1500 SW Arrowhead Road
Topeka, KS 66604-4027

Kansas
Corporation Commission

Phone: 785-271-3100
Fax: 785-271-3354
http://kcc.ks.gov/

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

February 1, 2013

Ms. Diane Minear, Secretary
Kansas Senate
Room 325-E Statehouse
Topeka, Kansas 66612

Dear Ms. Minear:

The attached report is provided pursuant to the requirements of K.S.A. 66-1282. Legislative action during the 2011 session enacted Senate Bill 224, which requires the Commission to provide a biennial report to the Legislature regarding Electric Supply and Demand. The report includes a current and 20 year forecasted capacity and system peak for utilities operating in Kansas; and, each Renewable Energy Standard (RES) affected utility's forecasted renewable capacity responsibility and nameplate renewable capacity.

Please feel free to contact Patti Petersen-Klein at (785)271-3166 if you need additional information or have questions. The report can also be viewed on our web site at: http://kcc.ks.gov.

Sincerely,

Patti Petersen-Klein
Executive Director

Jeff McClanahan, Director
Utilities Division

Michael Wegner, Chief
Energy Operations

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Topeka, KS 66604-4027

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February 1, 2013

Ms. Susan Kannarr, Chief Clerk
Kansas House of Representatives
Room 272-W, Statehouse
Topeka, Kansas 66612

Dear Ms. Kannarr:

The attached report is provided pursuant to the requirements of K.S.A. 66-1282. Legislative action during the 2011 session enacted Senate Bill 224, which requires the Commission to provide a biennial report to the Legislature regarding Electric Supply and Demand. The report includes a current and 20 year forecasted capacity and system peak for utilities operating in Kansas; and, each Renewable Energy Standard (RES) affected utility's forecasted renewable capacity responsibility and nameplate renewable capacity.

Please feel free to contact Patti Petersen-Klein at (785)271-3166 if you need additional information or have questions. The report can also be viewed on our web site at: http://kcc.ks.gov.

Sincerely,

Patti Petersen-Klein
Executive Director

Jeff McClanahan, Director
Utilities Division

Michael Wegner, Chief
Energy Operations

KANSAS CORPORATION COMMISSION

Biennial Report on Electric Supply and Demand

2013

Introduction

K.S.A. 2011 Supp. 66-1282 became effective July 1, 2011, and requires the Kansas Corporation Commission (KCC or Commission) to compile a report regarding electric supply and demand for all electric utilities in Kansas. This is the first report, which was to be filed on or before February 1, 2013. The next report will be submitted on or before February 1, 2015. The report is to be submitted to the House Energy and Utilities Committee and the Senate Utilities Committee.

The statute requires the report to include, but not be limited to: (1) Generation capacity needs and (2) system peak capacity needs and renewable generation needs associated with the 2009 Kansas renewable energy standards.

To ensure that the KCC Staff has the information it needs to compile these reports, the KCC issued an Order on October 25, 2012, requiring Westar Energy, Kansas City Power & Light Company, Empire District Electric Company, Kansas Power Pool, Kansas Municipal Energy Agency, Kansas Electric Power Cooperatives, Midwest Energy, Sunflower Electric Power Corporation, Mid-Kansas Electric Company, and Kansas City Board of Public Utilities to file annually, the data required to compile this report with the Commission under Docket 13-GIME-256-CPL.

Section 1: Generation Capacity Needs and 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, Mississippi, and New Mexico. SPP additionally serves as the Regional Entity of the North American Electric Reliability Corporation (NERC), and 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 and reserves are maintained by its members.

In furtherance of this mandate, SPP publishes a series of regulations—called the SPP Criteria—governing the system operations of its members. SPP additionally requires its members to annually submit 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]

Table 1 (page three) shows the current and 20 year forecasted capacity and system peak responsibility (system peak load plus SPP's 12% required reserve 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, two of the State's investor-owned utilities Kansas City Power & Light (KCP&L) and Empire District Electric Company (Empire), are multi-jurisdictional; therefore, the data shown in this report represents only their Kansas loads (peak demand) and their system capacity has been scaled to represent the capacity allocated to serving their Kansas load.

[1] Specifically, all utilities listed in this report are members of SPP. The Kansas Power Pool applied for and became a member of SPP since the last filing of this report in 2011.

[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}.

[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 one exception. Westar Energy provided internal load forecasts through 2022. Subsequent years' peak demands were calculated by Staff assuming a 1.0% growth rate per year. Likewise, because the McPherson Board of Public Utilities is a wholesale customer of Westar, numbers for McPherson are included the Westar tables.

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 (Empire)	Kansas City Power & Light (KCP&L)	Westar Energy (Westar)	Kansas Electric Power Coop. (KEPCo)	Midwest Energy (Midwest)	Sunflower Electric Power Corporation (Sunflower)	Kansas City Board of Public Utilities (KC-BPU)	Kansas Municipal Energy Agency (KMEA)	Kansas Power Pool (KPP)
2011 Historical	Total System Capacity (MW)	81	2,084	6,535	586	372	1,315	609	241	545
	System Planning Responsibility (MW)	77	1,884	6,244	514	392	1,270	560	239	434
	System Capacity Surplus (Deficit)	4	240	291	72	(20)	45	49	2	111
2016 Projected	Total System Capacity (MW)	80	2,138	6,403	684	396	1,445	719	357	381
	System Planning Responsibility (MW)	79	1,736	6,227	590	388	1,372	568	324	308
	System Capacity Surplus (Deficit)	1	402	176	94	8	73	151	33	73
2021 Projected	Total System Capacity (MW)	80	2,138	6,800	677	416	1,276	628	289	381
	System Planning Responsibility (MW)	83	1,799	6,566	589	413	1,492	574	358	338
	System Capacity Surplus (Deficit)	(3)	339	234	88	3	(216)	54	(69)	43
2026 Projected	Total System Capacity (MW)	79	2,112	6,276	699	416	1,271	467	223	322
	System Planning Responsibility (MW)	86	1,887	6,903	618	443	1,576	581	395	372
	System Capacity Surplus (Deficit)	(7)	225	(627)	81	(27)	(305)	(114)	(172)	(50)
2030 Projected	Total System Capacity (MW)	79	2,112	6,276	718	416	1,270	467	223	322
	System Planning Responsibility (MW)	90	1,971	7,187	644	471	1,628	587	427	403
	System Capacity Surplus (Deficit)	(11)	141	(911)	74	(55)	(358)	(120)	(204)	(81)

Section 2: Renewable Energy Planning

In May 2009, the Kansas Legislature passed Senate Substitute bill for H. 2369, in part creating the Renewable Energy Standard Act (RESA) which requires all non-municipal utilities in Kansas to satisfy a portion of the utility's generation needs through renewable generation sources. In particular, the RESA—incorporated into statue as K.S.A. 66-1256 through 66-1262—requires all 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 average prior three-year annual peak retail sales for the years 2011 through 2015, 15% for the years 2016 through 2019, and 20% for all years after 2020.

K.S.A. 2011 Supp. 66-1258 also stipulated that the KCC would establish rules and regulations governing specifics of RESA 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 decision of how the State's Renewable Energy Standard (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 RESA may be met by the G&T Cooperative on behalf of its members, rather than each individual distribution cooperative.

Table 2 (page five) shows each RESA 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 solely wholesale from Westar Energy (Nemaha-Marshall, Doniphan, and Kaw Valley electric cooperatives). The renewable energy requirements for these three entities are included within the overall annual requirements for Westar Energy.

[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 most 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 through K.A.R. 82-16-1(e) has interpreted this statutory definition as implying nameplate capacity.

[2] G&T Cooperatives operating in Kansas are Kansas Electric Power Cooperatives (KEPCo) and Sunflower Electric Power Corporation (Sunflower), though Sunflower's co-entity Mid-Kansas Electric Corporation (Mid-Kansas) 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 (Empire)	Kansas City Power & Light (KCP&L)	Westar Energy (Westar)	Kansas Electric Power Coop. (KEPCo)	Midwest Energy (Midwest)	Sunflower Electric Power Corporation (Sunflower)	Kansas City Board of Public Utilities (KC-BPU)[1]	Kansas Power Pool (KPP)[1]
2011 Historical	System Renewable Capacity (MW)	248	210	495	114	54	143	73	41
	Renewable Capacity Responsibility—10% (MW)	7	164	495	42	30	68	49	38
	Renewable Capacity Surplus (Deficit)	241	46	0	72	24	75	25	3
2016 Projected	System Renewable Capacity (MW)	213	282	848	114	76	257	84	36
	Renewable Capacity Responsibility—15% (MW)	10	235	741	72	53	119	75	48
	Renewable Capacity Surplus (Deficit)	203	47	107	42	23	138	9	(12)
2020 Projected	System Renewable Capacity (MW)	149	376	1,178	114	76	201	111	36
	Renewable Capacity Responsibility—20% (MW)	13	321	1,027	106	75	164	101	56
	Renewable Capacity Surplus (Deficit)	136	55	151	8	1	37	10	(20)
2025 Projected	System Renewable Capacity (MW)	79	367	1,178	114	76	196	111	36
	Renewable Capacity Responsibility—20% (MW)	14	333	1,078	105	81	173	102	62
	Renewable Capacity Surplus (Deficit)	65	34	100	9	(5)	23	9	(26)
2030 Projected	System Renewable Capacity (MW)	(187)	367	1,178	114	76	114	111	36
	Renewable Capacity Responsibility—20% (MW)	15	350	1,133	110	86	182	104	68
	Renewable Capacity Surplus (Deficit)	(202)[2]	18	45	4	(10)	(68)	7	(32)

[1] KC-BPU is a municipal utility not subject to K.S.A. 66-1258. However, KC-BPU has publicly stated that it will voluntarily comply with the Renewable Energy Standard (RES) contained within the statue. KPP (an organization of municipal utilities) included renewable energy information in its compliance filing with the Commission.

[2] Empire's deficiency of 202 MW is a result of PPA's that expire with Kansas wind farms in 2025 and 2028, coupled with a need to Missouri's RPS.

Appendix A: Utility System Capacities and Load Responsibilities

Appendix A-1—Empire District Electric Company (Empire)

The Empire District Electric Company (Empire) is a regulated 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 9,928 retail customers in Cherokee county (located in the extreme southeastern corner of the state).

		System Peak[1]				System Capacity[2]				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility		Accredited Generation	Net Contracts	Total System Capacity		
Historical	2008	**62**	8	**70**		69	7	**76**		**6**
	2009	**74**	10	**84**		69	9	**78**		**(6)**
	2010	**69**	9	**78**		72	6	**78**		**0**
	2011	**68**	9	**77**		77	4	**81**		**4**
	2012	**64**	9	**73**		77	4	**81**		**8**
Projected	2013	**69**	9	**78**		77	4	**81**		**3**
	2014	**69**	9	**78**		77	4	**81**		**3**
	2015	**70**	9	**79**		76	4	**80**		**1**
	2016	**70**	9	**79**		76	4	**80**		**1**
	2017	**70**	10	**80**		76	4	**80**		**0**
	2018	**71**	10	**81**		76	4	**80**		**(1)**
	2019	**72**	10	**82**		76	4	**80**		**(2)**
	2020	**72**	10	**82**		76	4	**80**		**(2)**
	2021	**73**	10	**83**		76	4	**80**		**(3)**
	2022	**73**	10	**83**		76	4	**80**		**(3)**
	2023	**74**	10	**84**		76	4	**80**		**(4)**
	2024	**75**	10	**85**		76	4	**80**		**(5)**
	2025	**75**	10	**85**		76	4	**80**		**(5)**
	2026	**76**	10	**86**		76	3	**79**		**(7)**
	2027	**76**	10	**86**		76	3	**79**		**(7)**
	2028	**77**	10	**87**		76	3	**79**		**(8)**
	2029	**78**	11	**89**		76	3	**79**		**(10)**
	2030	**79**	11	**90**		76	3	**79**		**(11)**
	2031	**79**	11	**90**		76	3	**79**		**(11)**

[1] Empire's system peak is scaled in this table to reflect the Kansas portion of Empire's service territory (demand created by customers).
[2] Empire's system capacity is scaled in this table to reflect the Kansas portion of Empire's service territory; approximately 5.5% of Empire's overall system peak.

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

The Kansas City Power and Light Company (KCP&L), a wholly owned subsidiary of Great Plains Energy Inc., is a regulated investor-owned utility that operates in northeast Kansas and western Missouri. System-wide KCP&L is responsible for serving approximately 520,275 retail customers, approximately 244,360 of which are located in Kansas.

		System Peak[1]				System Capacity[2]				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility[3]		Accredited Generation	Net Contracts	Total System Capacity		
Historical	2008	**1,646**	219	**1,823**		1,744	50	**1,794**		**(29)**
	2009	**1,632**	214	**1,783**		1,781	51	**1,832**		**49**
	2010	**1,686**	222	**1,847**		1,946	-3	**1,943**		**96**
	2011	**1,754**	227	**1,890**		2,108	-7	**2,101**		**211**
	2012	**1,713**	221	**1,844**		2,108	-24	**2,084**		**240**
Projected	2013	**1,556**	201	**1,676**		2,108	4	**2,112**		**436**
	2014	**1,565**	203	**1,692**		2,108	30	**2,138**		**446**
	2015	**1,577**	205	**1,708**		2,103	30	**2,133**		**425**
	2016	**1,590**	207	**1,723**		2,103	14	**2,117**		**394**
	2017	**1,598**	208	**1,736**		2,103	35	**2,138**		**402**
	2018	**1,606**	209	**1,745**		2,103	35	**2,138**		**393**
	2019	**1,617**	211	**1,757**		2,103	35	**2,138**		**381**
	2020	**1,628**	212	**1,769**		2,103	35	**2,138**		**369**
	2021	**1,641**	214	**1,784**		2,103	35	**2,138**		**354**
	2022	**1,654**	216	**1,799**		2,103	35	**2,138**		**339**
	2023	**1,668**	218	**1,814**		2,103	35	**2,138**		**324**
	2024	**1,682**	220	**1,831**		2,103	9	**2,112**		**281**
	2025	**1,698**	222	**1,849**		2,103	9	**2,112**		**263**
	2026	**1,714**	224	**1,867**		2,103	9	**2,112**		**245**
	2027	**1,732**	226	**1,887**		2,103	9	**2,112**		**225**
	2028	**1,749**	229	**1,907**		2,103	9	**2,112**		**205**
	2029	**1,767**	231	**1,927**		2,103	9	**2,112**		**185**
	2030	**1,786**	234	**1,949**		2,103	9	**2,112**		**163**
	2031	**1,806**	237	**1,971**		2,103	9	**2,112**		**141**

[1] KCP&L's system peak is scaled in this table to reflect the Kansas portion of KCP&L's service territory (demand created by customers).
[2] 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.
[3] The System Planning Responsibility is the sum of the Total System Peak Load plus the 12% Reserve Margin less any interruptible load not included in this table.

Appendix A-3—Westar Energy, Inc. (Westar)

Westar Energy, Inc. (Westar) is a vertically-integrated investor-owned utility operating in south-central and northeast Kansas. In the south-central portion of the state Westar operates as Kansas Gas and Electric Company (Westar South). In the northeastern portion of the state Westar operates under its corporate name of Westar Energy (Westar North). Although technically comprised of two separate companies, Westar's entire system is dispatched as one system unit, and therefore there has been a movement to consolidate electric rates with the ultimate goal of uniform rates across the two entities. Westar is responsible for providing electric service to approximately 700,000 retail customers across both systems.

		System Peak				System Capacity				
		Total System Peak Load	12% Reserve Margin	**System Planning Responsibility**[1]		Accredited Generation[2]	Net Contracts	**Total System Capacity**		**System Capacity Surplus (Deficit)**
Historical	2008	**4,796**	650	**5,418**		6,297	-493	**5,805**		**387**
	2009	**4,569**	623	**5,192**		6,626	-504	**6,122**		**930**
	2010	**5,073**	724	**6,034**		6,608	8	**6,616**		**582**
	2011	**5,173**	749	**6,244**		6,555	-20	**6,535**		**291**
	2012	**5,001**	727	**6,054**		6,521	74	**6,596**		**542**
Projected	2013	**5,051**	727	**6,062**		6,406	40	**6,447**		**385**
	2014	**5,101**	734	**6,114**		6,406	89	**6,495**		**381**
	2015	**5,058**	740	**6,166**		6,391	88	**6,479**		**313**
	2016	**5,201**	747	**6,227**		6,235	168	**6,403**		**176**
	2017	**5,254**	755	**6,294**		6,244	323	**6,567**		**273**
	2018	**5,308**	764	**6,363**		6,244	322	**6,566**		**203**
	2019	**5,360**	771	**6,428**		6,244	495	**6,739**		**311**
	2020	**5,413**	780	**6,496**		6,244	562	**6,806**		**310**
	2021	**5,467**	788	**6,566**		6,239	561	**6,800**		**234**
	2022	**5,516**	796	**6,629**		5,723	553	**6,276**		**(353)**[3]
	2023	**5,570**[4]	804	**6,697**		5,723	553	**6,276**		**(421)**
	2024	**5,625**	812	**6,765**		5,723	553	**6,276**		**(489)**
	2025	**5,681**	820	**6,833**		5,723	553	**6,276**		**(557)**
	2026	**5,737**	828	**6,903**		5,723	553	**6,276**		**(627)**
	2027	**5,793**	837	**6,973**		5,723	553	**6,276**		**(697)**
	2028	**5,850**	845	**7,043**		5,723	553	**6,276**		**(767)**
	2029	**5,907**	854	**7,115**		5,723	553	**6,276**		**(839)**
	2030	**5,966**	862	**7,187**		5,723	553	**6,276**		**(911)**
	2031	**6,024**	871	**7,260**		5,723	553	**6,276**		**(984)**

[1] The System Planning Responsibility is the sum of the Total System Peak Load plus the 12% Reserve Margin less any interruptible load not included in this table.
[2] Accredited Generation assumes retirement of: Abilene GT 1 in 2013, Hutchinson GT 4 in 2015, Murray Gill 1&2 in 2015, Neosho 3 in 2012, and Tecumseh GT 1&2 in 2012.
[3] The large deficit starting here is a result of the Company's plans to retire its Hutchinson Plant (395 MW) and its Murray Gill plant (293 MW) sometime in 2022.
[4] Total System Peak Load data for 2023 and beyond was generated by Staff assuming 1.0% growth rate per year.

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

The Kansas Electric Power Cooperatives, Inc. (KEPCo) is a deregulated Generation and Transmission Cooperative whose membership is composed of 19 rural distribution cooperatives located throughout central and eastern Kansas.[1] KEPCo's 19 member cooperatives collectively serve approximately 110,000 customers—as indicated by number of meters.

		System Peak				System Capacity				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	**System Planning Responsibility**		Accredited Generation	Net Contracts	**Total System Capacity**		
Historical	2008	**408**	56	**464**		90	404	**494**		**30**
	2009	**401**	55	**456**		90	411	**501**		**45**
	2010	**440**	60	**500**		90	452	**542**		**42**
	2011	**455**	62	**517**		122	459	**581**		**64**
	2012	**452**	62	**514**		123	463	**586**		**72**
Projected	2013	**456**	62	**518**		123	494	**617**		**99**
	2014	**486**	66	**552**		123	524	**647**		**95**
	2015	**500**	68	**568**		123	539	**662**		**94**
	2016	**509**	69	**578**		123	550	**673**		**95**
	2017	**519**	71	**590**		123	561	**684**		**94**
	2018	**528**	72	**600**		123	571	**694**		**94**
	2019	**537**	73	**610**		123	543	**666**		**56**
	2020	**547**	75	**622**		123	553	**676**		**54**
	2021	**512**	70	**582**		123	556	**679**		**97**
	2022	**518**	71	**589**		123	554	**677**		**88**
	2023	**523**	71	**594**		123	558	**681**		**87**
	2024	**528**	72	**600**		123	563	**686**		**86**
	2025	**534**	73	**607**		123	567	**690**		**83**
	2026	**539**	74	**613**		123	572	**695**		**82**
	2027	**544**	74	**618**		123	576	**699**		**81**
	2028	**550**	75	**625**		123	581	**704**		**79**
	2029	**555**	76	**631**		123	586	**709**		**78**
	2030	**561**	76	**637**		123	590	**713**		**76**
	2031	**567**	77	**644**		123	595	**718**		**74**

[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-Cowley, Caney Valley, and Twin Valley.

Appendix A-5—Midwest Energy, Inc. (Midwest)

Midwest Energy Inc. (Midwest) is a regulated electric and natural gas distribution cooperative operating in central and western Kansas. Unique in Kansas among the State's cooperatives, the electric utility is vertically-integrated, possessing generation and transmission assets and providing retail service. Headquartered in Hays, Midwest provides electric service to approximately 48,751 retail customers.

		System Peak				System Capacity				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility[1]		Accredited Generation	Net Contracts	Total System Capacity		
Historical	2008	**309**	42	**351**		76	288	**364**		**13**
	2009	**309**	42	**351**		102	264	**366**		**15**
	2010	**323**	44	**365**		99	264	**363**		**(2)**
	2011	**357**	47	**392**		97	275	**372**		**(20)**
	2012	**362**	47	**388**		97	300	**397**		**5**
Projected	2013	**359**	45	**379**		91	300	**391**		**12**
	2014	**364**	45	**379**		91	300	**391**		**12**
	2015	**369**	46	**384**		91	300	**391**		**7**
	2016	**374**	47	**388**		116[2]	280	**396**		**8**
	2017	**379**	47	**393**		166[3]	255	**421**		**28**
	2018	**384**	48	**397**		166	255	**421**		**24**
	2019	**389**	48	**402**		166	255	**421**		**19**
	2020	**395**	49	**408**		166	250	**416**		**8**
	2021	**401**	50	**413**		166	250	**416**		**3**
	2022	**406**	50	**418**		166	250	**416**		**(2)**
	2023	**412**	51	**424**		166	250	**416**		**(8)**
	2024	**419**	52	**430**		166	250	**416**		**(14)**
	2025	**425**	52	**436**		166	250	**416**		**(20)**
	2026	**432**	53	**443**		166	250	**416**		**(27)**
	2027	**439**	54	**450**		166	250	**416**		**(34)**
	2028	**446**	55	**456**		166	250	**416**		**(40)**
	2029	**453**	56	**463**		166	250	**416**		**(47)**
	2030	**461**	57	**471**		166	250	**416**		**(55)**
	2031	**469**	58	**479**		166	250	**416**		**(63)**

[1] The System Planning Responsibility is the sum of the Total System Peak Load plus the 12% Reserve Margin less any interruptible load not included in this table. The company anticipates growing its interruptible load from 20 MW in 2012 to 47 MW in 2031.

[2] Accredited Generation for 2016 includes a 25 MW expansion to the Company's Goodman Energy Center.

[3] Accredited Generation for 2017 and beyond includes the 25 MW expansion to the Goodman Energy Center and a new 50 MW gas-fired plant

Appendix A-6—Sunflower Electric Power Company (Sunflower)

Sunflower Electric Power Company (Sunflower) is a deregulated generation and transmission cooperative owned by six member rural distribution cooperatives in Western Kansas (Lane-Scott, Prairie Land, Southern Pioneer, Victory, Western, and Wheatland). In 2007, the six member distribution cooperatives comprising Sunflower formed the Mid-Kansas Electric Company (Mid-Kansas) with the purpose of acquiring the assets of Aquila Energy's defunct Kansas Electric Network. Although Mid-Kansas has distinct assets and distinct customers from Sunflower, the two companies employ the same individuals; and therefore, for the purposes of this report these two entities are combined as a single system.

		System Peak				System Capacity				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility		Accredited Generation	Net Contracts	Total System Capacity		
Historical	2008	**1,031**	141	**1,172**		1,049	125	**1,174**		**2**
	2009	**1,011**	138	**1,149**		1,049	123	**1,172**		**23**
	2010	**1,089**	149	**1,238**		1,196	119	**1,315**		**77**
	2011	**1,118**	152	**1,270**		1,176	139	**1,315**		**45**
	2012	**1,092**	149	**1,241**		1,166	139	**1,305**		**64**
Projected	2013	**1,126**	154	**1,280**		1,147	139	**1,286**		**6**
	2014	**1,165**	159	**1,324**		1,306[1]	139	**1,445**		**121**
	2015	**1,186**	162	**1,348**		1,306	139	**1,445**		**97**
	2016	**1,207**	165	**1,372**		1,306	139	**1,445**		**73**
	2017	**1,235**	168	**1,403**		1,305	139	**1,444**		**41**
	2018	**1,258**	172	**1,430**		1,305	139	**1,444**		**14**
	2019	**1,259**	172	**1,431**		1,276	-	**1,276**		**(155)**
	2020	**1,284**	175	**1,459**		1,276	-	**1,276**		**(183)**
	2021	**1,313**	179	**1,492**		1,276	-	**1,276**		**(216)**
	2022	**1,337**	182	**1,519**		1,276	-	**1,276**		**(243)**
	2023	**1,353**	185	**1,538**		1,276	-	**1,276**		**(262)**
	2024	**1,364**	186	**1,550**		1,276	-	**1,276**		**(274)**
	2025	**1,376**	188	**1,564**		1,271	-	**1,271**		**(293)**
	2026	**1,387**	189	**1,576**		1,271	-	**1,271**		**(305)**
	2027	**1,398**	191	**1,589**		1,271	-	**1,271**		**(318)**
	2028	**1,410**	192	**1,602**		1,271	-	**1,271**		**(331)**
	2029	**1,420**	194	**1,614**		1,270	-	**1,270**		**(344)**
	2030	**1,433**	195	**1,628**		1,270	-	**1,270**		**(358)**
	2031	**1,444**	197	**1,641**		1,270	-	**1,270**		**(371)**

[1] Accredited Generation from 2014 – 2031 includes 107 MW of capacity from the proposed new peaking unit (Rubart Station), 3 MW from a future Wind PPA, and 22 MW from the Abengoa plant.

Appendix A-7—Kansas City Board of Public Utilities (KC-BPU)

The Kansas City Board of Public Utilities (KC-BPU) is a non-KCC jurisdictional municipal utility serving water customers in the Kansas City, Kansas Metropolitan areas of Wyandotte and Johnson Counties, and electric customers in the whole of Wyandotte County. In all, KC-BPU provides electric service to approximately 63,000 customers.

		System Peak				System Capacity				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility		Accredited Generation	Net Contracts	Total System Capacity		
Historical	2008	**492**	67	**559**		613	-53	**560**		**1**
	2009	**471**	64	**535**		613	-53	**560**		**25**
	2010	**501**	68	**569**		613	-12	**601**		**32**
	2011	**502**	68	**570**		613	-12	**601**		**31**
	2012	**495**	67	**560**		614	-5	**609**		**49**
Projected	2013	**499**	68	**563**		714[1]	-5	**709**		**146**
	2014	**501**	68	**563**		714	15	**729**		**166**
	2015	**503**	68	**565**		702	17	**719**		**154**
	2016	**505**	68	**567**		702	17	**719**		**152**
	2017	**506**	68	**568**		702	17	**719**		**151**
	2018	**507**	68	**569**		702	17	**719**		**150**
	2019	**508**	68	**570**		702	17	**719**		**149**
	2020	**509**	69	**572**		646	17	**663**		**91**
	2021	**510**	69	**573**		573	17	**590**		**17**
	2022	**511**	69	**574**		573	55	**628**		**54**
	2023	**513**	69	**575**		523	55	**578**		**3**
	2024	**513**	69	**576**		523	55	**578**		**2**
	2025	**514**	69	**577**		523	55	**578**		**1**
	2026	**516**	70	**580**		523	55	**578**		**(2)**
	2027	**517**	70	**581**		412	55	**467**		**(114)**
	2028	**518**	70	**582**		412	55	**467**		**(115)**
	2029	**519**	70	**583**		412	55	**467**		**(116)**
	2030	**520**	70	**584**		412	55	**467**		**(117)**
	2031	**522**	70	**586**		412	55	**467**		**(119)**

[1] Accredited Generation for 2013 and beyond includes 100 MW of capacity provided by the inclusion of KC BPU's Dogwood Facility.

Appendix A-8—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 78 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.

		System Peak				System Capacity				System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility		Accredited Generation[1]	Net Contracts	Total System Capacity		
Historical	2008	**193**	26	**219**		199	58	**258**		**39**
	2009	**200**	27	**227**		199	89	**289**		**62**
	2010	**211**	29	**240**		199	13	**213**		**(27)**
	2011	**210**	29	**239**		199	41	**241**		**2**
	2012	**194**	27	**221**		199	47	**246**		**25**
Projected	2013	**200**	27	**227**		199	58	**257**		**30**
	2014	**274**	37	**311**		271	85	**357**		**46**
	2015	**280**	38	**318**		271	85	**357**		**39**
	2016	**285**	39	**324**		271	85	**357**		**33**
	2017	**291**	40	**331**		271	85	**357**		**26**
	2018	**297**	40	**337**		271	85	**357**		**20**
	2019	**303**	41	**344**		271	36	**308**		**(36)**
	2020	**309**	42	**351**		271	36	**308**		**(43)**
	2021	**315**	43	**358**		271	17	**289**		**(69)**
	2022	**321**	44	**365**		271	17	**289**		**(76)**
	2023	**327**	45	**372**		271	17	**289**		**(83)**
	2024	**334**	46	**380**		271	17	**289**		**(91)**
	2025	**341**	46	**387**		271	17	**289**		**(98)**
	2026	**347**	48	**395**		271	(48)	**223**		**(172)**
	2027	**354**	49	**403**		271	(48)	**223**		**(180)**
	2028	**362**	49	**411**		271	(48)	**223**		**(188)**
	2029	**369**	50	**419**		271	(48)	**223**		**(196)**
	2030	**376**	51	**427**		271	(48)	**223**		**(204)**
	2031	**384**	52	**436**		271	(48)	**223**		**(213)**

[1] Starting in 2013, these totals may be reduced considerably due to National Emissions Standards for Hazardous Air Pollutants (NEHSAP) for Reciprocating Internal Combustion Engines (RICE). KMEA does not know extent of this reduction yet.

Appendix A-9—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 has continuously added new municipal electric utilities since its founding, with the most recent member being added in late 2010. Because of this, historical comparisons to previous years are inherently misleading and have been omitted from this report. As of the end 2012, the KPP is comprised of 43 municipal electric utilities and is responsible for a total system capacity of approximately 545 MWs.

		System Peak			System Capacity			System Capacity Surplus (Deficit)
		Total System Peak Load	12% Reserve Margin	System Planning Responsibility	Accredited Generation	Net Contracts	Total System Capacity	
Historical	2008	--		--	--		--	--
	2009	--		--	--		--	--
	2010	--		--	--		--	--
	2011	**382**	52	**434**	363	182	**545**	**111**
	2012	**380**	52	**432**	405[1]	182	**587**	**155**
Projected	2013	**385**	53	**438**	405	181	**586**	**148**
	2014	**307**	42	**349**	343	163	**505**	**156**
	2015	**266**	36	**303**	267	114	**381**	**78**
	2016	**271**	37	**308**	267	114	**381**	**73**
	2017	**276**	383	**314**	267	114	**381**	**67**
	2018	**281**	38	**320**	267	114	**381**	**61**
	2019	**287**	39	**326**	267	114	**381**	**55**
	2020	**292**	40	**331**	267	114	**381**	**50**
	2021	**297**	41	**338**	267	114	**381**	**43**
	2022	**303**	41	**344**	267	114	**381**	**37**
	2023	**309**	42	**351**	267	55	**322**	**(29)**
	2024	**315**	43	**358**	267	55	**322**	**(36)**
	2025	**321**	44	**365**	267	55	**322**	**(43)**
	2026	**328**	45	**372**	267	55	**322**	**(50)**
	2027	**334**	46	**380**	267	55	**322**	**(58)**
	2028	**341**	47	**388**	267	55	**322**	**(66)**
	2029	**348**	47	**395**	267	55	**322**	**(73)**
	2030	**355**	48	**403**	267	55	**322**	**(81)**
	2031	**362**	49	**411**	267	55	**322**	**(89)**

[1] Accredited Generation for 2012 includes capacity provided by the Company's recently purchased stake in the Dogwood combine-cycle facility.

Appendix B—Renewable Capacity Requirements
Appendix B-1—Empire District Electric Company (Empire)

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 hydro-electric dam in Missouri called Ozark Beach. Empire is a multi-jurisdictional utility operating in the states of Missouri, Kansas, Arkansas, and Oklahoma. In addition to Kansas' RES, the utility must concurrently satisfy a separate RES in Missouri. Empire has enough renewable generation to satisfy both states requirements through 2025 when the utility's current long-term power purchase agreement to Elk River Wind Facility expires.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity			Renewable Capacity Required for Other Jurisdictions	Total Renewable Capacity[1]	Renewable Capacity Surplus (Deficit)
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Cloud County (Meridian Way) Wind Farm	Elk River Wind Facility	Ozark Beach			
2011	**10%**	**7**	105	150	16	**24**	**248**	**241**
2012		**7**	105	150	16	**23**	**249**	**242**
2013		**6**	105	150	16	**23**	**249**	**243**
2014		**6**	105	150	16	**59**	**213**	**207**
2015		**6**	105	150	16	**59**	**213**	**207**
2016	**15%**	**10**	105	150	16	**59**	**213**	**203**
2017		**10**	105	150	16	**60**	**212**	**202**
2018		**10**	105	150	16	**121**	**151**	**141**
2019		**10**	105	150	16	**122**	**150**	**140**
2020	**20%**	**13**	105	150	16	**123**	**149**	**136**
2021		**14**	105	150	16	**186**	**86**	**72**
2022		**14**	105	150	16	**188**	**84**	**70**
2023		**14**	105	150	16	**189**	**83**	**69**
2024		**14**	105	150	16	**191**	**81**	**67**
2025		**14**	105	150	16	**193**	**79**	**65**
2026		**14**	105	--	16	**195**	**(74)**	**(88)**
2027		**14**	105	--	16	**197**	**(76)**	**(90)**
2028		**14**	105	--	16	**199**	**(78)**	**(92)**
2029		**15**	--	--	16	**201**	**(185)**	**(200)**
2030		**15**	--	--	16	**203**	**(187)**	**(202)**

[1] The Total Renewable Capacity includes the 10% adder allowed by the RES Act, approximately 1.5 MW for Empire in 2011-2025, 0.5 MW in 2026-2028 and 0 MW thereafter. The 10% added for Empire is calculated on the percentage of renewables used to provide service to its Kansas load which is approximately 5.5% of Empire total system. The Total Renewable Capacity is calculated by adding the 10% amount to the sum of the Renewable Capacity columns and then subtracting the Renewable Capacity Required for Other Jurisdictions.

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

Kansas City Power & Light (KCP&L) owns and operates the Spearville Wind Farm in Ford County. Phase I was developed at 100.5 MW and Phase II was developed at 48 MW. Kansas City Power & Light is purchasing power from Phase III at Spearville, 100.8 MW, for a current facility capacity of 249.3MW. Kansas City Power & Light is also purchasing 131.1 MW from the Cimarron Energy Project in Gray County. The Cimarron Energy Project was developed by Competitive Power Venture's Renewable Energy Division (CPV Renewable Energy). CPV Renewable Energy subsequently sold its rights to construct and operate this 131.1 MW to Duke Energy Generation Services.

In addition to Kansas' RES, the utility must concurrently satisfy a separate RES in place in Missouri. With the addition of the Cimarron Energy Project, KCP&L has sufficient renewable generation to satisfy both states' requirements though 2015.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity[1]			Renewable Capacity Required for Other Jurisdictions	Renewable Energy Credits	Total Renewable Capacity[2]	Renewable Capacity Surplus (Deficit)[3]
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Spearville Wind Farm[4]	Cimarron Energy Project (Cimarron II)	Central Nebraska Public Power				
2011	10%	164	149	--	--	48	94[5]	210	46
2012		167	249	131	--	218	0	179	12
2013		170	249	131	--	218	0	179	9
2014		166	249	131	56	218	0	235	69
2015		160	249	131	56	218	0	235	75
2016	15%	235	249	131	56	275	0	282	47
2017		236	249	131	56	275	0	282	46
2018		238	249	131	56	275	0	282	44
2019		239	249	131	56	275	0	282	43
2020	20%	321	249	131	56	390	0	376	55
2021		322	249	131	56	390	0	376	53
2022		325	249	131	56	390	0	376	51
2023		328	249	131	56	447	0	423	95
2024		330	249	131	--	447	0	367	37
2025		333	249	131	--	447	0	367	34
2026		336	249	131	--	447	0	367	31
2027		339	249	131	--	447	0	367	28
2028		342	249	131	--	447	0	367	25
2029		346	249	131	--	447	0	367	21
2030		350	249	131	--	447	0	367	18

[1] The Renewable Capacity table does not show forecasted values of 100 MW for years 2016-2019, 300 MW for years 2020-2022, and 400 MW for years 2023-2030.
[2] The Total Renewable Capacity includes the 10% adder allowed by the RES Act and a minimal amount of net metering. The Total Renewable Capacity is calculated by adding the forecast from footnote 1 to the sum of the Renewable Capacity columns and then subtracting the Renewable Capacity Required for Other Jurisdictions.
[3] The Renewable Capacity Surplus (Deficit) is calculated by subtracting the Renewable Capacity Needed for Compliance from the Total Renewable Capacity.
[4] The Spearville Wind Farm includes three phases. Phases I and II are owed by KCP&L, while KCP&L purchases power under a PPA from Phase III.
[5] RES Act compliance for 2011was satisfied by KCP&L using 70.2MWs worth of RECs accumulated through operations of the Spearville Wind Farm prior to 2011, and 24.2MW worth of RECs purchased from the wholesale market.

Appendix B-3—Westar Energy (Westar)

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 agreement with Ironwood, Post Rock, and Meridian Way wind farms. The utility also has acquired a long-term power purchase agreement with Waste Management to receive electricity from that company's Rolling Meadows landfill-gas generation facility located just north of Topeka in Shawnee County.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity[1]						Renewable Energy Credits	Total Renewable Capacity[2]	Renewable Capacity Surplus (Deficit)
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Central Plains Wind Farm	Cloud County (Meridian Way) Wind Farm	Flat Ridge Wind Farm (Flat Ridge I)	Rolling Meadows Landfill	Post Rock Wind Farm	Ironwood Wind Farm			
2011	**10%**	**495**	99	96	100	6	--	--	**194**[3]	**495**	**0**
2012		**477**	99	96	100	6	201	169	**0**	**738**	**261**
2013		**481**	99	96	100	6	201	169	**0**	**738**	**257**
2014		**486**	99	96	100	6	201	169	**0**	**738**	**252**
2015		**480**	99	96	100	6	201	169	**0**	**738**	**258**
2016	**15%**	**741**	99	96	100	6	201	169	**0**	**848**	**107**
2017		**749**	99	96	100	6	201	169	**0**	**848**	**99**
2018		**756**	99	96	100	6	201	169	**0**	**848**	**92**
2019		**763**	99	96	100	6	201	169	**0**	**848**	**85**
2020	**20%**	**1,027**	99	96	100	6	201	169	**0**	**1,178**	**151**
2021		**1,037**	99	96	100	6	201	169	**0**	**1,178**	**141**
2022		**1,046**	99	96	100	6	201	169	**0**	**1,178**	**132**
2023		**1,057**	99	96	100	6	201	169	**0**	**1,178**	**121**
2024		**1,067**	99	96	100	6	201	169	**0**	**1,178**	**111**
2025		**1,078**	99	96	100	6	201	169	**0**	**1,178**	**100**
2026		**1,089**	99	96	100	6	201	169	**0**	**1,178**	**89**
2027		**1,100**	99	96	100	6	201	169	**0**	**1,178**	**78**
2028		**1,111**	99	96	100	6	201	169	**0**	**1,178**	**67**
2029		**1,122**	99	96	100	6	201	169	**0**	**1,178**	**56**
2030		**1,133**	99	96	100	6	201	169	**0**	**1,178**	**45**

[1] The Renewable Capacity table does not show forecasted values of 100 MW for years 2016-2019, and 400 MW for years 2020-2030.

[2] The Total Renewable Capacity includes the 10% adder allowed by the RES Act. The Total Renewable Capacity is calculated by adding the forecast from footnote 1 to the sum of the Renewable Capacity columns.

[3] RES Act compliance for 2011was satisfied by Westar using Renewable Energy Credits accumulated through operations of the Company's Wind Farms prior to 2011.

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

Kansas Electric Power Cooperatives (KEPCo), 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. Southwestern Power Administration is a series of 24 U.S. Army Corps of Engineer hydro-electric dams throughout the States of Missouri, Oklahoma, Arkansas, and Texas. Western Area Power Administration is likewise a series 56 hydro-electric dams operated by the Bureau of Reclamation, U.S. Army Corps of Engineers, and International Boundary and Water Commission in a 15 state region. 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 2030.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity		Renewable Capacity Required for Other Jurisdictions	Total Renewable Capacity	Renewable Capacity Surplus (Deficit)
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	SWPA	WAPA			
2011	**10%**	**42**	100	14	**0**	**114**	**72**
2012		**43**	100	14	**0**	**114**	**71**
2013		**45**	100	14	**0**	**114**	**69**
2014		**45**	100	14	**0**	**114**	**69**
2015		**46**	100	14	**0**	**114**	**68**
2016	**15%**	**72**	100	14	**0**	**114**	**42**
2017		**75**	100	14	**0**	**114**	**39**
2018		**76**	100	14	**0**	**114**	**38**
2019		**78**	100	14	**0**	**114**	**36**
2020	**20%**	**106**	100	14	**0**	**114**	**8**
2021		**107**	100	14	**0**	**114**	**7**
2022		**106**	100	14	**0**	**114**	**8**
2023		**105**	100	14	**0**	**114**	**9**
2024		**104**	100	14	**0**	**114**	**10**
2025		**105**	100	14	**0**	**114**	**9**
2026		**106**	100	14	**0**	**114**	**8**
2027		**107**	100	14	**0**	**114**	**7**
2028		**108**	100	14	**0**	**114**	**6**
2029		**109**	100	14	**0**	**114**	**5**
2030		**110**	100	14	**0**	**114**	**4**

Appendix B-5—Midwest Energy (Midwest)

Midwest Energy (Midwest) 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. Capacity from Smoky Hills should satisfy Midwest Energy's requirement under the Renewable Energy Standard through 2015.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity[1]		Renewable Capacity Required for Other Jurisdictions	Total Renewable Capacity[2]	Renewable Capacity Surplus (Deficit)
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Smoky Hills Wind Farm (Phase I)	Smoky Hills Wind Farm (Phase II)			
2011	10%	30	25	24	0	54	24
2012		32	25	24	0	54	22
2013		34	25	24	0	54	20
2014		35	25	24	0	54	19
2015		35	25	24	0	54	19
2016	15%	53	25	24	0	76[3]	23
2017		54	25	24	0	76	22
2018		55	25	24	0	76	21
2019		56	25	24	0	76	20
2020	20%	75	25	24	0	76	1
2021		76	25	24	0	76	0
2022		77	25	24	0	76	(1)
2023		79	25	24	0	76	(3)
2024		80	25	24	0	76	(4)
2025		81	25	24	0	76	(5)
2026		82	25	24	0	76	(6)
2027		83	25	24	0	76	(7)
2028		85	25	24	0	76	(9)
2029		86	25	24	0	76	(10)
2030		88	25	24	0	76	(12)

[1] The Renewable Capacity table does not show forecasted values of 20 MW for years 2016-2030.
[2] The Total Renewable Capacity includes the 10% adder allowed by the RES Act. The Total Renewable Capacity is calculated by adding the forecast from footnote 1 to the sum of the Renewable Capacity columns.
[3] The Company is forecasting the addition of a 20 MW Power Purchase Agreement in 2016.

Appendix B-6—Sunflower Electric Power Company (Sunflower)

Sunflower Electric Power Company (Sunflower) and the Mid-Kansas Electric Company (Mid-Kansas) currently have long-term power purchase agreements with two wind farms located in Kansas, Gray County and Smoky Hills located in Lincoln and Ellsworth counties. As federally defined non-profit rural utilities, these companies also receive electricity from the federally managed hydro-electric power marketer Western Area Power Administration (WAPA)[1].

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity				Total Renewable Capacity[2]	Renewable Capacity Surplus (Deficit)
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Gray County Wind Farm	Smoky Hills Wind Farm (Phase I and II)	WAPA	Shooting Star Wind Farm		
2011	**10%**	**68**	51	74	5	--	**143**	**75**
2012		**71**	51	74	5	--	**143**	**72**
2013		**75**	51	74	5	104	**257**	**182**
2014		**77**	51	74	5	104	**257**	**180**
2015		**78**	51	74	5	104	**257**	**179**
2016	**15%**	**119**	51	74	5	104	**257**	**138**
2017		**120**	--	74	5	104	**201**	**81**
2018		**121**	--	74	5	104	**201**	**80**
2019		**122**	--	74	5	104	**201**	**79**
2020	**20%**	**164**	--	74	5	104	**201**	**37**
2021		**166**	--	74	5	104	**201**	**35**
2022		**168**	--	74	5	104	**201**	**33**
2023		**169**	--	74	5	104	**201**	**32**
2024		**171**	--	74	5	104	**201**	**30**
2025		**173**	--	74	--	104	**196**	**23**
2026		**175**	--	74	--	104	**196**	**21**
2027		**176**	--	74	--	104	**196**	**20**
2028		**178**	--	74	--	104	**196**	**18**
2029		**180**	--	--	--	104	**114**	**(4)**
2030		**182**	--	--	--	104	**114**	**(68)**

[1] See Appendix B-4 for details about WAPA.

[2] The Total Renewable Capacity includes the 10% adder allowed by the RES Act. The Total Renewable Capacity is calculated by summing the Renewable Capacity columns, less the Western Area Power Administration (WAPA) amount of 5 MW. The summation value is multiplied by 1.1 to add in the 10% from the RES Act and finally the 5 MW from WAPA is added back in.

Appendix B-7—Kansas City Board of Public Utilities (KC-BPU)

Kansas City Board of Public Utilities (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 has publicly stated that it will voluntarily comply with the State's RES. Kansas City Board of Public Utilities currently has long-term power purchase agreements with the Smoky Hills wind farm in Lincoln and Ellsworth counties, as well as the federally managed hydro-electric power marketers Southwestern Power Authority (SWPA) and Western Area Power Authority (WAPA)[1]. The Company has agreements with the Waste Corporation of Kansas and the City of Lawrence to purchase electricity from the Oak Grove Landfill and Bowersock Hydro-Electric Dam, respectively.

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity[2]					Total Renewable Capacity[3]	Renewable Capacity Surplus (Deficit)[4]
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Smoky Hills Wind Farm	Oak Grove Landfill	Bowersock Mills & Power	SWPA	WAPA		
2011	**10%**	**49**	25	1.5	--	39	5	**73**	**25**
2012		**49**	25	1.5	7	39	5	**81**	**32**
2013		**50**	25	2	7	39	5	**82**	**32**
2014		**50**	25	2	7	39	5	**82**	**32**
2015		**50**	25	4	7	39	5	**84**	**34**
2016	**15%**	**75**	25	4	7	39	5	**84**	**9**
2017		**75**	25	4	7	39	5	**84**	**8**
2018		**76**	25	4	7	39	5	**84**	**8**
2019		**76**	25	4	7	39	5	**84**	**8**
2020	**20%**	**101**	25	4	7	39	5	**111**	**10**
2021		**102**	25	4	7	39	5	**111**	**10**
2022		**102**	25	4	7	39	5	**111**	**10**
2023		**102**	25	4	7	39	5	**111**	**9**
2024		**102**	25	4	7	39	5	**111**	**9**
2025		**102**	25	4	7	39	5	**111**	**9**
2026		**103**	25	4	7	39	5	**111**	**9**
2027		**103**	25	4	7	39	5	**111**	**8**
2028		**103**	25	4	7	39	5	**111**	**8**
2029		**103**	25	4	7	39	5	**111**	**8**
2030		**104**	25	4	7	39	5	**111**	**8**

[1] See Appendix B-4 for details about SWPA and WAPA.
[2] The Renewable Capacity table omits a forecasted value of 25 MW for years 2020-2030.
[3] The Total Renewable Capacity includes the 10% adder allowed by the RES Act and a minimal amount of net metering. The Total Renewable Capacity is calculated by adding the forecast from footnote 1 to the sum of the Renewable Capacity columns.
[4] The Renewable Capacity Surplus (Deficit) is calculated by subtracting the Renewable Capacity Needed for Compliance from the Total Renewable Capacity.

Appendix B-8—Kansas Power Pool (KPP)

Kansas Power Pool (KPP) is an association of municipal utilities not statutorily subject to the State's Renewable Energy Standard outlined in K.S.A. 66-1258. Kansas Power Pool currently has long-term power purchase agreements with Greensburg Wind Farm, LLC, to purchase electricity generated by ten 1.25MW wind turbines located just outside Greensburg, Kansas in Kiowa County. These wind turbines were completed in March 2010 as part of a larger project to rebuild the city after the devastating 2007 tornado. The Power Pool also receives hydro-electric capacity from the Bowersock Hydro-Electric Dam located outside Lawrence, Kansas, and from the federally managed hydro-electric power marketers Southwestern Power Authority (SWPA), Western Area Power Authority (WAPA)[1], and the Great River Dam Authority (GRDA).

	Renewable Capacity Required under Renewable Energy Standard (K.S.A. 66-1258)		Renewable Capacity					Total Renewable Capacity[2]	Renewable Capacity Surplus (Deficit)[3]
	Renewable Energy Standard	Renewable Capacity Needed for Compliance	Greensburg Wind Farm	Bowersock Mills & Power	SWPA	WAPA	Great River Dam Authority		
2011	**10%**	**38**	12.5	2.7	9.4	4.5	9.9	**41**	**3**
2012		**38**	12.5	2.7	9.4	4.5	9.9	**41**	**3**
2013		**38**	12.5	2.7	9.4	4.5	8.5	**39**	**1**
2014		**38**	12.5	2.7	9.4	4.5	5.4	**36**	**(2)**
2015		**36**	12.5	2.7	9.4	4.5	5.4	**36**	**0**
2016	**15%**	**48**	12.5	2.7	9.4	4.5	5.4	**36**	**(12)**
2017		**42**	12.5	2.7	9.4	4.5	5.4	**36**	**(6)**
2018		**41**	12.5	2.7	9.4	4.5	5.4	**36**	**(5)**
2019		**41**	12.5	2.7	9.4	4.5	5.4	**36**	**(5)**
2020	**20%**	**56**	12.5	2.7	9.4	4.5	5.4	**36**	**(20)**
2021		**57**	12.5	2.7	9.4	4.5	5.4	**36**	**(21)**
2022		**58**	12.5	2.7	9.4	4.5	5.4	**36**	**(22)**
2023		**59**	12.5	2.7	9.4	4.5	5.4	**36**	**(23)**
2024		**61**	12.5	2.7	9.4	4.5	5.4	**36**	**(25)**
2025		**62**	12.5	2.7	9.4	4.5	5.4	**36**	**(26)**
2026		**63**	12.5	2.7	9.4	4.5	5.4	**36**	**(27)**
2027		**64**	12.5	2.7	9.4	4.5	5.4	**36**	**(28)**
2028		**66**	12.5	2.7	9.4	4.5	5.4	**36**	**(30)**
2029		**67**	12.5	2.7	9.4	4.5	5.4	**36**	**(31)**
2030		**68**	12.5	2.7	9.4	4.5	5.4	**36**	**(32)**

[1] See Appendix B-4 for details about SWPA and WAPA.
[2] The Total Renewable Capacity includes the 10% adder allowed by the RES Act. The Total Renewable Capacity is calculated by summing the Renewable Capacity columns.
[3] The Renewable Capacity Surplus (Deficit) is calculated by subtracting the Renewable Capacity Needed for Compliance from the Total Renewable Capacity.

Appendix C—Commercial-Size Renewable Energy Generation

Appendix C-1—Existing Renewable Generators within Kansas

Renewable Generator (Total Nameplate Capacity)	County	Developer	Initial Month and Year of Operation	Utility Purchaser	Size
Gray County Wind Farm (112.2 MW)	Gray	NextEra (Florida Power & Light)	November 2001	Sunflower Electric (allocated to MKEC system)	50 MW
				Kansas City Power and Light – Greater Missouri Operations	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
Spearville Wind Energy Facility Phase III (101 MW)	Ford	enXco	October 2012	Kansas City Power and Light	101 MW
Smoky Hills Phase 1 (100.8 MW)	Lincoln and Ellsworth	Trade Wind 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	Trade Wind Energy	January 2009	Sunflower Electric (allocated to MKEC system)	24 MW
				Midwest Energy	24 MW
				City Power and Light (Independence, Mo.)	15 MW
				City Utilities of Springfield, Mo.	50 MW
				Unallocated (SPP EIM)[1]	35.5 MW
Cloud County (Meridian Way) Wind Farm (201 MW)	Cloud	Horizon Wind Energy	November 2008	Empire District Electric	105 MW
				Westar Energy	96 MW
Ironwood (168 MW)	Ford and Hodgeman	Duke Energy Generation Services	October 2012	Westar	168 MW
Post Rock (201 MW)	Ellsworth and Lincoln	Wind Capital Group	November 2012	Westar	201 MW
Flat Ridge Wind Farm (100 MW)	Barber	BP Alternative Energy	March 2009	Westar Energy	100 MW
Flat Ridge 2 Wind Farm (419.2 MW)	Harper, Kingman, Barber, and Sumner	BP Alternative Energy	December 2012	Associated Electric Cooperative	314.4 MW
				Arkansas Electric Coop Corp	51 MW
				Unallocated (SPP EIM)	105 MW
Cimarron Energy Project (Cimarron II) (131 MW)	Gray	Duke Energy Generation Services	June 2012	Kansas City Power & Light	131 MW

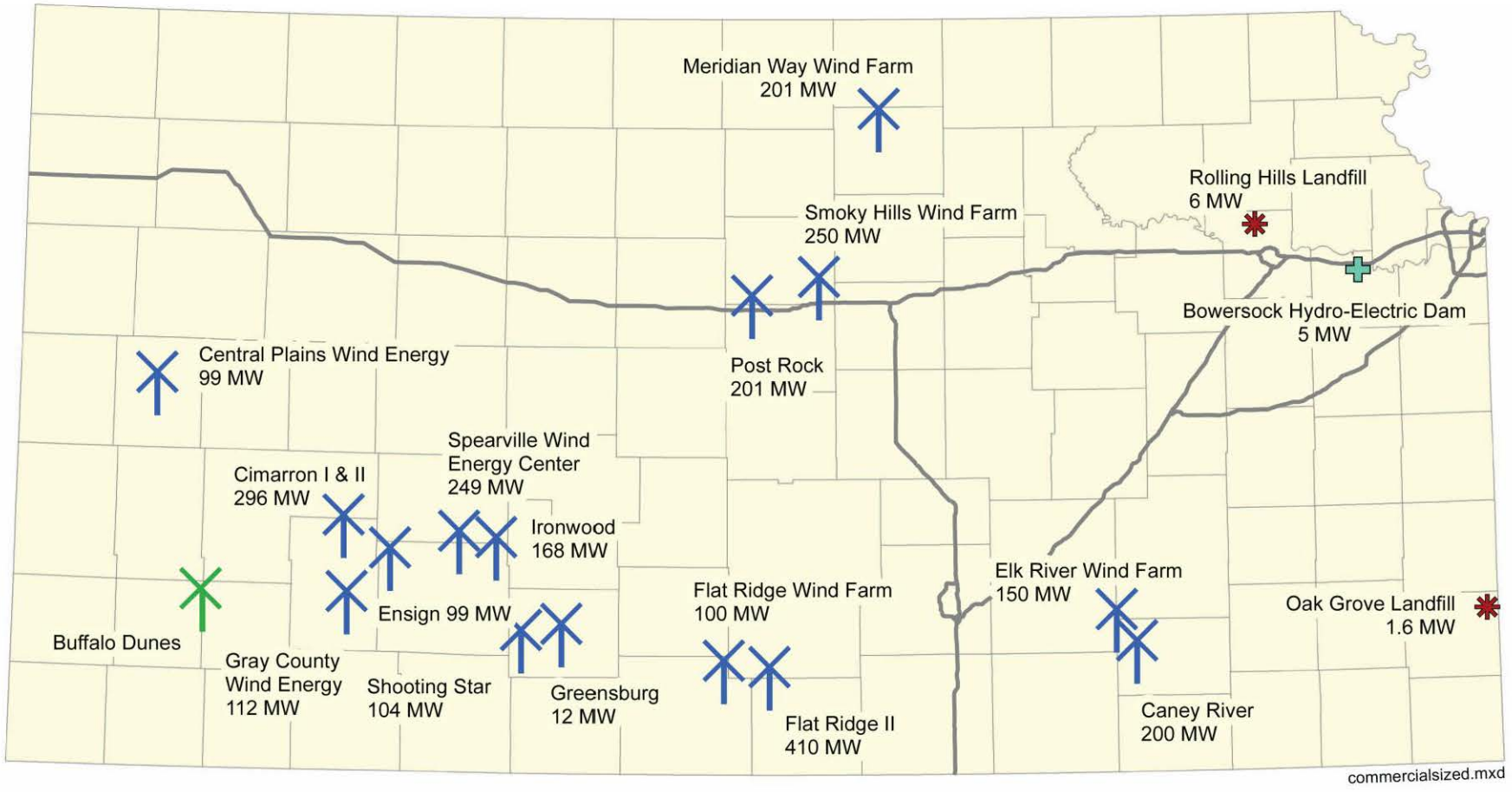
[1] Unallocated wind energy can be sold through the Southwest Power Pool's Energy Imbalance Market place.

Ensign Wind Energy (99 MW)	Gray	NextEra Energy Resources	November 2012	Kansas City Power and Light – Greater Missouri Operations	99 MW
Shooting Star (105 MW)	Kiowa	Infinity Wind Power	December 2012	Sunflower	105 MW
Caney River (200 MW)	Elk	Trade Wind Energy	January 2012	Tennessee Valley Authority	200 MW
Greensburg (12.5 MW)	Kiowa	John Deere / Excelon	September 2009	Kansas Power Pool	12.5 MW
Bowersock Hydro-electric Dam (2 MW)	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
Oak Grove Landfill (1.6 MW)	Crawford	Waste Corporation of Kansas	March 2010	Kansas City Board of Public Utilities	1.6 MW

Appendix C-2—Announced New Renewable Generation within Kansas

Renewable Generator (Total Nameplate Capacity)	**County**	**Developer**	**Initial Month and Year of Operation**	**Utility Purchaser**	**Size**
Buffalo Dunes (227 MW)	Haskell, Grant	Trade Wind Energy	4th Quarter 2013	Alabama Power Co	227 MW

Commercial-Size Renewable Generation within Kansas



Existing

Proposed

Landfill Gas

Hydro

Kansas
Corporation Commission
Information Technology
12/27/2012

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	2011 Net Generation (MWh)
Wolf Creek Nuclear Operating Corporation	**Wolf Creek** Nuclear (B)	Coffey	KCP&L (47%) Westar (47%) KEPCo (6%)	1,160	1985	5,330,632
Westar Energy, Inc. (Westar)	**Jeffrey Energy Center** Coal (B)	Pottawatomie	Westar (92%) Mid-Kansas (8%)	2,164	1978 - 1983	12,362,865
	Lawrence Energy Center Coal (B)	Douglas	Westar (100%)	529	1955 - 1971	3,514,120
	Hutchinson Natural gas (P)	Reno	Westar (100%)	395	1965 - 1983	53,467
	Abilene Natural gas (P)	Dickinson	Westar (100%)	64	1973	6,774
	Tecumseh Coal (B) and Natural gas (P)	Shawnee	Westar (100%)	239	1957 - 1972	1,118,866
	Gordon Evans Natural gas (P) Diesel (P)	Sedgwick	Westar (100%)	835	1961 - 2001	757,612
	Murray Gill Natural gas (P)	Sedgwick	Westar (100%)	293	1952 - 1959	284,232
	Neosho Natural gas (P)	Labette	Westar (100%)	67	1954	1,472
	Emporia Energy Center Natural gas (LF) and Natural gas (P)	Lyon	Westar (100%)	663	2008-2009	438,191
	Spring Creek Energy Center Natural gas (P)	Logan, Oklahoma	Westar (100%)	278	2001	118,720
Kansas City Power and Light (KCP&L)	**LaCygne** Coal (B)	Linn	KCP&L (50%) Westar (50%)	1,418	1973 - 1977	5,801,473
	Osawatomie Natural gas (P)	Miami	KCP&L (100%)	90	2003	3,140
	West Gardner Natural gas (P)	Johnson	KCP&L (100%)	360	2003	18,386

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2011 Net Generation (MWh)
	Iatan I Coal (B)	Platte, Missouri	KCP&L (70%) KCP&L-GMO (18%) Empire (12%)	651	1980	1,075,402
	Iatan II Coal (B)	Platte, Missouri	KCP&L (54.71%) KCP&L-GMO (18%) Empire (12%) MJMEUC (11.76%) KEPCo (3.53%)	850	2010	1,480,483
	Montrose Coal (B)	Henry, Missouri	KCP&L (100%)	510	1958 - 1964	1,100,248
	Hawthorn Coal (B)	Jackson, Missouri	KCP&L (100%)	563	1969	1,680,060
	Hawthorn Combine Cycle Natural gas (P)	Jackson, Missouri	KCP&L (100%)	292	1997 - 2000	
	Hawthorn Combustion Turbine Natural gas (P)	Jackson, Missouri	KCP&L (100%)	180	2000	
	Northeast Station Natural gas (P) and Distillate fuel oil (P)	Jackson, Missouri	KCP&L (100%)	522	1972 - 1985	(806)
Kansas City Board of Public Utilities (KC-BPU)	**Quindaro** Coal (B)	Wyandotte	KC-BPU (100%)	183	1965 - 1971	966,670
	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	1,474,450
	Nearman Creek Combustion Turbine Natural gas (P)	Wyandotte	KC-BPU (100%)	76 (*with 45MW additional announced)*	2006 *(addition planned 2012)*	54,340
	Kaw Natural gas (P)	Wyandotte	KC-BPU (100%)		1955 - 1962	(Out of Service)
Kansas Electric Power Cooperatives (KEPCo)	**Sharpe** Distillate fuel oil (I)	Coffey	KEPCo (100%)	20	2002	0

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2011 Net Generation (MWh)
Sunflower Electric Power Corporation (Sunflower)	**Holcomb Station** Coal (B)	Finney	Sunflower (100%)	360	1983	2,735,783
	Garden City Station Natural gas (I) and Natural gas (P)	Finney	Sunflower (100%)	239.2	1962 - 1979	70,106
Mid-Kansas Electric Company (Mid-Kansas)	**Cimarron River Station** Natural gas (I) and Natural gas (P)	Seward	Mid-Kansas (100%)	75	1963 - 1967	75,790
	Clifton Station Natural gas (P) and Distillate fuel oil (P)	Washington	Mid-Kansas (100%)	75.5	1974	4,873
	Fort Dodge Station Natural gas (LF) *(formerly Judson Large)*	Ford	Mid-Kansas (100%)	144.6	1968	381,242
	Great Bend Station Natural gas (I) *(formerly Arthur Mullergren)*	Barton	Mid-Kansas (100%)	96	1963	73,766
	Rubart Station Natural gas (I)	Grant	Mid-Kansas (100%)	110	2014	NA
Empire District Electric Company (Empire)	**Riverton** Coal (B)	Cherokee	Empire (100%)	92	1950	295,780
	Riverton Combustion Turbine Natural gas (P)	Cherokee	Empire (100%)	236	1964 – 2007	
	Asbury Coal (B)	Jasper, Missouri	Empire (100%)	210	1970 - 1986	1,137,768
	Empire Energy Center Natural gas (P)	Jasper, Missouri	Empire (100%)	272	1978 - 2003	47,471
	Ozark Beach Hydro (B)	Taney, Missouri	Empire (100%)	16	1931	48,898
	State Line Combine Cycle Natural gas (P)	Jasper, Missouri	Empire (60%) Westar (40%)	499	2001	1,098,095
	State Line Combustion Turbine Natural gas (P)	Jasper, Missouri	Empire (100%)	89	1995	9,770

Operating Utility	Power Plant Name Unit / Primary Fuel Source (B-Base, I-Intermediate, P-Peaking)	County	Ownership	Nameplate Capacity (MW)	Initial Year of Operation	2011 Net Generation (MWh)
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	9,206
	McPherson 3 Natural gas (P)	McPherson	McPherson-BPU (100%)	99.9	1998	NA
Midwest Energy, Inc. (Midwest)	**Colby** Dual Fuel (P)	Thomas	Midwest (100%)	13	1970	800
	Great Bend Dual Fuel (P)	Barton	Midwest (100%)	10	1948 - 1956	(91)
	Bird City Distillate fuel oil (P)	Cheyenne	Midwest (100%)	4	1965	(20)
	Goodman Energy Center Natural gas (P)	Ellis	Midwest (100%)	74.7	2008	36,212