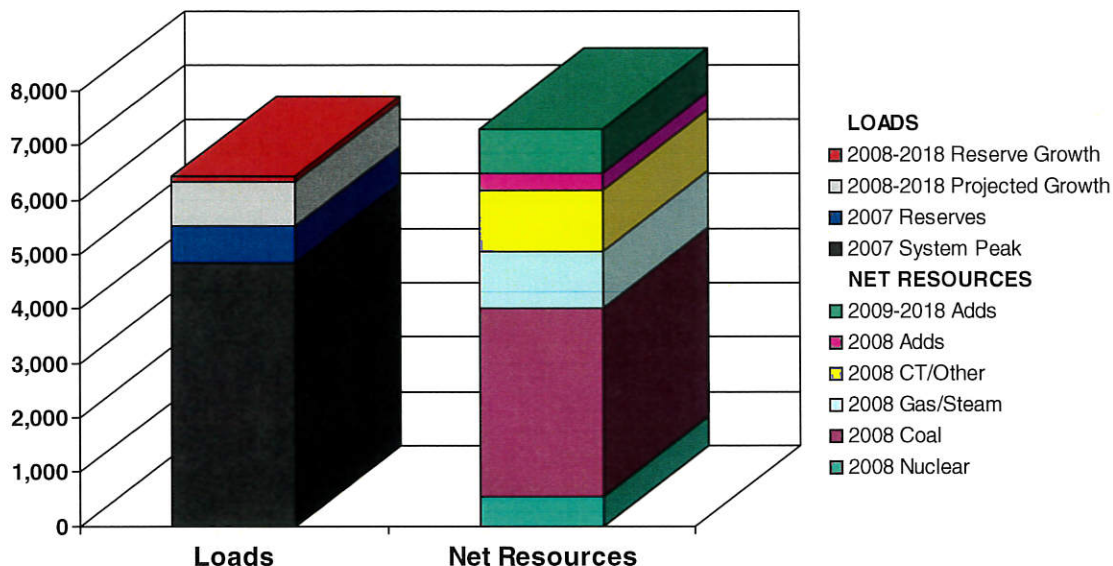
	<b>Robust</b>	<b>Flexible</b>	<b>Fragile</b>
<b>Wind</b>	✓		
<b>Consumer energy efficiency</b>	✓		
<b>Smart grid</b>		✓	
<b>Transmission expansion</b>	✓		
<b>Existing coal fleet</b>	✓		
<b>Wolf Creek</b>	✓		
<b>Gas/steam plants</b>		✓	
<b>Gas turbine (peaking/mid-duty)</b>	✓		
<b>Purchased power</b>		✓	
<b>New conventional coal baseload</b>			✓
<b>New nuclear</b>			✓
<b>Other renewables</b>			✓

### Electric Loads & Resources Modeling

The long life of many of our generating resources requires that we consider a planning horizon of decades. However, because circumstances change dramatically over time, and because the nearer term has the greatest weight in terms of present value to our customers and us, we have focused our attention on the first 10-year period.



**Figure 3  
Loads (2007) and Resources  
(in MWs)**



The left side of Figure 3 above shows our 2007-system peak and reserves, as well as reflecting load and reserve growth through 2018. It reflects an annual growth rate in electrical demand of approximately 1.5%.<sup>11</sup> Our 2007 peak demand was 4,836 MW.<sup>12</sup> For planning purposes, we project the peak to be 5,648 MW in 2018. We are required by the SPP to maintain a 12% capacity margin above peak demand. The right side of Figure 3 shows net resources that we expect to be available by 2018.

Table 3 shows the baseline assumptions we used to estimate the cost of different types of capacity, fuel and other variable costs/benefits, availability factor and capacity factor.

Another factor is customer demand. While our customer base has been growing steadily, and demand for energy along with it, we know that customer demand might also change. In fact, some of our efficiency programs are specifically designed to change customer demand. Accordingly, scalability of the resource is an important factor. If we can flex the resource to meet changing customer demand, it presents an advantage. An inflexible resource would score poorly in that regard. The programs designed to reduce demand are described in the next section of this report.

<sup>11</sup> Westar and Commission Staff have finalized a collaborative forecast demand model. Westar has incorporated results produced by that model into its supply planning and decision-making.

<sup>12</sup> By contract, we also currently provide significant generating capacity to other distribution utilities, primarily in Kansas.

**Table 3**  
**Baseline Assumptions (500 MW)**

	Coal	Wind	Natural Gas Combustion Turbines	Natural Gas Combined Cycle
Capital \$/kW	\$2,400-\$2,900	\$1,650-\$2,200	\$500	\$800
Fuel Cost (Tax Credit) \$/MWh	\$14.50	(\$19.00)	\$83.81	\$55.25
Non-Fuel Variable O&M \$/MWh	\$2.20	N/A	\$2.00	\$2.50
Non-Fuel Fixed O&M \$/kW-yr	\$17	\$30	\$6	\$13
Capital Cost	\$1,325M	\$963M	\$250M	\$400M
Availability Factor	85% - 95%	N/A	95% - 100%	95% - 100%
Planned Capacity Factor	85% - 95%	36% - 45%	5% - 15%	25% - 60%

### Present Supply Plan

Table 4 below shows our present supply plan, including the MW we intend to install and the years in which the plan shows the additional generation is needed. Our plan includes building or acquiring 300 MW of wind generation to be commercially operational in 2008. For reasons that we described in detail in our wind generation predetermination filing, the Southwest Power Pool, Inc. (SPP) credits capacity to wind at only a fraction of the installed nameplate rating. Although Westar is developing almost 300 MW of wind generation through ownership or power purchase agreements, it is assigned a 10% capacity recognition because of its intermittent characteristics and the SPP policy.

**Table 4**

	Incremental MW			Total without Wind	Wind	Total with Wind
	CT/CC/Aero	Coal	Nuclear			
2007	300	175		475		475
2008	310			310	30	340
2009	300			300		300
2010						
2011			16	16		16
2012						
2013	150			150		150
2014						
2015	350			350		350
2016			4	4		4
<b>Total</b>	<b>1,410</b>	<b>175</b>	<b>20</b>	<b>1,605</b>	<b>30</b>	<b>1,635</b>



## Energy Efficiency

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Westar is a microcosm of what is happening nationally in the electric energy sector. Consider first the national appetite for electricity. The Energy Information Administration (EIA) forecasts electricity consumption to increase at an average annual rate of 1.3% through 2030. It is reasonable to assume the electricity usage by Westar customers will largely parallel this growth trend.

Energy efficiency is important to Westar's plan. Many energy efficiency technologies can be deployed faster and at lower cost than supply-side options. Accordingly, we view energy efficiency as a high priority energy resource.<sup>13</sup> Another benefit of energy efficiency is that it reduces GHG emissions, first through direct load reduction and second by deferring the need for new generation. If we are entering a carbon-constrained future, energy efficiency's value will rise. The virtues of energy efficiency elevate it to a preferred option for electric utilities. Westar is no exception. In our educational and communications plans, we are promoting energy efficiency as "the first thing to do." It cannot answer the entire electric resource need, either nationally or for our customers, but it is the best first step. Energy efficiency holds great promise.

### Paradox #1

***Although customers endorse energy efficiency and express a desire for it, there is little evidence that they have curbed their ever-increasing consumption of energy. The challenge is not one of technology, but rather how to match technology with a broader public acceptance of the need for a change in behavior.***

What is the rub? Although customers endorse energy efficiency and express a desire for it, there is little evidence that they have curbed their ever-increasing consumption of energy. The challenge is not so much one of technology, but rather how to match technology with a broader public acceptance of the need for a change in behavior. For this reason, and probably others, opinions vary widely on energy efficiency's potential effect on demand and savings associated with it. Much depends on accurately predicting the vagaries of human behavior and, harder yet, changing consumer behavior.

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<sup>13</sup> Some argue that "negawatts" of energy efficiency are of equal value to megawatts. Even if this were true and we attained a degree of energy efficiency such that every additional megawatt of load was offset by a negawatt of energy efficiency, we would still eventually have to add generation because existing facilities will wear out. Nevertheless, energy efficiency is a high priority resource. For example, a well-designed demand response program could be treated as a resource in Westar's dispatch order; the demand response program would be triggered when it became the most economic increment in the generation dispatch order to meet customer demand.

Energy efficiency is not achieved merely by the actions of electric utilities. To succeed, policymakers will have to align incentives for utilities and their customers — and begin to take a visible role in convincing the public that energy efficiency is now a public priority. This means that serious consideration must be given to regulatory mechanisms to make energy efficiency a sustainable business model for utilities. That includes determining the potential of demand response options like real-time pricing. Electric rates are low compared with income,<sup>14</sup> and in Westar's case this is particularly so. Moreover, longstanding rate setting practices disguise price signals and sometimes maintain rates at artificially low levels. As a result, consumers have few prompts to change their behaviors — or perceptions. Innovative ratemaking approaches for implementing energy efficiency programs such as real-time or time of use pricing, decoupling, targeted incentives and incorporating demand side management (DSM) in rate base all merit Commission evaluation. These approaches are not exclusive of one another — nor is this list exhaustive.

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 that the Commission wishes to promote energy efficiency through a collaborative process among utilities, consumers and government agencies. Clearly, the Commission has ample authority over investor-owned utilities to approve energy efficiency programs and adopt innovative ratemaking mechanisms, including increases in rates of return or other incentives, to advance the interests of both customers and utilities.<sup>15</sup> Given the Commission's express findings and clear statements of intention, it appears to us that no statutory hindrances exist. Westar will be participating actively and constructively in the two parallel investigations the Commission has initiated to evaluate costs and benefits of energy efficiency programs and to examine how the Commission will address ratemaking treatment of energy efficiency programs.

**Paradox #2**

***With Westar's relatively low electricity prices and without technology to receive price signals, consumers have few prompts and little economic incentive to be more efficient in their use of electricity.***

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<sup>14</sup> See Figure 1, page 6.

<sup>15</sup> In the same order, the Commission noted its limited jurisdiction over retail rates of municipal and small cooperative utilities. Westar has engaged in wholesale business with many Kansas municipal utilities and rural electric cooperatives, and plans, whenever practical, to invite those same wholesale customers to participate in our energy efficiency programs. For example, though it will not be practical to include them in a retail real-time pricing program, they could participate in a Westar direct load control (DLC) thermostat program or in several Westar demand response initiatives, provided they reimburse Westar's costs and agree to the terms the Commission sets forth for the programs. If their costs and contribution to Westar's margins match those borne by our retail customers, we will avoid any cross-subsidization.



On July 1, 2007, Westar announced the creation of an energy efficiency department. It was not created from thin air or a radical departure from our usual business. Rather it was a natural development borne of our customers' expectations, technological advances, long-term investment planning, and public policy and environmental concerns.

The new energy efficiency department will have responsibility for:

- consumer education;
- implementation of direct load control (DLC) and DSM programs; and
- developing alliances with heating, ventilating and air conditioning dealers, builders, architects, and others to encourage use of high efficiency equipment and building practices.

Customers have expressed a desire, in various ways, but particularly in our customer satisfaction surveys, for Westar to help them get more value out of their energy dollars.<sup>16</sup> Technology now enables energy efficient practices that are convenient to customers, practices that do not connote a pejorative significance of "sacrifice" or "self-denial." Westar faces requirements for unprecedented investment in new sources of power to meet growing electricity demands and in our "wires" infrastructure to continue to provide reliable service. Given these investment requirements, it is imperative to pursue energy efficiency so customers can make choices that enable them to extract more value from their energy purchases. At national, state and local levels of government, the policy environment is ripe for energy efficiency initiatives, even those that may cause higher costs but are deemed worthwhile to protect the environment. The wisest energy choices may also lead to higher reliance on electricity than on other energy sources.

Westar has identified several energy efficiency programs and described them previously to the KCC, first in the filing requesting predetermination of ratemaking principles of Emporia Energy Center and then again in the similar filing for our wind power initiatives. To review, those programs are:

**Paradox #3**

***Energy efficiency programs sometimes are considered expenses, when in fact they really function as investment in that they help avoid or delay much more costly investments in new generation.***

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<sup>16</sup> This phenomenon is counter-intuitive. Customers seem to understand that if we help them consume less electricity, our profits fall and their rates could increase. Nonetheless, they desire or even expect that we, as the energy expert, can help them become more energy efficient. Their expectation bodes well for customer acceptance of a new regulatory policy that allows utilities to earn on energy efficiency programs.

1. Residential and commercial Direct Load Control (DLC) for central air conditioning, electric water heaters, swimming pool pumps, and other interruptible devices;
2. High efficiency heat pumps with mandatory DLC;
3. High efficiency residential and commercial water heating heat pumps with mandatory DLC;
4. Energy efficiency assistance to low-income households;
5. Targeted energy audits to identify energy efficiency opportunities for commercial and large residential customers.

### **DLC and DSM Programs**

The technology for DLC and DSM is commercially available, and firms that provide deployment of these services are already actively soliciting business. For example, DLC thermostats<sup>17</sup> can be offered to our residential customers on a "turn-key" contract basis by several firms. Likewise, several firms contract with utilities to provide demand response services for commercial and industrial customers. This type of service is also known as peak shaving or demand response. In some instances, it also involves customer-owned distributed generation that the utility may dispatch remotely.

In April 2007, Westar issued a request for proposals to vendors of DLC and DSM. Three firms responded in May 2007. The responses included proposals to provide demand response services for commercial and industrial customers and install DLC thermostats in residential customers' homes. The load control thermostats typically have an internal communications device that the utility can signal to adjust the thermostat during periods of peak demand in order to shave peak. The thermostats are also programmable, allowing customers to use energy more efficiently year round.

Westar has already begun testing the thermostats in a small employee pilot program before we roll it out to our customer base. Once satisfied that the program will

Westar has already begun testing the thermostats in a small employee pilot program before we roll it out to our customer base. Once satisfied that the program will

<sup>17</sup> We plan to market these thermostats by some other description, perhaps as "smart" thermostats. Focus group research has shown that "direct load control" may not be an appealing description to customers. We use the expression "direct load control" in this filing because it is common usage in the utility industry and to ensure clarity.

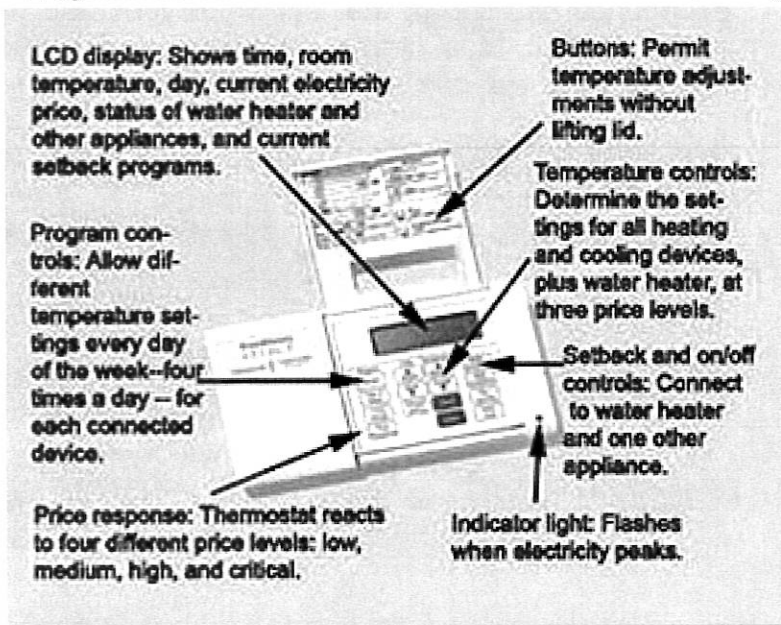
work, gain consumer acceptance and not harm customer satisfaction, Westar plans to deploy the program in Spring 2008. Assuming successful completion of contract negotiations, Westar plans to deploy a demand response program in 2008. Prior to deployment, Westar will seek the Commission's approval of these DLC and DSM programs and an accounting authority order to defer their costs for recovery in accordance with the KCC's rulings in its generic dockets on energy efficiency.

For the DLC thermostat program, we expect to retain a firm to install 5,000 thermostats in 2008. Willing residential customers would receive the thermostat and installation for free, and would benefit for participating through the savings they derive by using less electricity during peak periods.

In order to monitor our peak shaving results, we will randomly install recording meters on several homes that have the DLC thermostat. This will allow us to follow a customer's load profile to verify load reduction after thermostats are activated during peak periods. We preliminarily estimate that on average each thermostat installation will yield slightly more than 1 kW of demand response.

In addition to the residential DLC thermostat program in 2008, we plan to retain a firm to help achieve peak shaving for our small and medium sized commercial and industrial customers. The vendors we are evaluating have near real-time monitoring that can verify actual load reduction during curtailment at peak conditions. This demand response initiative will be in addition to our existing interruptible program discussed below. The actual annual costs and amount of peak shaving from this initiative are still being determined.

**Programmable thermostat with direct load control capability**



## Energy Efficient HVAC Equipment

The installation of HVAC equipment for consumers involves a large relative investment, complex decision-making and involvement by contractors or homebuilders. As a result, efficiency programs for HVAC demand much more customer education, building of alliances and a longer planning horizon. For example, in the retrofit arena, when such equipment fails (as it has an uncanny habit of doing on the worst, hot summer day!) the homeowner will want it replaced quickly and is likely to give little



thought to what would be the most efficient and cost effective equipment for the next 20 years. Rarely does a residential customer replace fully functioning HVAC equipment, even if it is old and inefficient. We need to find ways to reach these consumers well in advance of the replacement decisions as well as at the moment of decision.

It requires that we develop alliances with HVAC dealers, builders and architects. Effective programs may need to include financing packages, extended warranties, performance guarantees, government grants, tax credits and other similar programs. To make more rapid progress, it may also be necessary to encourage legislation or ordinances that require more energy efficient building codes and standards for equipment and appliances.

## Customer Education

To begin the process of education, we have added extensive educational information to Westar's website and have distributed educational materials. As well, our experience has shown that our employees and retirees can be effective educators of our customers. Most of them live in the communities we serve at retail, and it is natural for many of our customers to consult them on energy matters. We launched an

employee and retiree program to offer rebates for them to install high efficiency HVAC equipment. We are also hiring new employees to develop alliances with HVAC dealers, builders, architects, realtors and others who can influence consumer choices of equipment.

Another challenge is customers' limited awareness of resources available to them. Our initiatives include:

The screenshot shows a website layout with several key sections:

- Top Left:** A banner titled "HOW MANY DOLLARS DOES IT SAVE TO CHANGE A LIGHT BULB?" with a sub-link "Click here to see how it adds up with our lighting calculator." Below this is the Westar Energy logo and a close-up image of a compact fluorescent light bulb.
- Top Right:** Two promotional boxes. The first is for "RESIDENTIAL CUSTOMERS" with the text "From paying your bill online to learning home safety, we can help you get things done right." and a "Click here" button. The second is for "BUSINESS CUSTOMERS" with the text "From surge protection to energy consulting, we can help you succeed in your business." and a "Click here" button.
- Bottom Left:** A navigation menu with links for News, Residential Customers, Business Customers, Energy Efficiency, Outage Information, Site Map, About Us, Contact Us, Careers, and Investors.
- Bottom Center:** A "Latest News" section with two articles:
  - January 18, 2005: Westar Energy estimates storm costs at about \$73 million to \$85 million.
  - January 11, 2005: Westar Energy signs contracts with wind energy developers.
- Bottom Right:** A "MY ELECTRIC ACCOUNT" section with a login form (username, password, sign in), a "forgot your password? Create an account" link, and buttons for "GO TO JOB SEEKER SIGN IN" and "GO TO SHAREHOLDER SIGN IN".

- School Connections, which offers schools age-appropriate energy efficiency curricula.
- Westar's website has "calculators" for customers so that they can estimate savings from potential energy efficiency investments, information for children and an energy efficiency library for adults.
- Westar is also collaborating with other utilities, environmental groups and the Kansas Energy Office to develop consistent, accurate customer education materials.



- Media plans are being developed to utilize TV, newspapers and other media with interesting, practical stories about energy efficiency methods and "success stories."
- An instructional DVD for residential customers to advise them how to make their homes more energy efficient. A similar video for commercial customers is in production.
- "Weatherization kits," to be given to low-income customers, will have such basic products as compact fluorescent light bulbs (CFLs), weather stripping, caulking, insulation-wrap for water heaters, and other energy-saving materials.
- Working with landlords on ways to make rental properties more energy efficient.

### **Improvements to Westar's System**

Energy efficiency starts at home, and in our case we have made a commitment to apply energy saving practices throughout our company (given the size of our business, these savings may even rival what we can expect from some of our customer-focused initiatives.)<sup>18</sup> For example, we recently filed an application with the Kansas Department of Health and Environment seeking permission to improve Jeffrey Energy Center's thermal efficiency and modestly increase its output.

As discussed in subsequent sections of this report, we are also seeking ways to improve the efficiency of our transmission and distribution systems. An example is the use of infrared imaging to inspect distribution equipment. These inspections not only can detect likely failures before they occur (clearly a benefit to customer satisfaction), but we are also able to identify and change out equipment that is causing line losses. Another effort under way by our transmission department is to rewire many sections of our oldest transmission lines. Besides improving reliability, these new conductors reduce line losses as well, thus improving efficiency.

In order to lead by example, Westar also recently adopted a policy to adhere to the LEED<sup>19</sup> standards for energy efficiency when it builds a new facility or makes major renovations to existing space. For instance, we are renovating and expanding Westar's service center in Lawrence to standards that will qualify for LEED certification. We intend to invite customers, builders, architects, HVAC dealers, media and others to the site to witness how LEED standards are practically applied.

<sup>18</sup> Typically when we think of inefficiency we have retail customers in mind, but the greatest potential for efficiency gains is in power plants.

<sup>19</sup> LEED stands for Leadership in Energy and Environmental Design, also referred to as "Green Building Rating," and designates the state-of-the art in energy efficient, environmentally sound construction. Refer to [www.usgbc.org/LEED](http://www.usgbc.org/LEED), the official website address for LEED.

## Compact Fluorescent Lights

Westar has distributed more than 20,000 compact fluorescent lights (CFLs) over the last year. Comparatively low-watt CFLs produce as much light (lumens) as higher-watt incandescent bulbs (a 15-watt CFL produces approximately 900 lumens, the same as a 60-watt incandescent bulb). CFLs use about 75% less electricity than incandescent bulbs. By simply replacing their incandescent bulbs with CFLs, customers can make substantial progress in becoming more energy efficient consumers. In addition, because CFLs expend far less energy on "wasted" heat, CFLs can also reduce air conditioning demand.

## Real-Time Pricing

Price signals are the most effective means of stimulating energy efficient and DSM behaviors. Although price elasticity may be muted because of Westar's relatively low rates and because our customers' electricity bills have dropped as a percentage of their income, we are nonetheless committed to testing real-time pricing. If real time pricing demonstrates significant price elasticity among our customers, then we can offer (or the Commission may require) widespread real-time pricing tariffs. On the other hand, if most customers participating in the pilot do so because their circumstances make it nearly certain they will benefit by doing nothing except opting into the program,<sup>20</sup> then the pilot will fail. Nonetheless, even if we do not gain energy efficiency by price signals, we may still attract enough customers to at least be able to accomplish an appreciable demand response, and thereby defer the need to build additional peaking generation.

### Real-time Pricing Initiative

- Westar collaborating with KCC Staff on real-time pricing pilot program
- Pilot to test consumer price elasticity

## Summer/Winter Pricing Differences and Interruptible Program

Westar, like most utilities in the United States is a "summer peaking" utility, meaning that demand is highest during hot summer weather. Because we must size our resources to meet the peak demand, it means that those same resources may go unused during off-peak periods. By carefully designing rates we can encourage customers to reduce their peak demand, which keeps investment down, but we also can encourage off-peak use, which allows more efficient use of our facilities and keeps our unit costs lower. For example, the winter residential rate encourages wise use of

<sup>20</sup> Economists sometimes refer to such consumers as "free-riders." These are customers who already have an off-peak demand profile and would shift little or no demand because of the pricing plan.



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

Westar also has an active interruptible program with 73 customers participating. While it is an inexact science to attribute momentary demand reductions to specific calls for interruption, our best estimate is that our program has resulted in reductions of approximately 200 MW. We called on our interruptible customers four days this past summer during high demand periods, and also were able to call on cogeneration units of two of our industrial customers. On those days, we estimate the peak demand reductions from interruption ranged from 201 MW to 206 MW.

**Advanced Metering Infrastructure (AMI)**

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

AMI offers inherent benefits to its stakeholders:

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

Although they have many additional business applications and benefits, AMI and MDM are necessary antecedents for broad deployment of real-time pricing strategies and extensive DSM programs. Eventually AMI/MDM becomes the foundation for a "smart grid," which has computer-programmed "intelligence" to take automatic action on a transmission and distribution system, and can even go "behind the meter" to help customers use electricity more wisely.

Our approach on all these programs and technologies is to provide sufficient incentives — whether they are economical, practical or simply intriguing — to stimulate a change in behavior that is essential to a real reduction in the growth of electricity usage.



## Transmission

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The electric industry generally is entering a period requiring significant increases in transmission development. Over the period 2007-2010, our projections indicate a total transmission investment of \$613 million, or about \$153 million per year. This compares to the total \$93.5 million – or an annual average of \$18.7 million – Westar invested in transmission plant over the five-year period 2002-2006.

In Westar's case, the increase is being driven by three main factors:

1. **The need for new high capacity transmission lines.** There has not been a new high capacity transmission line built in the Westar service territory since the mid-1980s when lines were constructed to accommodate generation additions at Wolf Creek and Jeffrey Energy Center. The construction of these and other 345 kV lines at that time provided a robust 345 kV network with ample capacity to handle our customers' needs for decades. However, as a result of FERC's Order No. 888 requiring shared use of the transmission system, the creation of competitive wholesale power markets and the corresponding increase in demand on the transmission system, the available transfer capability of the 345 kV network is all but gone. We have now reached a point where new high capacity lines are needed to relieve growing incidences of congestion.
2. **FERC's creation of Regional Transmission Organizations (RTOs),** which in this region resulted in the Southwest Power Pool Regional Transmission Organization (SPP). In 2006, the SPP became a certificated public utility in Kansas. (Docket No. 06-SPPE-202-COC). The SPP now has functional control of Westar's and other regional utilities' transmission systems and oversees regional planning and requests for all new transmission service. The SPP can direct Westar to build needed transmission projects to provide transmission service not only for Westar's native load customers but also for any transmission customer in the SPP region. See, SPP Electric Transmission Tariff, Attachment O, Section 4.0(a), (b).
3. **The aging of our existing transmission infrastructure.** A substantial amount of our transmission system is 60 to 80 years old. Both physical obsolescence and the inability of these lines to handle higher load require us to rebuild local infrastructure to meet customer demand. Illustrations of this are in the region of Junction City and Manhattan, as a result of expansions to Fort Riley.

## High Capacity Transmission Line Projects

Currently, Westar has two high capacity transmission projects under development, with others being analyzed. The Commission recently granted siting authority for a new 345 kV transmission line from the Wichita area to Hutchinson and on to Salina — the Wichita-Reno-Summit project. The project is being constructed in two phases:

- **Phase I** A 345-kV line approximately 44 miles in length will be constructed from the existing Wichita 345 kV Substation near the Gordon Evans Energy Center to a new 345 kV substation just east of Hutchinson in Reno County, Kansas (the "Reno County Substation"). Construction of the Reno County Substation is included in Phase 1.
- **Phase II** A 345-kV line approximately 54 miles in length will be constructed from the new Reno County Substation to the existing Summit Substation just southeast of Salina.

We estimate this line will cost approximately \$150 million to construct. We selected a route largely along existing rights-of-way. This will expedite construction, save costs, and also afford us an economic opportunity to rebuild aging 115 and 138 kV lines still needed to serve the local areas. We expect Phase 1 to be completed by the end of 2008 and Phase 2 to be completed by the end of 2009.

The second high capacity transmission project is a 345 kV line to link our Rose Hill Substation southeast of Wichita with the Sooner Substation in Oklahoma Gas and Electric Company's territory just south of Ponca City, Oklahoma. Westar will construct the Kansas portion of the line of about 50 miles. Based on preliminary pre-design estimates, Westar estimates its portion will cost \$60 million to \$70 million. Actual construction costs will be affected by numerous factors, including the final route, engineering design, changes in the prices of transformers, conductor and structures, labor costs and the ultimate cost to acquire necessary rights-of-way. A siting application is now pending before the Commission.

Construction of the line will allow Westar more reliable (i.e., "firm") import capability from its recently acquired Spring Creek Energy Center to meet customer demand. SPP has authorized us to construct this line. Under SPP protocols, the line will receive base plan funding treatment. Base plan funding allows one-third of the cost of the line to be borne by users of the broader SPP regional transmission system with the remaining two-thirds of the cost to be allocated to the zones that benefit.

Both projects will provide substantial benefits to Westar's customers, Kansas and the SPP region. The resultant elimination of two key congestion points will allow the sale of additional transmission capacity thereby allowing additional wholesale transactions and more efficient use of existing and new generating sources.

Additionally, a high voltage line will need to be built to:

- substantially increase the bulk power transfer capability between Western and Eastern Kansas;
- reduce transmission constraints that result in higher imposed generation expenses (i.e., inefficient generator dispatch);
- improve local area reliability; and
- allow for the interconnection of new wind production expected in the region.

Westar has expressed its interest in participating in the development of this major project.

### **SPP Required Projects**

In determining how long-term firm transmission service requests can be fulfilled, the SPP identifies additions and upgrades to existing infrastructure that may be required. Westar's five-year forecast includes numerous projects needed to meet long-term firm requests for transmission service. Most of these projects consist of rebuilding lower voltage lines and/or making improvements to existing substations.

### **Aging Infrastructure, New Load and Reliability Projects**

The final group of transmission projects relates to rebuilding lower voltage lines and making improvements to substations to replace aging infrastructure, meet new load requirements and improve reliability. An example of a substation reliability project is the addition of breakers at a substation to minimize the number of customers affected by a single outage. Westar is targeting the addition of breakers at substations where a substation outage would affect 10,000 or more customers.



## **Environmental Issues and Projects**

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### **Current Requirements**

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The principal air emission regulations that affect Westar's power plants are the National Ambient Air Quality Standards (NAAQS), the Acid Rain Program, and the Clean Air Visibility Rule (CAVR) requirements.

#### **NAAQS**

The Clean Air Act (CAA) empowers the Environmental Protection Agency (EPA) to establish NAAQS for controlled emissions. EPA, using information supplied by the states, classifies areas of the country as "attainment" areas – locations in which air quality is in compliance with NAAQS – and "non-attainment" areas – where air quality fails to meet the standard for one or more pollutants. A finding that an area is in non-attainment requires development of a plan to bring the area into compliance with the NAAQS standards.

The CAA also delegates to the states the responsibility for developing and implementing compliance plans. In Kansas, the administering agency is the Kansas Department of Health and Environment (KDHE). Under the CAA, plans for construction of new plants and major modifications to existing plants may trigger New Source Review (NSR) requirements; essentially these are rules that require modified plants to meet new plant specifications. In attainment areas, the NSR pre-construction review is made pursuant to the Prevention of Significant Deterioration (PSD) provisions of the CAA. If pre-construction review of a proposed project indicates that the project would increase emissions of one or more regulated pollutants in an amount above specified major source thresholds, the source would be required to install control equipment which uses the best available control technology (BACT).

In a non-attainment area, a state implementation plan must be developed that requires the installation of reasonably available control technology (RACT) at major emission sources as soon as practicable. EPA has defined RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."<sup>21</sup>

This past summer, the Kansas City metropolitan area exceeded the 85 ppb (parts per billion) eight-hour ozone standard at three air quality monitoring stations. These exceedences caused the three-year average of readings at those monitoring

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<sup>21</sup> Memo from Roger Strelow, EPA Assistant Administrator for Air and Waste to EPA Regional Administrators December 9, 1976, 7 BNA Environmental Reporter, Current Developments 1210 col. 2 (1976).



stations to equal or exceed the EPA action level of 85 ppb for ozone, based on preliminary data reported at the September 11, 2007 Mid-America Regional Council (MARC) meeting. MARC serves as the coordinating agency for air monitoring and other purposes for Kansas City area local governments, the KDHE, the Missouri Department of Natural Resources and other entities. When the air quality data are confirmed, it is expected that "Contingency Measures" previously prepared by MARC will go into effect to reduce ozone. According to MARC, the Contingency Measures will include new air quality emission controls on some Kansas City-area power plants in Johnson and Wyandotte Counties, and regulations on idling engines in commercial heavy-duty diesel trucks. According to MARC, EPA has indicated that it does not anticipate redesignation of the Kansas City Air Quality area as non-attainment for ozone in the foreseeable future if Kansas and Missouri implement the contingency plan for the Kansas City Air Quality Region and the contingency plan measures bring the region back into compliance with the eight-hour ozone standard.

This sequence of events was expected and is a significant reason why Kansas City Power & Light Company (KCPL) recently installed selective catalytic reduction equipment on Unit 1 at the LaCygne Station. Westar has a 50% interest in the LaCygne Station, but the plant is operated by KCPL. One of the major factors contributing to ozone is nitrogen oxide (NO<sub>x</sub>) emissions. Due to its design, LaCygne Unit 1 emits more NO<sub>x</sub> than other coal plants of similar size and vintage. Reductions of NO<sub>x</sub> emissions at LaCygne 1 will contribute to ozone compliance in Kansas City and is a part of the Kansas City contingency plan.

### **Acid Rain Program**

Acid rain occurs when sulfur dioxide (SO<sub>2</sub>) and NO<sub>x</sub> emissions are transformed into acids in the atmosphere and are returned to the ground in the form of low pH moisture. The Acid Rain Program was established in Title IV of the 1990 amendments to the Clean Air Act to reduce emissions that cause this phenomenon. Title IV establishes a nationwide cap on electric utility SO<sub>2</sub> emissions, implemented through an emission trading system.

Under this system, EPA annually assigns a specified number of SO<sub>2</sub> allowances to each emitter that can be used each year or any year thereafter. For each such allowance, the holder has the right to emit one ton of SO<sub>2</sub>. Allowances are fixed in quantity, but are tradable among participants in a fairly active secondary market.

At the end of each year, each emitting unit must have enough allowances to cover its emissions for that year. Operators of units that emit SO<sub>2</sub> in excess of their allowances must acquire additional allowances to meet the excess or pay a penalty to EPA.

In addition to the cap on SO<sub>2</sub> emissions, the Acid Rain Program requires extensive monitoring and reporting of plant emissions; requires Acid Rain Permits; establishes a system-wide NO<sub>x</sub> emission rate limit for coal-fired generating units; and requires installation, operation, calibration, and annual certification of continuous emission monitors.

## Clean Air Visibility Rule

Acting under the CAA, EPA has issued rules to address emissions that cause regional haze to form over what are known as Class I national parks and wilderness areas. The targeted emissions are primarily SO<sub>2</sub> and NO<sub>x</sub>. The goal of this program is to reduce haze in Class I areas to natural conditions by 2064.

Five generating units we operate and two co-owned units have been identified as potentially impacting Class I areas. The affected units are Jeffrey Energy Center Units 1 and 2, Lawrence Energy Center Unit 5, Gordon Evans Energy Center Unit 2, Hutchinson Energy Center Unit 4, and LaCygne Station Units 1 and 2.

EPA issued its final Clean Air Visibility Rule on July 15, 2005. KDHE is working to complete its implementation plan that must outline the details of how the State of Kansas will comply with the rule. The EPA must rule within one year of receiving KDHE's implementation plan and the Clean Air Visibility Rule will take full effect after that date. On August 31, 2007, Westar submitted a proposed consent agreement to KDHE that outlines how Westar intends to comply with the Clean Air Visibility Rule. Details of the projects are discussed below.

Under the proposed Consent Decree Westar agrees that, within five years of EPA's approval of the Kansas Regional Haze State Implementation Plan, Westar will install emission controls and equipment and/or implement operating modifications in order to achieve air pollutant emission limits similar to the EPA Regional Haze Rule and Best Available Retrofit Technology (BART) requirements, for the following units subject to regional haze rule and related requirements which KDHE indicated are necessary to protect air quality, as the units may contribute to regional haze. Those units include:

Gordon Evans Energy Center Unit 1	Gordon Evans Energy Center Unit 2
Hutchinson Energy Center Unit 4	Jeffrey Energy Center Unit 1
Jeffrey Energy Center Unit 2	Jeffrey Energy Center Unit 3
Lawrence Energy Center Unit 3	Lawrence Energy Center Unit 4
Lawrence Energy Center Unit 5	Murray Gill Energy Center Unit 1
Murray Gill Energy Center Unit 2	Murray Gill Energy Center Unit 3
Murray Gill Energy Center Unit 4	Neosho Energy Center Unit 7
Tecumseh Energy Center Unit 7/9	Tecumseh Energy Center Unit 8/10

Additional terms stated in the proposed KDHE agreement are:

- For Jeffrey Energy Center Units 1, 2 and 3, Westar will install equipment and implement operating practices to meet "presumptive

emission limits" for NO<sub>x</sub> and SO<sub>2</sub> within three years of EPA approval of the Kansas Regional Haze State Implementation Plan.

- For Gordon Evans Energy Center Unit 2, Westar will implement control strategies to achieve visibility improvement superior to best available retrofit technology. This will be accomplished by switching from Number 6 fuel oil to natural gas, with an exception.
- The exception for Gordon Evans Energy Center Unit 2 is that when the natural gas supplier to Gordon Evans Energy Center Unit 2 takes emergency action which could result in an impact to electric system reliability, Westar may combust Number 6 fuel oil for the duration of that condition.

Actions proposed to be taken in connection with the proposed Consent Agreement would significantly reduce emissions from Westar Energy's energy centers. Sulfur dioxide emissions from our energy centers would fall more than 60,000 tons per year, a more than 70% reduction. Nitrous oxide emissions would fall more than 20,000 tons per year, a nearly 50% reduction. Particulate emissions would fall nearly 3,000 tons per year, a reduction of more than 60%.<sup>22</sup>

KDHE has not yet taken action to give final approval to the proposed Consent Agreement, or to submit the Consent Agreement to EPA for inclusion in a proposed amendment to the Kansas Implementation Plan for regional haze New Regulations and Pending Legislation.

### **Clean Air Mercury Rule**

On March 15, 2005, EPA published air quality rules referred to as the "Clean Air Mercury Rule" (CAMR). The CAMR requires all coal-fired power plants to reduce mercury emissions. The reductions must occur in two phases starting January 1, 2010 with the second round of reductions occurring in 2018. We are also required to install continuous emission mercury-monitoring equipment at each of our coal-fired units by January 1, 2009. On February 8, 2008, the DC Circuit Court vacated the Clean Air Mercury Rule (CAMR). To date we have not been able to analyze the impact of this ruling on our operations.

Other current or pending laws may require us to further reduce emissions of SO<sub>2</sub>, NO<sub>x</sub>, particulate matter, mercury and carbon dioxide (CO<sub>2</sub>). These include:

- Proposed revisions to the routine maintenance, repair and replacement (RMRR) exclusion and impact on New Source Review (NSR) requirements, and

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<sup>22</sup> Operation of emissions reduction equipment consumes power generated at a plant that otherwise would be available to meet customer demands. The load imposed by this equipment is referred to as "auxiliary" or "parasitic load."

- Legislation introduced in Congress, such as the various "multi-pollutant" and climate change bills requiring reductions of CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub> and mercury.

## **Compliance with Existing Regulations**

Under current law, our principal compliance concerns relate to Acid Rain (SO<sub>2</sub> and NO<sub>x</sub>), particulates, and mercury. We have been proactive in addressing environmental concerns in all of these areas.

We comply with the Acid Rain requirements by burning low-sulfur coal and to further reduce SO<sub>2</sub> and NO<sub>x</sub>, we are operating SO<sub>2</sub> scrubbers at Lawrence Energy Center (LEC) 4 and 5, upgrading SO<sub>2</sub> scrubbers at Jeffrey Energy Center and the Lawrence Energy Center and installing low NO<sub>x</sub> systems on the balance of our coal-fired units.

To further reduce particulates, we are upgrading the electrostatic precipitators (ESPs) at JEC 1, 2, and 3, LEC 3, and Tecumseh Energy Center (TEC) 7 and 8. We also plan to enhance particulate controls on both LEC 4 and 5 in the next few years.

Although the D.C. Circuit Court of Appeals recently vacated the CAMR, it is likely that mercury emission controls will be required in the next few years. We anticipate that EPA will issue a new rule requiring more stringent controls on mercury than were required by the CAMR. The current proven technology for removing mercury is activated carbon injection which will likely be the technology of choice for our application.

Mercury emission measurement and monitoring efforts continue throughout our coal fleet providing the technical data necessary to meet future mercury requirements effectively and efficiently. KCPL is taking similar measures on our behalf at LaCygne Station.

## **Project Status and Plans**

We have numerous emission control projects in various stages of planning and construction with some already completed. Below is a short summary of significant emission control projects on our coal fleet and the current status of each project.

### **Jeffrey Energy Center**

All three units will have low NO<sub>x</sub> systems, which include the installation of low NO<sub>x</sub> burners, over-fired air and neural net controls; control systems designed to reduce the formation of nitrous oxides and thereby reduce NO<sub>x</sub> emissions. To date one system has been installed on Unit 3 and is currently undergoing tuning with the other two



systems in-service dates (Units 1 and 2) scheduled for May 2008 and May 2009, respectively.

Existing SO<sub>2</sub> scrubbers are being upgraded from the original design of 60% removal to systems capable of removing over 90%. Projected in-service dates are Unit 1, spring 2008; Unit 2, spring 2009; and Unit 3, fall 2008. The current estimated cost of each scrubber upgrade is \$120 million.

The existing electrostatic precipitators (ESP) will be rebuilt using the latest ESP technology for particulate control. The Unit 1 ESP rebuild is scheduled for fall 2009 and Unit 3 will be rebuilt in the fall of 2008. Unit 2 ESP was partially rebuilt earlier but recent operating experience indicates performance has degraded and a more complete rebuild is scheduled for spring 2009.

### **Lawrence Energy Center**

All three units will be fitted with low NO<sub>x</sub> systems, which may include low NO<sub>x</sub> burners, over-fired air and a neural net control system. The installation dates and engineering are incomplete and therefore good cost estimates are unavailable.

The particulate removal systems on Units 4 and 5 are old and inefficient technology that was integrated with the existing SO<sub>2</sub> scrubbers. We plan to replace the particulate section of the existing scrubber with up-to-date fabric filter/bag house particulate removal technology. Unit 3 contains a standard electrostatic precipitator for particulate removal which will also be rebuilt. The costs of the projects at this time are uncertain, as engineering is incomplete.

### **Tecumseh Energy Center**

Low NO<sub>x</sub> systems will be installed on both units at Tecumseh Energy Center. This may include low NO<sub>x</sub> burners, over-fired air and neural net controls. Unit 7/9's low NO<sub>x</sub> system has a spring 2008 in-service date and Unit 8/10 is scheduled for spring 2009. The electrostatic precipitators for each unit will be rebuilt with Unit 7/9 scheduled for spring 2008 and Unit 8/10 for spring 2009.

### **LaCygne Station**

KCPL recently installed a selective catalytic reduction system (SCR) on LaCygne Unit 1 to reduce NO<sub>x</sub> emissions. The SCR went online May 2007. To date NO<sub>x</sub> emissions rates have dropped significantly and are meeting expectations. Additional emission controls for NO<sub>x</sub> are planned for Unit 2 and may include the installation of an SCR and low NO<sub>x</sub> systems. The installation schedule at this time is speculative, but will likely occur in the next few years.

KCPL plans to install an SO<sub>2</sub> scrubber on Unit 2 and replace the existing scrubber on Unit 1. Both projects are scheduled to come online after 2010.

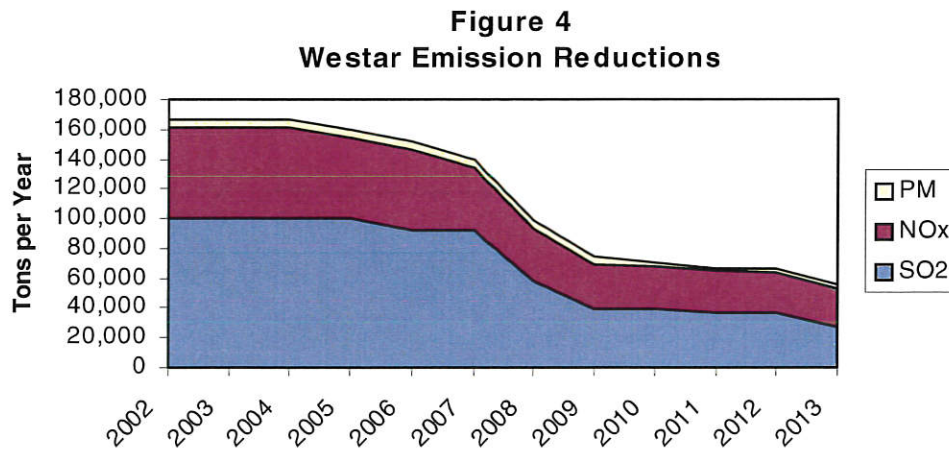
Both units will have their existing particulate control enhanced to the best available control technology, which in this case will be bag house/fabric filters

technology. This equipment will replace the Venturi system (integrated with the SO<sub>2</sub> scrubber) on Unit 1 and the electrostatic precipitator on Unit 2. Installation dates have not been determined.

### Other Air Emission Projects

Additional but less significant air emission projects include the installation of continuous emission monitoring and ancillary equipment to satisfy both the Acid Rain Program and anticipated mercury emissions regulation. Emission control equipment to remove mercury, which involves the installation of capital equipment to inject activated carbon in the flue gas stream, is likely to be required in the next few years. The cost of this equipment is unknown at this time, but may run several million dollars per unit. The major expense for any mercury removal requirement will be O&M dollars to purchase activated carbon. We expect to recover the cost of such environmental consumables similar to the way we recover costs today for fuel and limestone; i.e., as an element of the RECA. Other impacts will be the loss of fly ash sales revenue due to contamination with carbon and reduced life of existing landfills possibly requiring earlier permitting and construction of new landfill capacity.

Figure 4 below illustrates the emission reductions Westar expects to realize from its environmental projects.



## Reliability Initiatives

### Performance Improvements

In 2001 and 2002, Westar's reliability performance as measured by the industry-standard System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI), was in the third and fourth quartiles, respectively, compared with other investor-owned utilities. Seeking to improve service reliability, Westar began targeting the poorest performing areas for improvement.

Our SAIDI and SAIFI measures have improved significantly from the pre-2002 levels. (Figures 5 & 6) Year-end 2007 performance is second quartile for SAIDI (closely approaching first quartile) and third quartile for SAIFI (closely approaching second quartile). This improvement is a direct result of our enhanced vegetation management and reliability programs identified later in this paper.

Figure 5

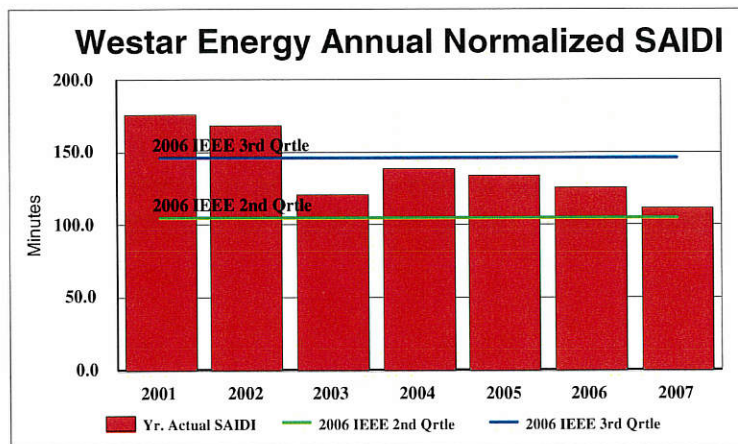
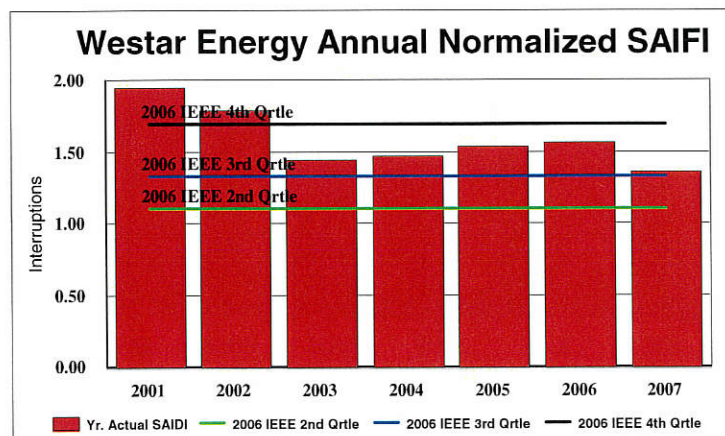


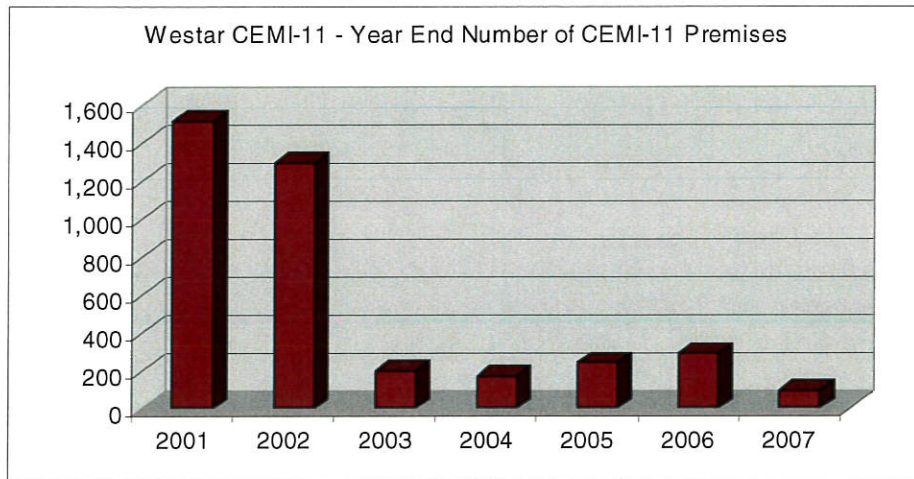
Figure 6





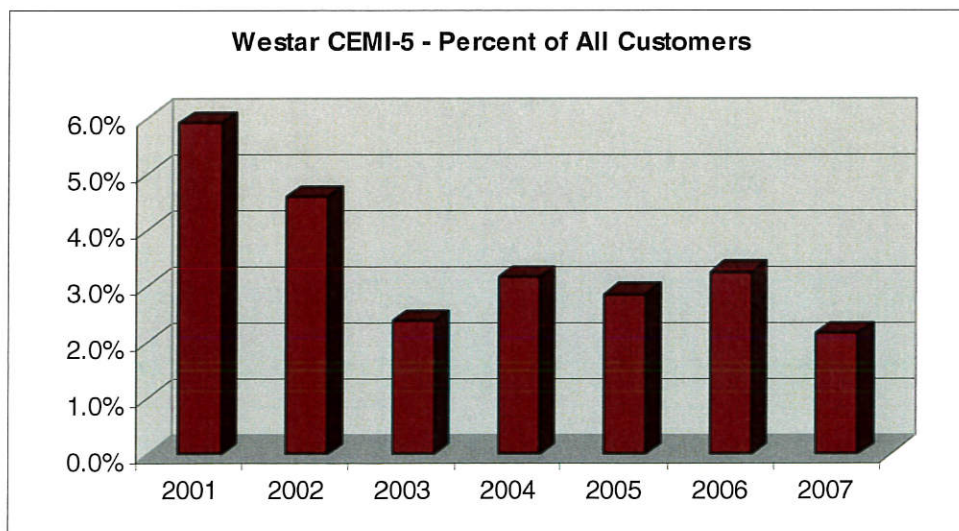
In addition to improving our SAIDI and SAIFI performance numbers, our reliability effort has also emphasized reducing the number of Customers Experiencing Multiple Interruptions (CEMI). In 2001, Westar had more than 1,500 customers who experienced more than 11 outages (Figure 7), i.e. CEMI-11 annually. By 2007, we reduced that number to fewer than 100 customers.

**Figure 7**



With the substantial reduction of CEMI-11 instances, and with our continuing efforts focusing on the worst performing circuits, we are moving toward reducing customer's experiencing more than 5 sustained interruptions (CEMI-5). Though we see room for further improvement, these efforts are taking hold with CEMI-5 instances also having been reduced dramatically; falling from 5.9% of our customers in 2001 to 2.2% today (Figure 8).

**Figure 8**





## **Vegetation Management**

Vegetation, principally, but not exclusively, trees, growing in and near lines has been the leading cause of service interruptions. To address this problem, Westar substantially improved its vegetation management and line clearance program, devoting significantly greater resources to this effort. Between 1998 and 2007, transmission and distribution O&M line clearance expenditures increased from \$7.9 million annually to \$25.2 million annually, representing real growth multiples above the general rate of inflation. We are continuing to maintain an enhanced and more focused vegetation management program within constraints of available resources.

## **Reliability Strategic Plan (2004 through 2008)**

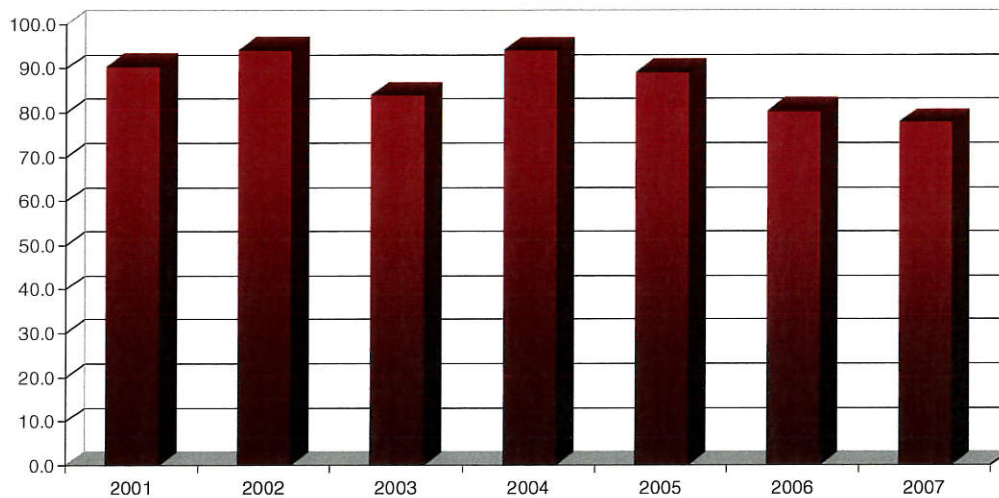
In 2003, as part of our effort to improve service reliability and to move SAIDI and SAIFI from the third and fourth quartiles to the top one-half, Westar embarked on a five-year Reliability Strategic Plan (R-Plan). Implementing the R-Plan required an additional \$6 million in annual expenditures from 2004 to 2007, above the increases in vegetation management expenditures. The initial phase of the R-Plan focused on:

- upgrading coordination on selected circuits;
- completing visual and infrared inspections and subsequent repairs on the 50 to 60 circuits with the highest incidences of equipment failure;
- installing remote-controlled mid-circuit reclosers; and
- completing a wide range of specific improvements to increase reliability on the 100 worst performing circuits.

Vegetation management remains a primary component of our reliability effort, but as vegetation induced outages have been reduced, we have turned our attention to the next most prevalent cause of outages, equipment failure. To address this cause of outages, we increased visual inspections and began infrared inspections, again on the worst performing circuits. We followed these inspections with preventive maintenance.

We also undertook a detailed review of how we restore service once interruptions occur. The result was that we were able to modify our restoration activities to reduce the average duration of customer interruptions (CAIDI). (Figure 9) One example of these efforts was the installation of more than 1,000 visual fault indicators on risers for underground cables and at other selected locations on the circuits. This equipment allows field personnel quickly to locate the fault equipment and, in doing so, reduce the duration of service interruptions on these circuits.

Figure 9  
Westar - Annual Normalized CAIDI



### Aging Infrastructure and Asset Management

Prospectively, a key feature of Westar's reliability programs will be to reduce the stress on facilities that results from repeated physical contact and electrical faults, typically caused by trees. A goal is to achieve a more routine cycle for line clearance. By doing so, we believe we can reduce ongoing costs for vegetation management.

As part of the R-Plan, we are also tackling the problem of aging infrastructure among our 660,000 distribution poles, 23,671 circuit miles of distribution lines and over 500 substations. We estimate that over 33% of distribution poles are older than 40 years and many are approaching the end of their useful lives. Forty-five percent of substation transformers are over 40 years old.

In 2004, we began the process of inspecting 34 kV poles and lines. As a result of our having identified poles in need of replacement, trussing or above-ground repair, we have improved significantly the reliability of these lines. These inspections and repairs have been focused on the aged 34 kV lines with the worst reliability history. By the end of the first quarter in 2008, we anticipate that Westar will have completed the inspection on 40% of the entire 34 kV system, resulting in improved reliability for customers in mostly rural parts of our service area.

For Phase 2 of the R-Plan, improvements under consideration for the next five years are:

- installing monitoring equipment on selected substation equipment better to predict pending problems before equipment failures occur;
- installing additional supervisory control and data acquisition (SCADA) capabilities in existing substation;

- performing pole ground-line inspection on distribution circuits.<sup>23</sup>

We also continue to review and implement changes to our management processes. Recently, we reorganized our people and processes to gain efficiencies from centralized contractor management, better oversight of line contractors and utilizing company employees rather than contractors to focus on maintenance work. We are also reviewing new information systems that might also help us improve our efficiencies.

As described earlier in this report, AMI when fully deployed will allow real-time monitoring of circuits for the first time. As a result, we will be able more quickly to identify and respond to outages, further reducing the duration of customer interruptions.

All of these programs and initiatives are aimed toward maintaining and improving the reliability of our service while balancing against the equally important goals of keeping our costs reasonable and maintaining public health and safety.

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<sup>23</sup> One recent phenomenon affecting both public safety and reliability is copper theft, particularly ground wires and substation equipment. In addition to doing more to protect this equipment from thieves, Westar has been active in lobbying for penalties and stepped up law enforcement to reduce such incidents.

## Financing the Strategy

Implementation of Westar's comprehensive strategy will require capital expenditures well in excess of the cash flow produced by the business. Table 5 shows capital expenditures for major functions and projects for the period 2007 through 2010.

Table 5<sup>24</sup>

	Actual 2007	2008	2009	2010	2007-2010 Cumulative
	(In Thousands)				
Generation:					
Refurbishments and other	\$ 45,271	\$ 98,200	\$ 136,800	\$ 133,100	\$ 413,371
Additional capacity	189,757	96,500	56,400	12,300	354,957
Wind	79,195	205,000	----	----	284,195
Environmental	207,781	198,400	206,200	259,000	871,381
Nuclear fuel	38,168	18,100	20,000	33,900	110,168
Transmission	70,651	148,100	228,600	165,900	613,251
Distribution:					
Refurbishments and other	34,797	35,600	47,900	53,700	171,997
Advanced metering infrastructure	----	----	36,900	38,400	75,300
Customer growth	60,521	57,000	59,200	61,600	238,321
Other	22,015	31,300	28,300	23,100	104,715
Total capital expenditures	<u>\$ 748,156</u>	<u>\$ 888,200</u>	<u>\$ 820,300</u>	<u>\$ 781,000</u>	<u>\$3,237,656</u>

As previously noted, we anticipate that over the next five years continued investment for efficiency, for new generation and transmission, and for environmental projects will likely result in a doubling of our net utility plant. Single-year investments for these projects are expected to be from approximately \$750 million to nearly \$900 million. By comparison, Westar's capital expenditures historically have been in the

<sup>24</sup> We prepare these estimates for planning purposes and revise our estimates from time to time. Actual expenditures will differ due to changing environmental requirements, changing costs, delays and other factors. We and our plant co-owners periodically evaluate these estimates and this may result in frequent and possibly material changes in actual costs. These amounts do not include all estimates for expenditures that may be incurred as a result of the U.S. Environmental Protection Agency's nationwide investigations regarding the New Source Review permitting program or respecting environmental requirements relating to mercury and CO<sub>2</sub> emissions.



range of \$150 million to \$250 million. Accordingly, Westar will need to raise substantial external funds, in the forms of both new debt and equity capital.

Although the magnitude of projected capital expenditures is significant and challenging, we believe that with reasonable capital market conditions and constructive regulation, we should be able to attract the necessary external capital on reasonable terms. More to the point, a necessary precedent of Westar's ability to formulate these plans is a sustainable, consistent and constructive regulatory platform assembled in a collaborative and cooperative approach among regulators, elected officials, consumer representatives and the company. We believe it important that all parties understand that the ability to continue executing on these plans also requires that the parties remain committed to constructive and predictable regulatory outcomes.

Consistent with maintaining an overall strategic positioning as a pure electric utility, in the short-term Westar maintains a target capitalization ratio of approximately 50% equity and 50% debt, but will target a slightly higher equity ratio over time. Because capital, particularly long-term debt, is most efficiently raised in \$100+ million increments, Westar also maintains access to significant short-term revolving credit facilities that allow it to finance on a low-cost shorter-term basis until such time as the need for external capital is large enough to warrant the issuance of debt or equity securities. Westar believes the proposed capital structure, consisting of long-term debt, equity, and perhaps hybrid equity securities, will result in a reasonable cost of capital consistent with assuring access to necessary capital.

Equity capital will typically be in the form of common equity. New equity may be issued through various channels to increase flexibility and access and decrease market risk. These avenues include traditional underwritten secondary public offerings, underwritten forward sales of equity, controlled offerings through an agent, dividend reinvestment, and direct placement of shares to existing shareholders. Depending on market conditions and market demand, but secondarily to common equity, Westar may also consider the issuance of hybrid equity securities.

Because the vast proportion of Westar's capital expenditures is related to long-lived, fixed utility assets, financial management believes long-term debt is an appropriate form of financing. Debt will typically be issued in the form of first mortgage bonds, with and without embedded call optionality, depending on the market price of call options. It is in the interests of our customers and shareholders — and more specifically, the viability of this plan — that Westar maintain strong investment grade debt ratings. While we also retain the option to issue unsecured debt, credit ratings on secured debt are higher and interest expense would typically be lower as a result. Debt capital will be issued from both the Kansas Gas and Electric Company and Westar Energy legal entities.

## Rate Implications of Sustained Capital Investment

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Rising energy costs are going to be a fact of life across all fuel and energy types for years to come in the United States as we begin to see the effects of tightening supplies, soaring construction costs and mounting environmental requirements. In particular, there is a narrowing gap between growing consumer demand and the generation and transmission assets necessary to support that growth. It is inevitable that prices will climb to reflect utility efforts to provide adequate supplies.

Westar heads into this new era with a distinct advantage — an average retail rate of \$.06/kWh, about 30% below the national average of \$.089/kWh. It is our intent to preserve this relative advantage in the coming years. We will do it by avoiding "big bet" investments with unsettled or untested technology, making selective investments across a range of generation options to maintain supply diversity and stimulating meaningful energy conservation — all to defer a baseload investment until more promising baseload technologies are commercially proven.

The capital expenditures we contemplate are substantial and critical to success of this strategy, and it will be equally important that the investment community have confidence in the willingness of Kansas regulators and policy-makers to support the pricing to match this growth in our utility plant.

Portions of this higher revenue requirement will be recovered through annual adjustments to the Environmental Cost Recovery Rider and the Transmission Delivery Charge. The use of these riders is constructive, for both Westar and our customers:

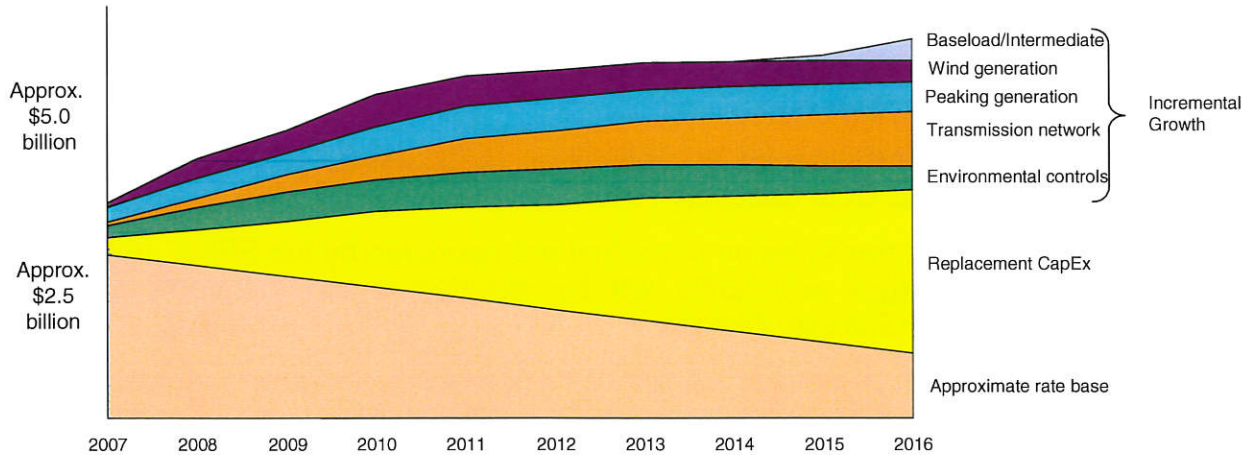
- They provide more timely cost recovery for Westar, which in turn supports the credit ratings of the company and allows us to access capital on reasonable terms.
- They provide customers clearer price signals about the cost of energy and associated environmental requirements.
- They serve to reduce volatility in utility rates and provide for more gradual rate adjustments.

We believe that the measure of whether rates are reasonable or not includes both volatility and absolute levels of rates. The largest portion of capital additions still requires rate adjustment through the periodic filing and processing of traditional rate cases, but the operation of the riders tends to lessen the likelihood of sharp increases that would otherwise result from the exclusive use of rate cases.

Figure 10 illustrates the changes and growth in the major components of our utility plant that result from our planned investments. It incorporates expenditures for maintaining and replacing existing plant as well as our investments in the projects discussed in this paper. With these investments, our rate base (including transmission and environmental plant) would increase from approximately \$2.5 billion determined in

our 2005 rate case to above \$5 billion by 2016. Over time, this increase will exert significant upward pressure on customer rates.

**Figure 10**



Utility rates are, of course, affected by both plant additions and changes in operating and maintenance costs (O&M), which will also increase as a result of general inflationary pressures and the requirements of operating plant additions. Growth in both retail and wholesale sales and in projected asset-based sales margins partially offset the higher costs associated with new investment and increased O&M. It is too early to predict precisely the rate impacts of these investments. Given their scope and magnitude, however, neither Westar nor our customers will be immune from the energy cost increases sweeping the country over the next decade.<sup>25</sup> However, we believe our strategy avoids the "sticker shock" of a major baseload investment and our past investments in baseload will help us maintain a comparative advantage over the ultimate rates for energy being predicted across the country.

<sup>25</sup> Nationally, it is estimated that the cost of electricity will likely increase by more than 60% in the next 8 to 10 years. As previously noted, Westar's rates are much lower than the national average and we intend to maintain this rate advantage for our customers.



## Regulatory Plan

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Generally, Westar will seek recovery of costs incurred in implementing the elements of the energy plan through already established procedures and mechanisms:

- Generation and distribution system capital costs will be included in future requests for rate review.
- Capital expenditures for environmental costs will be recovered through the Environmental Cost Recovery Rider.
- Jurisdictional transmission costs that are approved by the FERC and included in SPP charges and tariffs will be included in the statutorily authorized Transmission Delivery Charge.
- For fuel and purchased power costs, including the power purchase costs related to the wind energy that we will purchase from plants owned by others, and environmental consumables such as limestone, fuel treatments and allowances, we will recover through the RECA.
- For energy efficiency and AMI/MDM program costs, Westar will seek prior specific approval for implementation of discrete programs and recovery of associated costs through mechanisms such as the rider approved in Docket No. 07-KCPE-905-RTS, accounting orders, or other mechanisms identified and approved by the Commission in its recently opened generic energy efficiency dockets (Docket Nos. 08-GIMX-441-GIV and 08-GIMX-442-GIV). We believe strongly that establishing appropriate cost recovery mechanisms and incentives for investments in energy efficiency initiatives are fundamental to the long-term success of efficiency programs.
- For ongoing study costs related to future plants not part of our immediate plans (e.g., evaluating the suitability of sites for future power plants, etc.), we may seek accounting authority to defer such costs as regulatory assets. Should a power plant eventually be constructed as a result of those studies, the costs would be capitalized into the plant costs. Should a plant not result from such studies we would then propose to amortize those study costs over a reasonable period of time. At present, Westar has no such application before the Commission.

We recognize that the timing, and perhaps even the nature, of planned generation additions will likely need to be modified in response to future changes in markets, available technology, regulation, changing customer demand and other unforeseeable events. Accordingly, as with the Emporia Energy Center and our proposed wind generation projects, Westar intends to file with the Commission appropriate applications for predetermination of ratemaking principles associated with future generation facilities. Such filings provide transparency to our customers as to the



nature and cost of our resource planning and better inform investors as to the credit quality and business risks associated with capital expenditures. Predetermination also affords the Commission an upfront opportunity to consider whether construction of the facilities is consistent with the public interest and consistent with Westar's obligation to meet customer demands — all before Westar makes those substantial commitments of investor-supplied capital on behalf of its customers.

## **The Way Forward**

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Although we have offered both broad context and considerable detail about our view of the future – including the inherent uncertainties – this paper is not intended as a dissertation on the "Westar way." Rather, we offer it as an invitation to facilitate discussion with the Commission and other state policy-makers on the fundamental challenges we face together.

Ultimately, we recognize that parties who share our concern for the future may differ in their view of how Westar should proceed best to meet the needs of our state in the context of heightened environmental concerns and mandates. Nonetheless, we believe that the quality of public decision-making is enhanced through a collaborative process where, to the extent reasonably practical, plans are publicly disclosed, comments are received, and alternative approaches may be proposed and thoughtfully discussed.

We welcome that next step.

### Climate Change Policy



Westar Energy recognizes the growing concerns regarding the threat of climate change and believes our industry must take a leadership role in this debate. It must be understood that climate change is a global problem requiring global solutions guided by sound science, objective engineering and our best economic information.

At the federal level the solution must be comprehensive, far-sighted and recognize all sources of greenhouse gases. The Westar Climate Change Policy and its Climate Change Principles, together represent the shared commitment of all Westar employees to protect and enhance the environment while providing safe, reliable and reasonably priced energy service.

1. We will intensify our efforts to make reductions in greenhouse gas emissions while continuing to provide safe, reliable and reasonably priced energy service.
2. We will base greenhouse gas reduction strategies on sound science, objective engineering and best available economic information.
3. We will support science-based education on climate change, its causes and how consumer choices can affect energy consumption.
4. We will support public policies and initiatives to accelerate the development and use of environmentally beneficial and cost effective strategies for:
  - demand-side management
  - energy efficiency programs for both customers and Westar's own operations
  - zero - or low - emissions generation technologies
  - renewable energy resources
  - carbon capture and storage technologies
5. We will support public policies and initiatives that recognize early actions or investments made to mitigate greenhouse gas emissions.
6. We will support public policies and initiatives that recognize and correct for possible extreme financial consequences that could result from the imposition of greenhouse gas regulations.
7. We will support compliance timelines for greenhouse gas reductions consistent with the expected development and commercialization of technology solutions.

## Forward-looking Statements

This document is intended for a broad audience, and we recognize that our investors may be part of that audience. We encourage our investors to be mindful of the following statement as they review this document.

Forward-looking statements: Certain matters discussed in this document are “forward-looking statements.” The Private Securities Litigation Reform Act of 1995 has established that these statements qualify for safe harbors from liability. Forward-looking statements may include words like we “believe,” “anticipate,” “expect,” “likely,” “estimate,” “intend” or words of similar meaning. Forward-looking statements describe our future plans, objectives, expectations or goals and are based on assumptions by the management of the Company as of the date of this document. If management’s assumptions prove incorrect or should unanticipated circumstances arise, the Company’s actual results could differ materially from those anticipated. These differences could be caused by a number of factors or a combination of factors including, but not limited to, those factors described under the heading “Risk Factors” contained in the Company’s quarterly and annual periodic reports as filed with the Securities and Exchange Commission. Readers are urged to consider such factors when evaluating any forward-looking statement, and the Company cautions you not to put undue reliance on any forward-looking statements. Any forward-looking statement speaks only as of the date such statement was made, and we do not undertake any obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement was made except as required by applicable laws or regulations.

The information contained in this document is intended to be considered in the context of our filings with the U.S. Securities and Exchange Commission (“SEC”) and other public announcements that we may make, by press release or otherwise, from time to time. We disclaim any current intention to revise or update the information contained in this document, although we may do so from time to time as our management believes is warranted. Any such updating may be made through the filing of reports or documents with the SEC, through press releases or through other public disclosure.





*Kathleen Sebelius, Governor  
Thomas E. Wright, Chairman  
Michael C. Moffet, Commissioner  
Joseph F. Harkins, Commissioner*

Before the Select Committee on Energy and Environment for the Future  
Regarding HB 2949  
March 11, 2008

Testimony of  
Larry Holloway  
Kansas Corporation Commission

Thank you, Chairman and members of the Committee. I am Larry Holloway, Chief of Energy Operations with the Kansas Corporation Commission, and I appreciate the opportunity to be here today to testify for the Commission on HB 2949.

HB 2949 sets out policy regarding electric generation policy in Kansas over the next twenty years. Much of the information in the bill is based upon a presentation I made to this committee on February 20, 2008.

While the Commission does not oppose or support this bill, it has several concerns and comments regarding this legislation.

- First the Commission wants to clarify its position. While the bill states that the State Corporation Commission testified before the Committee on February 20, 2008, the referenced report was provided as a summary of data from the Energy Information Agency of the US Department of Energy, and information available from the Southwest Power Pool. As such, the report was provided by the Commission Staff, and as mentioned during the Committee meeting, did not reflect any policy statement or opinion of the State Corporation Commission itself.
- While the terms used in this bill defining different generation types are correct in the context of the information provided to the Committee, the fuel types and generation

modes may change over time depending on capital costs and fuel costs. For example, if the price of natural gas were to drop dramatically, the cost of dispatching natural gas units could justify operating these units at higher capacity factors and they would then be considered baseload units. The types of baseload units listed were intended to indicate considerations based upon current technology and fuel prices.

- While this bill may not set out mandated objectives or goals, it is possible that this legislation could bind or restrict future policy decisions. For example, if a utility would file a request asking the Commission to pre-approve ratemaking treatment for a new coal or gas-fired combined cycle power plant, the targets listed in this legislation may provide opponents an unanticipated opportunity to successfully litigate against such a proposal, either before the Commission or through judicial review, irrespective of the proposal's economic or environmental costs and benefits.
- Likewise, the policy and planning objectives set out in the bill may not allow energy policymakers the flexibility needed in light of future information and technology developments. For example, the fuel use act, passed in the late 1970's prohibited the use of natural gas as a fuel for electric generation plants after the year 1990. However, in 1987 this act was repealed by congress in response to an initiative by the executive branch, who considered the act failed energy policy. Today, many of our utilities have invested hundreds of millions of dollars in natural gas generation, primarily for peak power generation. While it may be important to conserve this valuable natural resource, it may also be critical to use natural gas in peaking units to provide quick response to electric demand, particularly as utilities incorporate intermittent renewable resources.
- Section 5 of the bill attempts to provide guidance for policymakers regarding the fuel mix of future electric generation in Kansas. However, the language appears as strict

percentages and does not clearly provide the intent of the policy. For example, if fuel prices stayed at their current level, and there was an abundance of coal and nuclear generation in 2020, it would make little sense to idle generators using these lower cost fuels and to dispatch natural gas generators just to achieve a 5% natural gas share of the fuel mix. If the legislative intent is to decrease the use of coal and natural gas, and increase nuclear, as generation fuels in 2020, 2025 and 2028, the language should include “no greater than” for natural gas and coal fuel mix percentages, and “at least” for the fuel mix related to nuclear.

**Testimony of John R. Grimwade to the  
House Select Committee on Energy and Environment for the Future  
House Bill 2949**

March 11, 2008

Good afternoon. Thank you Mr. Chairman and members of the committee. My name is John Grimwade and I am the Senior Director of Strategic Planning and Development at Kansas City Power & Light. In addition to strategy development, I am responsible for the coordination of KCP&L's long-range Comprehensive Energy Plan.

I would like to applaud the committee today for addressing legislation that seeks to provide a foundation for the development of a balanced energy plan for Kansas. Balance has always been a critical component of any long-range plan. However, with the uncertainties we face as energy planners today, it has become even more critical that we maintain a balance of options as we consider our energy future.

From the perspective of someone who has been engaged in the practice of long-range resource planning for many years, there has never been a period where energy planners have faced more uncertainty than we face today. In addition to the traditional uncertainties we have always faced such as fuel and commodity pricing, today we see a huge amount of uncertainty regarding the rules and regulations concerning global climate change, environmental emission standards, the long-term sustainability of fossil fuels and the availability of a skilled work force. These are big issues that have major consequences for our customers and the price of electricity and there's not a lot of clarity today as to what the future holds.

I have to point out, however, that the uncertainty we face in the future should not be entirely construed as negative. We have made great advances in developing technology that allows Americans to enjoy the most reliable and cost-effective energy system in the world. We have also made meaningful advances in our development of energy efficiency technology and programs that have great promise for moving our customers to use energy more wisely. I have full faith in our ability as an industry to continue the advancement of technology that will allow us to address these critical uncertainties. The questions that can't be answered today include: what will these new technologies look like, what will they cost and when will they be available? We also can't answer today the question that relates to which of these new technologies will be the right ones to deploy to serve our customers and what constitutes an optimal energy resource mix 20 years from now.

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There is much debate today regarding global climate change, what if anything should be done about it and what the timing of any compliance strategy should look like. There have been many forms of legislation proposed at the local, state and federal level to address the control of manmade greenhouse gasses for the purpose of mitigating purported climate impacts due to these gasses. One such bill proposed in the United States Senate, America's Climate Security Act, by Senators Warner and Lieberman calls for the reduction of manmade greenhouse gas emissions by 70 percent below 2005 levels by 2050 and in the near term, reductions of approximately 25 percent by 2012. If this bill passes, in the long term, planners will attempt to address the requirements of this bill with the evolution of new generating technology, renewable energy, energy efficiency, smart end-use technology and perhaps more nuclear power. In the short term, however, compliance will require the redispach of the existing fossil fuel generating fleet, primarily natural gas and coal. What we today call intermediate and peaking resources, those resources fired with natural gas, could increase considerably in their generation and move closer to base load and what we today know as base load generation, our coal plants, will likely decrease in generation and move closer to intermediate generation and eventually be retired. And let me point out that all of this will come with a considerable increase in the cost of electricity to all Kansans.

Now, my point in raising the Warner-Lieberman bill here today is not to debate the issue of global climate change. My hope is that I can help bring awareness that given these extreme uncertain futures we face, it is difficult to prescribe any given resource mix today that will best address the needs of the future.

We use the word "robust" a lot when talking about what we'd like to see in a long range comprehensive energy plan. Merriam-Webster defines robust as "capable of performing without failure under a wide range of conditions". When we look at the amount of uncertainty we currently face with regard to energy, we must as planners and policy makers, keep open as many of our options as possible so that we can maintain robust resource plans that provide the most reliable and least expensive supply of energy as possible, regardless of what the future might hold.

Thank you for your time.

John Grimwade  
Senior Director of Strategic Planning and Development  
816-556-2896



[www.climateandenergy.org](http://www.climateandenergy.org)

Testimony before Select Committee on Energy & Environment for the Future  
Regarding KS HB 2949  
11 March 2008

Mr. Chairman, members of the committee, thank you for the opportunity to address you this afternoon, and for the good work you all do for the state of Kansas.

I am Nancy Jackson, Executive Director of the Climate & Energy Project (CEP) of The Land Institute. I testify today regarding Kansas House Bill 2949, the Kansas Energy Plan Act.

The issues you consider today are crucial and complex. Electricity has become central to our economy and way of life. We use more of it each year and our infrastructure for both generation and transmission is aging and was, in any case, designed for a different time. It is time to make decisions for a new century.

Today, we recognize that the way we produce and consume electricity affects our air, our water, our climate, and for all those reasons, our ability - and our childrens' ability - to lead healthy, productive lives in Kansas over the years to come. At the same time, in an uncertain world, we face growing concerns about energy security and independence. For all these reasons and, in Kansas, to encourage rural economic development, interest in distributed generation and renewable resources is growing.

The bill before you today states early its purpose, to "develop a balanced energy approach, a plan which allows for continued development of all energy sources but is not driven by special interests or energy crises." It provides "encouragement" for renewable energy, as well as for policies to increase transmission and promote market-driven solutions, and focuses on a "market-driven approach." All of these are goals that CEP applauds.

The bulk of 2949, however, attends to base load generation - the sources of energy that utilities depend upon to meet the majority of their consistent demand, 24 hours a day, 7 days a week. The difficulty, in 2008, is that in a fluid global market, economics can be tricky to predict and the notion of base load itself is being reconsidered.

Just this week, for example, we learned that Peabody Coal shipped more coal to China in the first six weeks of this year than in all of 2007. Last week, Merrill Lynch announced its forecast that coal prices would jump by 200% this calendar year. As nuclear generation enjoys a likely renaissance, we can expect similar jumps in uranium. In a global marketplace with rapidly developing economies, competition for finite resources is and will continue to be stiff. Determining in 2008 what will be economic in 2028 is challenging to say the least.

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Attachment # 5

Add to economic uncertainty the reconsideration of base load. As we speak, the Southwest Power Pool and the Midwest Independent System Operator are jointly conducting a study on the integration of large amounts of wind onto the grid and how that may affect historical understandings of base load and reliability. Just as we would not expect nuclear to conform to the profile of coal, or coal to natural gas, wind is a unique resource. It provides energy, but not "capacity" in the way we developed that term to describe other resources. If the country places a high priority on getting energy from wind - and indeed President Bush, the Department of Energy, and Governor Sebelius all agree that we should be getting 20% of our energy from wind by 2030 - then it makes sense to find new ways to talk about new resources.

All of this - not to mention pressing environmental concerns including air, water, and climate pollution and their costs, which are not mentioned in this bill - makes it difficult to project with any accuracy the most economic, reliable, and socially beneficial mix of generation for 2030 and beyond.

The suggested mix of generation reflected in Sec 5 (b)(3) - the bill's directive to the corporation commission regarding base load analysis and planning - appears to double our nuclear generation (to 40%), reduce our coal generation (to 60%), and all but eliminate natural gas for base load by 2028. Which is to say: 2949 essentially directs that another nuclear plant be built in Kansas.

Passing such a law at this time seems premature. Another nuclear plant may ultimately prove to be a good option for Kansas, but surely that decision would result from careful consideration of a comprehensive energy plan for the state - one that considers base load, intermediate load, peaking power, the unique contributions of renewables, and the potential contribution of energy efficiency in addition to developing market forces, environmental concerns, and the desire and ability of Kansas utilities to participate.

In sum, CEP supports a comprehensive planning effort. In recognition of the complexity of the task, we trust that the committee will take a careful, considered approach and postpone determining fuel mix for future generation until more information is available.

**Testimony on HB 2949 March 11, 2008**

**Margaret Thomas<sup>1</sup>, 8401 Prairie Village, Prairie Village, KS 66207**

How we can reinvent our energy future is the greatest challenge Kansans face today. A comprehensive energy plan is of paramount importance, and we appreciate your beginning this effort. Hopefully, your work can lead to an informed evaluation and careful presentation of the long-term impacts of the alternatives.

Findings published in separate science journals just within the past few weeks indicate a frightening truth: the world must cease carbon emissions altogether within a matter of decades. Both industrialized and developing nations must wean themselves off fossil fuels by as early as mid-century in order to prevent warming that could change precipitation patterns and dry up sources of fresh water worldwide.

Kansas must do its part to eliminate the massive CO<sub>2</sub> emissions from coal-fired power plants that would overwhelm any conservation or efficiency effort to limit this impact. The coalition of 8 northeastern states that are engaged in CO<sub>2</sub> reduction efforts notified KDHE that if the new Holcomb power plants are built the emissions from these new plants alone will offset the efforts of all these states! First, our comprehensive state energy plan must state that new coal-fired power be put on hold until technology has been developed to eliminate carbon emissions.

Secondly, while nuclear energy generation does not produce climate changing CO<sub>2</sub>, it does require large quantities of water which are increasingly scarce in Kansas. Most of all, the nuclear industry, despite vigorous effort over at least 30 years, has yet to determine how to safely store the spent fuel from nuclear power generation. Nuclear energy may be the energy of our future, but until the safety issues are resolved – and I believe they will be – we must focus on clean, safe, renewable energy sources.

Third, Kansas wind has the potential to generate as much as 7,000 MW of electricity. What a tremendous economic opportunity for rural Kansas! And the world is on the verge of a boom in solar thermal plants, that could be used on our driest, hottest lands to focus sunlight onto fluids, make steam to turn a turbine and make electricity. Our plan must place the greatest emphasis on utilizing our massive and constantly renewing wind and solar resources.

Fourth, you will want to include strong emphasis on energy technology in our state energy plan. Many energy savings technologies are already proven. Kansans need to be educated and incentivized to make energy savings investments that will produce major economic as well as environmental returns.

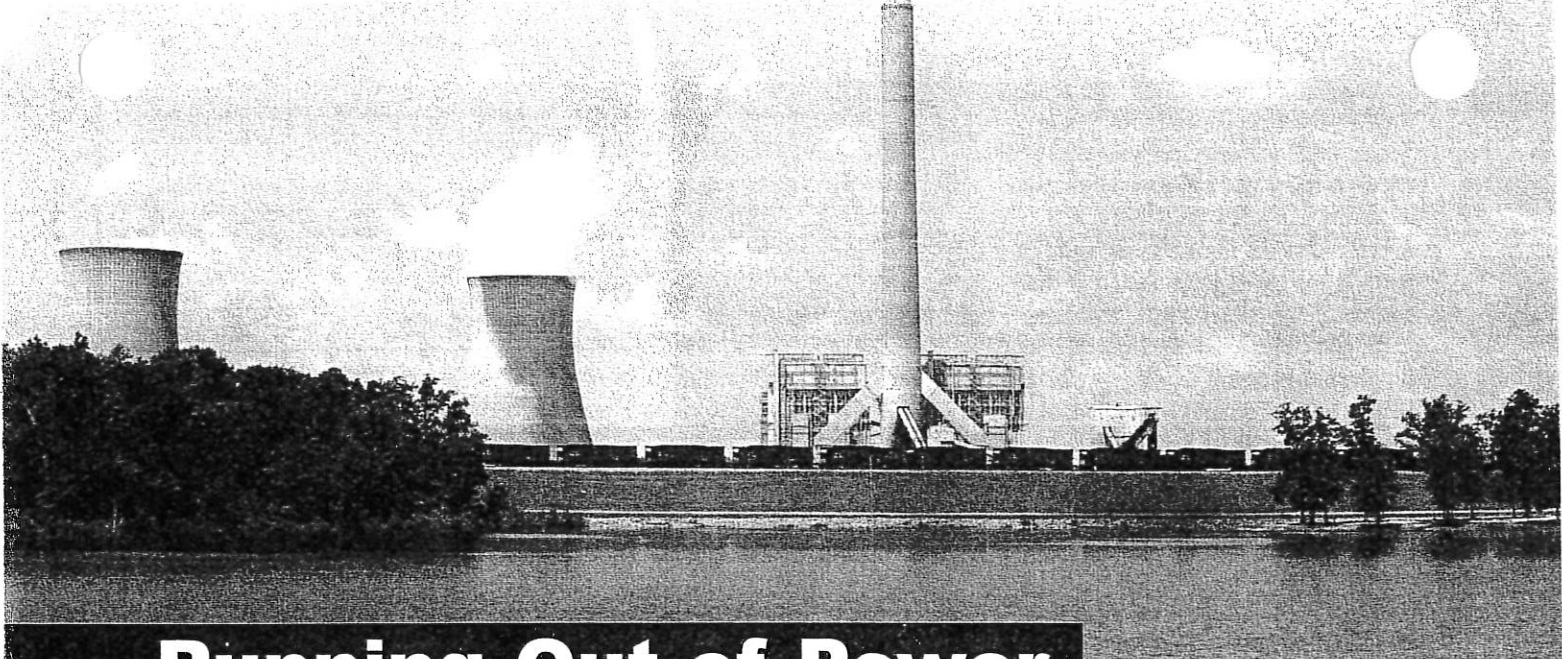
In summary, our state energy plan must focus like a laser on the opportunities offered by wind, sun, and energy efficiency. Until the problems of coal and nuclear generation are resolved they should not be included in our state's plan for new energy generation.

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<sup>1</sup> Chair, Prairie Village Environmental Committee; founding member, Sustainable Sanctuary Coalition; member, Climate Protection Coalition for Johnson County; Board, Kansas Natural Resource Council; member, Environmental Committee, True Blue Women.

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Attachment # 6





# Running Out of Power

*More electricity needed to meet growing demand*

By Nancy S. Grant and Jennifer Taylor

Will our nation's electric system continue to provide a reliable, safe and affordable supply of power in coming years? This question was asked most recently by the North American Electric Reliability Corporation (NERC), a Princeton, N.J.-based non-profit organization charged with monitoring America's power system reliability.

In October 2007, NERC published its annual Long-Term Reliability Assessment, which provides a forecast on how much electric generating capacity will be available during the next decade. The report also estimates how much electricity people will use over that time.

The organization's findings revealed that current plans to build power plants and high-voltage transmission lines lag behind the expected growth in power consumption. They also match a U.S. Department of Energy forecast that demand for electricity nationally will increase by 40 percent during the next 22 years. Even if the country can dramatically increase efficiency and conservation programs—electricity demand over time will continue to grow as our economy and population grows.

NERC warned, "Demand for electricity is expected to increase over the next 10 years by approximately 18 percent in the United States, but confirmed generation capacity will increase by only 8.5 percent; expansion and strengthening of the transmission system [also] continues to lag demand growth and expansion of generating resources in most areas."

To fully grasp the impact of that statement, consider these facts about generation, transmission and the demand for electricity:

\* Electricity can't be stored—it must be used immediately and flow continuously. Electric energy generated at a power plant flows through high-voltage transmission lines to

substations, where it is reduced to a lower voltage for safe distribution to homes and businesses. Reliability refers to the availability of electricity when and where consumers need it, without interruption.

\* Not every power plant generates electricity all of the time. Across the country on any given day, it is normal for numerous plants to be shut down due to a broad range of issues, such as scheduled maintenance, fuel availability or price, or low water levels at a dam where a hydroelectric power plant operates.

\* High-voltage transmission lines carrying electricity from generating plants to distribution substations need regular and emergency maintenance. Vegetation management to clear rights-of-way, or weather events, such as ice storms or tornadoes, can interrupt the flow of electricity on these "power highways."

For consumers to receive reliable electric service, a certain amount of extra capacity must always be available. NERC has stated that generation capacity margins should average 15 percent or more. In other words, generation plants should be able to produce approximately 15 percent more electricity than consumers are expected to use during times of peak demand—the electric utility industry's equivalent of rush-hour traffic. This helps ensure sufficient power in an emergency or if a specific power plant needs to be shut down for service.

The NERC report also found that even if all power plants under construction now are completed on time and begin generating electricity in the amounts slated, and new construction ramps up according to plans now underway, generation capacity margins will drop below minimum reliability margin levels in certain areas of the United States within the next two to three years.

*Rep. Dick Kelsey*  
*Dist 93*  
*Seaf 80*

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Regions affected include California, Rocky Mountain states, New England, Texas, the Southwest and Midwest. Other parts of our country could face a reliability gap a few years later. In western Canada, the problem could become apparent to consumers within two years.

In addition to the needed power supply, transmission line capacity (what's needed to deliver the power) is projected to increase by a bit less than 9 percent in the United States—and by just 4.8 percent in Canada over the next 10 years.

All of this means that a sudden surge in weather-caused disruptions or a batch of construction delays could leave consumers facing immediate and recurring disruptions in their supply of electricity.

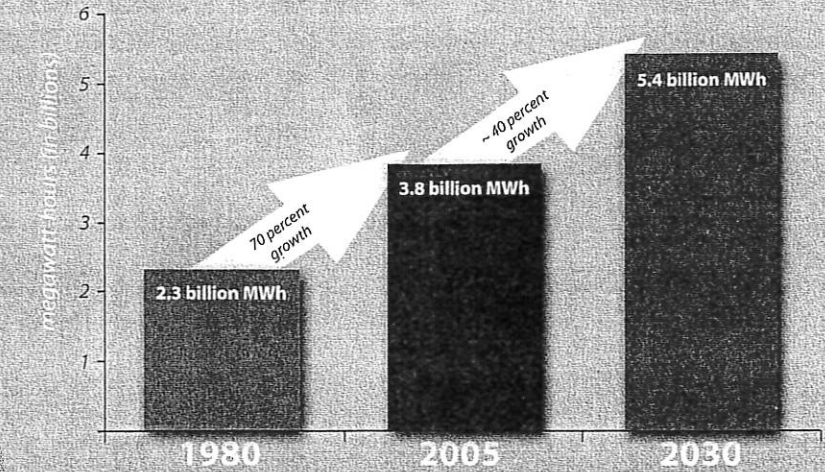
Glenn English, CEO of the National Rural Electric Cooperative Association based in Arlington, Va., believes the NERC study shows that the nation's lawmakers and regulators must quickly come to grips with the difficult challenges of meeting future energy demand.

"The generation and transmission needed to supply everyone with electricity will get built," says English. "Electric co-ops, as not-for-profit, consumer-owned utilities, have an obligation to serve. The issue is how we manage rising costs associated not only with the fuels needed to produce electricity and construction materials like steel, copper and concrete, but climate change as well. Policymakers must seek out solutions that are feasible technologically and can be sustained economically—remedies that will allow electric co-ops to continue providing reliable, affordable power in an environmentally responsible fashion."

In its report, NERC examines other significant problems that could affect reliability. These include the need to attract well-trained younger workers to replace the aging workforce of electric utility professionals and how to deal with renewable energy concerns such as intermittency—the fact that wind only blows about 40 percent of the time and generally not on hot, humid weekdays in the summer when power consumption skyrockets, and the sun

## Increasing U.S. Demand for Electricity

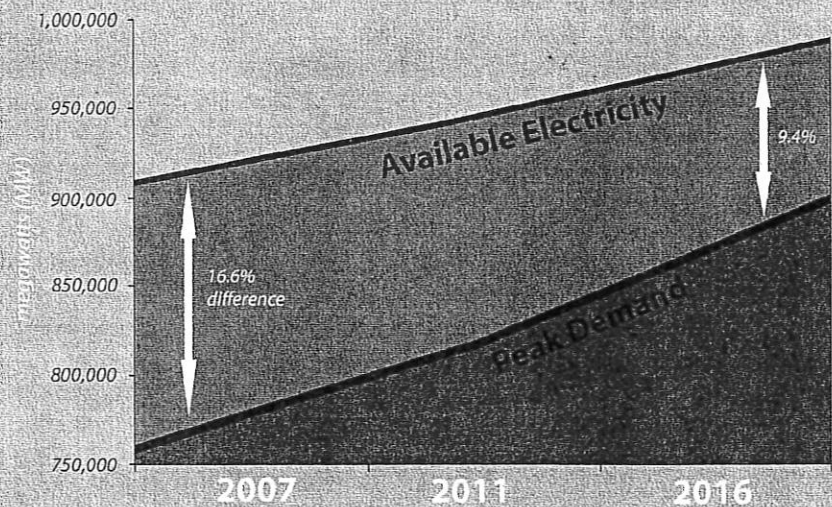
Between 1980 and 2005, electricity consumption increased at an average annual rate of 2.3 percent. The U.S. Energy Information Administration (EIA) now projects an average annual rate of 1.5 percent from 2005 to 2030.



Source: EIA Annual Energy 2007 Outlook Assumptions, Reference Case Table A8, Total Net Generation

## Running Out of Power: Electricity supply isn't keeping up with demand

Peak demand for electricity will increase by 17.7 percent in the U.S. over the next 10 years, while resources needed to meet that demand will grow only 8.4 percent. If this "power gap" continues to shrink, brownouts and rolling blackouts could result.



Source: North American Electric Reliability Corporation 10-year forecast, October 2007, pp 10-11

doesn't shine during nighttime hours.

"Beginning now, start doing everything you can to use electricity wisely," NERC encourages consumers—such as turning off lights when not in use, replacing old appliances and equipment with more energy-efficient models and managing electricity use carefully.

Source: North American Electric Reliability Corporation, National Rural Electric Cooperative Association  
Nancy S. Grant is a freelance writer based near Louisville, KY, and is a member of the American Society of Journalists and Authors. Jennifer Taylor is writer of consumer and cooperative affairs at the National Rural Electric Cooperative Association.

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