Approved: February 25, 2011
Date

MINUTES OF THE HOUSE ENERGY AND UTILITIES COMMITTEE

The meeting was called to order by Chairman Carl Holmes at 9:00 A.M. on January 20, 2011, in Room 785 of the Docking State Office Building.

All members were present except:
Rob Bruchman-excused
Gail Finney-excused
Annie Kuether-excused
Joe Seiwert-excused
Mike Slattery-excused
Tom Sloan-excused

Committee staff present:
Matt Sterling, Office of the Revisor of Statutes
Cindy Lash, Kansas Legislative Research Department
Corey Carnahan, Kansas Legislative Research Department
Renae Hansen, Committee Assistant

Conferees appearing before the Committee:
Robert Glass, Kansas Corporation Commission
Michael Deupree, Research Analyst, Kansas Corporation Commission

Others attending:
Thirteen including the attached list.

Briefing on:
Economic Outlook

Robert Glass, Kansas Corporation Commission, (Attachment 1), spoke to the committee on the Kansas Generation Planning Survey. His portion of the presentation was on the historical look at Economics and Rates and he continued on with the Economic Outlook and its affect on Generation Planning. He noted that changes in the economy and its unpredictability make forecasting for electric generation very difficult.

Questions were asked and comments made by Representatives: Don Hineman, Vern Swanson, Stan Frownfelter, and Carl Holmes.

Briefing on:
Load and Capacity

Michael Deupree, Kansas Corporation Commission, (Attachment 2) presented to the committee the detailed 2010 Kansas Generation Planning Survey data and explanation. Additionally, he presented a (Attachment 3) power point with the same title. His explanation included charts that evaluate the demand and supply of the major power providers in Kansas through 2029. Additionally, he described the renewable energy projections for the immediate future.

Questions were asked and comments made by Representatives: Carl Holmes, Don Hineman, Don Schroeder, Stan Frownfelter,

Mark Schreiber, Westar, also helped answer some of the questions asked by the committee.

Staff Briefing on:
Interim Committees:
Special Committee on Natural Gas Storage Fields and Facilities

Matt Sterling, Kansas Revisor of Statutes, spoke to the committee regarding the Special Committee on Natural Gas Storage Fields and Facilities. He included several documents in his presentation:

- Memorandum on Federal Regulation of the Interstate Distribution of Gas (Attachment 4)

The minutes of the House Energy and Utilities Committee at 9:00 A.M. on January 20, 2011, in Room 785 of the Docking State Office Building.

- Memorandum on Colorado Interstate Gas Company v. Thomas E. Wright (KCC) (Attachment 5)
- Memorandum on **2010 SB 533** (Attachment 6)

In addition the committee received:

- Letter from Northern Natural Gas(Attachment 7)
- Article on Natural Gas (Attachment 8)

Questions were asked and comments made by Representatives: Vern Swanson,

The next meeting is scheduled for January 25, 2011.

The meeting was adjourned at 10:17 A.M.

HOUSE ENERGY AND UTILITIES COMMITTEE
GUEST LIST

DATE: January 20, 2011

NAME	REPRESENTING
Colin Curtis	The Sandstone Group
Leslie Kaufman	Ks Co-op Council
Chelsea Good	Pinegar, Smith & Associates
JOHN BOTTENBERG	
TOM DAY	KCC
ROBERT GLASS	KCC
MICHAEL DEMPREE	KCC
George Stafford	Stafford Consultry
Mark Schreiber	Westar
Lon Stanton	Northern Natural Gas Co
John Peterson	Capitol Strategies,
Ron Gaches	CBA
Melissa Ward	Hein Lawfirm

2010 Kansas Generation Planning Survey

Bob Glass
Economics and Rates
Economic Outlook & Generation Planning

Michael Deupree
Research Section
2010 Kansas Generation Planning Survey

Peak Load and the Economy

- In general, electric generation is built to cover peak load
- Growth in peak load is primarily a function of growth in the economy (there is some upward trend)
- The economic outlook for a service area is an important factor in forecasting the peak load

Economic Outlook

- The Kansas Economy behaves much like the US Economy
- The dominant element in the US Economy for the next several years will be the looming effects of the financial crisis
- Kansas Unemployment Rate
- Brief look at Local and Regional Economies

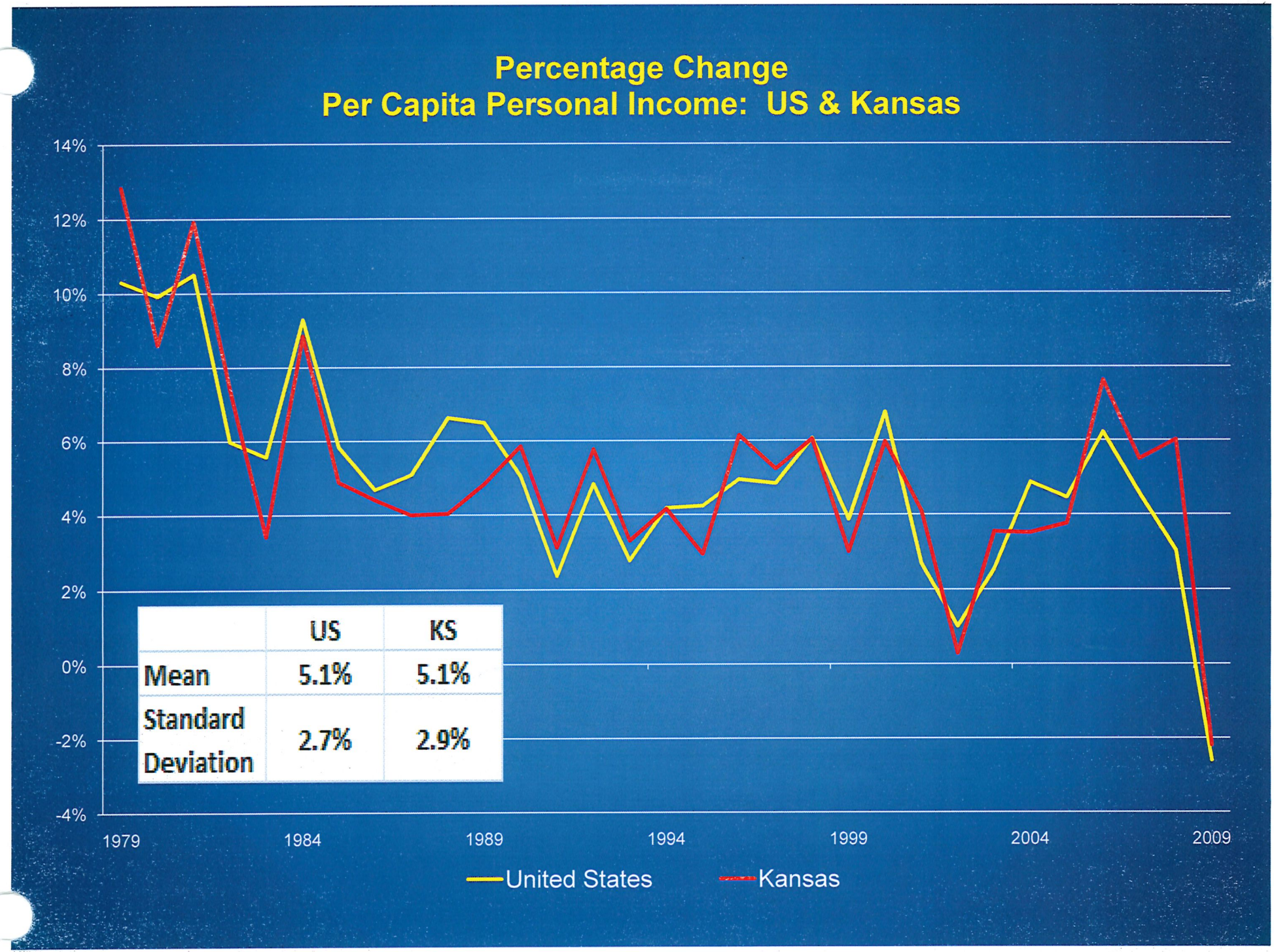
Economic Outlook

- **The Kansas Economy behaves much like the US Economy**

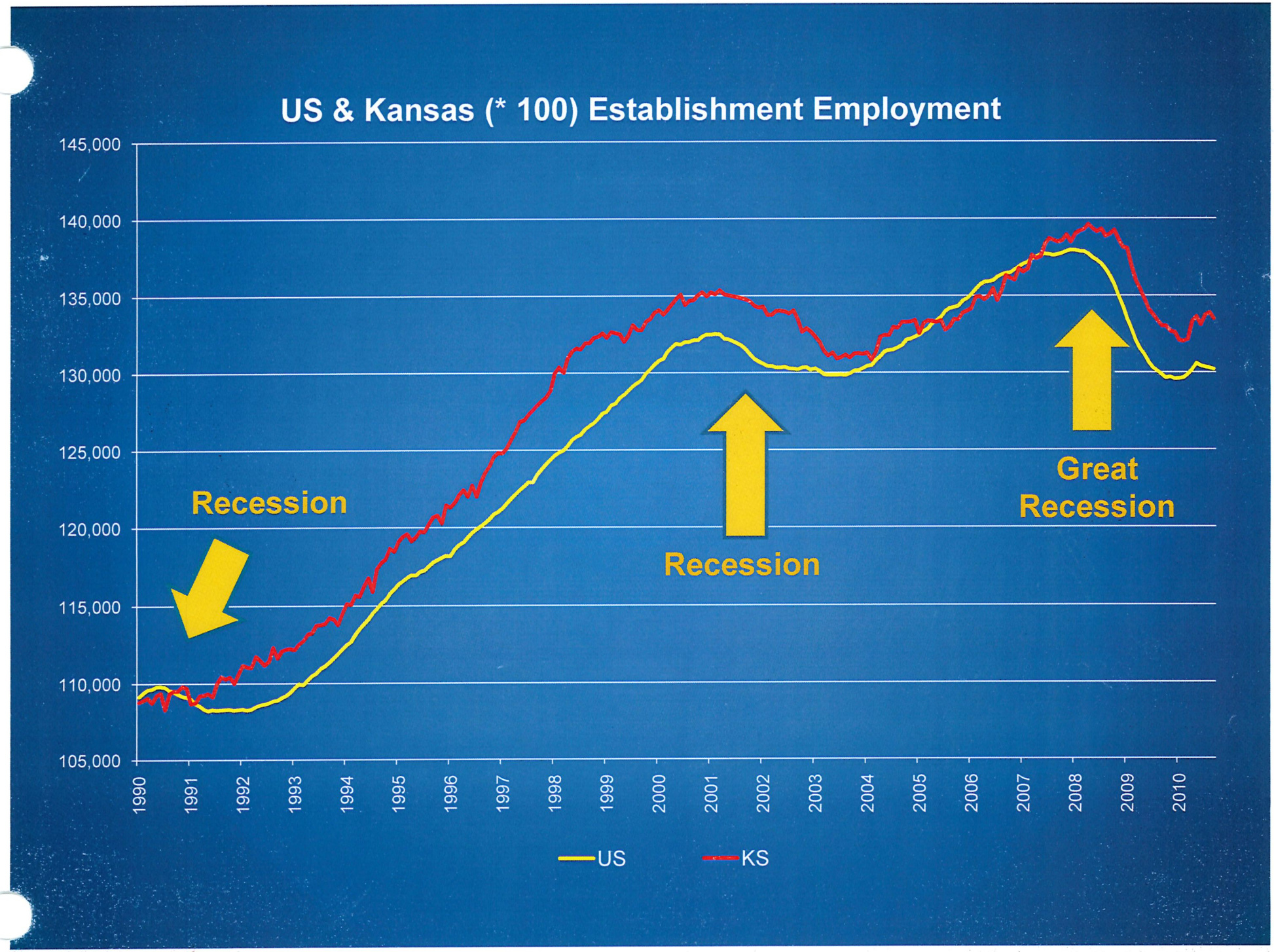
- The dominant element in the US Economy for the next several years will be the looming effects of the financial crisis

- Kansas Unemployment Rate

- Brief look at Local and Regional Economies



	US	KS
Mean	5.1%	5.1%
Standard Deviation	2.7%	2.9%


US & Kansas (* 100) Establishment Employment
145,000
140,000
135,000
130,000
125,000
120,000
115,000
110,000
105,000
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Recession
Recession
Great Recession
US
KS

Economic Outlook

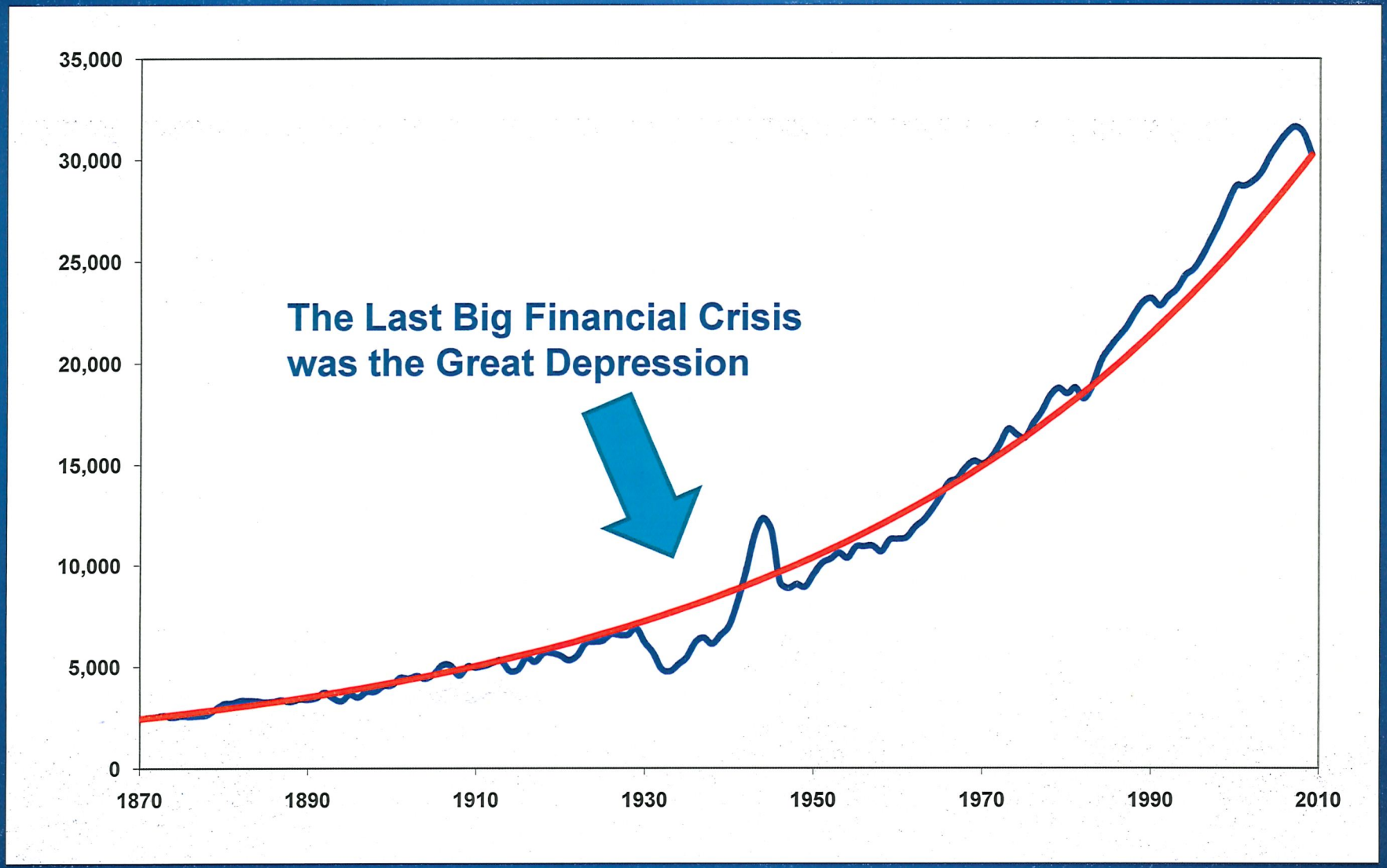
- The Kansas Economy behaves much like the US Economy

- **The dominant element in the US Economy for the next several years will be the looming effects of the financial crisis**

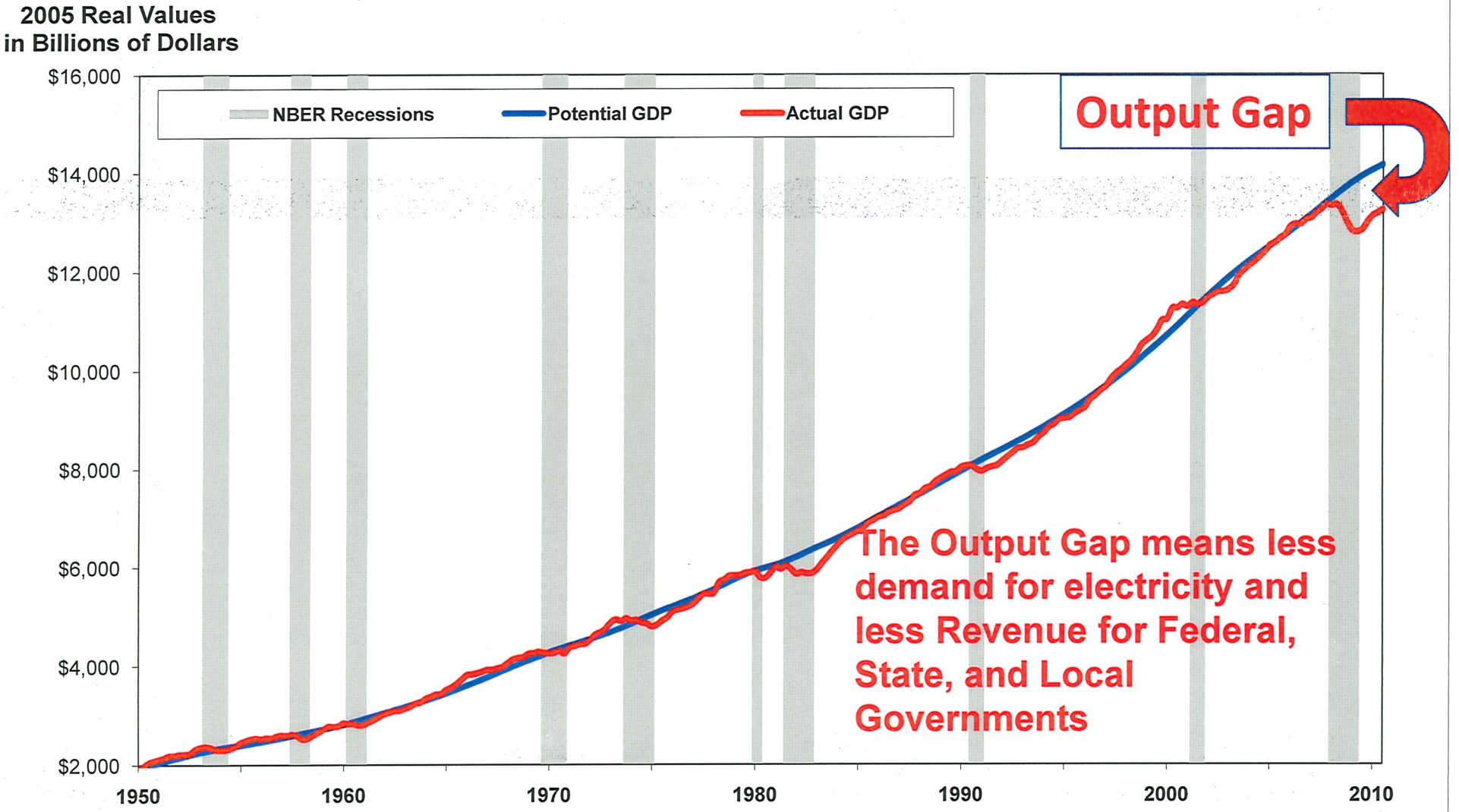
- Kansas Unemployment Rate

- Brief look at Local and Regional Economies

Real Per Capita GDP from 1870 to 2009 and the Average Annualized Growth Trend

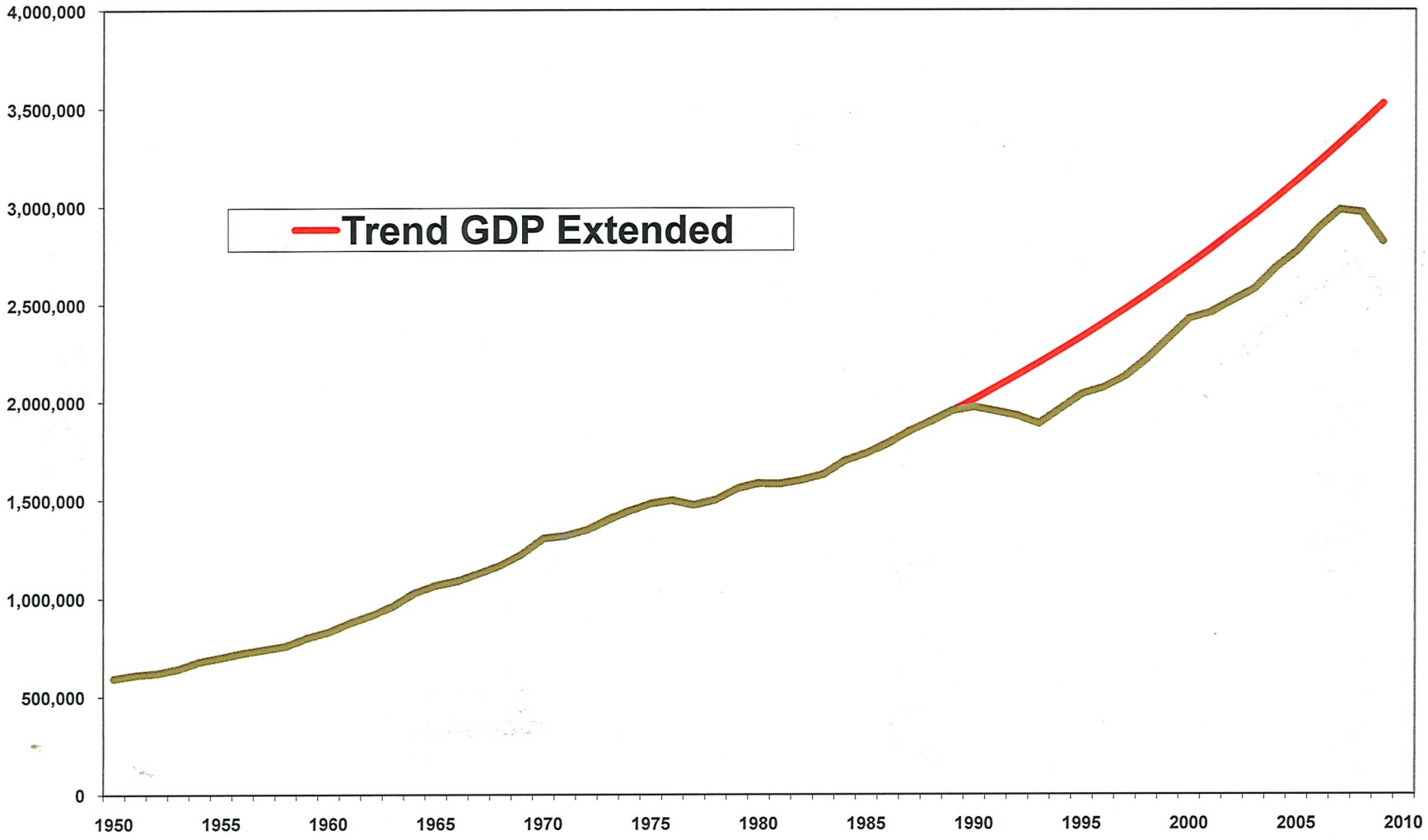


Real US GDP & Potential GDP

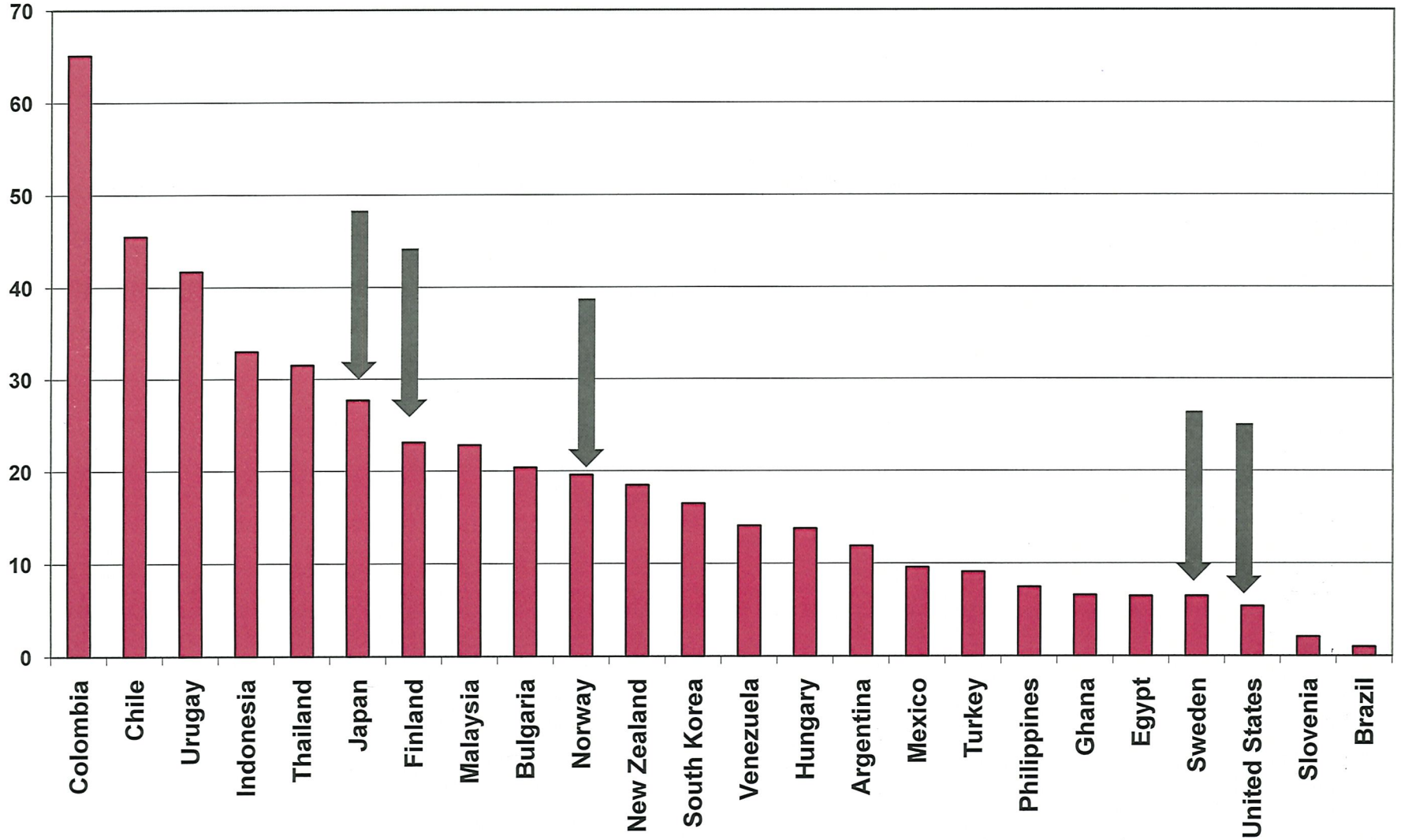


Swedish Experience with Financial Crisis

Swedish Annual Real GDP: 1950 - 2009

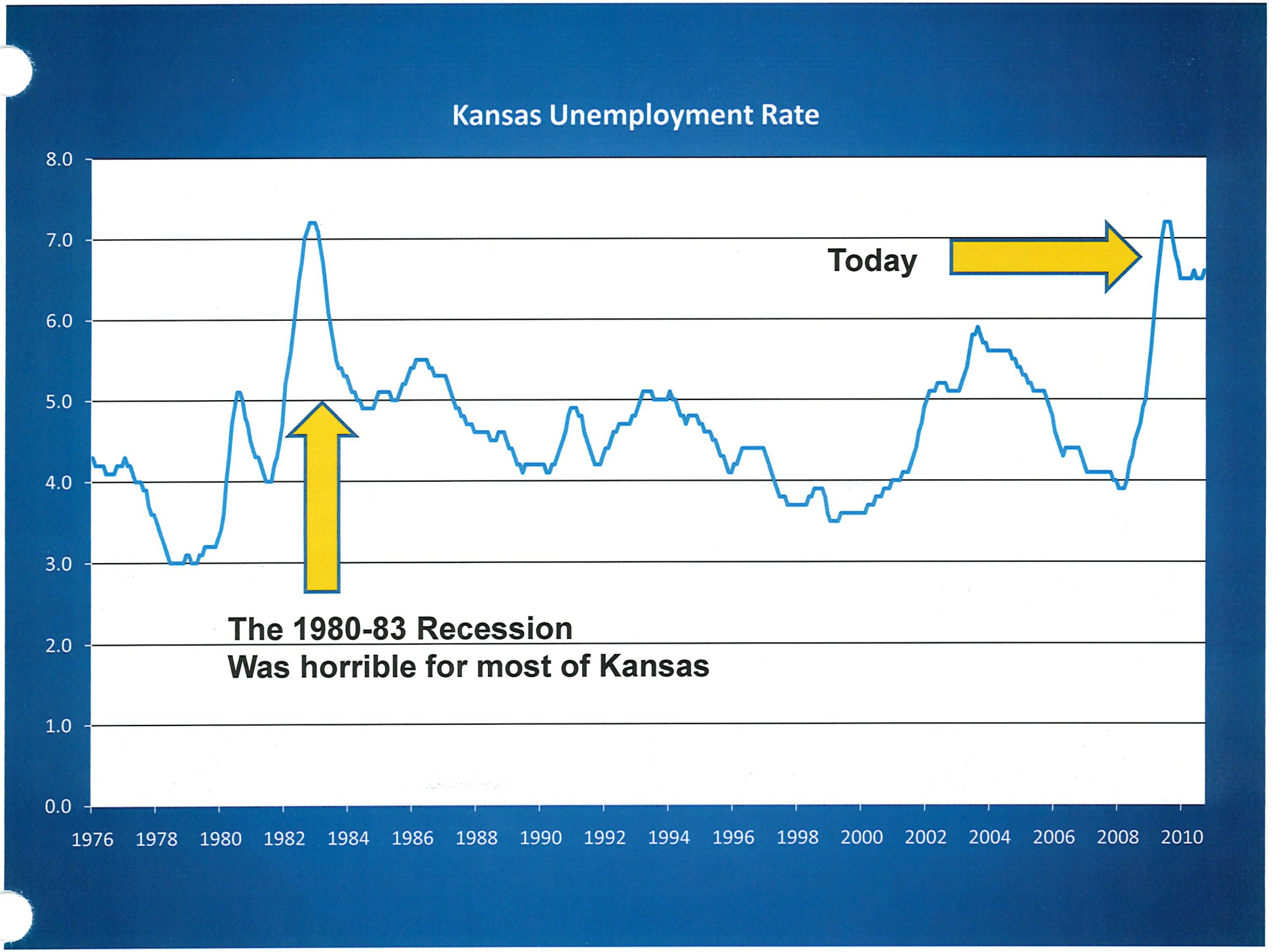


Gross output loss In percent of GDP Due to a Financial Crisis Prior to 2001



Economic Outlook

- The Kansas Economy behaves much like the US Economy
- The dominant element in the US Economy for the next several years will be the looming effects of the financial crisis
- **Kansas Unemployment Rate**
- Briefly look at Local and Regional Economies


Kansas Unemployment Rate
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Today
The 1980-83 Recession
Was horrible for most of Kansas

Economic Outlook

- The Kansas Economy behaves much like the US Economy
- The dominant element in the US Economy for the next several years will be the looming effects of the financial crisis
- Kansas Unemployment Rate
- **Brief look at Local and Regional Economies**

Change and Percentage Change in Establishment Employment for Kansas MSAs and the Counties in the MSAs: 2007 to 2009

Kansas Side of the KC MSA	**-17,757**	**-4.0%**		**Topeka MSA**	**-1,851**	**-1.7%**
Franklin	-445	-4.5%		Jackson	-319	-7.2%
Johnson	-14,803	-4.7%		Jefferson	90	2.5%
Leavenworth	551	2.7%		Osage	61	1.8%
Linn	-161	-7.7%		Shawnee	-1,717	-1.8%
Miami	-739	-8.7%		Wabaunsee	34	2.2%
Wyandotte	-2,160	-2.7%				
				Wichita MSA	**-10,053**	**-3.4%**
Lawrence MSA	**-1,328**	**-2.8%**		Butler	83	0.5%
				Harvey	208	1.5%
Manhattan MSA	**2,442**	**4.9%**		Sedgwick	-10,340	-4.0%
Geary	993	7.3%		Sumner	-4	-0.1%
Pottawatomie	250	2.9%				
Riley	1,199	4.3%				

Percentage Change in Establishment Employment: 2007 to 2009

Kansas: -2.9%

County	% Change	County	% Change
Meade	8.7%	Seward	-16.3%
Morton	8.3%	Logan	-14.9%
Cowley	7.5%	Greenwood	-11.6%
Wilson	7.4%	Stevens	-11.5%
Smith	7.3%	Ness	-11.2%

Change and Percentage Change in Establishment Employment: 2007 to 2009

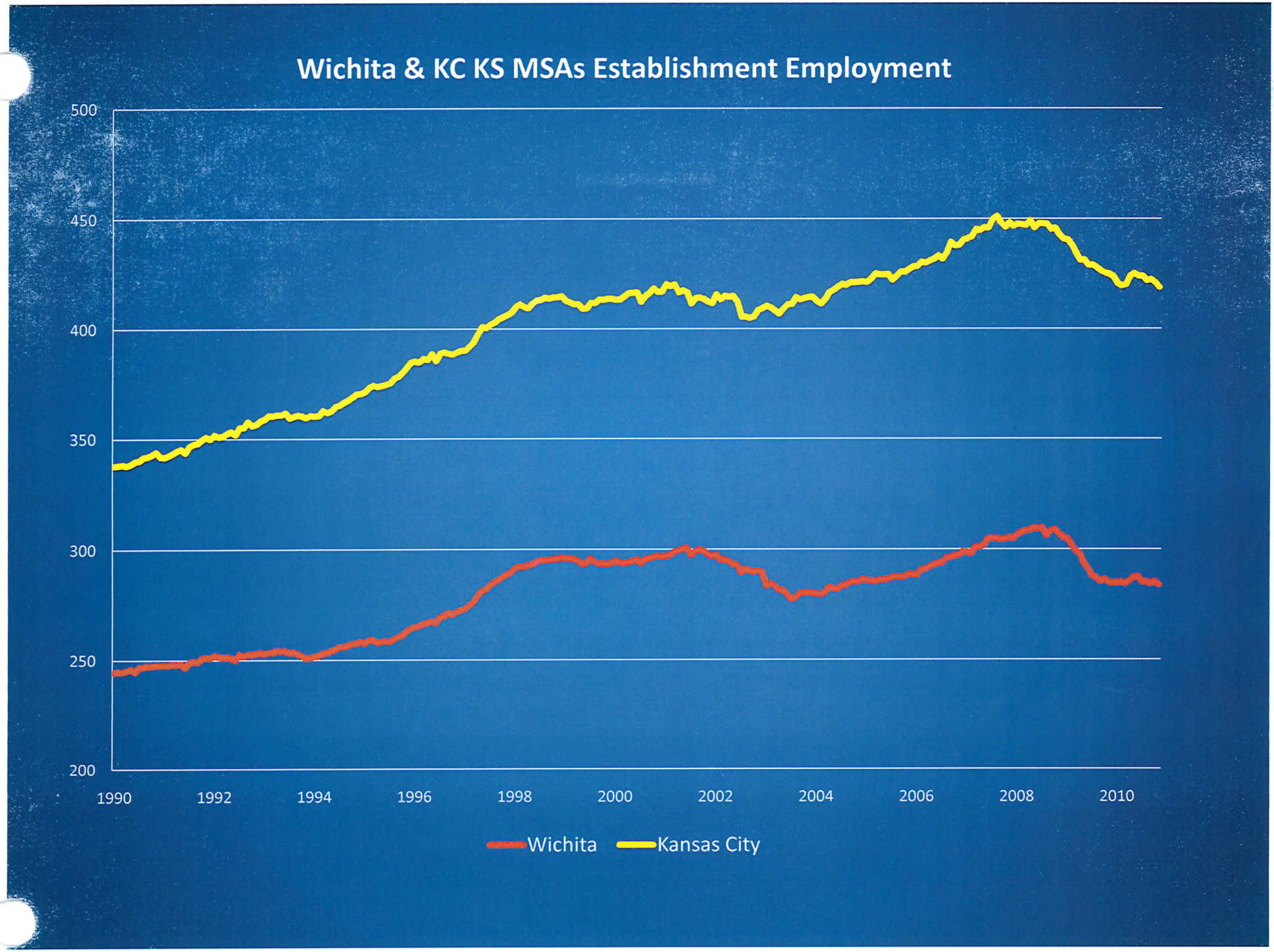
Statewide	-39,937	-2.9%
Barton	-601	-4.5%
Crawford	-923	-5.3%
Ellis	-62	-0.4%
Finney	590	3.4%
Ford	814	5.0%
Montgomery	-917	-5.3%
Reno	113	0.4%
Saline	-1,234	-3.9%

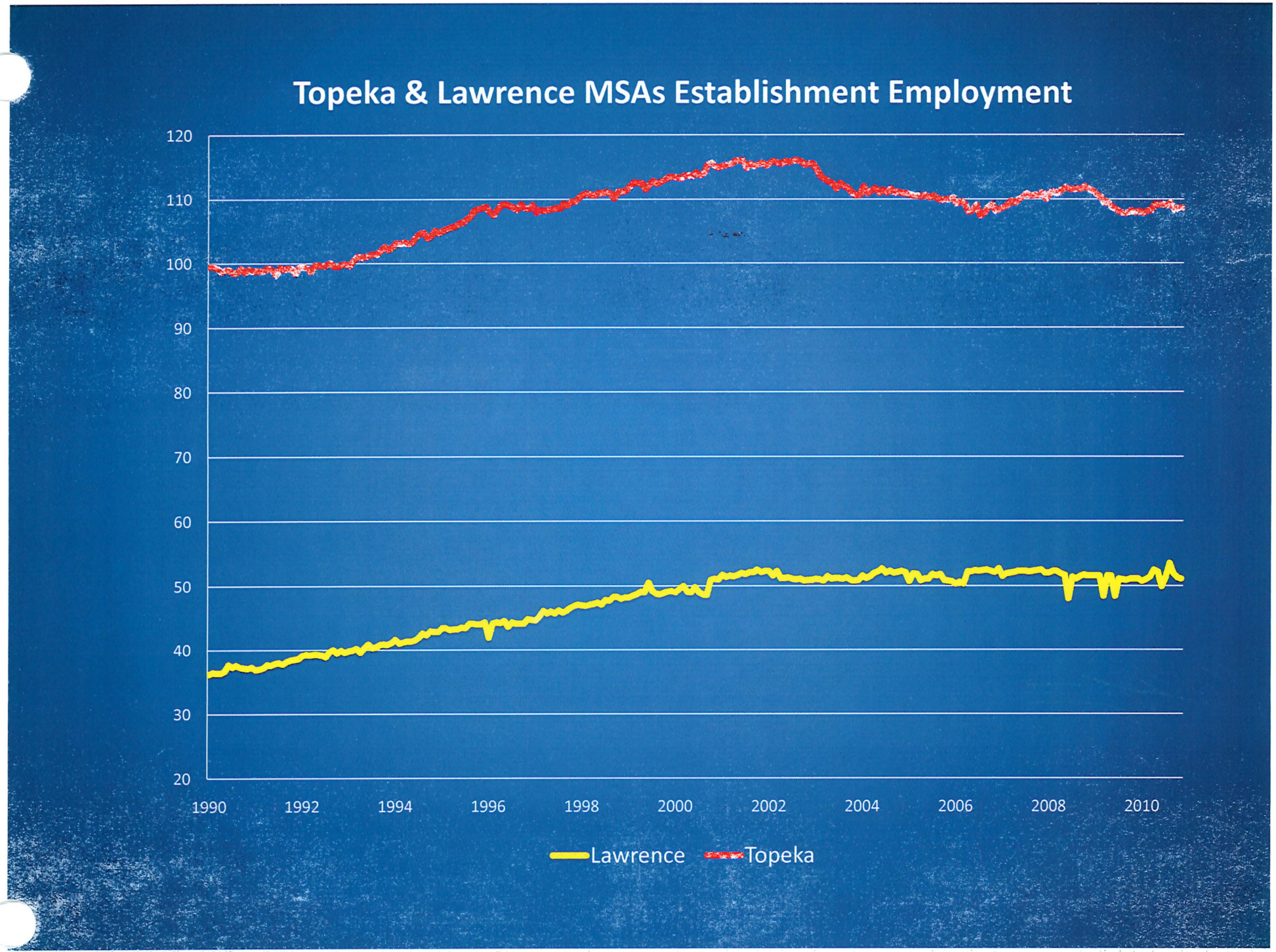
Percentage Increase in the Unemployment Rate: Sept 2007 to Sept 2010

Wilson	185.7%		Douglas	68.6%
Neosho	118.9%		Johnson	56.1%
Montgomery	108.3%		Shawnee	55.6%
Sedgwick	107.5%		Finney	50.0%
Butler	105.3%		Reno	42.5%
Atchison	102.6%		Ellis	34.6%
Harvey	100.0%		Wyandotte	30.1%
Labette	100.0%		Ford	23.3%
	STATEWIDE		61.0%	

What does the last recession mean for load and peak load growth?

- For KCP&L, the KC, KS MSA is the best, most current surrogates for establishment employment
- For Westar, Wichita, Topeka, and Lawrence are the best, most current surrogates for establishment employment


Wichita & KC KS MSAs Establishment Employment
500
450
400
350
300
250
200
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Wichita
Kansas City


Topeka & Lawrence MSAs Establishment Employment
120
110
100
90
80
70
60
50
40
30
20
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Lawrence
Topeka

Employment by Establishment for all Kansas Counties

	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Statewide	1,319,667	1,303,114	1,284,726	1,296,618	1,305,440	1,327,677	1,356,966	1,366,878	1,317,029
Allen	6,353	5,954	5,995	6,081	5,967	6,079	6,138	6,044	5,725
Anderson	2,219	2,228	2,114	2,082	2,016	2,139	2,206	2,247	2,189
Atchison	6,639	6,550	6,464	6,682	6,740	6,826	6,870	6,864	6,080
Barber	1,863	1,811	1,857	1,800	1,791	1,817	1,825	1,866	1,877
Barton	13,048	13,175	12,593	12,649	12,790	13,017	13,241	13,305	12,640
Bourbon	7,204	6,519	6,656	6,673	6,621	7,103	6,831	6,573	6,230
Brown	4,795	4,713	4,892	4,962	4,956	5,095	4,930	4,916	5,048
Butler	16,178	16,506	16,548	16,441	16,760	17,183	18,140	18,351	18,223
Chase	777	812	741	756	741	761	838	844	821
Chautauqua	1,025	1,026	1,011	1,049	994	940	883	900	828
Cherokee	6,341	6,060	6,171	6,227	6,224	6,091	6,250	6,205	6,020
Cheyenne	908	901	909	885	843	816	812	851	863
Clark	799	802	799	775	755	762	803	806	791
Clay	3,153	3,098	3,041	3,114	3,276	3,346	3,445	3,515	3,412
Cloud	3,774	3,723	4,037	4,040	3,942	4,016	3,889	3,894	3,806
Coffey	3,819	3,828	3,846	3,810	4,059	4,229	4,133	4,266	4,286
Comanche	697	701	665	655	695	709	722	734	694
Cowley	15,371	15,396	14,786	14,548	14,170	14,572	15,117	14,655	13,840
Crawford	17,926	18,005	17,784	17,403	17,641	17,219	17,580	17,863	16,657
Decatur	1,564	1,185	1,153	1,105	1,042	1,033	1,064	1,116	1,090
Dickinson	7,026	7,006	7,054	7,095	7,080	7,077	6,949	6,917	6,757
Doniphan	2,575	2,323	2,218	2,493	2,429	2,613	2,665	2,763	2,369
Douglas	47,005	46,259	46,940	47,823	47,798	48,093	48,204	47,049	46,876
Edwards	1,057	1,019	960	957	1,044	992	962	1,020	974
Elk	766	713	710	725	704	716	635	644	628
Ellis	14,356	14,672	15,042	14,779	14,621	14,936	15,155	15,349	15,093
Ellsworth	2,409	2,340	2,287	2,325	2,283	2,752	2,819	2,842	2,785
Finney	18,294	17,809	17,562	17,451	17,249	17,177	17,322	17,954	17,912
Ford	15,521	15,837	15,849	15,943	15,758	16,017	16,280	16,895	17,094
Franklin	8,705	9,566	9,789	9,596	9,496	9,365	9,803	9,589	9,358
Geary	12,126	11,977	11,994	12,523	12,734	13,518	13,633	14,473	14,626
Gove	1,145	1,199	1,128	1,105	1,109	1,112	1,142	1,128	1,164
Graham	1,052	1,065	1,048	1,037	1,022	1,055	1,096	1,093	1,014
Grant	3,485	3,459	3,399	3,460	3,394	3,545	3,683	3,644	3,592
Gray	2,692	2,660	2,552	2,661	2,651	2,688	2,830	2,871	2,955
Greeley	707	639	594	608	571	537	563	578	555
Greenwood	1,929	1,895	1,850	1,759	1,859	1,804	1,859	1,883	1,742
Hamilton	1,064	1,073	1,064	1,066	1,081	1,116	1,112	1,217	1,195
Harper	2,171	2,200	2,174	2,283	2,319	2,336	2,343	2,349	2,234
Harvey	13,423	13,364	13,354	13,502	13,915	14,008	13,779	14,438	13,987
Haskell	1,490	1,488	1,420	1,496	1,529	1,487	1,555	1,630	1,684
Hodgeman	597	583	575	554	572	569	557	569	545
Jackson	4,333	4,374	4,474	4,658	4,711	4,554	4,435	4,310	4,116

Employment by Establishment for all Kansas Counties

	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Statewide	1,319,667	1,303,114	1,284,726	1,296,618	1,305,440	1,327,677	1,356,966	1,366,878	1,317,029
Jefferson	3,520	3,603	3,553	3,465	3,420	3,431	3,564	3,624	3,654
Jewell	893	979	1,006	994	962	922	928	955	896
Johnson	292,984	289,905	289,132	294,169	300,551	306,269	316,733	317,772	301,930
Kearny	1,246	1,236	1,269	1,209	1,275	1,273	1,326	1,317	1,233
Kingman	2,566	2,476	2,436	2,458	2,524	2,568	2,526	2,620	2,576
Kiowa	1,166	1,098	1,221	1,280	1,223	1,250	1,116	1,048	1,147
Labette	10,346	10,167	9,274	9,483	9,517	10,153	10,509	11,133	10,687
Lane	804	798	743	711	708	708	734	730	747
Leavenworth	19,989	20,162	20,267	20,379	20,425	20,686	20,478	20,909	21,029
Lincoln	949	971	951	887	897	939	950	992	984
Linn	2,044	2,071	2,081	2,049	2,001	2,079	2,082	2,022	1,921
Logan	1,135	1,080	1,075	1,059	1,053	994	1,316	1,180	1,169
Lyon	17,745	17,768	17,770	18,057	17,610	17,321	17,300	16,224	15,292
McPherson	13,609	13,929	14,017	14,810	14,909	15,117	14,588	14,085	13,801
Marion	4,173	4,002	3,914	3,932	3,993	4,008	3,953	3,992	3,935
Marshall	4,714	4,766	4,656	4,726	4,834	4,687	4,790	4,792	4,450
Meade	1,272	1,299	1,305	1,299	1,274	1,334	1,504	1,578	1,607
Miami	8,264	8,598	8,398	8,564	8,364	8,400	8,474	8,192	7,735
Mitchell	3,341	3,294	3,272	3,350	3,304	3,246	3,224	3,445	3,461
Montgomery	16,577	16,279	16,196	16,640	16,454	17,178	17,281	17,012	16,364
Morris	1,722	1,806	1,748	1,579	1,526	1,530	1,540	1,505	1,462
Morton	1,303	1,201	1,225	1,225	1,247	1,268	1,289	1,315	1,259
Nemaha	4,313	4,374	4,376	4,492	4,564	4,645	4,999	5,008	4,978
Neosho	7,842	7,894	8,253	8,200	7,996	8,394	8,449	8,226	7,186
Ness	1,300	1,242	1,196	1,213	1,193	1,194	1,272	1,295	1,263
Norton	2,431	2,448	2,385	2,424	2,497	2,470	2,515	2,582	2,580
Osage	4,324	3,288	3,204	3,189	3,147	3,168	3,331	3,468	3,392
Osborne	1,575	1,535	1,553	1,491	1,497	1,468	1,472	1,478	1,438
Ottawa	1,295	1,323	1,332	1,359	1,379	1,390	1,393	1,421	1,347
Pawnee	3,206	3,079	3,148	3,323	3,505	3,618	3,694	3,423	3,462
Phillips	2,635	2,702	2,571	2,626	2,493	2,522	2,693	2,436	2,415
Pottawatomie	7,894	7,991	7,923	8,294	8,349	8,557	8,570	9,015	8,820
Pratt	4,234	4,486	4,386	4,363	4,428	4,511	4,642	4,634	4,524
Rawlins	956	904	901	868	857	855	821	829	839
Reno	28,748	28,788	27,737	27,701	27,588	27,721	28,076	28,715	28,189
Republic	2,216	2,209	2,021	1,984	1,926	1,929	2,062	2,144	1,995
Rice	3,423	3,516	3,281	3,402	3,414	3,506	3,580	3,710	3,640
Riley	24,474	24,087	24,780	25,238	25,813	26,706	27,767	29,273	28,966
Rooks	2,152	2,136	1,990	1,981	1,975	2,018	2,013	2,007	1,929
Rush	1,173	1,145	1,085	1,102	1,076	1,104	1,081	1,088	1,029
Russell	2,656	2,621	2,664	2,664	2,679	2,721	2,764	2,790	2,658
Saline	31,713	31,226	30,308	30,556	30,322	30,493	31,283	30,721	30,049
Scott	2,207	2,128	1,986	2,022	1,959	1,941	1,874	1,915	1,961

Employment by Establishment for all Kansas Counties

	2,001	2,002	2,003	2,004	2,005	2,006	2,007	2,008	2,009
Statewide	1,319,667	1,303,114	1,284,726	1,296,618	1,305,440	1,327,677	1,356,966	1,366,878	1,317,029
Sedgwick	249,863	244,254	238,721	240,161	243,113	249,644	256,843	260,658	246,503
Seward	11,746	11,615	11,414	11,466	11,467	11,610	11,928	12,085	11,654
Shawnee	100,462	98,403	96,480	94,881	93,673	92,213	94,986	95,766	93,269
Sheridan	850	819	832	848	840	838	925	919	915
Sherman	3,554	3,532	3,425	3,385	2,468	2,504	2,514	2,566	2,488
Smith	1,441	1,504	1,426	1,486	1,445	1,428	1,439	1,396	1,371
Stafford	1,512	1,431	1,432	1,434	1,441	1,451	1,397	1,376	1,377
Stanton	888	782	769	783	780	797	796	725	727
Stevens	1,859	1,928	1,810	1,916	1,937	1,855	1,828	1,831	1,823
Sumner	7,322	7,141	5,996	6,113	5,980	5,720	6,234	6,475	6,230
Thomas	4,401	4,209	4,212	4,176	4,205	4,305	3,973	4,050	3,876
Trego	1,132	1,132	1,119	1,108	1,135	1,145	1,133	1,252	1,232
Wabaunsee	1,463	1,318	1,319	1,327	1,401	1,450	1,519	1,926	1,553
Wallace	524	525	513	496	493	473	490	458	468
Washington	2,306	2,233	2,242	2,227	2,197	2,217	2,233	2,212	2,157
Wichita	809	807	827	846	871	877	861	888	862
Wilson	3,881	3,914	3,937	4,072	4,347	4,532	4,467	4,366	3,740
Woodson	770	783	760	736	734	727	714	720	734
Wyandotte	79,321	77,131	74,892	75,869	76,639	79,225	80,916	80,958	78,756

2010 Kansas Generation Planning Survey

Kansas Corporation Commission (KCC) Staff Summary, Prepared for the Kansas Electric Transmission Authority (KETA)

The report below was originally compiled for Kansas Energy Council (KEC) Electricity Committee in 2008 as "Kansas Electric Generation: Capacity and Peak Load, 2008 to 2028," and presented a twenty-year snapshot of projected future generation needs for utilities operating in Kansas. In early 2009 Representative Carl Holmes, in his capacity as the chairman of the Kansas Electric Transmission Authority (KETA), asked the Kansas Corporation Commission (KCC) to update the original KEC report to be presented to the Kansas Legislature. The KCC plans to continue updating this report on an annual basis in future years.

The current version of the Forecasted Capacity and Peak Load Summery, renamed the Kansas Generation Planning Survey, has been modified and expanded from the original report in both style and substance to incorporate relevant changes in Kansas Statutes, primarily the 2009 adoption of the State's Renewable Energy Standard (RES). The current report is divided into two sections. Section 1 below provides twenty years worth of projected information on system peak capacity needs for utilities operating in Kansas.[1] Section 2 likewise provides twenty years worth of projected information on Utility compliance with Kansas' recently passed RES outlined in K.S.A. 66-1258.

In addition to Sections 1 and 2, the report includes four appendixes providing in-depth information and KCC Staff calculations used in the preparation of Sections 1 and 2. Appendix A provides detailed year-by-year information on system capacity needs for each utility listed in Section 1. Appendix B likewise provides detailed year-by-year information on current forecasted compliance with Kansas' RES for each utility subject to K.S.A. 66-1258 and presented in Section 2. Appendix C provides information on renewable generation in Kansas, including location, developer, month of initial operations, and final utility purchaser. Finally, Appendix D provides a detailed listing of major electrical generation facilities currently serving Kansans.

Detailed information on individual generation units was obtained by Staff from the U.S. Department of Energy's Energy Information Administration (EIA) Form 923 and from the databases maintained by Regulatory Research Associates®. All other information was provided to KCC by the utilities themselves. The KCC thanks all utilities for their cooperation and assistance in the compiling of this report.

[1] Due to time constraints, this report does not including the following two municipal utilities: McPherson Board of Public Utilities, and the City of Anthony. These municipal utilities will be included in future versions of this report.

Section 1: System Peak Capacity Planning

All major utilities[1] in Kansas are members of the Southwest Power Pool (SPP), which operates as the Regional Transmission Organization (RTO) throughout the State, as well as in the states of Nebraska, Oklahoma, and parts of Missouri, Texas, Arkansas, Louisiana, and New Mexico. SPP additionally serves as the Regional Entity of the North American Electric Reliability Corporation (NERC), as is mandated by the Federal Energy Regulatory Commission (FERC) to ensure reliable operation of the electric grid within the region, including ensuring adequate power supplies are maintained by its members.

In furtherance of this mandate, SPP publishes a series of regulations—called the SPP Criteria—governing system operations of its members, and additionally requires its members submit annual 10 year capacity and load projections to show how the utility will meet its ongoing system obligations, including the 12% reserve margin requirement outlined in the Criteria.[2] System obligations may be satisfied by capacity from owned generation units, capacity purchased through long term wholesale power contracts (often called Power Purchase Agreements (PPAs), full or partial requirements contracts, and short-term capacity contracts.[3]

The table presented below shows the current and 20 year forecasted capacity and system peak responsibility (system peak load plus SPP 12% required capacity margin) for utilities operating in Kansas.[4] This includes smaller municipal and cooperatives utilities that purchase electricity wholesale from larger state utilities through full requirements contracts, wherein these municipal and cooperative utilities' peak loads are incorporated into the larger utility's system requirements. Finally, capacity and system peak responsibility for the State's two multi-jurisdictional utilities—Kansas City Power & Light, and Empire District Electric Company—represent only Kansas peak load, with their system capacity scaled to represent capacity allocated to serving this load.

[1] Specifically, all utilities listed in this report exclusive of the Kansas Power Pool are members of SPP. Kansas Power Pool, while not a member of SPP, is registered customer of SPP.

[2] *See* SPP Criteria section 2.1.9; "Each Load Serving Member's Minimum Required Capacity Margin shall be twelve percent." Capacity margin is calculated as {((1/0.88)-1)*estimated peak load}. Additionally, margin responsibility for firm power contracts (contracts which included reserve responsibility as an element) are not included in Staff's calculations.

[3] Note Table 1.1 and the tables listed in Appendix A are intended to represent a utility's long-term position, and thus do not include short-term capacity contracts. Short-term capacity contracts are defined as a capacity contract greater than three months but less than a year in duration.

[4] Peak-load data presented was provided by the individual utilities based on internal system planning forecasts, with the two exceptions. Westar Energy provided 10-year peak-load forecasts—through 2018. Subsequent years' peak demands were calculated by Staff assuming a 1.8% growth rate per year. Likewise, Kansas City Power and Light provided information through 2028, which Staff extended to 2029 assuming a 1% growth rate.

2-3

Table 1—Overview of Current and Projected System Capacity and Load Responsibility for Utilities Operating in Kansas.

		Investor Owned Utilities (IOUs)			Cooperatives				Municipal Utilities		
		Empire District Electric Company	Kansas City Power & Light (KCP&L)	Westar Energy	Kansas Electric Power Coop. (KEPCo)	Midwest Energy	Mid-Kansas Electric Corporation (MKEC)	Sunflower Electric Power Corporation	Kansas City Board of Public Utilities (KC-BPU)	Kansas Municipal Energy Agency (KMEA)	Kansas Power Pool (KPP)
2009 Historical	Total System Capacity (MW)	81	1,832	6,334	465	349	517	676	628	303	434
	System Responsibility (MW)	80	1,782	5,430	420	332	653	549	535	227	432
2014 Projected	Total System Capacity (MW)	84	2,266	6,512	525	376	787	658	603	323	521
	System Planning Responsibility (MW)	82	2,064	6,093	505	337	690	630	594	251	472
2019 Projected	Total System Capacity (MW)	84	2,278	7,007	479	366	738	658	668	294	467
	System Planning Responsibility (MW)	91	2,218	6,288	565	365	701	623	606	272	511
2024 Projected	Total System Capacity (MW)	84	2,294	7,040	504	366	738	658	546	279	397
	System Planning Responsibility (MW)	100	2,356	6,597	584	370	713	642	618	293	552
29 Projected	Total System Capacity (MW)	84	2,298	7308	532	366	738	658	435	231	397
	System Planning Responsibility (MW)	111	2,474	7770	645	378	725	663	631	314	598

Section 2: Renewable Energy Planning

2-4

In May 2009, the Kansas Legislature passed Senate Substitute for H. 2369, a legislative compromise designed to in part resolve the disputed construction of a new coal-fired generator in western Kansas, Holcomb 2, which had been a disputed issue in three consecutive legislative sessions. As part of H. 2369, the bill included the Renewable Energy Standard (RES) Act requiring all non-municipal utilities in Kansas to satisfy a portion of the utility's generation needs through renewable generation sources.

Kansas' RES, passed into statue as K.S.A. 66-1256 through 66-1262, differs from most RES Standards in the nation in that renewable generation is not defined as energy generation, but rather as generation capacity. In particular, K.S.A.66-1258 requires utilities subject to its requirements to own or purchase renewable generation such that the nameplate capacity[1] of these generators is equal to 10% of the utility's annual peak demand for the years 2011 through 2015, 15% for the years 2016 through 2019, and 20% for all years after 2020.

K.S.A. 66-1258 also stipulated that the KCC would establish rules and regulation governing specifics of the RES not covered within the statues. In October 2010, the KCC finalized K.A.R. 82-16-1 through 82-16-6 establishing these rules and regulations. Of note within these administrative regulations is the KCC's modification of how the State's RES would be measured for the many electric distribution cooperative utilities operating in the State. Electric cooperative distribution utilities, while engaging in the retail sale and distribution of electricity from the transmission system to their customer's homes or businesses, do not own any generation or wholesale transmission facilities themselves. Instead these utilities either enter into wholesale purchase contracts with Investor Owned Utilities, or often a Generation and Transmission (G&T) Cooperative[2] formed with other electric distribution cooperative utilities for the purposes of acting as a wholesale supplier. K.A.R. 82-16-2(b) indicates that compliance with the RES may be met by the G&T Cooperative on behalf of its members, rather than each individual distribution cooperative.

The table below shows each RES affected utility's forecasted renewable capacity responsibility and nameplate renewable capacity (multiplied by a factor of 1.1 for renewable generators located within the State as defined by K.S.A. 66-1258(c)), with the exclusion of three independent distribution cooperatives who purchase power wholesale from Westar Energy (Nemaha-Marshall, Doniphan, and Kaw Valley electric cooperatives). Finally, it should be noted that calculations of renewable capacity do not include estimates of capacity from net metering as defined by K.S.A. 66-1258.

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[1] K.S.A. 66-1257(c) defines 'net renewable generation capacity' as the gross generation capacity of a renewable generation resource over a four-hour period free from limitations including ambient conditions. As renewable generation is completely driven by ambient weather conditions (i.e. if and to what degree the wind is blowing), it is hard to apply the defined statue in its strictest sense. However, the KCC in K.A.R. 82-16-1(e) has interpreted this definition as implying nameplate capacity as the given definition would be the correct definition of nameplate capacity for non-renewable generation sources.

[2] G&T Cooperatives operating in Kansas are Kansas Electric Power Cooperatives (KEPCo) and Sunflower Electric Power Corporation, though Mid-Kansas Electric Corporation (MKEC) additionally acts as a similar entity.

Table 2—Overview of Renewable Capacity and Renewable Capacity Requirements for Utilities Operating in Kansas.

		Utilities Subject to Renewable Energy Standard (RES) under K.S.A. 66-1258							
		Empire District Electric Company	Kansas City Power & Light (KCP&L)	Westar Energy	Kansas Electric Power Coop. (KEPCo)	Midwest Energy	Mid-Kansas Electric Corporation (MKEC)	Sunflower Electric Power Corporation	Kansas City Board of Public Utilities (KC-BPU)[1]
2010 Historical	Renewable Capacity Responsibility (MW)	--	--	--	--	--	--	--	--
	System Renewable Capacity (MW)	286.5	176.4	333.3	114	54.1	110	68.8	71.7
2011 Projected	Renewable Capacity Responsibility—10% (MW)	6	166	464	42	30	58	49	49
	System Renewable Capacity (MW)	286.5	286.4	333.3	114	54.1	110.3	68.8	71.7
2016 Projected	Renewable Capacity Responsibility—15% (MW)	10	288	774	72	48	91	83	78
	System Renewable Capacity (MW)	286.5	286.4	739.2	114	54.1	216.5	68.8	71.7
2020 Projected	Renewable Capacity Responsibility—20% (MW)	15	407	1061	103	65	123	113	106
	System Renewable Capacity (MW)	286.5	286.4	739.2	114	54.1	215.8	68.8	71.7
2025 Projected	Renewable Capacity Responsibility—20% (MW)	16	433	1150	107	67	125	112	108
	System Renewable Capacity (MW)	286.5	286.4	739.2	114	54.1	215.8	68.8	71.7
2029 Projected	Renewable Capacity Responsibility—20% (MW)	18	449	1238	115	68	127	115	110
	System Renewable Capacity (MW)	286.5	286.4	739.2	114	54.1	215.8	68.8	71.7

[1]-BPU is a municipal utility not subject to K.S.A. 66-1258. However, the utility has stated that it will voluntarily attempt to comply with the Renewable Energy Standard (RES) contained within the statue.

Appendix A: Utility System Capacities and Load Responsibilities

Appendix A-1—Empire District Electric Company

The Empire District Electric Company (Empire) is a regulated multi-jurisdictional investor-owned utility operating in the states of Kansas, Missouri, Arkansas, and Oklahoma. Only a very small portion of Empire's overall service territory falls within Kansas, consisting of approximately 10,102 retail customers in Cherokee county (located in the extreme southeastern corner of the state).

Empire acquired partial ownership of two coal-fired power plants recently built in Arkansas and Missouri, Plum Point and Iatan II, respectively. Plum Point and Iatan II, with Empire-designated operating capacities of 100MW and 102MW (Empire's Plum Point capacity is divided between a 50MW ownership and 50MW power purchase agreement), meets Empire's generating capacity needs through 2015.

		System Peak						System Capacity[1]		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	61	4	**65**	9	**74**		63	9	**72**
	2006	62	4	**66**	9	**75**		63	9	**72**
	2007	57	3	**60**	8	**69**		72	9	**81**
	2008	55	4	**59**	8	**67**		72	7	**78**
	2009	67	4	**71**	10	**80**		72	10	**81**
Projected	2010	64	4	**67**	9	**77**		74	6	**81**
	2011	65	4	**68**	9	**78**		80	4	**84**
	2012	66	4	**70**	9	**79**		80	4	**84**
	2013	67	4	**71**	10	**81**		80	4	**84**
	2014	68	4	**72**	10	**82**		80	4	**84**
	2015	70	4	**74**	10	**84**		80	4	**84**
	2016	71	4	**75**	10	**86**		80	4	**84**
	2017	72	4	**77**	10	**87**		80	4	**84**
	2018	74	4	**78**	11	**89**		80	4	**84**
	2019	75	4	**80**	11	**91**		80	4	**84**
	2020	77	5	**81**	11	**93**		80	4	**84**
	2021	78	5	**83**	11	**94**		80	4	**84**
	2022	80	5	**85**	12	**96**		80	4	**84**
	2023	82	5	**86**	12	**98**		80	4	**84**
	2024	83	5	**88**	12	**100**		80	4	**84**
	2025	85	5	**90**	12	**102**		80	4	**84**
	2026	87	5	**92**	13	**104**		80	4	**84**
	2027	88	5	**94**	13	**106**		80	4	**84**
	2028	90	5	**95**	13	**108**		80	4	**84**
	2029	92	5	**97**	13	**111**		80	4	**84**

[1] Empire's system capacity is scaled in this table to reflect the Kansas portion of Empire's service territory; approximately 6.5% of Empire's overall system peak.

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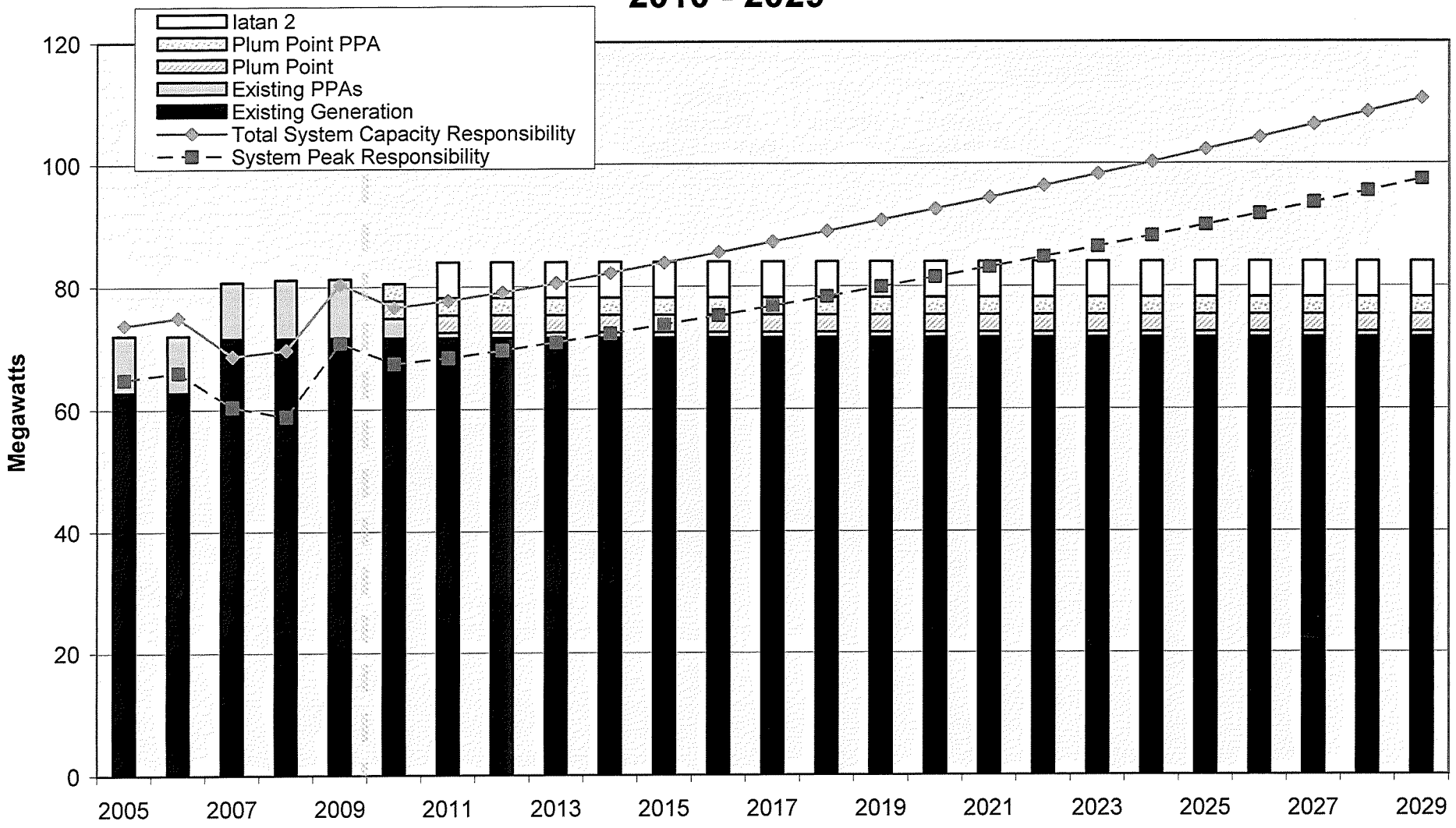
Forecasted Demand and System Capacity, Empire District Electric Company - Kansas Service Area, 2010 - 2029



2010 Generation Survey
Updated September 1, 2010

Appendix A-2—Kansas City Power & Light Company

The Kansas City Power and Light Company (KCP&L) is a wholly owned subsidiary of Great Plains Energy Inc. It is a regulated multi-jurisdictional investor-owned utility that operates in the states of Kansas and Missouri. KCP&L is responsible for serving approximately 518,196 retail customers in both Kansas and Missouri, with approximately 242,441 customers in northeastern Kansas.

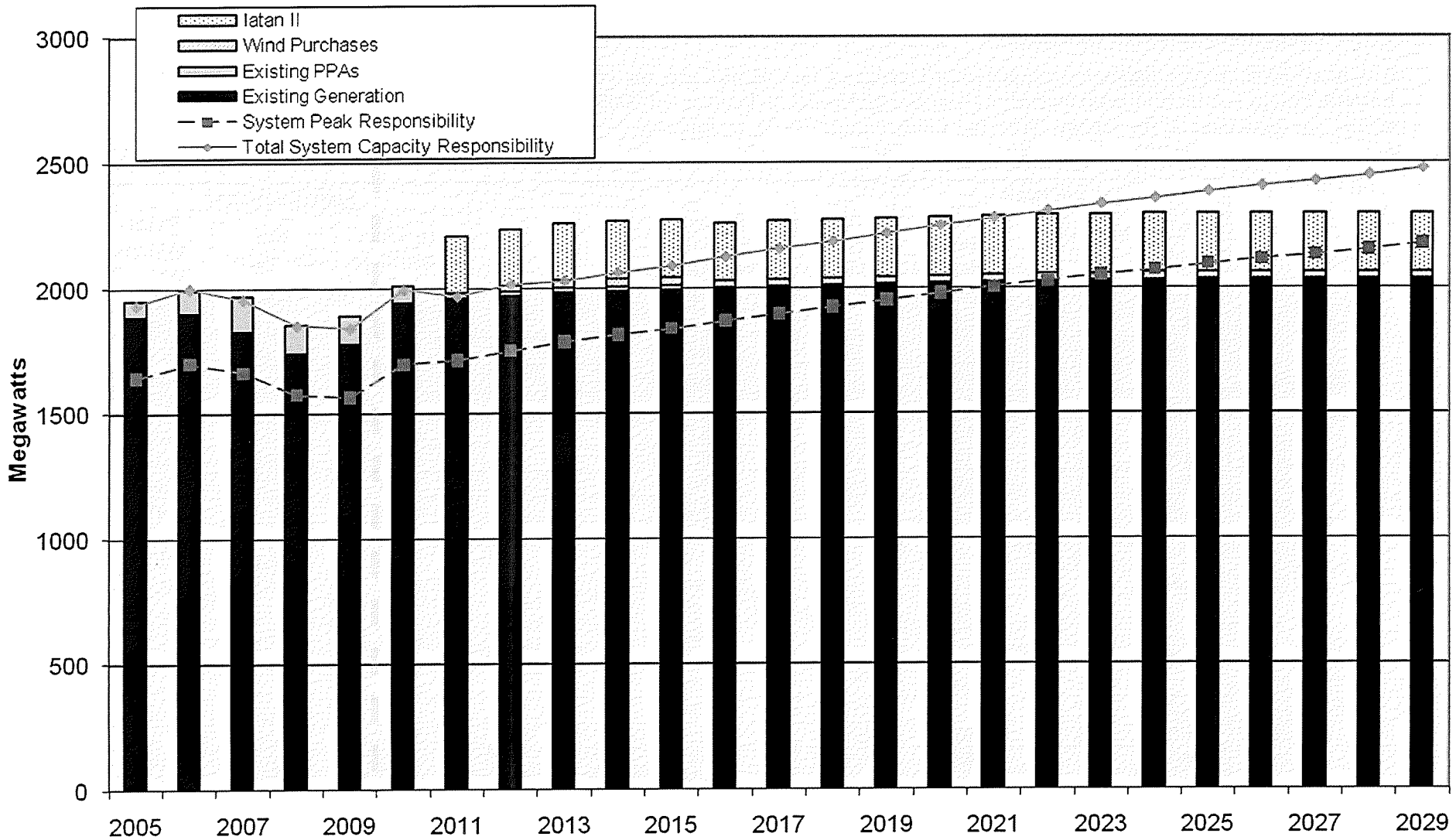
KCP&L recently finished construction on a new coal-fired generator Iatan II—located adjacent to an existing coal-fired generator Iatan I, built in the early 1980s. With the construction of Iatan II, KCP&L has enough generating capacity to fulfill its system needs through the early 2020s.

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity[1]**
Historical	2005	1628	19	**1647**	225	**1872**		1891	-4	**1886**
	2006	1697	18	**1703**	232	**1935**		1904	23	**1927**
	2007	1666	19	**1668**	227	**1895**		1830	79	**1909**
	2008	1603	17	**1579**	215	**1794**		1744	50	**1794**
	2009	1614	17	**1568**	214	**1782**		1781	51	**1832**
Projected	2010	1773	18	**1700**	232	**1932**		1946	-2	**1943**
	2011	1794	18	**1714**	234	**1948**		2185	0	**2185**
	2012	1841	18	**1753**	239	**1992**		2200	14	**2214**
	2013	1884	18	**1788**	244	**2032**		2214	46	**2261**
	2014	1918	19	**1816**	248	**2064**		2220	47	**2266**
	2015	1952	18	**1840**	251	**2091**		2225	47	**2272**
	2016	1981	19	**1870**	255	**2125**		2232	30	**2261**
	2017	2009	19	**1898**	259	**2157**		2237	30	**2267**
	2018	2037	18	**1925**	263	**2188**		2242	30	**2272**
	2019	2065	18	**1952**	266	**2218**		2248	30	**2278**
	2020	2092	19	**1980**	270	**2250**		2253	30	**2283**
	2021	2118	20	**2006**	274	**2280**		2257	30	**2287**
	2022	2141	20	**2030**	277	**2307**		2260	30	**2290**
	2023	2164	20	**2053**	280	**2333**		2263	30	**2293**
	2024	2186	19	**2073**	283	**2356**		2264	30	**2294**
	2025	2208	20	**2096**	286	**2382**		2268	30	**2298**
	2026	2228	20	**2116**	289	**2405**		2267	30	**2297**
	2027	2245	20	**2133**	291	**2424**		2267	30	**2297**
	2028	2265	21	**2154**	294	**2448**		2268	30	**2298**
	2029[2]	2309	21	**2177**	297	**2474**		2268	30	**2298**

[1] KCP&L's system capacity is scaled in this table to reflect the Kansas portion of KCP&L's service territory; approximately 47% of KCP&L's overall system peak.
[2] System Load for 2029 was calculated by Staff assuming a 1% load growth from 2028.

2-47

Forecasted Demand and System Capacity, Kansas City Power & Light Company 2010 - 2029



10 Generation Survey
dated September 1, 2010

Appendix A-3—Westar Energy, Inc.

Westar Energy Inc. (Westar) is a regulated vertically-integrated investor-owned utility operating in south central and northeast Kansas. In the south central portion of the state, Westar operates as the Kansas Gas and Electric Company (Westar South). In the northeastern portion of the state, Westar operates under its corporate name of Westar Energy, Inc (Westar North). Although technically composed of two separate companies, Westar's entire system is dispatched as one system unit. Because of these and other factors there has been a movement by the KCC to consolidate electric rates with the ultimate goal of uniform rates across the two entities. Westar is responsible for providing electric service to approximately 687,000 retail customers across both systems.

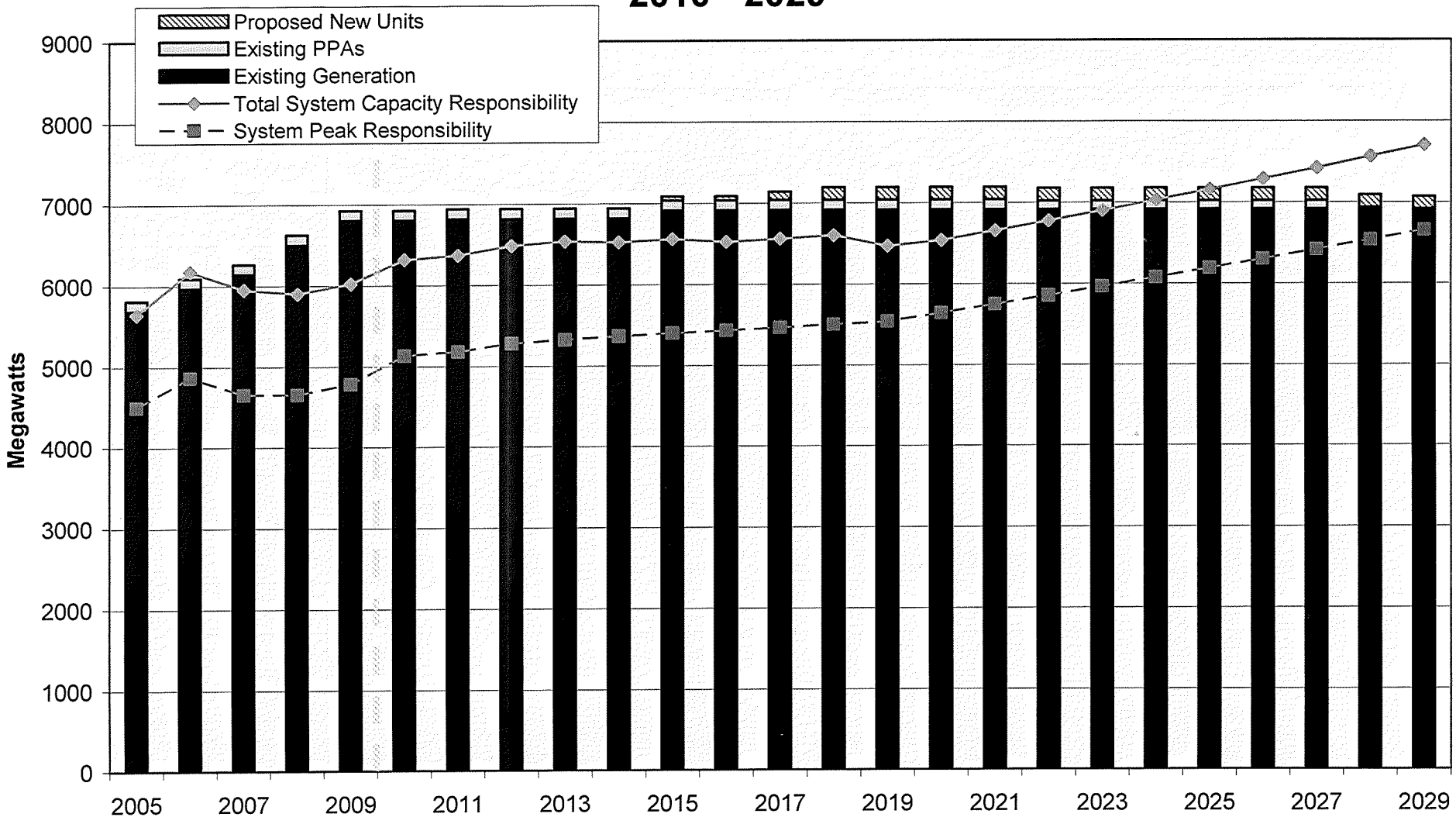
2-10

In June of 2008, Westar finished construction of a series of four 42MW and one 150MW natural gas combustion turbines (CTs) at Westar's Emporia Energy Center (Emporia) located in Lyon county Kansas. In February of 2009, an additional two 150MW CTs were added to the existing natural gas generators at the facility. With the finished construction of Emporia, Westar has enough generating capacity to satisfy its system capacities needs through 2024, through Westar does include the small purchase or construction of new generation in the 2015-2018 time horizon.

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	4096	400	**4496**	604	**5100**		5692	-423	**5269**
	2006	4467	400	**4867**	655	**5522**		5970	-533	**5437**
	2007	4255	400	**4655**	626	**5281**		6144	-548	**5596**
	2008	4255	400	**4655**	626	**5281**		6507	-498	**6009**
	2009	4375	411	**4786**	644	**5430**		6807	-473	**6334**
Projected	2010	4902	400	**5136**	691	**5827**		6807	-371	**6436**
	2011	4968	387	**5182**	698	**5880**		6823	-371	**6452**
	2012	5071	391	**5284**	712	**5996**		6823	-371	**6452**
	2013	5118	393	**5327**	718	**6045**		6823	-371	**6452**
	2014	5163	394	**5370**	723	**6093**		6823	-311	**6512**
	2015	5200	396	**5404**	728	**6132**		6781	-311	**6470**
	2016	5235	397	**5436**	732	**6168**		6739	-236	**6503**
	2017	5271	398	**5470**	737	**6207**		6747	-236	**6511**
	2018	5306	398	**5505**	742	**6247**		6805	-236	**6569**
	2019	5342	399	**5541**	747	**6288**		6863	-62	**6801**
	2020	5441	403	**5644**	761	**6405**		6921	-12	**6909**
	2021	5542	407	**5750**	775	**6525**		6979	-12	**6967**
	2022	5645	411	**5857**	790	**6647**		7037	-29	**7008**
	2023	5750	415	**5966**	805	**6771**		7095	-29	**7066**
	2024	5857	419	**6077**	520	**6597**		7153	-29	**7124**
	2025	5966	423	**6190**	835	**7025**		7211	-29	**7182**
	2026	6076	428	**6305**	851	**7156**		7269	-29	**7240**
	2027	6189	432	**6422**	867	**7289**		7327	-29	**7298**
	2028	6304	436	**6541**	892	**7433**		7385	-115	**7270**
	2029	6421	441	**6862**	908	**7770**		7443	-135	**7308**

2-11

Forecasted Demand and System Capacity, Westar Energy, Inc. 2010 - 2029



2010 Generation Survey
Updated September 1, 2010

Appendix A-4—Kansas Electric Power Cooperative, Inc. (KEPCo)

The Kansas Electric Power Cooperatives, Inc. (KEPCo) is a deregulated generation and transmission cooperative utility whose membership is composed of 19 distribution rural cooperatives[1]. KEPCo's 19 member cooperatives serve approximately 110,000 customers—as indicated by number of meters—throughout the state.

KEPCo acquired a 3.5% (30MW) partial ownership of Iatan II recently constructed by Kansas City Power & Light. The addition of Iatan II satisfies KEPCo's generation capacity needs until 2019, when the expiration of a full requirements contract with Sunflower Electric Power Company renders KEPCo capacity deficient.

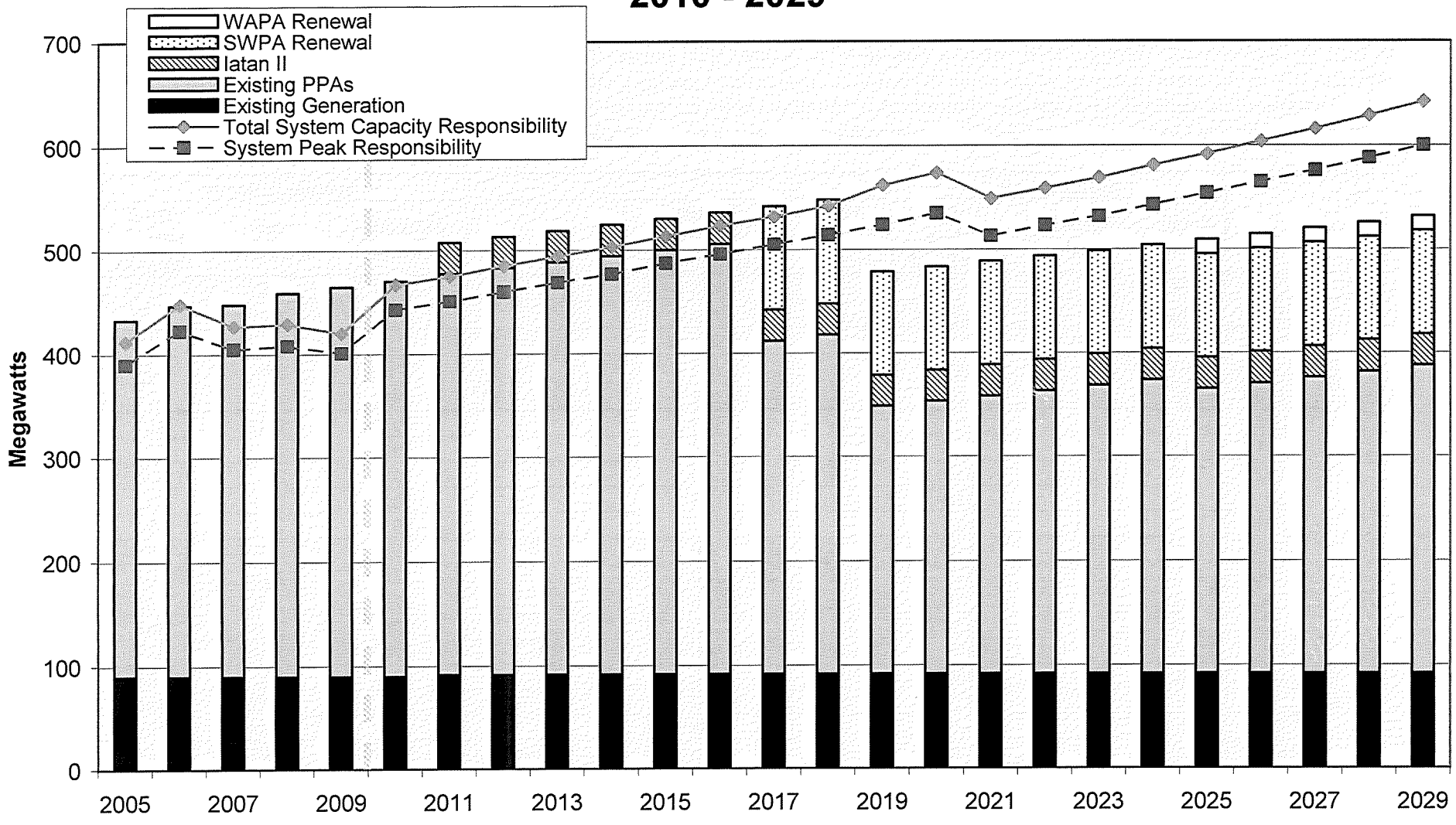
2-12

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	390	0	**390**	22	**412**		90	343	433
	2006	423	0	**423**	25	**448**		90	357	447
	2007	405	0	**405**	22	**427**		90	358	448
	2008	408	0	**408**	21	**429**		90	369	459
	2009	401	0	**401**	19	**420**		90	375	465
Projected	2010	443	0	**443**	24	**467**		90	380	470
	2011	451	0	**451**	24	**475**		122	386	508
	2012	460	0	**460**	27	**487**		122	391	513
	2013	469	0	**469**	28	**497**		122	397	519
	2014	477	0	**477**	28	**505**		122	402	524
	2015	487	0	**487**	29	**516**		122	408	530
	2016	496	0	**496**	29	**525**		122	414	536
	2017	505	0	**505**	30	**535**		122	320	542
	2018	514	0	**514**	30	**544**		122	326	548
	2019	524	0	**524**	41	**565**		122	257	479
	2020	535	0	**535**	42	**577**		122	261	483
	2021	513	0	**513**	38	**551**		122	266	488
	2022	523	0	**523**	39	**562**		122	271	493
	2023	532	0	**532**	40	**572**		122	277	499
	2024	543	0	**543**	41	**584**		122	282	504
	2025	554	0	**554**	41	**595**		122	273	509
	2026	565	0	**565**	42	**607**		122	279	515
	2027	576	0	**576**	43	**619**		122	284	520
	2028	588	0	**588**	44	**632**		122	290	526
	2029	600	0	**600**	45	**645**		122	296	532

[1] Member cooperatives of KEPCo are: Prairie Land, Rolling Hills, Bluestem, Brown-Atchison, Leavenworth-Jefferson, DS&O Electric, Flint Hills, Lyon-Coffey, Victory, Ninnescah, Ark Valley, Sedgwick County, Butler, Heartland, Radiant, CMS Electric, Sumner County, Caney Valley, and Twin Valley

2-13

Forecasted Demand and System Capacity, Kansas Electrical Power Cooperatives, LLC 2010 - 2029



2010 Generation Survey
dated September 1, 2010

Appendix A-5—Midwest Energy, Inc.

Midwest Energy Inc. (Midwest) is a regulated vertically integrated cooperative electric natural gas distribution utility operating in western Kansas. Headquartered in Hays, Midwest provides electric service to approximately 48,353 retail customers.

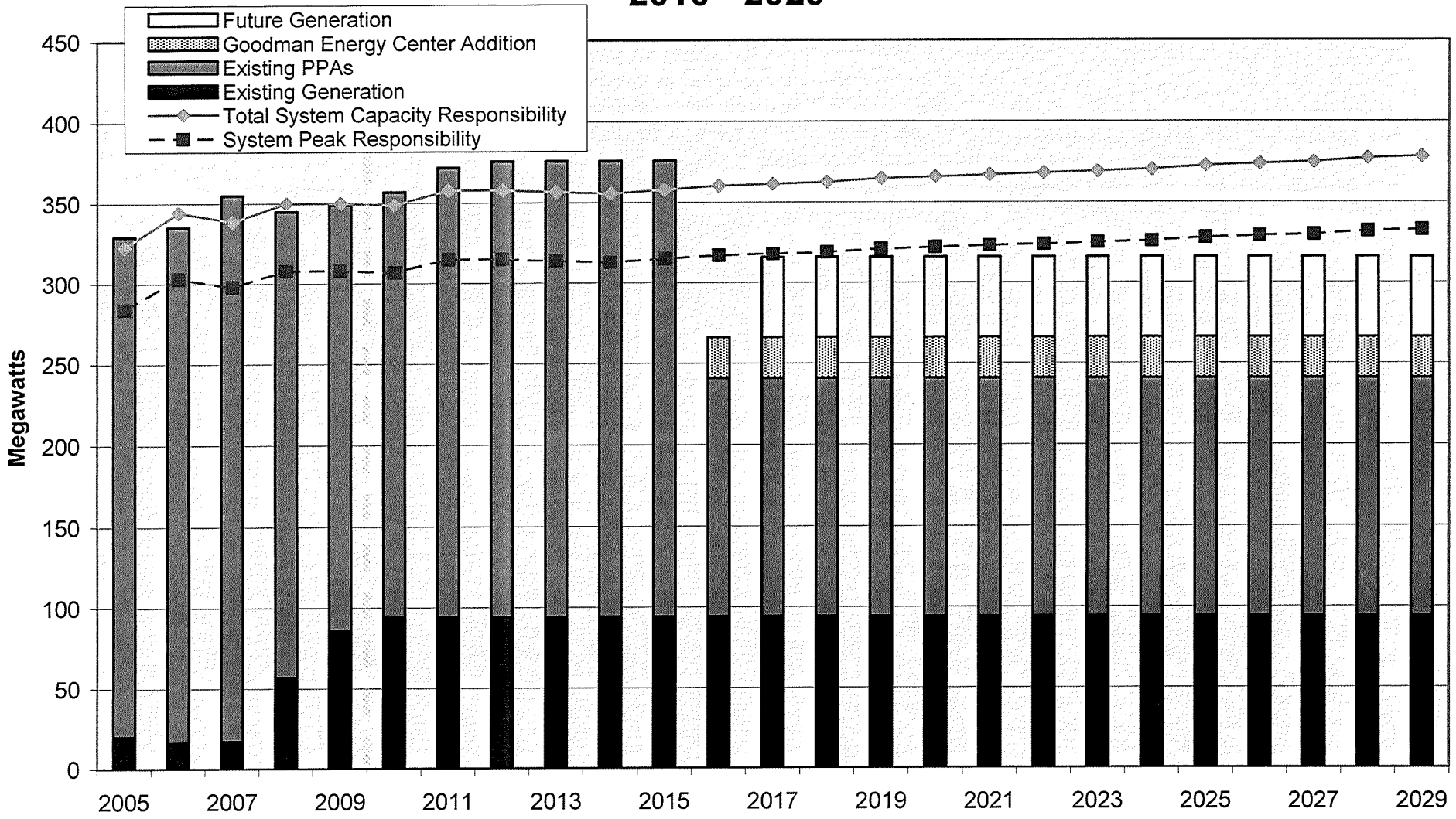
In 2008 Midwest finished construction on a series of nine 8.3 MW natural gas combustion turbines at the Midwest's Goodman Energy Center site (three being completed in September of 2008, and thus not included in Midwest's 2008 total system capacity). With the addition of 75 MW of capacity at Goodman, and the renegotiation of existing power purchase agreements with Westar Energy, Midwest has enough generating capacity to meet its system needs through 2016, when a portion of its renegotiated power purchase agreement with Westar Energy expires. Midwest indicates it is in the initial planning stages of an extension to its Goodman energy center and a new generation facility in the 2016 time frame to meet a portion of its shortfall. Midwest also indicates it is currently reviewing the feasibility of continued operation of its small diesel generating units in Bird City and Great Bend (4 and 9 MW respectively) due to recent new regulations by the Environmental Protection Agency.

2-14

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	278	42	**284**	21	**305**		26	305	**331**
	2006	293	32	**303**	24	**327**		26	310	**336**
	2007	289	47	**298**	23	**321**		26	329	**355**
	2008	294	35	**308**	24	**332**		71	274	**345**
	2009	296	33	**308**	24	**332**		98	251	**349**
Projected	2010	303	35	**307**	26	**333**		101	256	**357**
	2011	314	35	**315**	25	**340**		101	271	**372**
	2012	317	36	**315**	25	**340**		101	275	**376**
	2013	319	36	**314**	24	**338**		101	275	**376**
	2014	321	36	**313**	24	**337**		101	275	**376**
	2015	323	37	**315**	25	**340**		101	275	**376**
	2016	325	37	**317**	43	**360**		126	240	**366**
	2017	326	37	**318**	43	**361**		176	190	**366**
	2018	327	38	**319**	44	**363**		176	190	**366**
	2019	329	38	**321**	44	**365**		176	190	**366**
	2020	330	38	**322**	44	**366**		176	190	**366**
	2021	331	38	**323**	44	**367**		176	190	**366**
	2022	332	39	**324**	44	**368**		176	190	**366**
	2023	333	39	**325**	44	**369**		176	190	**366**
	2024	334	39	**326**	44	**370**		176	190	**366**
	2025	336	39	**328**	45	**373**		176	190	**366**
	2026	337	40	**329**	45	**374**		176	190	**366**
	2027	338	40	**330**	45	**375**		176	190	**366**
	2028	340	40	**332**	45	**377**		176	190	**366**
	2029	341	40	**333**	45	**378**		176	190	**366**

2-15

Forecasted Demand and System Capacity, Midwest Energy, Inc. 2010 - 2029



2010 Generation Survey
dated September 1, 2010

Appendix A-6—Mid-Kansas Electric Company, LLC (MKEC)

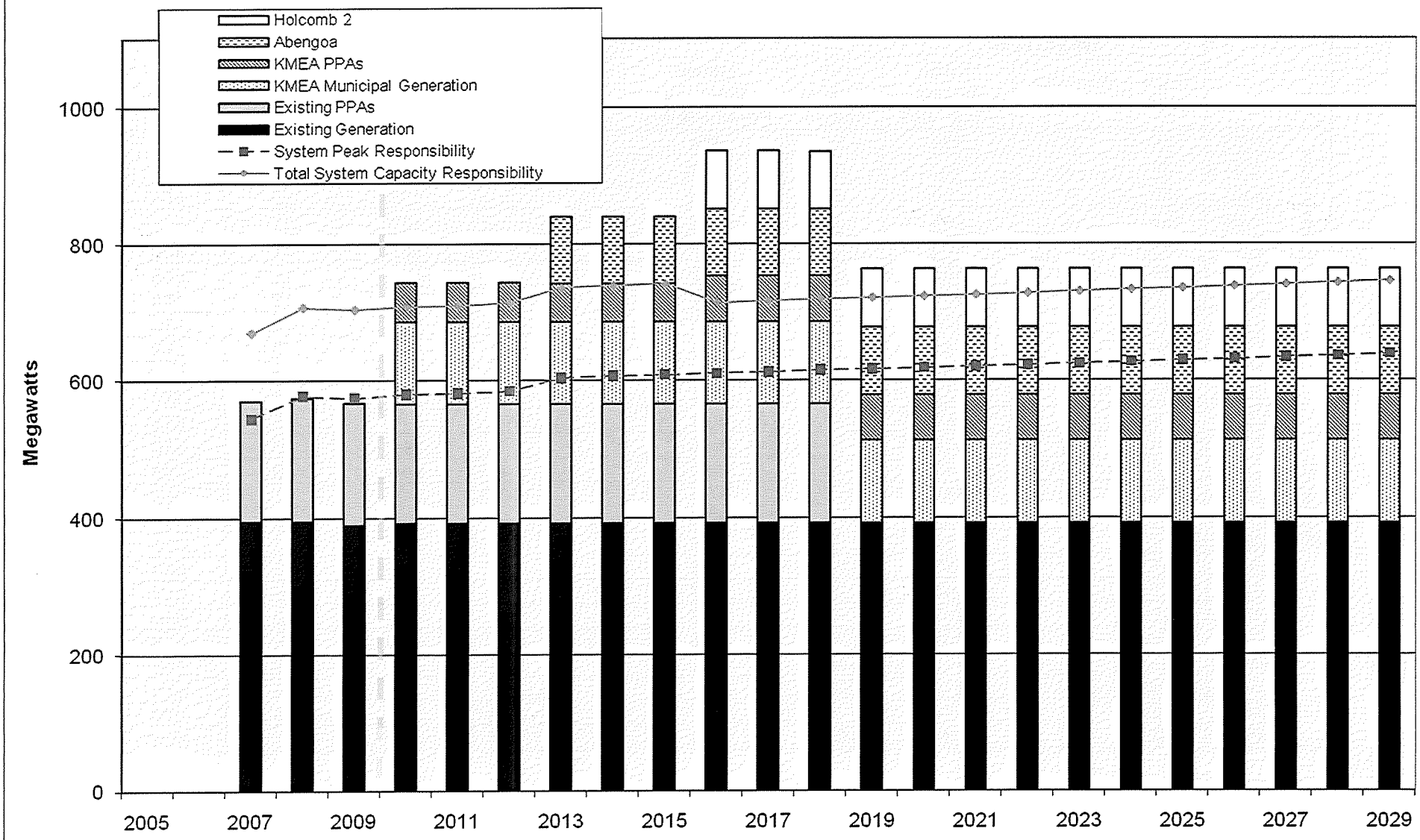
Mid-Kansas Electric Company, LLC (MKEC) is a regulated limited liability corporation that was created by six distribution cooperatives with the purpose of acquiring the assets of Aquila's defunct Kansas Electric Network. MKEC owns both generation and transmission on behalf of Lane-Scott, Prairie Land, Southern Pioneer, Victory, Western, and Wheatland. MKEC serves both retail and wholesale customers and has a current total system capacity responsibility of approximately 653.4 MWs.

The recent energy bill compromise resolved the disputed Holcomb 2 coal-fired generator, and now makes its construction appear to be near certainty (the Kansas Department of Health and the Environment (KDHE) recently granted environmental permits for the plant's construction). As part of the compromise, Sunflower Electric (whose owners are the same as MKEC's) is required to meet a stricter renewable generation requirement. In furtherance of this requirement, MKEC is funding a new plant being constructed by Abengoa bioenergy, a biofuels subsidiary of the Spanish multination corporation Abengoa. This new plant will be a biomass-fired steam generator fueled by local crop residue, with waste heat being recycled in a cogeneration manner for use in an adjacent cellulosic ethanol facility.

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	480	0	**480**	65	**545**		0	0	**0**
	2006	519	0	**519**	71	**590**		0	0	**0**
	2007	545	0	**545**	74	**619**		395	125	**520**
	2008	578	0	**578**	79	**657**		395	130	**525**
	2009	575	0	**575**	78	**653**		389	129	**517**
Projected	2010	580	0	**580**	79	**659**		508	182	**690**
	2011	582	0	**582**	79	**661**		508	182	**690**
	2012	585	0	**585**	80	**665**		508	182	**690**
	2013	604	0	**604**	82	**686**		606	181	**787**
	2014	607	0	**607**	83	**690**		606	181	**787**
	2015	609	0	**609**	83	**692**		606	181	**786**
	2016	611	0	**611**	83	**694**		691	221	**911**
	2017	613	0	**613**	84	**696**		691	221	**911**
	2018	616	0	**616**	84	**700**		691	220	**911**
	2019	617	0	**617**	84	**701**		691	47	**738**
	2020	619	0	**619**	84	**703**		691	47	**738**
	2021	621	0	**621**	85	**705**		691	47	**738**
	2022	623	0	**623**	85	**708**		691	47	**738**
	2023	625	0	**625**	85	**710**		691	47	**738**
	2024	627	0	**627**	86	**713**		691	47	**738**
	2025	629	0	**629**	86	**715**		691	47	**738**
	2026	631	0	**631**	86	**718**		691	47	**738**
	2027	634	0	**634**	86	**720**		691	47	**738**
	2028	636	0	**636**	87	**723**		691	47	**738**
	2029	638	0	**638**	87	**725**		691	47	**738**

2-17

Forecasted Demand and System Capacity, Mid-Kansas Electric Company, LLC 2010 - 2029



2010 Generation Survey
ated September 1, 2010

Appendix A-7—Sunflower Electric Power Company

Sunflower Electric Power Company (Sunflower) is a recently deregulated generation and transmission cooperative utility owned by the same members comprising Mid-Kansas Electric Company (MKEC) (Lane-Scott, Prairie Land, Southern Pioneer, Victory, Western, and Wheatland). Although owned and operated by the same owners/operators of MKEC, the two entities have distinct generation and transmission assets, as well as distinct customers. Sunflower currently has a total system capacity responsibility of approximately 549 MWs.

2-18

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	394	0	**394**	54	**448**		653	13	**667**
	2006	438	0	**438**	60	**497**		652	13	**665**
	2007	456	0	**456**	62	**518**		653	13	**666**
	2008	493	0	**493**	67	**560**		652	21	**673**
	2009	483	0	**483**	66	**549**		655	21	**676**
Projected	2010	503	0	**503**	69	**572**		653	13	**666**
	2011	525	0	**525**	72	**597**		644	13	**658**
	2012	536	0	**536**	73	**609**		644	13	**658**
	2013	546	0	**546**	74	**621**		644	13	**658**
	2014	555	0	**555**	76	**630**		644	13	**658**
	2015	560	0	**560**	76	**636**		644	13	**658**
	2016	564	0	**564**	77	**641**		644	13	**658**
	2017	568	0	**568**	77	**646**		644	13	**658**
	2018	572	0	**572**	78	**650**		644	13	**658**
	2019	548	0	**548**	75	**623**		644	13	**658**
	2020	551	0	**551**	75	**626**		644	13	**658**
	2021	554	0	**554**	76	**630**		644	13	**658**
	2022	557	0	**557**	76	**633**		644	13	**658**
	2023	561	0	**561**	76	**637**		644	13	**658**
	2024	565	0	**565**	77	**642**		644	13	**658**
	2025	569	0	**569**	78	**646**		644	13	**658**
	2026	573	0	**573**	78	**651**		644	13	**658**
	2027	576	0	**576**	79	**655**		644	13	**658**
	2028	580	0	**580**	79	**659**		644	13	**658**
	2029	583	0	**583**	80	**663**		644	13	**658**

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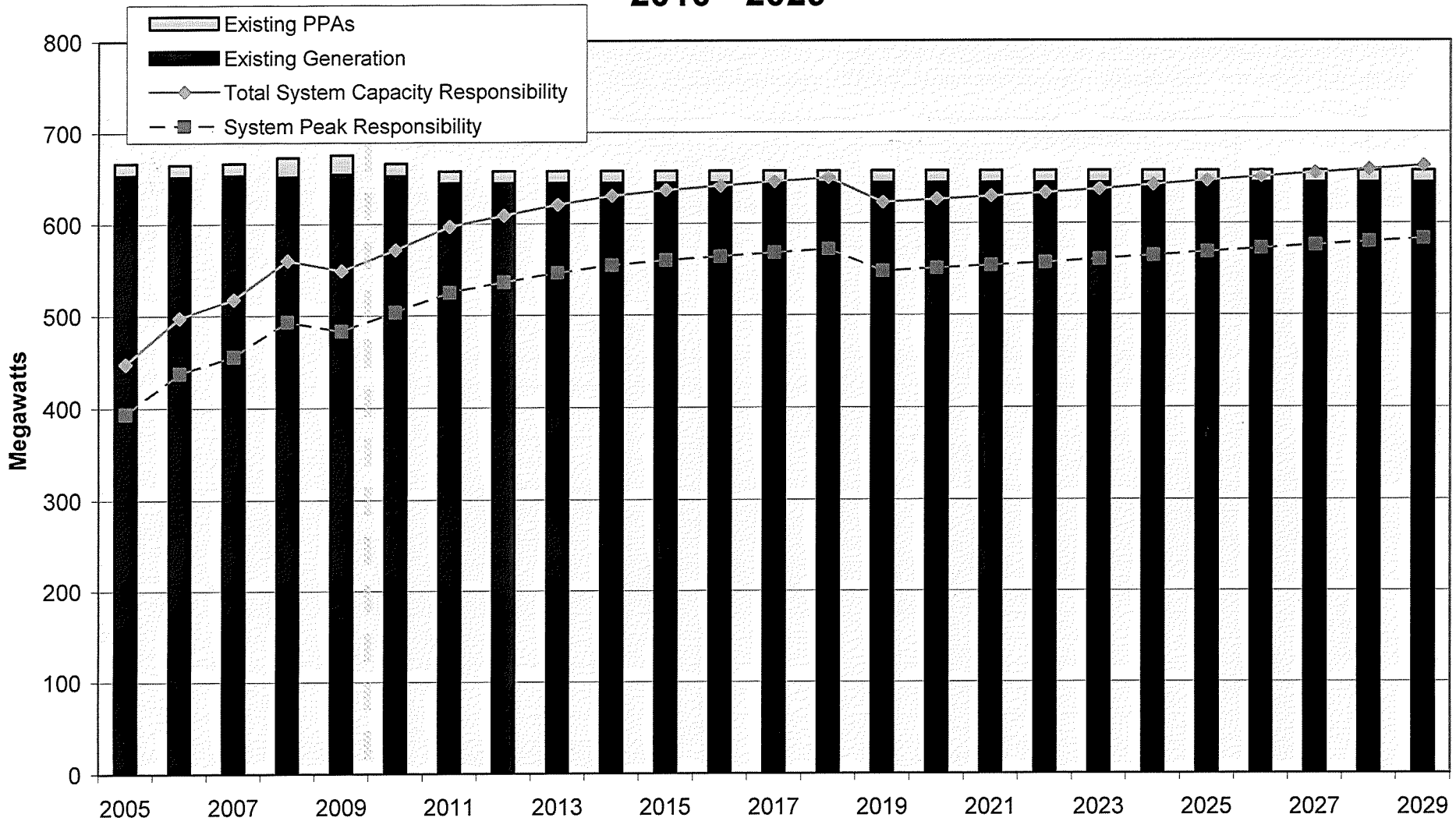
Forecasted Demand and System Capacity, Sunflower Electric Power Cooperative, LLC 2010 - 2029



2010 Generation Survey
dated September 1, 2010

Appendix A-8—Kansas City Board of Public Utilities (KC-BPU)

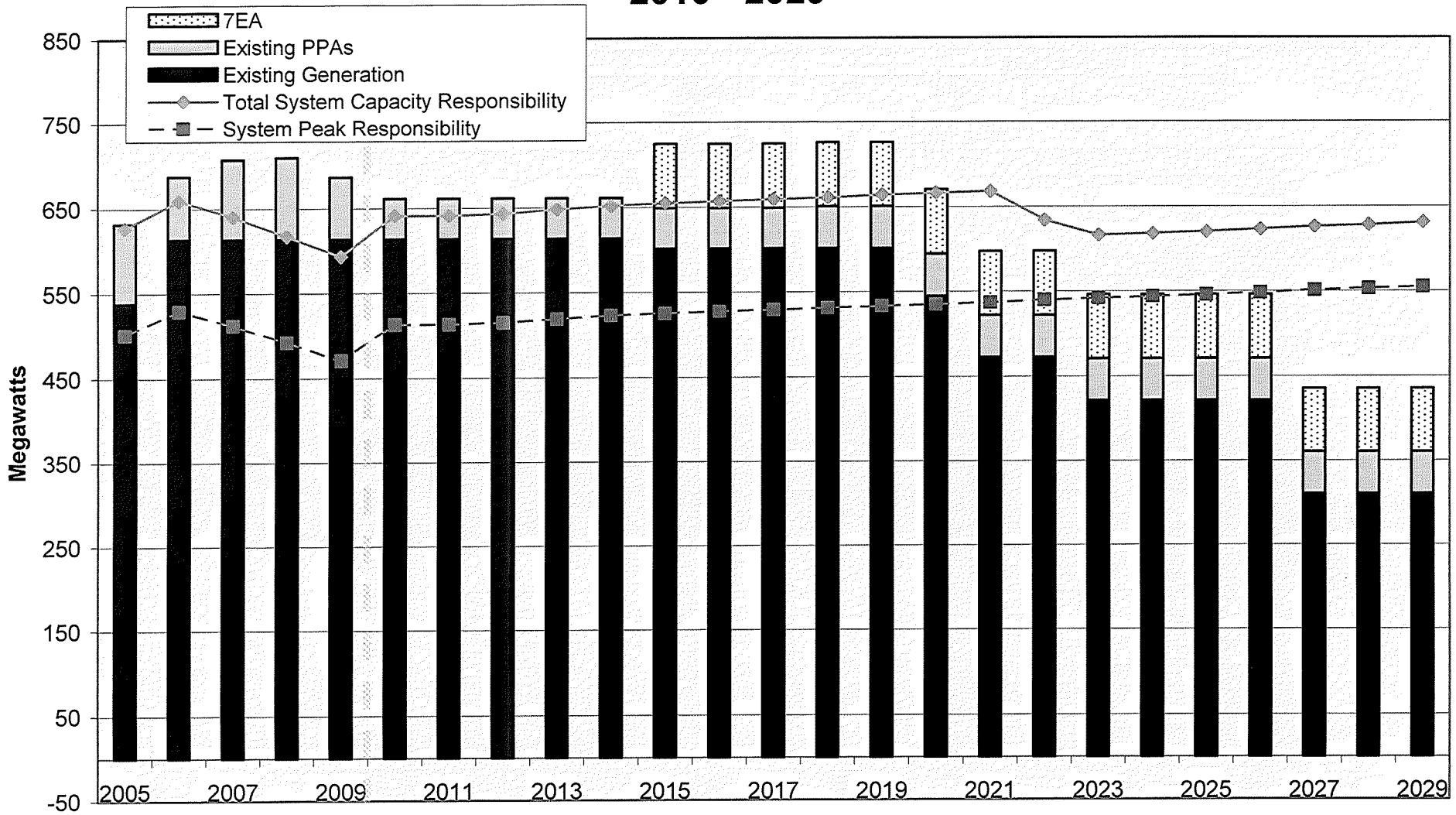
The Kansas City Board of Public Utilities (KC-BPU) is a deregulated municipal utility serving water customers in the Kansas City, Kansas Metropolitan areas in Wyandotte and Johnson Counties, and electric customers in the whole of Wyandotte County. In all, KC-BPU provides electric service to approximately 65,000 customers.

KC-BPU currently has enough generating capacity to satisfy its system needs through 2015, with the addition of a new 80MW natural gas combustion turbine at the utility's existing Nearman Creek facility, KC-BPU will continue to meet its system needs through 2020. After 2020 KC-BPU contends with the problems of an aging generation fleet, with a substantial portion of the utility's existing generation capacity scheduled to be retired within the 2020 decade. This creates a near 200MW capacity deficit by 2029.

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	501	0	**501**	68	**569**		538	36	**574**
	2006	529	0	**529**	72	**601**		613	16	**629**
	2007	512	0	**512**	70	**582**		613	36	**649**
	2008	492	0	**492**	67	**559**		613	39	**652**
	2009	471	0	**471**	64	**535**		613	15	**628**
Projected	2010	513	0	**513**	70	**583**		613	-10	**603**
	2011	513	0	**513**	70	**583**		613	-10	**603**
	2012	515	0	**515**	70	**585**		613	-10	**603**
	2013	519	0	**519**	71	**590**		613	-10	**603**
	2014	523	0	**523**	71	**594**		613	-10	**603**
	2015	525	0	**525**	72	**597**		677	-10	**667**
	2016	527	0	**527**	72	**599**		677	-10	**667**
	2017	529	0	**529**	72	**601**		677	-10	**667**
	2018	531	0	**531**	72	**603**		677	-9	**668**
	2019	533	0	**533**	73	**606**		677	-9	**668**
	2020	535	0	**535**	73	**608**		621	-9	**612**
	2021	537	0	**537**	73	**610**		548	-9	**540**
	2022	540	0	**540**	74	**614**		548	30	**578**
	2023	542	0	**542**	74	**616**		497	50	**546**
	2024	544	0	**544**	74	**618**		497	50	**546**
	2025	546	0	**546**	74	**620**		497	50	**546**
	2026	548	0	**548**	75	**623**		497	50	**546**
	2027	551	0	**551**	75	**626**		386	50	**435**
	2028	553	0	**553**	75	**628**		386	50	**435**
	2029	555	0	**555**	76	**631**		386	50	**435**

2-21

Forecasted Demand and System Capacity, Kansas City Board of Public Utilities 2010 - 2029



2010 Generation Survey
dated September 1, 2010

Appendix A-9—Kansas Municipal Energy Agency (KMEA)

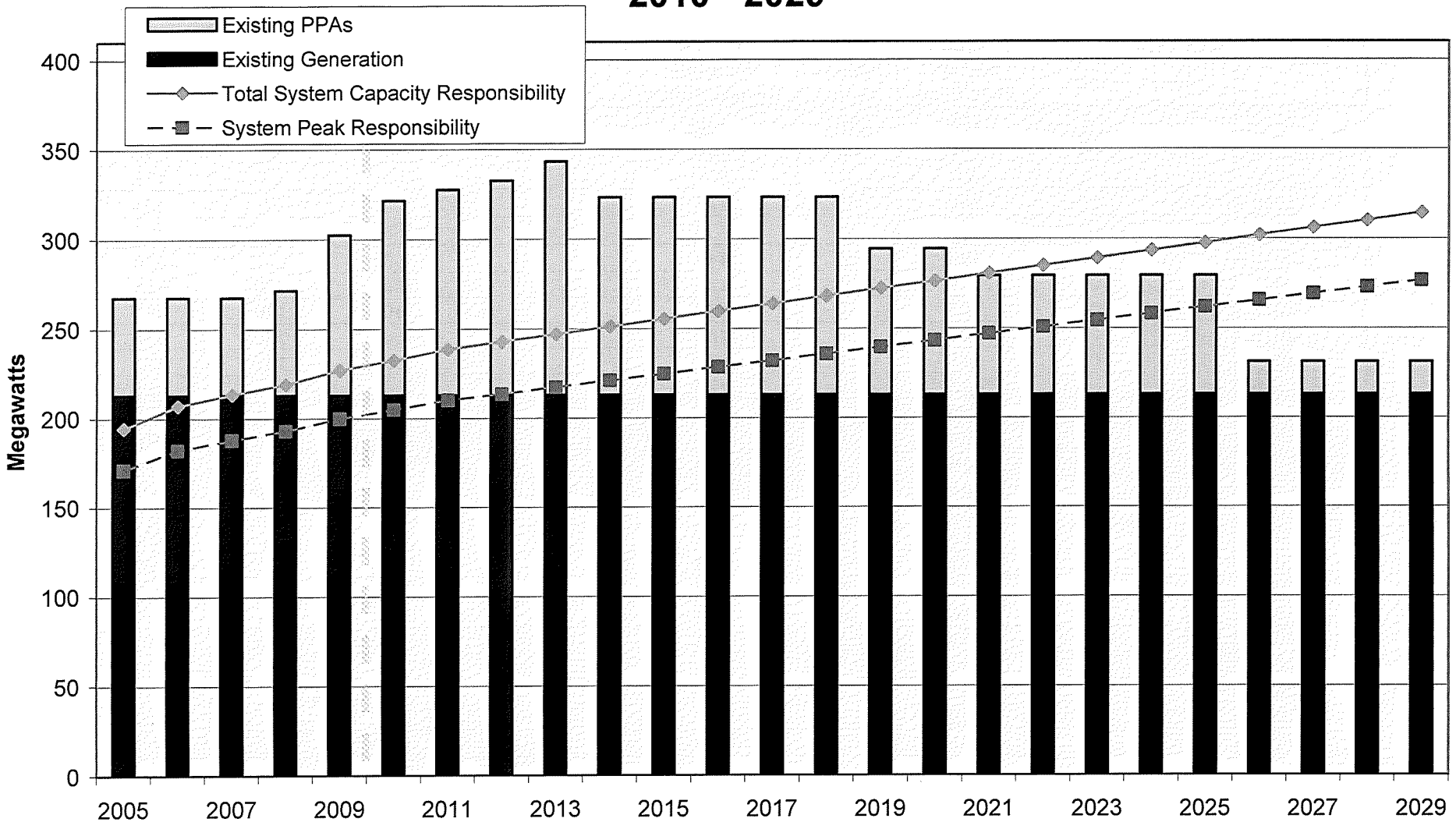
The Kansas Municipal Energy Agency (KMEA) is an organization that finances projects for the purchase, sale, generation, and transmission of electricity on behalf of its member municipal electric utilities. In addition to these functions, KMEA also manages the Mutual Aid Program where municipalities assist one another in the event of emergencies that affect the electric system, conducts power supply and transmission feasibility studies, and advocates members' positions before industry bodies, regulatory agencies and legislative bodies. KMEA has 70 member municipal electric utilities, and has a current total system capacity responsibility across all member utilities of approximately 125.6 MWs.

2-22

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	171	0	**171**	23	**194**		213	54	**268**
	2006	182	0	**182**	25	**207**		213	54	**268**
	2007	188	0	**188**	26	**213**		213	54	**268**
	2008	193	0	**193**	26	**219**		213	58	**272**
	2009	200	0	**200**	27	**227**		213	89	**303**
Projected	2010	205	0	**205**	28	**233**		213	109	**322**
	2011	210	0	**210**	29	**239**		213	115	**328**
	2012	214	0	**214**	29	**243**		213	120	**333**
	2013	218	0	**218**	30	**247**		213	130	**343**
	2014	221	0	**221**	30	**251**		213	110	**323**
	2015	225	0	**225**	31	**256**		213	110	**323**
	2016	229	0	**229**	31	**260**		213	110	**323**
	2017	232	0	**232**	32	**264**		213	110	**323**
	2018	236	0	**236**	32	**268**		213	110	**323**
	2019	240	0	**240**	33	**272**		213	81	**294**
	2020	243	0	**243**	33	**277**		213	81	**294**
	2021	247	0	**247**	34	**281**		213	66	**279**
	2022	251	0	**251**	34	**285**		213	66	**279**
	2023	255	0	**255**	35	**289**		213	66	**279**
	2024	258	0	**258**	35	**293**		213	66	**279**
	2025	262	0	**262**	36	**298**		213	66	**279**
	2026	266	0	**266**	36	**302**		213	18	**231**
	2027	269	0	**269**	37	**306**		213	18	**231**
	2028	273	0	**273**	37	**310**		213	18	**231**
	2029	277	0	**277**	38	**314**		213	18	**231**

2-23

Forecasted Demand and System Capacity, Kansas Municipal Energy Agency 2010 - 2029



2010 Generation Survey
Updated September 1, 2010

Appendix A-10—Kansas Power Pool (KPP)

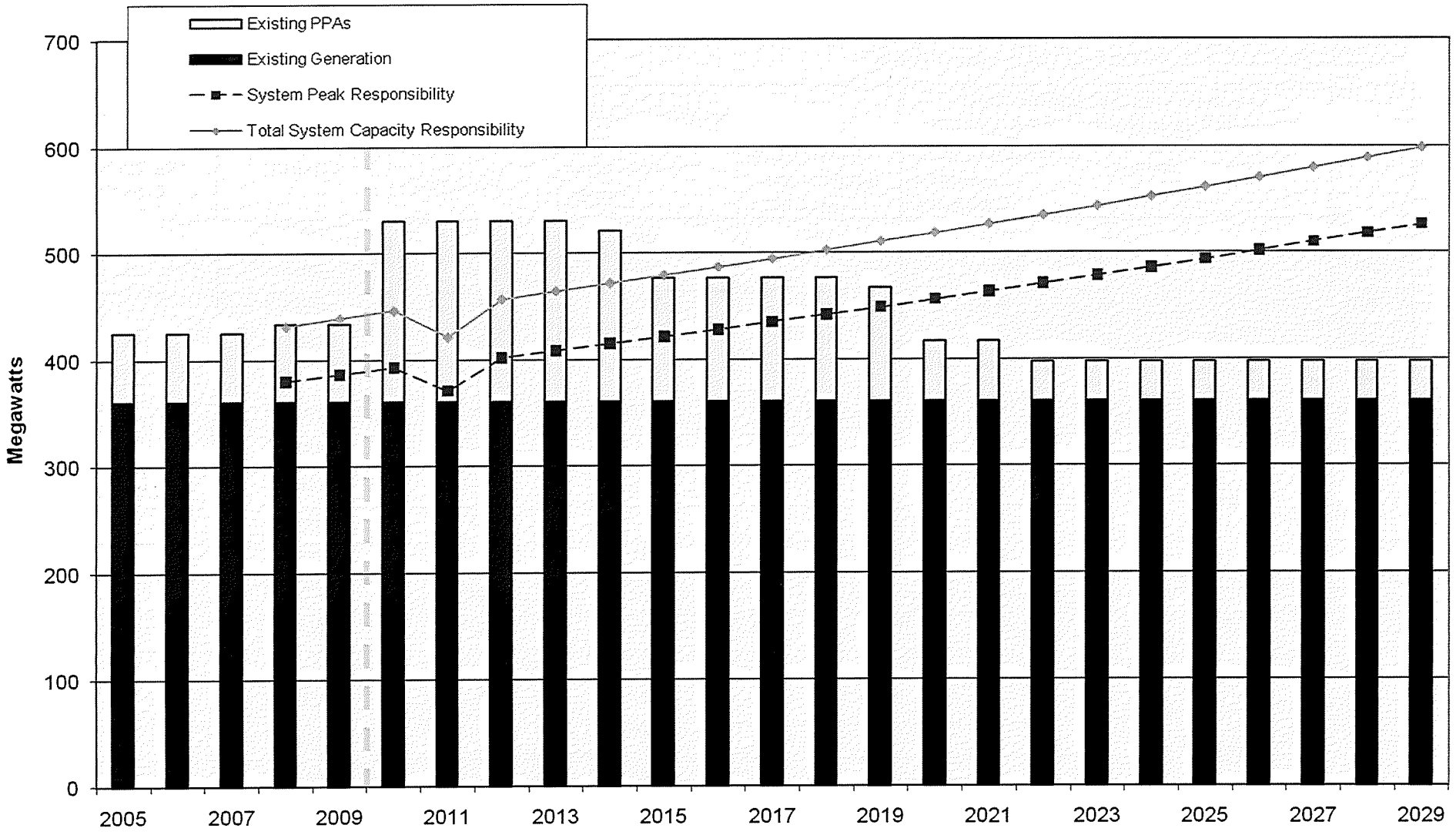
The Kansas Power Pool (KPP), created in May of 2005, is an organization that provides wholesale electric power, reserve sharing, collective resource planning and acquisition, network transmission service, and cost sharing of operations to its member municipal utilities. The KPP is comprised of 41 municipal electric utilities and is responsible for a total system capacity of approximately 439.8 MWs.

		System Peak						System Capacity		
		Retail Load	Wholesale Load	**Total System Peak Load**	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**
Historical	2005	NA	NA	**NA**	NA	**NA**		360	64	**425**
	2006	NA	NA	**NA**	NA	**NA**		360	64	**425**
	2007	NA	NA	**NA**	NA	**NA**		360	64	**425**
	2008	380	0	**380**	52	**432**		360	73	**434**
	2009	387	0	**387**	53	**439**		360	73	**434**
Projected	2010	393	0	**393**	54	**447**		360	170	**530**
	2011	371	0	**371**	51	**422**		360	170	**530**
	2012	403	0	**403**	55	**458**		360	170	**530**
	2013	409	0	**409**	56	**465**		360	170	**530**
	2014	415	0	**415**	57	**472**		360	161	**521**
	2015	422	0	**422**	58	**480**		360	116	**476**
	2016	429	0	**429**	58	**487**		360	116	**476**
	2017	435	0	**435**	59	**495**		360	116	**476**
	2018	442	0	**442**	60	**503**		360	116	**476**
	2019	449	0	**449**	61	**511**		360	106	**467**
	2020	457	0	**457**	62	**519**		360	56	**417**
	2021	464	0	**464**	63	**527**		360	56	**417**
	2022	471	0	**471**	64	**535**		360	37	**397**
	2023	479	0	**479**	65	**544**		360	37	**397**
	2024	486	0	**486**	66	**552**		360	37	**397**
	2025	494	0	**494**	67	**561**		360	37	**397**
	2026	502	0	**502**	68	**570**		360	37	**397**
	2027	510	0	**510**	70	**579**		360	37	**397**
	2028	518	0	**518**	71	**589**		360	37	**397**
	2029	526	0	**526**	72	**598**		360	37	**397**

2-24

2-25

Forecasted Demand and System Capacity, Kansas Power Pool 2010 - 2029



10 Generation Survey
ated December 31, 2010

Appendix B—Renewable Capacity Requirements

Appendix B-1—Empire District Electric Company

Empire District Electric Company (Empire) currently has two long-term power purchase agreements with two wind farms operating in Kansas, Meridian Way in Cloud County and Elk River in Barber County. Empire also operates a small hydro-electric dam in Missouri called Ozark Beach. A very small portion of Empire's overall service territory resides in Kansas, meaning the utility's required renewable capacity under the Renewable Energy Standard is small relative to the utility's existing renewable capacity. This makes it unlikely the utility will ever not be in compliance with K.S.A. 66-1258, as clearly shown below.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity			Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Cloud County (Meridian Way) Wind Farm	Elk River Wind Facility	Ozark Beach		
2010	--	--	105	150	16	**286.5**	--
2011	**10%**	**6**	105	150	16	**286.5**	0
2012		**7**	105	150	16	**286.5**	0
2013		**6**	105	150	16	**286.5**	0
2014		**7**	105	150	16	**286.5**	0
2015		**7**	105	150	16	**286.5**	0
2016	**15%**	**10**	105	150	16	**268.5**	0
2017		**10**	105	150	16	**268.5**	0
2018		**11**	105	150	16	**268.5**	0
2019		**11**	105	150	16	**286.5**	0
2020	**20%**	**15**	105	150	16	**286.5**	0
2021		**15**	105	150	16	**286.5**	0
2022		**15**	105	150	16	**286.5**	0
2023		**16**	105	150	16	**286.5**	0
2024		**16**	105	150	16	**286.5**	0
2025		**16**	105	150	16	**286.5**	0
2026		**17**	105	150	16	**286.5**	0
2027		**17**	105	150	16	**286.5**	0
2028		**17**	105	150	16	**286.5**	0
2029		**18**	105	150	16	**286.5**	0

2-27

Appendix B-2—Kansas City Power & Light (KCP&L)

KCP&L currently owns two wind farms in the state of Kansas, Gray County and Spearville, the latter of which the utility is currently in the process of adding an additional 100MW expansion to. With the expansion of Spearville, KCP&L has enough renewable capacity to satisfy the utility's requirement under the Renewable Energy Standard until 2016, when the Standard's 15% requirement leaves the utility with a minor renewable capacity deficit. This deficit increases to 100 to 150MWs with the Standards 20% requirement after 2020.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity			Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Gray County Wind Farm	Spearville Wind Energy Facility Phase I	Spearville Wind Energy Facility Phase II		
2010	--	--	60	100.5		**176.7**	--
2011	**10%**	**166**	60	100.5	48	**229.4**	0
2012		**173**	60	100.5	48	**229.4**	0
2013		**180**	60	100.5	48	**229.4**	0
2014		**184**	60	100.5	48	**229.4**	0
2015		**188**	60	100.5	48	**229.4**	0
2016	**15%**	**288**	60	100.5	48	**229.4**	**58.6**
2017		**293**	60	100.5	48	**229.4**	**63.6**
2018		**297**	60	100.5	48	**229.4**	**67.7**
2019		**301**	60	100.5	48	**229.4**	**71.7**
2020	**20%**	**407**	60	100.5	48	**229.4**	**177.6**
2021		**413**	60	100.5	48	**229.4**	**183.6**
2022		**418**	60	100.5	48	**229.4**	**188.6**
2023		**423**	60	100.5	48	**229.4**	**193.6**
2024		**428**	60	100.5	48	**229.4**	**198.6**
2025		**433**	60	100.5	48	**229.4**	**203.6**
2026		**437**	60	100.5	48	**229.4**	**207.6**
2027		**441**	60	100.5	48	**229.4**	**211.6**
2028		**445**	60	100.5	48	**229.4**	**215.6**
2029		**449**	60	100.5	48	**229.4**	**219.6**

Appendix B-3—Westar Energy

Westar Energy (Westar) currently owns Central Plains wind farm, and 50% of Flat Ridge wind farm in Wichita and Barber counties, respectively. Westar additionally has long-term power purchase agreements with the remainder of the Flat Ridge not own by the utility and Meridian Way in Cloud County (Meridian Way is reported on EIA form 923 as Cloud County). The utility also recently acquired a long-term power purchase agreement with Waste Management to receive electricity from that company's Rolling Meadows landfill-gas generation facility just north of Topeka in Shawnee County. Finally, Westar recently announced the selected recipients of a 2010 request for proposals for new renewable energy generation. These two recipients, Post Rock and Ironwood—Ellsworth and Ford counties, respectively—are slated to be in service in late 2012.[1]

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity						Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Cloud County Meridian Way) Wind Farm	Flat Ridge Wind Farm	Central Plains Wind Farm	Rolling Meadows	Post Rock Wind Farm	Ironwood Wind Power Project		
2010	--	--	96	100	99	8	--	--	**333.3**	--
2011		**464**	96	100	99	8	--	--	**333.3**	**130.7**[2]
2012		**475**	96	100	99	8	--	--	**333.3**	**141.7**[v]
2013	**10%**	**498**	96	100	99	8	201	168	**739.2**	0
2014		**505**	96	100	99	8	201	168	**739.2**	0
2015		**512**	96	100	99	8	201	168	**739.2**	0
2016		**774**	96	100	99	8	201	168	**739.2**	**34.8**
2017	**15%**	**780**	96	100	99	8	201	168	**739.2**	**40.8**
2018		**785**	96	100	99	8	201	168	**739.2**	**45.8**
2019		**791**	96	100	99	8	201	168	**739.2**	**51.8**
2020		**1061**	96	100	99	8	201	168	**739.2**	**321.8**
2021		**1073**	96	100	99	8	201	168	**739.2**	**333.8**
2022		**1088**	96	100	99	8	201	168	**739.2**	**348.8**
2023		**1109**	96	100	99	8	201	168	**739.2**	**369.8**
2024	**20%**	**1129**	96	100	99	8	201	168	**739.2**	**389.8**
2025		**1150**	96	100	99	8	201	168	**739.2**	**410.8**
2026		**1171**	96	100	99	8	201	168	**739.2**	**431.8**
2027		**1193**	96	100	99	8	201	168	**739.2**	**453.8**
2028		**1215**	96	100	99	8	201	168	**739.2**	**475.8**
2029		**1238**	96	100	99	8	201	168	**739.2**	**498.8**

[1] Westar's predetermination docket for wind 2013 wind acquisitions, Docket 11-WSEE-377-PRE, is still active, thus information regarding Post Rock and Ironwood wind farms is preliminary.
[2,v] In an active Docket before the Commission, Docket 11-WSEE-438-MIS, Westar Energy indicates it intends to fulfill its 2011 and 2012 RES requirements through the use of Renewable Energy Credits (RECs). The Commission has yet to give guidance to Westar Energy as to whether or not this would be allowable.

2-29

Appendix B-4—Kansas Electric Power Cooperatives (KEPCo)

KEPCo, being a federally defined rural non-profit utility, has received discounted power allocations from federally managed hydro-electric power marketers since the utility's inception. In particular, KEPCo currently has contracts to receive 100MW of capacity from the Southwestern Power Administration (SWPA) through 2016 and 14MW of capacity from the Western Area Power Administration (WAPA) through 2024. SWPA is a series of 24 U.S. Army Corps of Engineer hydro-electric dams throughout the States of Missouri, Oklahoma, Arkansas, and Texas. WAPA is likewise a series 57 hydro-electric dams operated by the Bureau of Reclamation, U.S. Army Corps of Engineers, and International Boundary and Water Commission in the states of Colorado and New Mexico. Both of KEPCo's current power purchase contracts with WAPA and SWPA are expected to be renewed, and satisfy KEPCo's member's requirement under the Renewable Energy Standard through at least 2029.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity		Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Western Area Power Administration (WAPA)	Southwestern Power Administration (SWPA)		
2010	--	--	14	100	114	--
2011	10%	42	14	100	114	0
2012		43	14	100	114	0
2013		45	14	100	114	0
2014		46	14	100	114	0
2015		47	14	100	114	0
2016	15%	72	14	100	114	0
2017		73	14	100	114	0
2018		74	14	100	114	0
2019		76	14	100	114	0
2020	20%	103	14	100	114	0
2021		105	14	100	114	0
2022		105	14	100	114	0
2023		105	14	100	114	0
2024		105	14	100	114	0
2025		107	14	100	114	0
2026		109	14	100	114	0
2027		111	14	100	114	0
2028		113	14	100	114	0
2029		115	14	100	114	1

Appendix B-5—Midwest Energy

Midwest Energy currently has long-term power purchase agreement for 49.2 MW of capacity from the 250MW Smoky Hills Wind Farm in Lincoln and Ellsworth counties—25.2MW designated from Phase 1 of the wind farm, and 24MW designated from phase 2. Capacity from Smoky Hills should satisfy Midwest Energy's requirement under the Renewable Energy Standard through 2020, when the standard's 20% requirement will require the utility to purchase or build an additional 10 to 15MW of renewable capacity.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity		Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Smoky Hills Phase 1	Smoky Hills Phase 2		
2010	--	--	25.2	24	**54.1**	--
2011		**30**	25.2	24	**54.1**	0
2012		**30**	25.2	24	**54.1**	0
2013	**10%**	**31**	25.2	24	**54.1**	0
2014		**32**	25.2	24	**54.1**	0
2015		**32**	25.2	24	**54.1**	0
2016		**48**	25.2	24	**54.1**	0
2017	**15%**	**48**	25.2	24	**54.1**	0
2018		**49**	25.2	24	**54.1**	0
2019		**49**	25.2	24	**54.1**	0
2020		**65**	25.2	24	**54.1**	**10.9**
2021		**66**	25.2	24	**54.1**	**11.9**
2022		**66**	25.2	24	**54.1**	**11.9**
2023		**66**	25.2	24	**54.1**	**11.9**
2024	**20%**	**66**	25.2	24	**54.1**	**11.9**
2025		**67**	25.2	24	**54.1**	**12.9**
2026		**67**	25.2	24	**54.1**	**12.9**
2027		**67**	25.2	24	**54.1**	**12.9**
2028		**67**	25.2	24	**54.1**	**12.9**
2029		**68**	25.2	24	**54.1**	**13.9**

2-31

ppendix B-6—Mid-Kansas Electric Company (MKEC)

MKEC currently has two long-term power purchase agreements with two wind farms operating in Kansas, Grey County and Smoky Hills located in Lincoln and Ellsworth (in particular phase 2 of Smoky Hills). Additionally, MKEC receives portions of federal hydro-electric allocations (Western Area Power Administration and Great River Dam Authority) through members of Kansas Municipal Energy Agency (KMEA) that MKEC has partial requirement contracts with. Finally, MKEC is funding a portion of a new plant being constructed by Abengoa bioenergy in () county. This new plant will be a biomass-fired steam generator fueled by local crop residue, with waste heat being recycled in a cogeneration manner for use in an adjacent cellulosic ethanol facility. With the addition of Abengoa, MKEC is expected to fulfill its requirement under the Renewable Energy Standard through the scope of this survey.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity					Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Grey County Wind Farm	Smoky Hills Phase 2	Abengoa	KMEA – Western Area Power Administration (WAPA)	KMEA – Great River Dam Authority (GRDA)		
2010	--	--	50	24	--	10.61	18	**110**	--
2011	10%	**58**	50	24	--	10.86	18	**110.3**	0
2012		**58**	50	24	--	10.86	18	**110.3**	0
2013		**58**	50	24	98	9.4	18	**216.6**	0
2014		**59**	50	24	98	9.4	18	**216.6**	0
2015		**61**	50	24	98	9.31	18	**216.5**	0
2016	15%	**91**	50	24	98	9.31	18	**216.5**	0
2017		**91**	50	24	98	9.31	18	**216.5**	0
2018		**92**	50	24	98	8.63	18	**215.8**	0
2019		**92**	50	24	98	8.63	18	**215.8**	0
2020	20%	**123**	50	24	98	8.63	18	**215.8**	0
2021		**123**	50	24	98	8.63	18	**215.8**	0
2022		**124**	50	24	98	8.63	18	**215.8**	0
2023		**124**	50	24	98	8.63	18	**215.8**	0
2024		**125**	50	24	98	8.63	18	**215.8**	0
2025		**125**	50	24	98	8.63	18	**215.8**	0
2026		**125**	50	24	98	8.63	18	**215.8**	0
2027		**126**	50	24	98	8.63	18	**215.8**	0
2028		**126**	50	24	98	8.63	18	**215.8**	0
029		**127**	50	24	98	8.63	18	**215.8**	0

Appendix B-7—Sunflower Electric Power Company

Sunflower Electric Power Company (Sunflower) currently has a long-term power purchase agreement to purchase 50.4MW of capacity from the Smoky Hills Wind Farm located in Lincoln and Ellsworth counties–in particular phase 1 of the wind farm. Additionally, being a federally defined non-profit rural utility, Sunflower receives 13.4MW from the federally managed hydro-electric power marketer Western Area Power Administration (WAPA)—WAPA being a series 57 hydro-electric dams operated by the Bureau of Reclamation, U.S. Army Corps of Engineers, and International Boundary and Water Commission in the states of Colorado and New Mexico. Sunflower's current renewable capacity meets its requirement under the Renewable Energy Standard through 2016, when the utility has an approximate 15MW deficit to meet the Standard's 15% requirement. This deficit increases to approximately 45MW after the Standard's 20% requirement comes into effect in 2020.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity			Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Smoky Hills Phase 1	Western Area Power Administration (WAPA)	Municipals – Western Area Power Administration (WAPA)		
2010	--	--	50.4	5.4	8	68.8	--
2011	10%	49	50.4	5.4	8	68.8	0
2012		50	50.4	5.4	8	68.8	0
2013		52	50.4	5.4	8	68.8	0
2014		54	50.4	5.4	8	68.8	0
2015		55	50.4	5.4	8	68.8	0
2016	15%	83	50.4	5.4	8	68.8	14.2
2017		84	50.4	5.4	8	68.8	15.2
2018		85	50.4	5.4	8	68.8	16.2
2019		85	50.4	5.4	8	68.8	16.2
2020	20%	113	50.4	5.4	8	68.8	44.2
2021		111	50.4	5.4	8	68.8	42.2
2022		110	50.4	5.4	8	68.8	41.2
2023		111	50.4	5.4	8	68.8	42.2
2024		111	50.4	5.4	8	68.8	42.2
2025		112	50.4	5.4	8	68.8	43.2
2026		113	50.4	5.4	8	68.8	44.2
2027		114	50.4	5.4	8	68.8	45.2
2028		115	50.4	5.4	8	68.8	46.2

2029		115	50.4	5.4	8	68.8	46.2

pendix B-8—Kansas City Board of Public Utilities (KC-BPU)

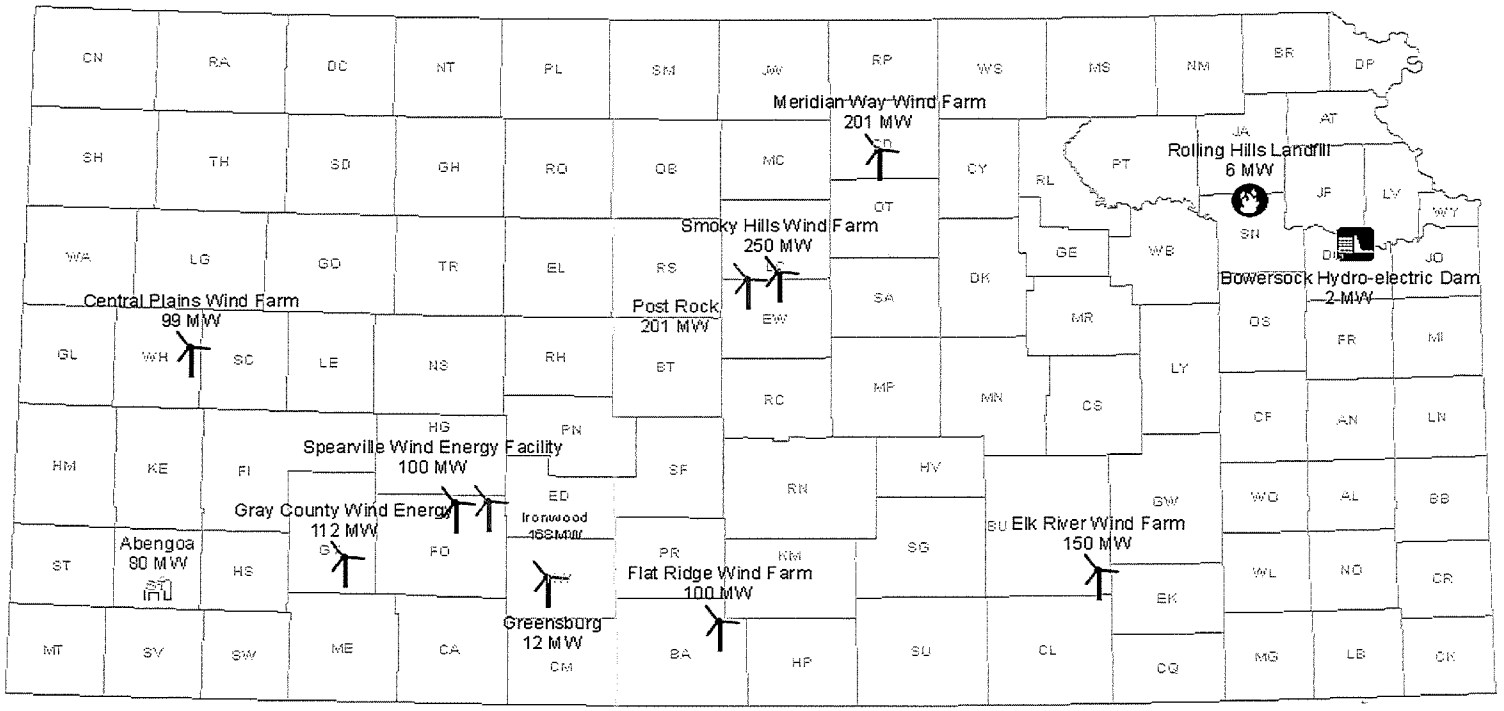
KC-BPU is a municipal utility not statutorily subject to the State's Renewable Energy Standard outlined in K.S.A. 66-1258. However, the utility participated in the KCC's roundtable discussions concerning KCC administrative regulations governing the Renewable Energy Standard's (RES) implementation, and has stated that it will voluntarily comply with the State's RES.

KC-BPU currently has long-term power purchase agreements with the Smoky Hills wind farm in Lincoln and Ellsworth counties (in particular phase 1 of the wind farm), as well as the federally managed hydro-electric power marketers Southwestern Power Authority (SWPA) and Western Area Power Authority (WAPA). KC-BPU's current renewable capacity meets the State's RES through 2016, when the utility is estimated to have an approximate 7MW deficit to meet the Standard's 15% requirement. This deficit grows to approximately 35 to 40MW after the Standard's 20% requirement comes into effect in 2020.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity			Total Renewable Capacity	Additional Required Renewable Capacity
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Smoky Hills Phase 1	Southwestern Power Authority (SWPA)	Western Area Power Authority (WAPA)		
2010	--	--	25.2	39	5	71.7	--
2011	10%	49	25.2	39	5	71.7	0
2012		50	25.2	39	5	71.7	0
2013		51	25.2	39	5	71.7	0
2014		52	25.2	39	5	71.7	0
2015		52	25.2	39	5	71.7	0
2016	15%	78	25.2	39	5	71.7	6.3
2017		79	25.2	39	5	71.7	7.3
2018		79	25.2	39	5	71.7	7.3
2019		79	25.2	39	5	71.7	7.3
2020	20%	106	25.2	39	5	71.7	34.3
2021		107	25.2	39	5	71.7	35.3
2022		107	25.2	39	5	71.7	35.3
2023		107	25.2	39	5	71.7	35.3
2024		108	25.2	39	5	71.7	36.3
2025		108	25.2	39	5	71.7	36.3
2026		109	25.2	39	5	71.7	37.3
2027		109	25.2	39	5	71.7	37.3
2028		110	25.2	39	5	71.7	38.3
2029		110	25.2	39	5	71.7	38.3

Appendix C—Renewable Energy Generation

Commercial-Size Renewable Generators within Kansas



2-35

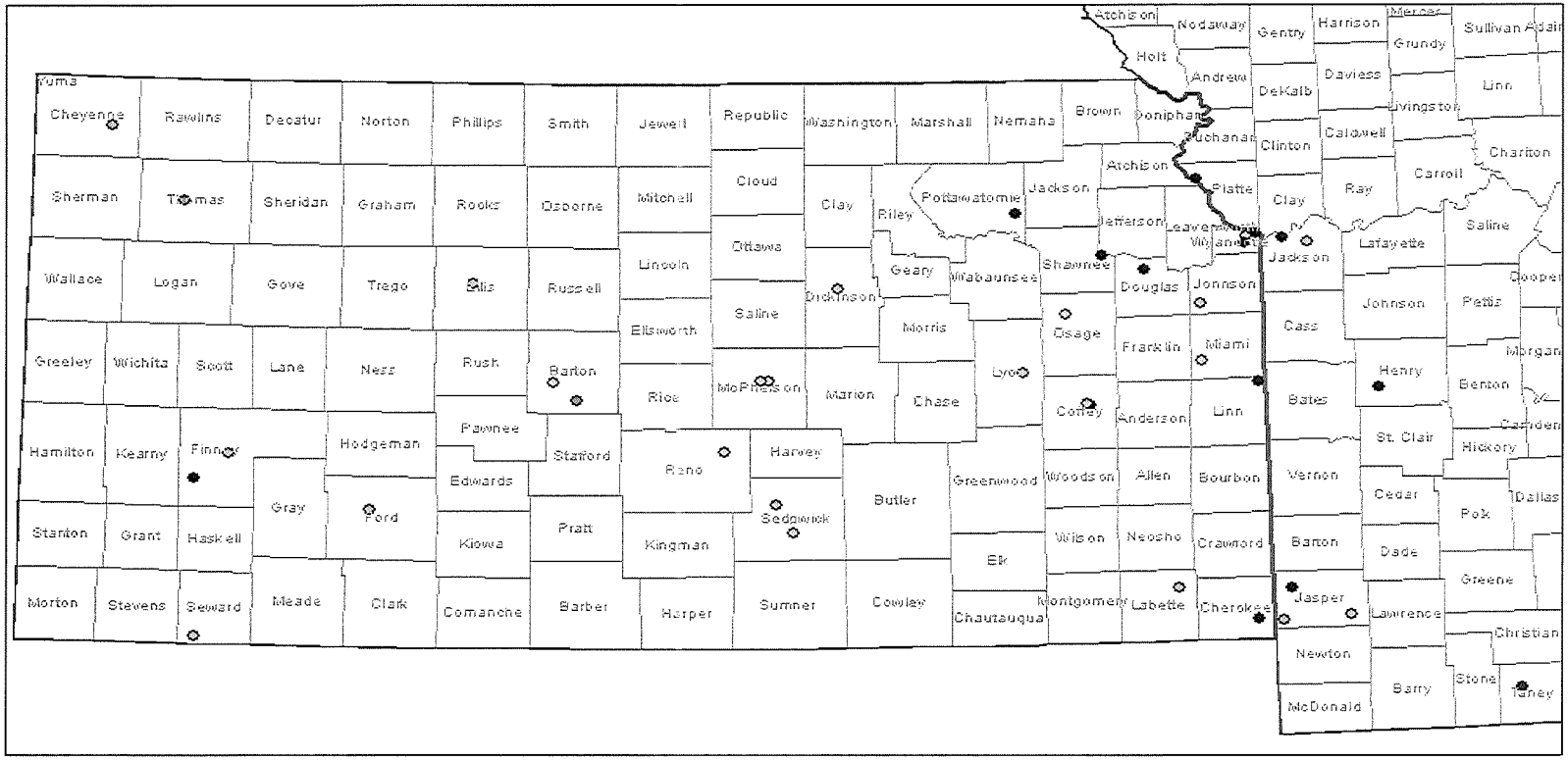
Appendix C—List of Commercial-Size Renewable Generators within Kansas

Renewable Generator (Total Nameplate Capacity)	County	Developer	Initial Month and Year of Operation	Utility Purchaser	Size
Grey County Wind Farm (112.2 MW)	Gray	NextEra (Florida Power & Light)	November 2001	Sunflower (allocated to Mid-Kansas Electric Company system)	50 MW
				Kansas City Power and Light	60 MW
				Unallocated	2.2 MW
Elk River Wind Facility (150 MW)	Butler	PPM Energy (Ibedrola)	December 2005	Empire District Electric	150 MW
Spearville Wind Energy Facility Phase I (100.5 MW)	Ford	enXco	August 2006	Kansas City Power and Light	100.5 MW
Spearville Wind Energy Facility Phase II (48 MW)	Ford	enXco	December 2010	Kansas City Power and Light	48 MW
Smoky Hills Phase 1 (100.8 MW)	Lincoln and Ellsworth	TradeWind Energy	January 2008	Sunflower Electric	50.4 MW
				Kansas City Board of Public Utilities	25.2 MW
				Midwest Energy	25.2 MW
Smoky Hills Phase 2 (148.5 MW)	Lincoln and Ellsworth	TradeWind Energy	January 2009	Sunflower (allocated to Mid-Kansas Electric Company system)	24 MW
				Midwest Energy	24 MW
				City Power and Light (Independence, Mo.)	15 MW
				City Utilities of Springfield, Mo.	50 MW
				SPP EIM *(Unallocated)*	35.5 MW
Cloud County (Meridian Way) Wind Farm (105 MW)	Cloud	Horizon Wind Energy	November 2008	Empire District Electric	105 MW
				Westar Energy	96 MW
Flat Ridge Wind Farm (100 MW)	Barber	BP Alternative Energy	March 2009	Westar Energy	100 MW
Central Plains Wind Farm (99 MW)	Wichita	RES America	March 2009	Westar Energy	99 MW
Greensburg (12.5 MW)	Kiowa	John Deere	September 2009	Kansas Power Pool	12.5 MW
Bowersock Hydro-electric Dam	Douglas	Kansas River Hydro Project	1922	Kansas Power Pool	2.7 MW
Rolling Hills Landfill (8 MW)	Shawnee	Waste Management	January 2009	Westar Energy	8 MW

Appendix D—Traditional Fossil-Fuel Generation

2-36

Inventory of Existing Power Plants Serving Kansas Loads



Primary Fuel

- Coal
- Diesel
- Dual Fuel
- Hydro
- Natural gas
- Nuclear

2010 Generation Survey
3 January 2011

KANSAS
CORPORATION COMMISSION
18 January 2010

Appendix D—Inventory of Major Power Plants Serving Kansas Loads

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2009 Net Generation (MWh)
Wolf Creek Nuclear Generating Corporation	**Wolf Creek** Nuclear (B)	Coffey	KCPL (47%) Westar (47%) KEPCo (6%)	1,160	1985	8,768,548
Westar Energy, Inc.	**Jeffrey Energy Center** Coal (B)	Pottawatomie	Westar (92%) MKEC (8%)	2,164	1978 - 1983	12,921,850
	Lawrence Energy Center Coal (B)	Douglas	Westar (100%)	529	1955 - 1971	3,318,128
	Hutchinson Natural gas (P)	Reno	Westar (100%)	395	1965 - 1983	64,461
	Abilene Natural gas (P)	Dickinson	Westar (100%)	64	1973	17,087
	Tecumseh Coal (B) and Natural gas (P)	Shawnee	Westar (100%)	239	1957 - 1972	1,397,547
	Gordon Evans Natural gas (P)	Sedgwick	Westar (100%)	835	1961 - 2001	614,110
	Murray Gill Natural gas (P)	Sedgwick	Westar (100%)	293	1952 - 1959	233,892
	Neosho Natural gas (P)	Labette	Westar (100%)	67	1954	-1,181
	Emporia Energy Center Natural gas (LF) and Natural gas (P)	Lyon	Westar (100%)	663	2008-2009	435,062
	Spring Creek Energy Center Natural gas (P)	Logan, Oklahoma	Westar (100%)	278	2001	220,037
Kansas City Power and Light (KCP&L)	**LaCygne** Coal (B)	Linn	KCPL (50%) Westar (50%)	1,418	1973 - 1977	9,244,848

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2009 Net Generation (MWh)
	Osawatomie Natural gas (P)	Miami	KCPL (100%)	90	2003	NA
	West Gardner Natural gas (P)	Johnson	KCPL (100%)	360	2003	35,792
	Iatan I Coal (B)	Platte, Missouri	KCPL (70%) KCPL-GMO (18%) Empire (12%)	651	1980	3,825,377
	Iatan II Coal (B)	Platte, Missouri	KCPL (54.71%) KCPL-GMO (18%) Empire (12%) MJMEUC (11.76%) KEPCo (3.53%)	850	2010	NA
	Montrose Coal (B)	Henry, Missouri	KCPL (100%)	510	1958 - 1964	3,211,592
	Hawthorn Coal (B)	Jackson, Missouri	KCPL (100%)	563	1969	4,174,936
	Hawthorn Combine Cycle Natural gas (P)	Jackson, Missouri	KCPL (100%)	292	1997 - 2000	
	Hawthorn Combustion Turbine Natural gas (P)	Jackson, Missouri	KCPL (100%)	180	2000	
	Northeast Station Natural gas (P) and Distillate fuel oil (P)	Jackson, Missouri	KCPL (100%)	522	1972 - 1985	-930
Kansas City Board of Public Utilities (KC-BPU)	**Quindaro** Coal (B)	Wyandotte	KC-BPU (100%)	183	1965 - 1971	1,103,686
	Quindaro Combustion Turbine Natural gas (P) and Distillate fuel oil (P)	Wyandotte	KC-BPU (100%)	115	1969 - 1977	
	Nearman Creek Coal (B)	Wyandotte	KC-BPU (100%)	229	1981	1,342,694

2-38

2-35

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2009 Net Generation (MWh)
	Nearman Creek Combustion Turbine Natural gas (P)	Wyandotte	KC-BPU (100%)	76 *(with 45MW additional announced)*	2006 *(addition planned 2012)*	
	Kaw Natural gas (P)	Wyandotte	KC-BPU (100%)		1955 - 1962	NA
Kansas Electric Power Cooperatives (KEPCo)	**Sharpe** Distillate fuel oil (I)	Coffey	KEPCo (100%)	20	2002	NA
Sunflower Electric Power Corporation	**Holcomb Station** Coal (B)	Finney	Sunflower (100%)	360	1983	2,655,821
	Garden City Station Natural gas (I) and Natural gas (P)	Finney	Sunflower (100%)	239.2	1962 - 1979	65,576
Mid-Kansas Electric Company (MKEC)	**Cimarron River Station** Natural gas (I) and Natural gas (P)	Seward	MKEC (100%)	75	1963 - 1967	NA
	Clifton Station Natural gas (P) and Distillate fuel oil (P)	Washington	MKEC (100%)	75.5	1974	NA
	Fort Dodge Station Natural gas (LF) *(formerly Judson Large)*	Ford	MKEC (100%)	144.6	1968	411,051
	Great Bend Station Natural gas (I) *(formerly Arthur Mullergren)*	Barton	MKEC (100%)	96	1963	NA
Empire District Electric Company	**Riverton** Coal (B)	Cherokee	Empire (100%)	92	1950	593,035
	Riverton Combustion Turbine Natural gas (P)	Cherokee	Empire (100%)	236	1964 - 2007	
	Asbury Coal (B)	Jasper, Missouri	Empire (100%)	210	1970 - 1986	1,343,898

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2009 Net Generation (MWh)
	Empire Energy Center Natural gas (P)	Jasper, Missouri	Empire (100%)	272	1978 - 2003	96,312
	Ozark Beach Hydro (B)	Taney, Missouri	Empire (100%)	16	1931	NA
	State Line Combine Cycle Natural gas (P)	Jasper, Missouri	Empire (60%) Westar (40%)	499		1,077,259
	State Line Combustion Turbine Natural gas (P)	Jasper, Missouri	Empire (100%)	89	1995	
Plum Point Energy Associates, LLC	**Plum Point Energy** Coal (B)	Mississippi, Arkansas	EIF Plum Point (29.6%) John Hancock (27.25%) MJMEUC (22.11%) Empire (7.52%) East Texas Coop. (7.52%) Mississippi Municipal Energy Agency (6%)	665	2010	NA
McPherson Board of Public Utilities	**McPherson 2** Natural gas (P) and Distillate fuel oil (P)	McPherson	McPherson-BPU (100%)	180	1973 - 1979	4,019
	McPherson 3 Natural gas (P)	McPherson	McPherson-BPU (100%)	99.9	1998	NA
Midwest Energy, Inc.	**Colby** Dual Fuel (P)	Thomas	Midwest (100%)	13	1970	NA
	Great Bend Dual Fuel (P)	Barton	Midwest (100%)	10	1948 - 1956	NA
	Bird City Distillate fuel oil (P)	Cheyenne	Midwest (100%)	4	1965	NA
	Goodman Energy Center Natural gas (P)	Ellis	Midwest (100%)	74.7	2008	NA

2-40

2010 Kansas Generation Planning Survey

Presentation to the
Kansas House Energy and Utilities Committee
January 20, 2011

Michael Deupree—Research Analyst, KCC

Introductions and Background

- Introductions
- History
  - Originally compiled by the Kansas Energy Council (KEC) as a Staff Summery for the KEC's Electricity Committee.
  - In late March 2010, Chairman Holmes requested the KCC look into updating the information presented within the report.

Background Cont.

- Report divided into two sections
  - Section 1 covers system peak capacity needs
  - Section 2 covers renewable generation needs associated with Renewable Energy Standard passed in 2009.
- Methodology used in this report has changed from the previous report.
  - Future generation restrictions eased.
  - System loads were divided between retail and wholesale to account for potential double counting.
  - Essentially, report was complied in a more efficient and technically correct manner.

Section 1:

System Peak Capacity Planning

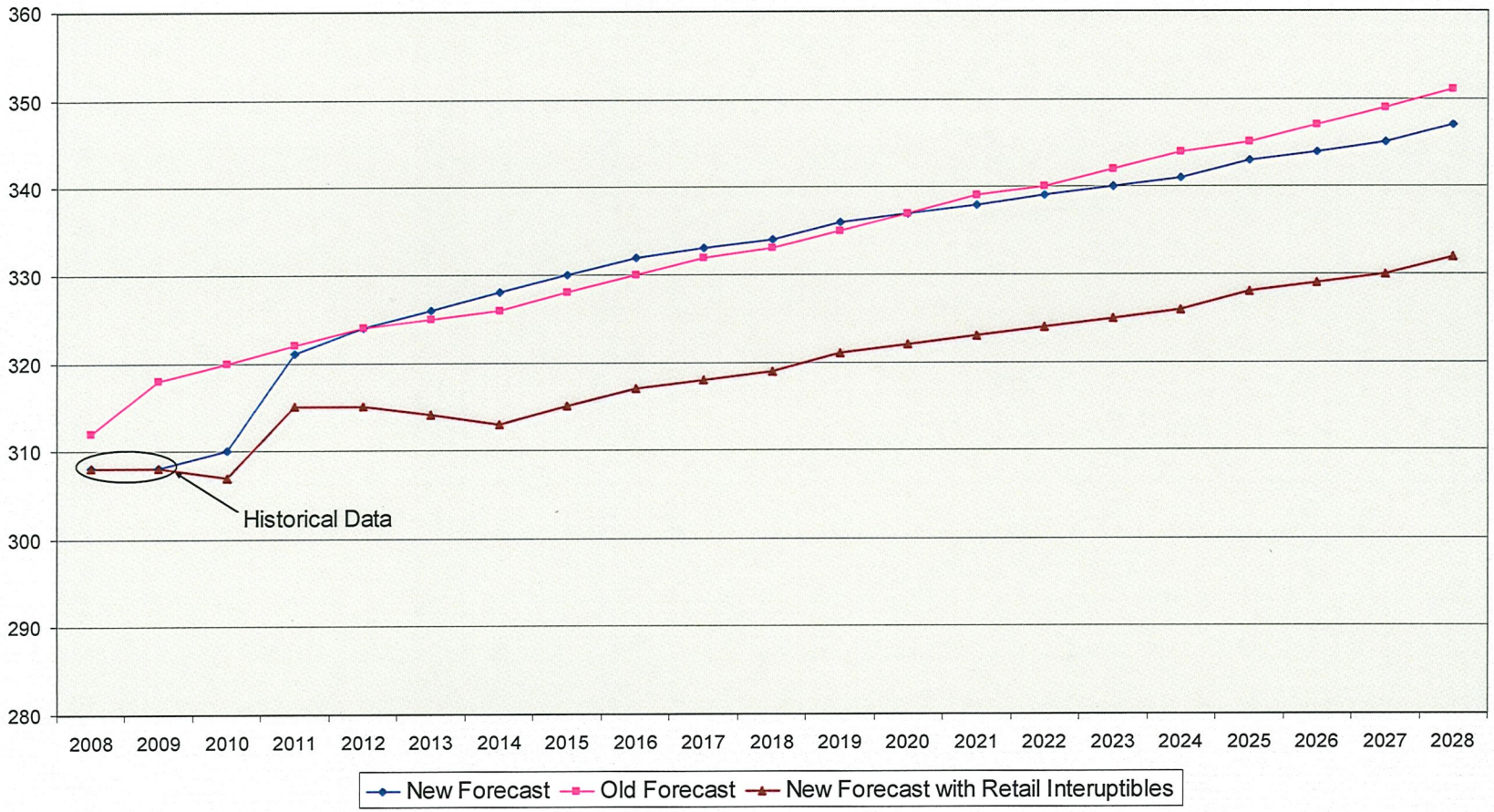
Role of SPP in Capacity Planning

- All major utilities in Kansas are members of the Southwest Power Pool (SPP)
  - One of SPP's duties is to ensure reliable operation of the electric grid within the region, including ensuring adequate power supplies are maintained by its members.
- SPP requires all member utilities submit annual 10 year resource and load forecasts showing how each member will meet its system obligations, including a required 12% reserve margin.

Load Forecasting

- Load forecasting methods vary from utility to utility.
  - Smaller utilities use simple linear approximations, while larger utilities use more complex time-series analysis methods.
- This, coupled with weather abnormalities and system changes makes utility to utility and year to year (meaning report to report) comparisons difficult.
- Additionally, information does not include 2010 data, and may be revised downward as the current economic recession continues.

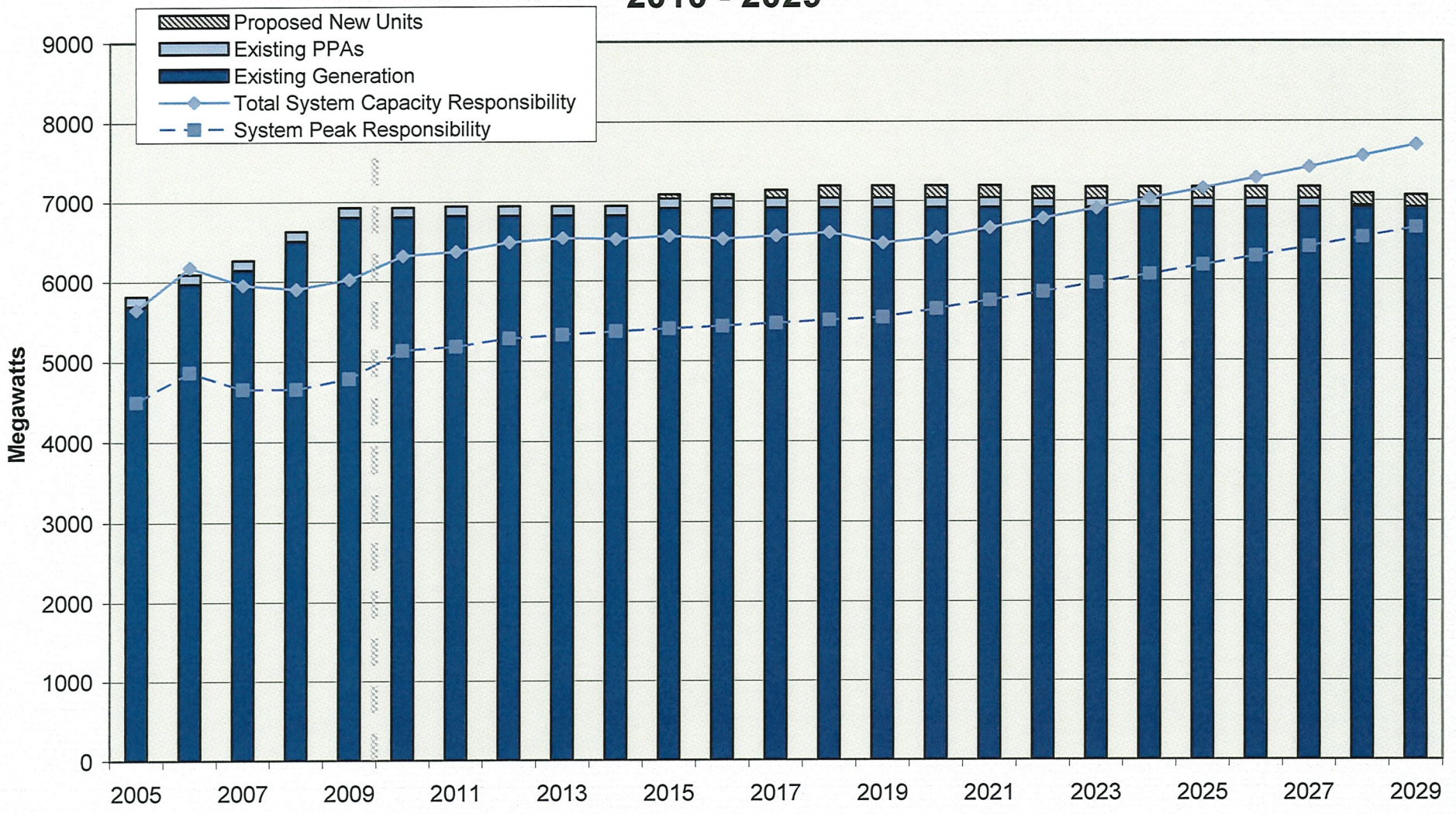
Changes in Midwest's Load Forecast



Summery of State Capacity Needs

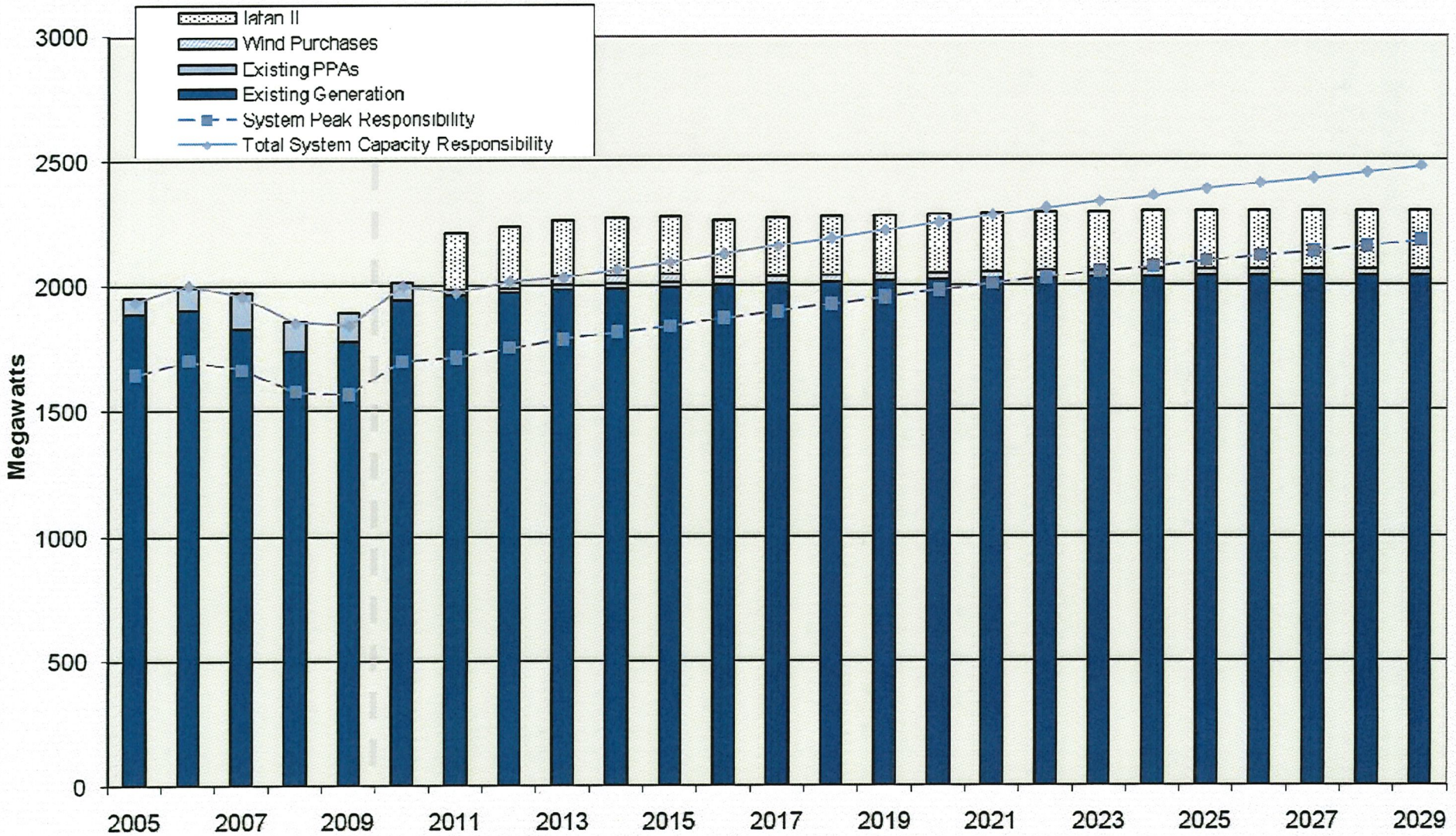
- Electrical utilities go through build cycles at roughly the same times.
- Currently, we are nearing the end of the build cycle of the last few years.
  - Kansas' major electric utilities (Westar and KCPL) have enough generation capacity to meet system needs until early to mid 2020s.
  - Other state electric utilities in general will seek new generation capacity in mid-2010s.
- Of course, these prognostications are conditioned on the current federal regulatory environment not changing.

Forecasted Demand and System Capacity, Westar Energy, Inc. 2010 - 2029



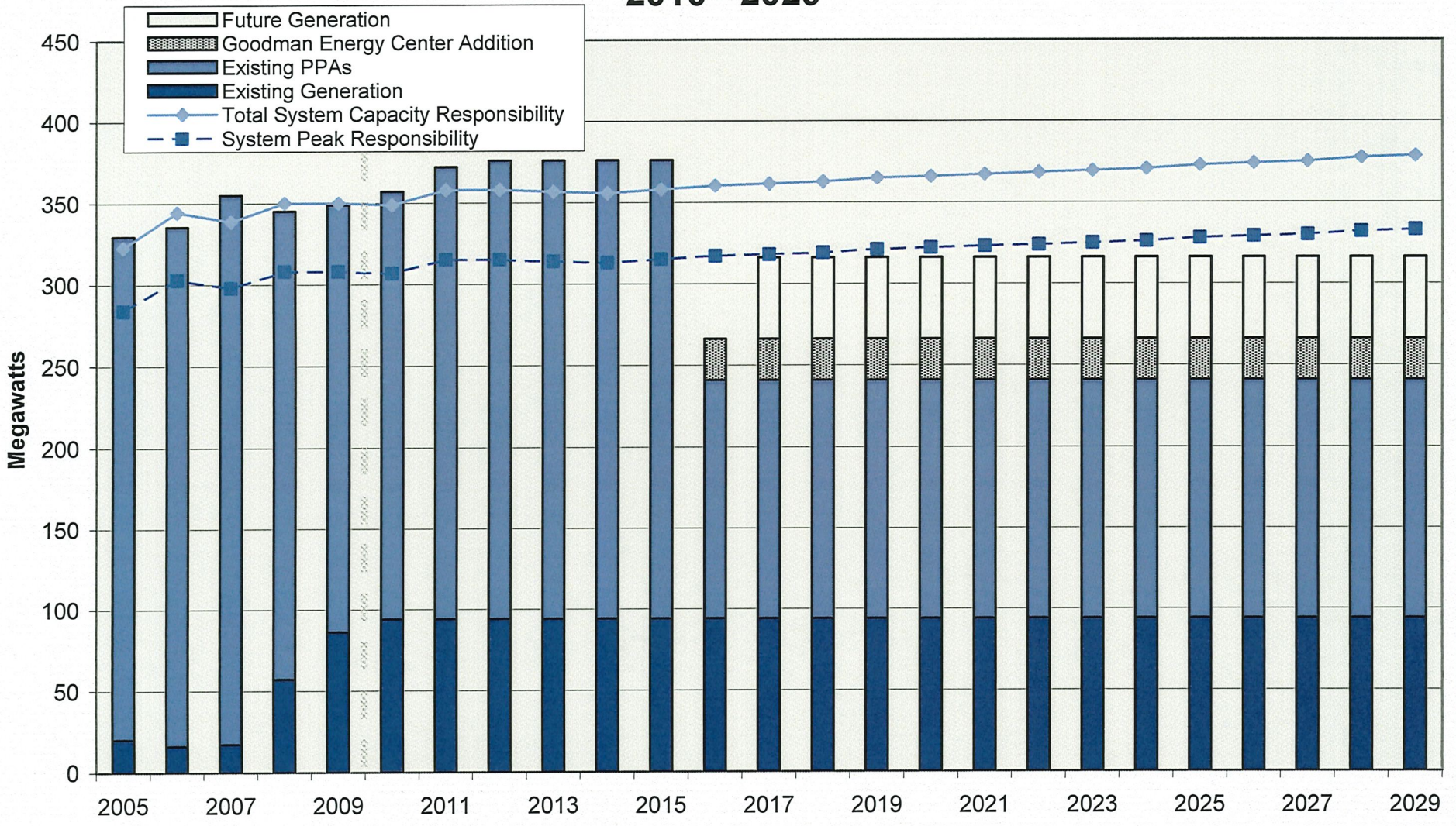
2010 Generation Survey
Updated September 1, 2010

Forecasted Demand and System Capacity, Kansas City Power & Light Company 2010 - 2029



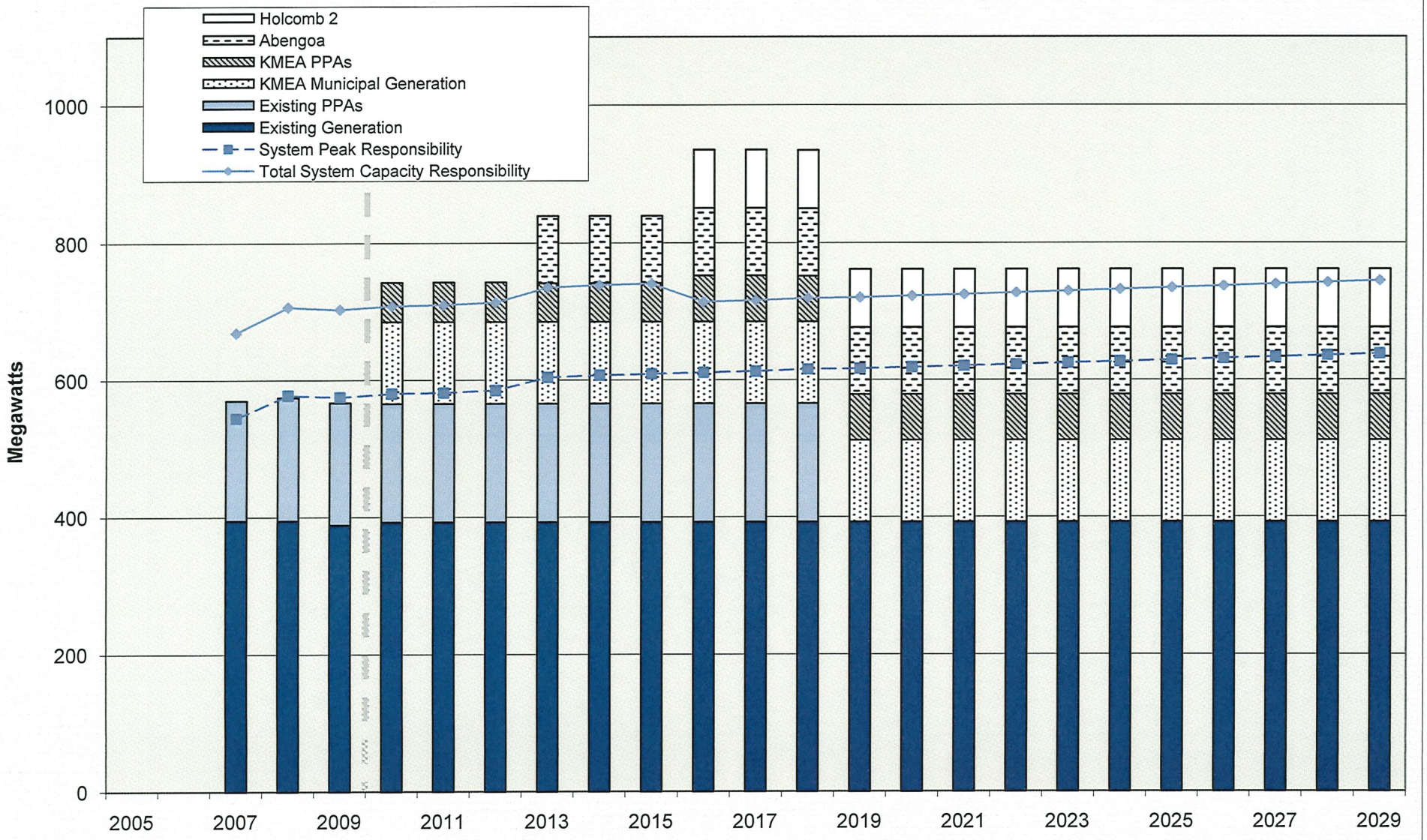
10 Generation Survey
dated September 1, 2010

Forecasted Demand and System Capacity, Midwest Energy, Inc. 2010 - 2029



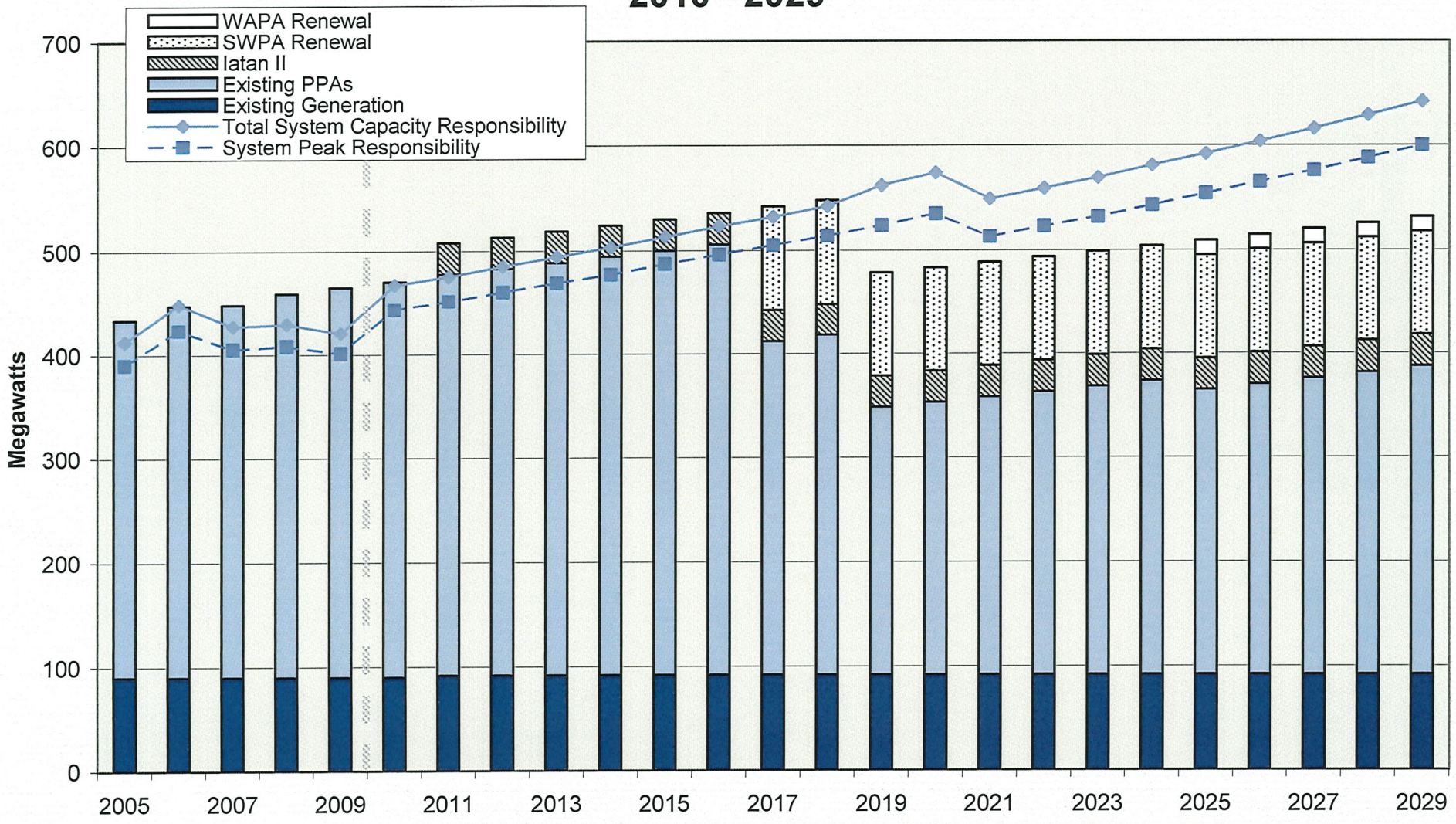
2010 Generation Survey
dated September 1, 2010

Forecasted Demand and System Capacity, Mid-Kansas Electric Company, LLC 2010 - 2029



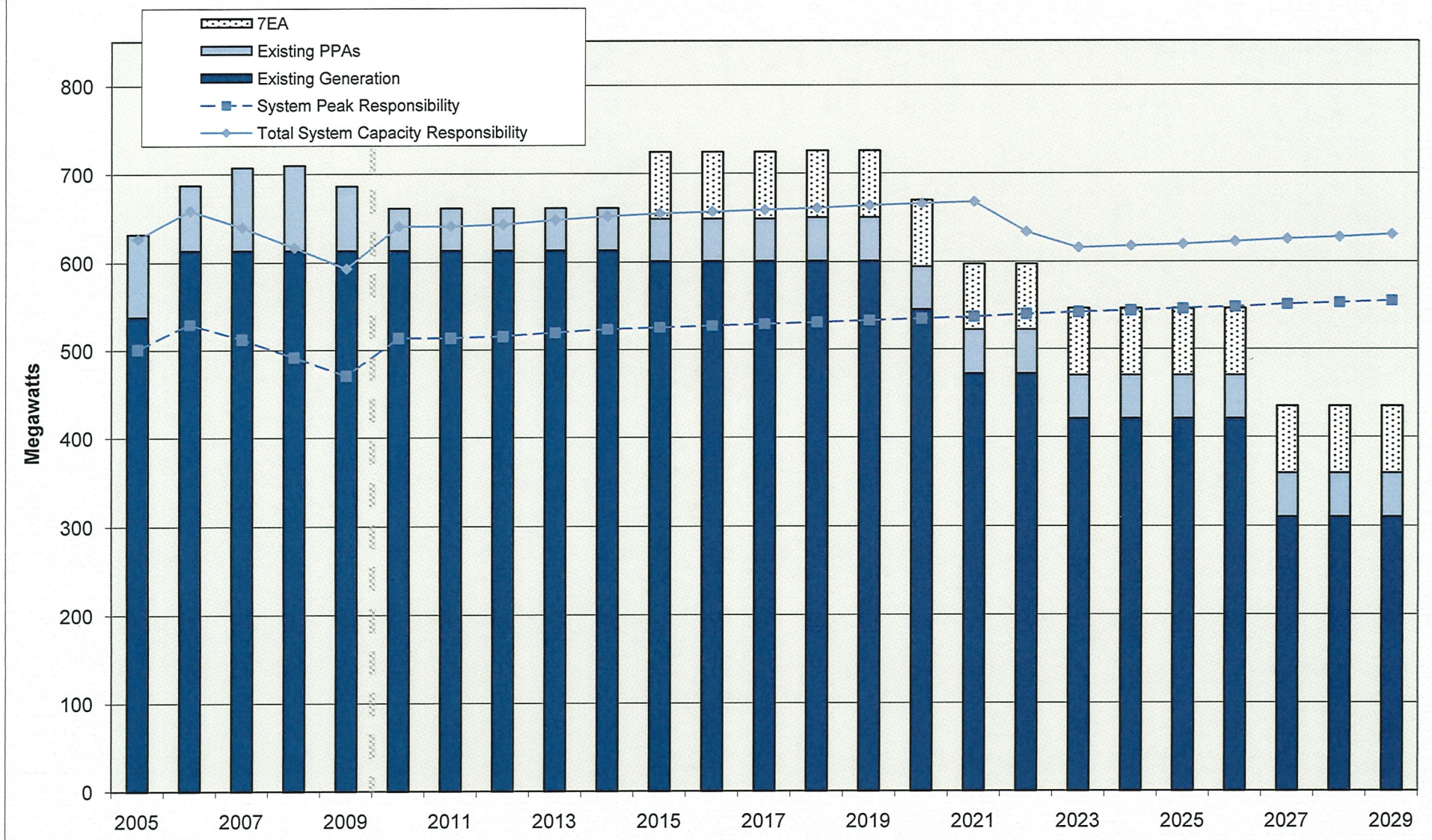
2010 Generation Survey
dated September 1, 2010

Forecasted Demand and System Capacity, Kansas Electrical Power Cooperatives, LLC 2010 - 2029



2010 Generation Survey
dated September 1, 2010

Forecasted Demand and System Capacity, Kansas City Board of Public Utilities 2010 - 2029

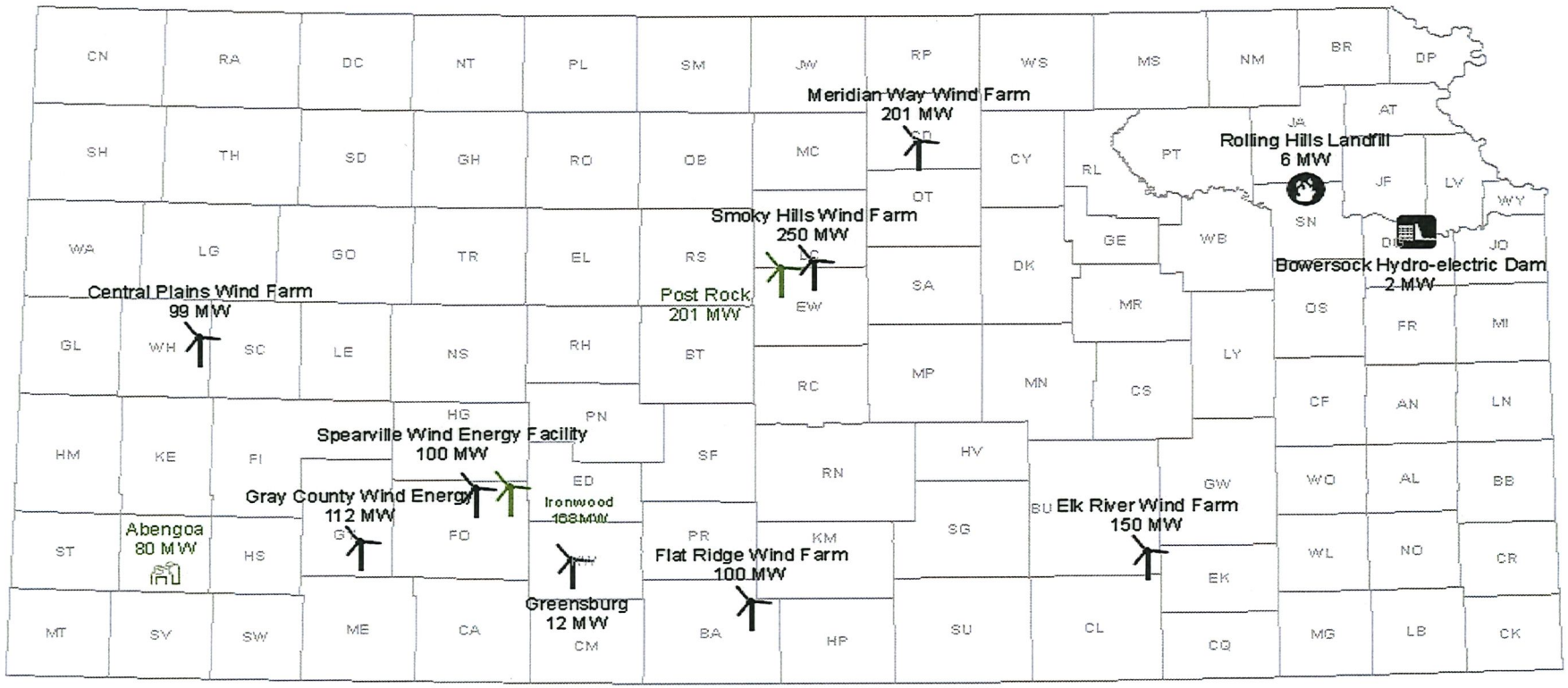


2010 Generation Survey
Updated September 1, 2010

Section 2:

Renewable Energy Planning

Commercial-Size Renewable Generators within Kansas



2010 Generation Survey
3 January 2011

KANSAS
CORPORATION COMMISSION
18 January 2011

Renewable Energy Standard

- K.S.A. 66-1258
  - 2011-2015: 10%
  - 2016-2019: 15%
  - 2020-onward: 20%
- Kansas RES differs from most RES's in that it is capacity based and not energy based.
- K.A.R. 82-16-2(b) allows for compliance to be met by G&T Cooperatives on behalf of its members.

RES Compliance

- All Utilities excluding Westar will meet the 2011 10% RES
  - Westar has an active docket before the Commission (11-WSEE-438-MIS), requesting guidance on the use of Renewable Energy Credits (RECs) through 2013.
- Combined state utilities will need an additional 100MW of renewable generation capacity to meet the 2015 15% RES
- An additional 550MW of renewable generation capacity will be needed to meet the 2020 20% RES

Where does this go from here?

- The KCC has received internal and external interest in this document, enough that we feel it warrants continual updating.
- Lessons Learned
  - Data collection in the spring and summer creates confusion as yearly peak has not yet occurred.
- In the future, Staff plans to begin data collection in September.
  - This will mean that the report will be available on the KCC website in early December and included in the KCC's annual report to the legislature.

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REVISOR OF STATUTES

JAMES A. WILSON III, ATTORNEY
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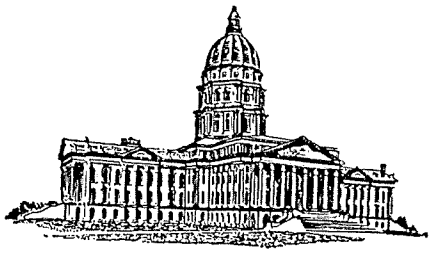
GORDON L. SELF, ATTORNEY
FIRST ASSISTANT REVISOR



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Editing and Publication
Legislative Information System

MEMORANDUM-

To: Chairman Holmes and members of the House Energy and Utilities Committee
From: Matt Sterling, Assistant Revisor of Statutes
Date: 1/19/11
Subject: Federal Regulation of the Interstate Distribution of Gas

There are two federal statutes that govern the interstate distribution of natural gas: The Natural Gas Act, 15 U.S.C. § 717 (NGA) and the Natural Gas and Hazardous Materials Pipeline Safety Act, 49 U.S.C. § 60101 (NGPSA). The NGA is a regulatory scheme concerning the interstate transportation and sale of natural gas for distribution to the public and the NGPSA regulates the safety of natural gas pipelines. In 1988, the U.S. Supreme Court found that Congress had occupied the field of matters relating to the transportation of natural gas in interstate commerce. *Schneiderwind v. ANR Pipeline Co.*, 485 U.S. 293, 300 (1988).

The NGA provides that the business of transporting and selling natural gas for the ultimate distribution to the public is affected with a public interest, and that federal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate commerce is necessary and in the public interest. 15 U.S.C. § 717(a). The NGA also expressly states that its provisions and the regulations promulgated thereunder apply to the transportation of natural gas in interstate commerce and to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, industrial, and other uses. 15 U.S.C. § 717(b).

The NGA requires that a natural gas company obtain a certificate of public convenience and necessity from the Federal Energy Regulatory Commission (FERC) in order to transport, sell, construct, extend, acquire or operate any natural gas facility. 15 U.S.C. §717f(c). In order to obtain a certificate, a natural gas company must submit an application to FERC to engage in these activities. 15 U.S.C. §717f(d). FERC uses an extensive administrative process to determine whether to issue a certificate of public convenience and necessity that analyzes all aspects of the proposed action including the location, construction, and environmental impacts of the proposed action. 18 C.F.R. Part 157.

Once this administrative process is completed, FERC will issue a certificate if the natural gas company is willing and able and to do the acts and perform the services proposed in the application, to conform to the provisions of the NGA, and to conform to FERC regulations. FERC must also find that the service, sale, operation, construction, extension, or acquisition is or will be required by the present or future public convenience and necessity to the extent authorized by the certificate. 15 U.S.C. § 717f(e). Once a certificate has been issued, the NGA grants the applicant the power of eminent domain to construct natural gas pipelines and facilities. 15 U.S.C. § 717f(h).

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In addition to the NGA, Congress also adopted the NGPSA. The NGPSA provides that the Secretary of Transportation shall prescribe the minimum safety standards for pipeline transportation and for pipeline facilities. The standards apply to owners and operators of pipeline facilities; may apply to the design, installation, inspection, emergency plans and procedures, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities; and shall include a requirement that all individuals who operate and maintain pipeline facilities shall be qualified to operate and maintain the pipeline facilities. 49 U.S.C. § 60102(a). The NGPSA further provides that a state is permitted to adopt additional or more stringent safety standards for intrastate pipeline facilities and intrastate pipeline transportation so long as such standards are compatible with the minimum standards prescribed by the act. However, a state agency is not permitted to adopt or continue in force any safety standards for interstate pipeline facilities, or interstate pipeline transportation. 49 U.S.C. § 60104(c).

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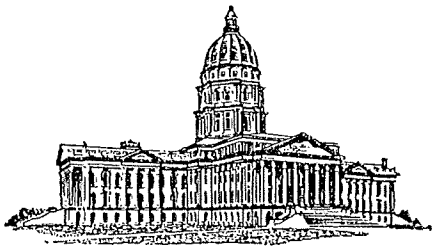

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Editing and Publication
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MEMORANDUM

To: Chairman Holmes and members of the House Energy and Utilities Committee
From: Matt Sterling, Assistant Revisor of Statutes
Date: 1/19/2011
Subject: Colorado Interstate Gas Company v. Thomas E. Wright, et al. (KCC)

In this case, Colorado Interstate Gas Company (CIG), an Operator of underground natural gas storage facility brought action seeking both declaratory and injunctive relief against the commissioners and officials with the Kansas Corporation Commission (KCC), alleging that the Kansas gas storage statutes and regulations were preempted by the Natural Gas Act (NGA) and the Pipeline Safety Act (PSA), violate the Supremacy Clause, and had no force or effect on CIG. The court held that the Kansas gas storage statutes and regulations were directed at controlling facilities of natural gas companies used in transportation of natural gas in interstate commerce, and thus were preempted by the NGA and PSA.

CIG is subject to federal jurisdiction and regulation by the Federal Energy Regulatory Commission (FERC) under the NGA, 15 U.S.C. 717-717w. On June 5, 1945, CIG was issued a Certificate of Public Convenience and Necessity under the NGA, finding that CIG was "... engaged in the transportation of natural gas in interstate commerce and ... is a 'natural-gas company' within the meaning of the Natural Gas Act". *Colorado Interstate Gas Company v. Thomas E. Wright, et al.*, 707 F.Supp.2d 1169, 1172 (D. Kan. 2010) (hereinafter CIG); *See* Docket No G-294, 4 F.P.C. 936, 1945 WL 1027 (F.P.C.).

At the time of the 2001 Yaggy incident, Mid-Continent (a wholly-owned subsidiary of ONEOK) provided interstate natural gas service pursuant to a certificate issued by FERC, exempting Mid-Continent from the requirements of the NGA under the Hinshaw exemption. Docket No. CP95-684-000, 72 F.E.R.C. 62274, 1995 WL 562483 (F.E.R.C.) (1995). The FERC Order issuing the certificate stated that Mid-Continent "meets the qualifications for a Hinshaw exemption under Sec. 1(c) of the NGA because all the gas received from interstate pipelines is received within the state of Kansas, consumed within the state of Kansas, and all transactions involving the gas are regulated by the KCC." *CIG* at 1173.

In May, 2001, the Kansas Legislature passed HB 2200, which is codified at K.S.A. 55-1,115 et seq. The bill vested jurisdiction for the safety of underground porosity storage of natural gas with the KCC, and vested jurisdiction for the safety of underground storage of natural gas in salt caverns with the KDHE. Both the KCC and the KDHE were directed to adopt regulations that would protect the public safety by regulating and ensuring the safety of underground storage in natural gas in Kansas. These regulations are codified at K.A.R. 82-3-1000 through 82-3-1012. The KCC implemented and commenced enforcement of these regulations and applied those regulations to all those storing gas in underground porosity fields, including CIG, which stores natural gas in its Boehm Gas Storage Facility

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in Morton County, Kansas. *Id.*

The Supremacy Clause of Article VI of the Constitution gives the U.S. Congress the authority to preempt or supersede state laws that interfere with, conflict with, or are contrary to federal law. In determining whether a statute is preempted, the court "is guided by the rule that '[t]he purpose of Congress is the ultimate touchstone in every pre-emption case.' "*CIG* at ; *Altria Group, Inc. v. Good*, 129 S.Ct. 538, 543 (2008) (quoting *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996)).

A state statute is preempted when "it regulates conduct in a field that Congress intended the Federal Government to occupy exclusively... or when it actually conflicts with federal law." *English v. General Electric Co.*, 496 U.S. 72, 79 (1990). Conflict preemption "occurs where it is impossible for a private party to comply with both state and federal requirements, or where state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *CIG* at 1175; *Ramsey Winch Inc. v. Henry*, 555 F.3d 1199, 1204 (10th Cir.2009).

In determining whether a statute is preempted, there is an assumption that unless Congress' intent is clear and manifest, a federal act does not supersede the states' historic police powers, particularly in a "field traditionally occupied by the states." *Altria* at 543. However, this " 'assumption' of non-preemption is not triggered when the State regulates in an area where there has been a history of significant federal presence." *CIG* at 1175; *United States v. Locke*, 529 U.S. 89, 108 (2000).

In determining whether a statute expressly or implicitly preempts state law, the court's "primary task in interpreting statutes [is] to determine congressional intent, using traditional tools of statutory construction." *United States v. Manning*, 526 F.3d 611, 614 (10th Cir.2008). In determining such congressional intent, the court examines the statute's plain language. "If the statute's plain language is ambiguous as to Congressional intent, [the court] look[s] to the legislative history and the underlying public policy of the statute."*CIG* at 1176; *Manning* at 614.

Federal regulations have the same "preemptive effect" as federal statutes if promulgated pursuant to the discretion and within the authority given by Congress. *Capital Cities Cable, Inc. v. Crisp*, 467 U.S. 691, 699 (1984). Federal regulations also are "indicative" of what powers Congress intended for an agency to exercise and of the parameters of the occupied regulatory field. *CIG* at 1176; *Schneidewind w. ANR Pipeline Co.*, 485 U.S. 293, 309 (1988).

The NGA has been recognized as a "comprehensive scheme of federal regulation of 'all wholesales of natural gas in interstate commerce.' " *Northern Natural Gas Co. v. State Corporation Comm'n of Kansas*, 372 U.S. 84, 91 (1963), quoting *Phillips Petroleum Co. v. Wisconsin*, 347 U.S. 672, 682 (1954). The NGA confers upon FERC exclusive jurisdiction over the transportation and sale of natural gas in interstate commerce for resale. *Northern* at 89. The court noted that even before the NGA, the states' regulatory reach did not extend to interstate transportation of natural gas. *CIG* at 1177; *Michigan Consol. Gas Co. v. Panhandle Eastern Pipe Line Co.*, 887 F.2d 1295, 1301 (6th Cir.1989), cert. denied, 494 U.S. 1079 (1990).

The court noted that, in the NGA, "Congress carefully divided up regulatory power over the natural gas industry" specifying "the intended reach of federal power." *Northwest Central Pipeline Corp. v. State Corp. Com'n of Kansas*, 489 U.S. 493, 510 (1989). The NGA gives exclusive FERC "jurisdiction over the transportation of natural gas in interstate commerce." *Northwest Central Pipeline*, 489 U.S. 493, 506 (1989). "This jurisdiction encompasses regulation of market entry through FERC's [*i.e.*, 'permitting authority'] authority to issue certificates of public convenience and necessity

authorizing pipelines to transport and sell gas in interstate commerce, ..., and of market exit through FERC's control over [*i.e.*, 'abandonment authority'] the abandonment of certificated interstate service." *Id.* Thus, "[t]he NGA confers upon FERC exclusive jurisdiction over the transportation and sale of natural gas in interstate commerce for resale," and "FERC exercises authority over the rates and facilities of natural gas companies used in this transportation and sale through a variety of powers." *Schneidewind* at 300-301. Furthermore, "FERC has authority to regulate the construction, extension, operation, and acquisition of natural gas facilities, *see id.* § 717f(c)(1)(A), and does so through its extensive and detailed regulations concerning applications for certificates. *See generally* 18 C.F.R. Part 157, Subpart A." *CIG* at 1177; *Northern Natural Gas Co. v. Iowa Utilities Bd.*, 377 F.3d 817, 821 (8th Cir.2004).

Since the storage of gas in interstate commerce falls within the scope of transportation covered by the NGA, *Schneidewind* at 295, the court stated that the central question was whether the Kansas gas storage statutes and regulations were a regulation of the " facilities of natural gas companies used in transportation and sale for resale of natural gas in interstate commerce." *Id.* at 305-306. The court stated that because "every state statute has some indirect effect on ... facilities of natural gas companies," it is important to consider whether the purpose of the state law "is to regulate matters Congress intended FERC to regulate" and whether there is the "imminent possibility of collision between" the state law and the NGA. *CIG* at 1178; *Schneidewind* at 308-310.

The court stated that Congress exercised its Constitutional authority by enacting the NGA and the NGPSA. The court stated that these statutes, together with the regulations promulgated pursuant to them, establish a comprehensive scheme of federal regulation that the Supreme Court has said confers upon FERC exclusive jurisdiction over the transportation and sale of natural gas in interstate commerce. The court found that there is nothing to indicate that Congress passed the NGPSA because it believed that FERC lacked jurisdiction to regulate the safety of interstate transportation or that Congress later intended to deny FERC of that safety jurisdiction. The court noted that explicit in the NGPSA is Congress's stated intent to preempt state safety standards[1]. In passing the NGPSA with the express preemption clause, Congress rejected the notion " 'that gas safety matters are primarily of local concern and subject to regulation by the States.'" *CIG* at 1183-184; *Northern Border Pipeline Co. v. Jackson County et al.*, 512 F.Supp. 1261, 1265 (quoting H.R.Rep. No. 1390 (1968).

The court further stated that, since the parties stipulated that the Kansas gas storage statutes directed the KCC to adopt regulations for protecting and ensuring public safety from underground storage of natural gas in Kansas, if CIG's storage field in Kansas met the definition of an interstate pipeline facility or interstate pipeline transportation, then the Kansas statute and regulations would be preempted by the NGPSA. *CIG* at 1184.

Under the NGPSA, "'pipeline facility' means a gas pipeline facility," 49 U.S.C. § 60101(a)(18), and " 'pipeline transportation' means transporting gas," 49 U.S.C. § 60101(a)(19). A "'gas pipeline facility' includes a pipeline, a right of way, a facility, a building, or equipment used in transporting gas or treating gas during its transportation." 49 U.S.C. § 60101(a)(3). An "'interstate gas pipeline facility' means a gas pipeline facility-(A) used to transport gas; and (B) subject to the jurisdiction of the Commission under the Natural Gas Act (15 U.S.C. 717 et seq.)." 49 U.S.C. § 60101(a)(6). Finally, "

1 49 U.S.C. § 60104(c) Preemption.- A State authority that has submitted a current certification under section 60105(a) of this title may adopt additional or more stringent safety standards for intrastate pipeline facilities and intrastate pipeline transportation only if those standards are compatible with the minimum standards prescribed under this chapter. A State authority may not adopt or continue in force safety standards for interstate pipeline facilities or interstate pipeline transportation.

'transporting gas' (A) means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas, interstate or foreign commerce...." 49 U.S.C. § 60101(a)(21). The court found that by the terms of the statute, CIG's storage field in Kansas meets the definition of an interstate gas pipeline facility, because it is subject to FERC jurisdiction and because it is used to store gas which is one of the statutorily defined ways of transporting gas. *CIG* at 1184.

The court found that the state regulation in this case was not compatible and would interfere with the federal regulatory scheme and would compromise the federal agencies' ability to achieve a comprehensive and uniform scheme. The court found that the KCC's exercise of its permitting authority ran afoul with the exclusive permitting authority of FERC. The court found that since "it is settled that if the NGA grants jurisdiction to the Commission over a matter, as it does here, its jurisdiction is exclusive" *Cascade Natural Gas Corp. v. F.E.R.C.*, 955 F.2d 1412, 1421 (10th Cir.1992), the State's enforcement of its safety standards through permits, fines and administrative actions presents the real possibility of a disagreement over the safety of the facilities and over what measures are appropriate and necessary to address any safety concerns. The court found that a "state-ordered" change in the operation of the interstate natural gas facility "would impinge on the federal" permitting authority. *See Schneidewind*, 485 U.S. at 310, and that the State's exercise of concurrent review and enforcement authority of different safety standards would likely burden, frustrate and delay the operation, any extensions, and/or eventual abandonment of the storage facility. *CIG* at 1188-1189; *See Nat'l Fuel Gas Supply Corp. v. Pub. Serv. Com'n*, 894 F.2d 571, 576-77 (1990); *Michigan Consolidated Gas Co. v. Panhandle Eastern Pipe Line Co.*, 887 F.2d 1295, 1301 (1989); *Northern Natural Gas Co. v. Munns*, 254 F.Supp.2d 1103, 1110-12 (2003).

The defendants argued that there is a "heavy presumption against preemption in the area of state safety regulation" and that the state has an overriding interest in protecting life and property through a comprehensive regulatory scheme addressing safe gas containment. The court rejected this argument stating that the presumption "is not triggered when the State regulates in an area where there has been a history of significant federal presence." *United States v. Locke*, 529 U.S. 89, 108 (2000). This situation is not an instance of a state's exercise of historic police powers with a mere indirect effect upon interstate natural gas transportation. Rather, the defendants here are actually exercising direct permitting and abandoning authority over interstate natural gas transportation. Prior to the NGA, the states were "powerless to regulate" in this area by reason of the Supreme Court decisions. *CIG* at 1189; *Cascade Natural Gas Corp. v. FERC*, 955 F.2d at 1416.

The court concluded that the Kansas Gas Storage Statutes, K.S.A. §§ 55-1,115 and 55-182(a), and the Kansas Gas Storage Regulations, §§ 82-3-105, 82-3-113, 82-3-114, 82-3-117, 82-3-120, and 82-3-1000 through 82-3-1012, violate the Supremacy Clause and are preempted by both the NGA and the NGPSA. The court also stated that the Kansas enabling statutes purported to give the KCC the authority for permitting and abandoning storage facilities of interstate natural gas transportation companies like CIG, and this statute and the regulations promulgated in the exercise of that authority are impliedly preempted by the NGA. In addition, the Kansas statute and regulations setting forth and enforcing safety standards on CIG's underground storage facility, which is an interstate natural gas pipeline facility, are expressly preempted by the PSA. Thus, the court found that the Kansas Gas Storage Statutes and the Kansas Gas Storage Regulations have no force or effect on the plaintiff's interstate natural gas pipeline, storage facilities and transportation at CIG's Boehm Underground Gas Storage Field. *CIG* at 1189-1190.

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MEMORANDUM

To: Chairman Holmes and members of the House Energy and Utilities Committee

From: Scott Wells, Assistant Revisor

Date: January 19, 2011

Subject: 2010 SB 553

Background

2010 Senate Bill 553 was introduced at the behest of Senator Teichman and approved for introduction on February 23, 2010, by the Senate committee on Ways and Means. The bill was referred to the Senate committee on Natural Resources on the following day and was the subject of hearings held by that committee on the 4th, 10th, and 11th, of March. After hearing testimony on the bill, no action was taken by the committee and an interim study of the issue, outcomes of recent court cases

At the time of its introduction, the provisions of SB 553 addressed a dispute in Pratt county between Northern Natural Gas Company, Inc. (Northern) and local property owners who receive royalties from natural gas wells that are located in an area within 6 miles of Northern's Cunningham storage field. The central issue to this dispute is determining who has title to the gas being produced at the wells in the impacted area. Northern asserts that the gas in question is actually storage gas which has migrated outside the certified storage boundary to adjoining property and therefore it still retains title to that gas. The property owners argued that they were the ones who had title to the gas being produced either because it was native gas or because even if the gas was originally storage gas belonging to Northern, it had migrated beyond adjoining property and was thus subject to the rule of capture. Wrapped up within this issue of title is a myriad of other issues that include public safety, private property right's of landowners in the affected area and lost tax revenues. SB 553 was introduced to address all these issues.

After hearing testimony from both proponents and opponents of SB 553, no action was taken by the committee. Subsequently, an interim study of this topic, including the outcomes of recent court cases and their potential impact on the provisions of the bill itself, was requested by Senate President Steve Morris. In that light, the Joint Committee on Natural

Gas Storage Fields and Facilities was charged with: Reviewing the potential impact on the state's ability to regulate natural gas storage fields (including safety of the fields) as a result fo the Federal District Court's decision in Colorado Interstate Gas Company v. Thomas E. Wright, et. al.; studying current law and the potential impact on state law as a result of the Kansas District Court's decision in Northern Natural Gas Company v. ONEOK Field Services Company, et. al.; studying the taxation of natural gas in underground storage facilities, the fields, storage gas, cushion gas and other minerals produced from storage fields; and reviewing the current law that does not impose a tax on oil produced when storage gas is withdrawn from a natural gas storage field.

Provisions of SB 553

A. Amendments to K.S.A. 55-1,115 and 55-1201. Section 1 of the bill amends K.S.A. 55-1,115 by preventing the Kansas Corporation Commission from renewing or amending underground porosity storage permits issued after July 1, 2002, if the permit holder is seeking a certificate of public convenience and necessity pursuant to 15.U.S.C. 717F in order to recover gas beyond the boundaries set forth in K.S.A. 55-1210[1]. This section is also amended to give the commission the power to assess a $1000 penalty per day that a natural gas public utility is found to be in violation of KCC rules and regulations due to leaking or migrating gas. The commission would also be given the power to suspend or cancel underground porosity storage permits in the case that such storage facility causes waste, pollution or a threat to public safety.

Section 2 amends K.S.A. 55-1201 to amend the definition of "natural gas public utility" to include those entities engaged in the business of underground storage of natural gas and also add three new definitions. Of the new definitions, the one most central to the issues surrounding the bill would be the new definition of "adjoining"[2]. In the bill, the term "adjoining" is defined as "the area which includes the surface and subsurface area within a ½ mile radius of a certified boundary of an underground storage field". This definition would apply to all of Article 12 of Chapter 55 of the Kansas Statutes, which covers underground storage of natural gas.

B. Amendments to 55-1210

1. Current law. Senate Bill 553 proposes extensive amendments to K.S.A. 55-1210, which is the provision of Kansas law that addresses what's commonly known as the rule or

1 The two citations here are incorrectly listed in the bill as 15 U.S.C. 715f and K.S.A. 12-1210.
2 The other two definitions are for "conservation division" and "state emergency management".

law of "capture". Very generally speaking, not taking into consideration the amendments proposed in the bill, this section states that one who injects (including heirs or assigns) natural gas into the ground retains possession of that gas. Subsection (c) of this section goes on to specifically address gas which has migrated onto "adjoining property" and delineates the rights of both the injector and the landowner. In that case, the injector (heirs or assigns) retains title to the gas given it can be proven by a preponderance of the evidence that the gas was originally injected in underground storage. The injector also has the right to conduct tests on existing wells on adjoining property, at their own expense, that may be reasonable in order to determine the ownership of any gas being produced. The landowner would then be entitled to compensation for use of or damage to the surface or substratum and to recover costs and expenses, including attorney's fees, if litigation was necessary to enforce rights under subsection (c) and the injector did not prevail.

2. Proposed Amendments. Subsection (a) of this section would be amended to make clear that the injector retains title to the injected gas except as limited by the provisions of the section. Because of the addition of the definition of "adjoining" in K.S.A. 55-1201, subsection (c) would now only apply to gas which has migrated to property within an area of ½ mile from the certified boundary of a storage field. Under the proposed amendments to the bill, an injector would now has to show "clear and convincing" evidence that such gas was originally injected into underground storage as opposed to the current, less stringent standard of a preponderance of the evidence.

Landowners outside the certified storage boundary would be entitled collect compensation under a number of new situations, including trespass, conversion and slander of title. Also, litigation would no longer be necessary to award reasonable attorney fees and expenses could be awarded under a number of new situations, including determining the extent of migrated and migrating natural gas, negotiating of lease agreements for storage of natural gas, proceedings in front of any state or federal agency having oversight of underground storage fields or the transportation of natural gas, and any other litigation necessary to enforce any rights under that subsection. Language goes on to state that subsection (c) shall apply retroactively to all such litigation and such state and federal proceedings. Language which awarded attorney fees to enforce rights under subsection (c) where litigation was necessary and the injector did not prevail has been removed.

New paragraphs 4, 5 to subsection (c) outline some instances where the injector does lose title to injected gas which has migrated. The first instance would be if such gas has

migrated as a result of pressure in a storage field in excess of 75% of the fracture gradient of such field or reservoir. Secondly, the injector would lose title if the injector is aware of or has reason to know that natural gas is migrating or has migrated and fails to notify certain listed parties within 30 days of the date the injector knows or has reason to know of the migration. New paragraph 6 would make it clear that the "rule of capture" applies to any gas that has migrated or is migrating beyond "adjacent" property as described in subsection (c)[3].

New paragraph 7 requires the injector to compensate any taxing entity which suffers a loss of ad valorem taxes due to the injector's gas migrating into property outside the certified storage area if such migration or condemnation of property affected by the migration results in a cessation of production from an existing oil or gas well which was subject to ad valorem taxation at the time of cessation. The amount of compensation is based on the fair market value of the proved producing and proved non-producing gas or oil which could have been produced from the well during its commercial life but for the cessation. A claim for recovery under this section is to be made in the county where the well is located and the amount of recovery to be determined by the county appraiser. The county appraiser is to assume that the fair market value was or could have been produced in the year of cessation or condemnation, whichever is latest. The injector is then required to file a statement of assessment with the county appraiser on or before April 1 of the year following cessation or condemnation. The mill levy rate for the affected taxing entities in effect for the year of cessation or condemnation is to be applied to determine the tax compensation. If the injector fails to pay the tax within 30 days, the tax will become delinquent and be a lien on the injector's real and personal property located in the county. Delinquent taxes will accrue interest and penalties in accordance with K.S.A. 79-2004.

Finally, subsection (d) is amended to state that landowners with title or an interest in an underground storage field, reservoir or facility or an area containing migrated or migrating gas has the right to compel compliance with this section by injunction or other appropriate relief by application to a court of competent jurisdiction. Landowners bringing any such actions are then entitled to recover costs described in subsection (c)(3).

As it is currently written, SB 553 would become effective upon publication in the Kansas Register.

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3 The term "adjacent" as used here appears to actually mean "adjoining" and should be considered a technical amendment that would be necessary if the bill were reintroduced in the future.

Northern Natural Gas
A MIDAMERICAN ENERGY HOLDINGS COMPANY

To: Members of the House Energy and Utilities Committee

From: Michael Loeffler, Senior Director of External Affairs, Northern Natural Gas

Date: January 19, 2011

Re: 2010 Special Interim Committee on Natural Gas Storage Issues – Update

On Oct. 28, 2010, the Kansas Legislature's Special Interim Committee on Natural Gas Storage Issues conducted a one-day meeting – the meeting that was the subject of today's briefing. The interim study committee heard information on natural gas storage issues, including the migration of natural gas from Northern's Cunningham underground storage facility, and that the storage gas, stored by Northern for its customers, was being produced and sold by third-party producers.

The interim committee heard about Northern's ongoing efforts at the Federal Energy Regulatory Commission (FERC) and in the courts to halt this third-party production. Since the interim committee hearing, the federal district court in Wichita, Kan., on Dec. 22, 2010, granted Northern's motion for a preliminary injunction and ordered the three producers by Feb. 21, 2011, to shut in 25 wells they operate within the certificated boundaries of the Cunningham storage field.

Specifically, the court found:

- The evidence clearly showed these producers are producing migrated storage gas. Further, the court agreed with the FERC's earlier ruling that the evidence overwhelmingly showed that storage gas migrated because of third-party production of gas and water that resulted in a pressure differential between the storage field and the third-party producers' wells.

- After the June 2010 order from FERC, the producers were clearly on notice that their wells were producing primarily, if not entirely, Northern's storage gas, and that their production of significant amounts of water was causing the migration of storage gas from the Cunningham field. The third-party producers did not appeal the FERC order.

- These third-party producers' continuing production of the migrated gas after the FERC's order "can now be viewed as an intentional and substantial interference with Northern's use of the Cunningham Storage Field."

- The third-party producers failed to prove that they are not producing storage gas and causing the storage gas to migrate. The court also noted that the producers' own expert witness admitted that the third-party producers were producing Northern's storage gas.

- Notably, the "defendants' production of substantial amounts of storage gas and water will likely continue to draw storage gas beyond the underground fault and out of the storage field as long as such production continues, threatening the continued viability of the storage facility."

A copy of the federal court order can be accessed at:
http://www.northernnaturalgas.com/Document%20Postings/fedco_011711.pdf
located on Northern's website or contact Mike Loeffler at 402-680-6464 or by e-mail at mike.loeffler@nngco.com.

HOUSE ENERGY AND UTILITIES
DATE: 1/20/2011
ATTACHMENT 7

Plan to export natural gas stirs up critics

Kansas City Star, The (MO) - Tuesday, January 18, 2011 Author: STEVE EVERLY, The Kansas City Star U.S. natural-gas supplies have surged dramatically, giving the country a chance to move toward greater energy independence, gas proponents say. But plans are brewing to start selling some of that gas overseas. Critics say that move would most likely boost gas prices, hurting homeowners who rely on the fuel for heating. Higher prices also would be felt by the many industries that rely heavily on gas, and by utilities that use gas to generate electricity.

Other critics say it would be a shame to squander the chance to decrease reliance on foreign energy .

The U.S. natural-gas outlook has shifted radically in just five years. In 2006, U.S. gas fields were in decline, and the Energy Information Administration expected the U.S. to have to buy a lot of gas from other countries.

But now, with huge amounts of natural gas potentially available in shale formations, the U.S. could have enough to meet its current demand for more than 100 years. The energy agency raised its reserve estimate for shale gas a year ago and then recently doubled it.

"It's a huge reserve," said Phyllis Martin, an energy analyst for the federal agency. By one estimate, U.S. gas reserves now are equal in energy value to Saudi Arabia's oil reserves.

The ample gas supplies also have pushed prices down. U.S. consumers pay half the going wholesale rate in many other developed countries. But that has made producers consider exporting natural gas to get the higher prices. A Houston company, Chenier Energy Partners, recently agreed to provide natural gas to Gas Natural Fenosa, the largest gas and electric company in Spain and Latin America. The exports could begin in 2015.

"We believe current market fundamentals have created an opportunity for the U.S. to offer natural gas to global markets at competitive prices," Charif Souki, the company's chairman and chief executive, said in a statement.

Natural gas is harder to ship overseas than oil because it has to be supercooled to turn it into a liquid. That's reversed at its destination plant, and then the gas can be put into a country's pipeline system.

Eight U.S. liquefied-natural-gas plants have been underused, and Chenier plans to refit one of them in Louisiana to use for its exports.

That plan faces some backlash.

"We are awash in natural gas, and the reserves, driven by the shale plays, continue to expand," said T. Boone Pickens, the Texas energy developer who champions a plan that would use more natural gas for transportation. "We are going to go down as the dumbest generation ever if we don't put those reserves to work domestically and use it as a clean, abundant domestic alternative to OPEC oil."

English

The natural-gas supply picture changed with the potential of shale gas, which is being tapped with horizontal drilling methods and the use of water and chemicals to recover gas in huge underground formations.

The increased production has been a mixed blessing for the gas industry. Wholesale gas prices are also now below crude oil prices for equivalent amounts of energy . Selling gas overseas would tighten the surplus supplies and boost prices. As natural gas becomes more of a global market,

prices being paid overseas will affect U.S. prices, said James Williams, an analyst for WTRG Economics.

"Exports would help set a floor for prices," he said.

The Industrial Energy Consumers of America, with members such as Goodyear and other large companies, has come out against exports.

The American Public Gas Association, which represents municipal-owned natural-gas utilities, is concerned.

"We need to ensure that there are adequate levels of supply to meet our growing demand while keeping prices at a long-term affordable level," said Dave Schryver, executive vice president of the group.

Regardless of exports, U.S. demand for gas seems certain to rise. Black & Veatch, an engineering firm based in Overland Park, predicts that U.S. gas use to generate electricity could almost double in the next 25 years. But that increase, to 40 percent of generation, would replace coal-fired plants. That could help reduce pollution but wouldn't necessarily curb oil imports. To do that, the country would have to make a big shift and use natural gas for transportation. The "Pickens Plan" calls for using compressed natural gas in truck fleets and eventually in cars as a bridge to other alternative fuels. Convert every 18-wheel truck to natural gas, he says, and you could cut crude-oil imports by a third. But building or retrofitting vehicles to run on liquid natural gas would be expensive. There are 12 million natural-gas-powered vehicles in the world. But out of 250 million vehicles in the U.S., only 110,000 are natural-gas-powered. Equipment to dispense natural gas to vehicles is costly and rare right now. The Kansas City area has one public natural-gas dispenser in Overland Park. But there are signs of more interest in the fuel.

The Kansas City, Kan., School District will soon start using natural gas in 47 buses, and AT&T uses it in some vans. Kansas City is a leader among municipalities in natural-gas vehicles, especially in its trucks.

Converting fleets such as garbage trucks and city bus systems would be the next logical step, experts say.

"It's going to take some time," said Kelly Gilbert, who is Clean Cities coordinator for the Metropolitan Energy Center in Kansas City. "There's definitely interest bubbling." David Friedman, program director for the Union of Concerned Scientists, is among environmentalists who have mixed feelings about natural gas, in part because retrieving the shale gas will require lots of water and leave behind tons of shattered rock. Perhaps the best plan, he says, would be to use more natural gas to replace coal in power generation — and use that to charge electric cars. He also understands why there's opposition to natural-gas exports, since using the gas here could reduce dependence on imports and increase national security. "One of the reasons our energy policy is all over the place is we think too much about how to make profits tomorrow and not about the long term," Friedman said.