Approved: February 27. 2009
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 26, 2009, in Room 783 of the Docking State Office Building.

All members were present except:
Mike Burgess- excused
Margaret Long-excused
Rob Olson-excused

Committee staff present:
Mary Galligan, Kansas Legislative Research Department
Cindy Lash, Kansas Legislative Research Department
Melissa Doeblin, Office of the Revisor of Statutes
Sean Ostrow, Office of the Revisor of Statutes

Conferees appearing before the committee:
Ray Hammerlund, KCC
Phil Wages, KEPCo
Scott Jones, KCPL
Tom Sloan, State Representative, 45th District
Scott Jones, KCPL
Wayne Penrod, Sunflower
Don Low, KCC
Mark Schreiber, Westar
Phil Wages, KepCo
Rick Brunetta, KDHE
Tom Gross, KDHE
Tom Thompson, Sierra Club

Others attending:
Thirty-five including the attached list.

Representative Tom Sloan moved to introduce legislation that would: 1. Amend KSA 12-527 to mirror the process found in KSA 82a-622. 2. Amend KSA 82a-637 requiring that districts accept payment in satisfaction of the federal debt in the course of annexation, or negotiation pursuant thereto. 3. Amend KSA 82a-646 adding additional factors for consideration by the board when determining whether release of land is in the best interest of the landowners in the area. 4. Rural Water District Board membership composition. Seconded by Representative Tom Moxley. Motion carried.

Ray Hammerlund, KCC, spoke to the committee about the "Kansas Energy Report 2009", which can be found by contacting the KCC. Additionally, he had a power point presentation that he handed out in paper format, (Attachment 1). Included in the presentation were various charts and explanations of what the energy program entails and what some of the recommendations are for 2009.

Questions were asked and comments made by Representatives: Tom Moxley, Vince Wetta, Carl Holmes, and Annie Kuether.

Hearing on:

HB 2033 - Requiring utilities to become members of the climate registry.

Melissa Doeblin, Kansas Revisor, gave an explaination of **HB 2033** to the committee.

Opponent:

Minutes of the House Energy And Utilities Committee at 9:00 a.m. on January 26, 2009, in Room 783 of the Docking State Office Building.

Phil Wages, KEPCo, (Attachment 2), offered testimony in opposition to **HB 2033.**

Neutral:
Scott Jones, KCPL, (Attachment 3), spoke to the committee about **HB 2033.**

Nancy Jackson, Climate and Energy Project, (Attachment 4) offered testimony in regards to **HB 2033.**

Questions were asked and comments made by Representative Carl Holmes.

The hearing was closed on **HB 2033.**

Hearing on:
HB 2034 - Requiring utilities to develop means of reducing greenhouse gas emissions.

Melissa Doeblin, Kansas Revisor, gave an explaination of **HB 2034** to the committee.

Opponent:

Mark Schreiber, Westar, (Attachment 5), offered testimony in opposition to **HB 2034.**

Neutral:

Scott Jones, KCPL (Attachment 6),spoke to the committee about **HB 2034.**

Nancy Jackson, Climate and Energy Project, (Attachment 7), presented written testimony only regarding **HB 2034.**

There were no questions asked.

The hearing was closed on **HB 2034.**

Hearing on:
HB 2038 - Establishing fossil-fuel electric generation standards and evaluating renewable, distributive generation and transmission technology.

Melissa Doeblin, Kansas Revisor, gave an explaination of **HB 2038** to the committee.

Proponent:

Tom Sloan, State Representative, 45th District (Attachment 8), spoke to the committee in favor of **HB 2038.**

Opponents:

Scott Jones, KCPL, (Attachment 9), offered testimony in opposition of **HB 2038.**

Wayne Penrod, Sunflower, (Attachment 10), presented testimony in opposition to **HB 2038.**

Don Low, KCC, (Attachment 11), offered testimony in opposition to **HB 2038.**

Mark Schreiber, Westar, (Attachment 12), gave testimony in opposition to **HB 2038.**

Minutes of the House Energy And Utilities Committee at 9:00 a.m. on January 26, 2009, in Room 783 of the Docking State Office Building.

Written Opponent:

Phil Wages, KEPCo, (Attachment 13), gave written testimony in opposition to **HB 2038.**

David Springe, CURB, (Attachment 14), offered written testimony in opposition to **HB 2038.**

Neutral:

Tom Gross, KDHE (Attachment 15), offered testimony regarding **HB 2038.**

Tom Thompson, Sierra Club (Attachment 16), offered testimony regarding **HB 2038.**

Nancy Jackson, Climate and Energy Project, (Attachment 17), presented written testimony only regarding **HB 2038**.

Questions were asked and comments made by Representatives: Josh Svaty, Annie Kuether, Forrest Knox, Tom Moxley, Tom Sloan, and Carl Holmes.

The hearing on **HB 2038** was closed.

Representative Annie Kuether moved to introduce a comprehensive energy plan. Seconded by Representative Josh Svaty. Motion carried.

The next meeting is scheduled for January 27, 2009.

The meeting was adjourned at 10:47 a.m.

HOUSE ENERGY AND UTILITIES COMMITTEE
GUEST LIST

DATE: January 26, 2009

NAME	REPRESENTING
Ray Hammarlund	KCC
Liz Brosius	KCC
John Peterson	Capitol Strategy
Paul Johnson	Ks Catholic Conf.
Scott Jones	KCPL
TOM DAY	KCC
DON LOW	KCC
Mark Hazlett	CEP
Mark Schreiber	Westar
Paul Snider	KCPL
LARRY BERG	MIDWEST ENERGY
Mick Cobb	Kansas Gas Service
Mike Beam	Ks Lust Assn.
Jim Gardner	AT&T
Margie Heeney	Interested Citizen
Mari Tucker	Dept of Commerce
Leigh Klock	Hein Law Firm
Carol McDowell	Tallgrass Ranchers
Tom Thompson	Sierra Club

HOUSE ENERGY AND UTILITIES COMMITTEE
GUEST LIST

DATE: January 26, 2009

NAME	REPRESENTING
Dave Holtwick	Overland Park Chamber
PHIL WAGGS	KCPCO
Wes Ashton	Black Hills
Doug Smith	Sunflower Electric
Clark Bustin	Sunflower Electric
Shari Albrecht	KCHE
LON STANTON	NORTHERN NATURAL GAS
Jim McLean	KCHE Mens Service
Leslie Kaufman	Ks Co-gs Council
RYAN EASTERSON	CAL. CONSULTING GRP.
Dan Murray	Federico Consulting
Don Teske	KFU

Kansas Corporation Commission
Energy Programs Division

Ray Hammarlund, Director
Presentation to the House Energy and Utilities Committee
January 26, 2009

Mission Statement

The mission of the Energy Programs Division is *to promote energy conservation and efficiency in Kansas and to provide information on alternative energy and other energy topics.*

EPD's three primary functions

- Administer energy efficiency programs.
- Deliver public information and outreach.
- Foster coordination of state and federal initiatives and programs related to energy efficiency and alternative energy.

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 1-1

Function #1: EE Programs

- Primary program is the Facility Conservation Improvement Program (FCIP)
- Additional efforts are aimed at coordination with other state and federal programs: KEEP, LIHEAP, WAP, USDA-RD, and KACEE (Green Schools and EC/EE)

Facility Conservation Improvement Program (FCIP)

- A client-funded program for local units of government to implement energy efficiency upgrades in public buildings.
- Three Parties
  - FCIP staff
  - Local Unit of Government
  - Energy Service Companies (ESCO's)

The concept of FCIP is simple

- Performance Contracting
  - Allows customers to cash flow capital improvements for energy efficiency at the front end of the project and pay for that capital investment by energy savings over the life of the improvements.

Why FCIP?

- FCIP staff
  - Provides information at the point of transaction
  - Provides for and encourages balanced risk-sharing by both contracting parties and careful review of financial and energy saving assumptions.
  - Without FCIP, local units of government with limited resources may enter contracts with insufficient information to negotiate from a position of strength.
- See map for locations of FCIP projects.

Public Information and Outreach

- Annual Conference
- State Fair Booth
- Kansas Wind Working Group, funding and coordination with Lt. Gov. office
- Numerous speaking engagements with entities, groups, and communities
- Exploring potential regional "town hall" in the future on an ongoing basis
- Solar Roundtable on March 3, 2009

Updated Website with ...

- Easy-to-access information on energy topics and issues as well as available programs in KS and the federal level.
- Updated Wind Resource maps for Kansas
- New Solar Resource maps for Kansas
- FAQ's

Coordination and Promotion of Existing Energy Programs

- USDA Rural Development 9007
  - Largest resource in Topeka underutilized
  - $50,000 grant from the National Governors Association to hire a consultant and build a network to assist applicants
- Kansas Energy Efficiency Program (KHRC) –
  - Will coordinate with KHRC, and if necessary, dedicate DOE funds to its promotion.
- Kansas Association for Conservation and Environmental Education (KACEE)
  - Green Schools (KACEE-KDHE funded)

Wind for Schools

- $5,000 of DOE funds awarded to five districts ($1,000 each)
  - Pretty Prairie
  - Deerfield
  - South Barber
  - Blue Valley
  - Greenbush (Girard)

Midwestern Governors Association

- Climate Change Accord and Platform (map)
- MGA agreement to inform the national debate
- Kansas efforts have expanded terrestrial carbon offsets and informed the national discussion on a Low Carbon Fuel Standard (LCFS)

Kansas Energy Council Recommendations

Greenhouse Gas Policy

1. If a cap-and-trade policy or carbon tax is passed, it should be done at the federal level.
2. Endorse policies that promote declines in greenhouse gas emissions, not policies that merely shift emissions within or between regions.
3. Urge Congressional delegation to include agricultural sequestration as an offset in any federal cap-and-trade policy.

Kansas Energy Council Recommendations

Electricity Generation

1. Encourage federal funding of research and development of all technologies that can provide base-load power while achieving reduced CO2 emissions.
2. Encourage the Kansas Bioscience Authority to allocate some of their funds to research and development related to biomass-fueled electric generation, including the analysis of carbon footprint.

Kansas Energy Council Recommendations

Electricity Generation, cont.

3. Endorse collaborative development of advanced generation technologies in Kansas that can provide base-load power while reducing greenhouse gas emissions. Such collaboration could be between Kansas utilities, between Kansas utilities and regional utilities, or between Kansas utilities and other stakeholders.

Kansas Energy Council Recommendations

Energy Conservation & Efficiency

1. The State of Kansas should adopt a goal of increasing energy efficiency such that the rate of growth in electricity peak demand and total energy is 50% less than it would have been absent the energy efficiency initiative.
2. Establish minimum building design standard for all new and renovated, occupied, majority State-funded construction in accordance with LEED Platinum or design equivalent.

KEC Recommendations

Transportation and Agricultural Sectors

1. Encourage State agencies to develop guidelines for telecommuting for appropriate state employees, giving broad discretion to State agencies on how such an option would be applied.
2. Increase state agency and private sector efforts to educate farmers (and agricultural landowners) about the benefits—reduced CO2 emissions, energy and dollar savings—associated with no-till agriculture and existing state and federal conservation programs.

Kansas Energy Council Resources

Council resources will be archived and updated and linked to EPD web site

- Charts, graphs, and tables
- Compilation of informational resources on Greenhouse gas policy and Kansas electricity generation

Questions?

Contact Ray Hammarlund, Director, KCC Energy Programs Division:

785-271-3179

r.hammarlund@kcc.ks.gov

KCC ENERGY PROGRAMS DIVISION

The mission of the Energy Programs Division is to promote energy conservation and efficiency in Kansas and to provide information on alternative energy and other energy topics.

In support of this mission, the division ...

- administers energy efficiency programs,
- delivers public information and outreach, and
- fosters coordination of state and federal initiatives and programs related to energy efficiency and alternative energy.

PROGRAMS

Facility Conservation Improvement Program (FCIP)—The FCIP, administered by the staff of the Energy Programs Division, is a program that helps finance facility improvements in state, municipal, county, and school structures using a tool known as energy savings performance contracting. The program connects public entities with pre-approved, private energy service companies (ESCOs) that identify energy savings opportunities and then recommend a package of improvements that are paid for by the savings generated.

The FCIP has completed over 50 improvement projects and currently has another 20 projects either under construction or in the preliminary or investment grade audit stage. To date, all the projects complete are collectively savings Kansas taxpayers approximately over $11 million in annual energy savings.

In response to Executive Directive 07-373, the FCIP has increased the marketing of the program's benefits to the state's unified school districts. USDs, currently make up the largest portion of FCIP participants. The 15 USDs with projects completed or under construction have achieved a combined annual savings of approximately $925,000.

As public entities continue to compete for increasingly limited financial resources, the FCIP remains a cost-effective method to implement much-needed facility improvements without the need of capital dollars (http://www.kcc.ks.gov/energy/fcip/index.htm).

OUTREACH

Kansas Wind and Renewable Energy Conference—Division staff organized the 9th annual conference, held in Topeka on September 23 – 24, 2008. Over 760 people attended the conference, which included a record number of exhibitors, several keynote speakers, and numerous presentations on a range of renewable energy and energy efficiency topics and issues. Plans are underway for the 2009 conference.

USDA Rural Development Funds for Energy Efficiency & Alternative Energy—Using a one-time $50,000 grant from the National Governor's Association, the Division hired a consultant to increase the utilization of these funds by rural Kansans. Compared to other states, Kansas has not availed itself of these grant and loan funds as effectively: from 2001 to 2008, Kansas received roughly $1.8 million, whereas Nebraska received $16.4 million, Minnesota received $27.9 million,

and Iowa received $55.3 million. The purpose is to build a support and facilitation network to assist applicants in their funding request for USDA RD funds.

Governor's Booth at the State Fair—Division staff coordinated with the Governor's office to promote energy conservation at the Kansas State Fair, where 5,000 compact fluorescent light bulbs (donated by WalMart) were given away and fairgoers learned about energy savings through interactive electric meter display and educational publications.

POLICY

Kansas Energy Council—Division staff supported the work of the Kansas Energy Council in 2008, during which the Council focused on developing a better understanding of electricity generation in Kansas and policies to reduce greenhouse gas emissions. In support of committee activities, staff prepared summaries of resources related to greenhouse gas policy (http://www.kec.kansas.gov/mga/index.htm) and tables summarizing the state's existing generating units as well as current and projected capacity and peak demand through 2028 (http://www.kec.kansas.gov/reports.htm). The Council sponsored a September 3rd public presentation on national climate policy by Yale environmental economist Robert Repetto.The *Kansas Energy Report 2009* contains the Council's recommendations, which, along with related background information, were delivered to the Governor, Legislature, and KCC January 7, 2009. The Governor dissolved the Council on December 31, 2008.

Midwestern Governor's Association—In November, 2007, Governor Sebelius signed the Midwestern Greenhouse Gas Accord and associated Platform. The purpose of the Accord and Platform is to inform the national debate on climate policy and any resulting federal legislation that may arise in the next few years. The Kansas delegation has been very aggressive in bringing a Kansas perspective to the debate and has advocated strongly for positions that will benefit the Kansas economy and its industry and agriculture. To date, the delegation has aggressively advocated for the inclusion of offsets (both terrestrial and geologic) in federal cap-and-trade policy and identified issues associated with the Low Carbon Fuel Standard.

Kansas Wind Working Group—Division staff also assist the Lt. Governor's staff in coordinating the activities of this working group, established by the Governor in 2008. The group met four times last year and will meet again in Topeka on February 20, 2009. More information is available online (http://wwg.kansas.gov).

OTHER PROJECTS SUPPORTED BY DIVISION FUNDS

Resource Maps—New maps showing wind speeds and power densities at different heights (from 30 to 100 meters) were prepared by the National Renewable Energy Laboratory. Another map showing the state's solar resource was also prepared by an outside contractor.

Energy Conservation Education—As recommended by the Kansas Energy Council, the Division will provide $30,000 to the Kansas Association for Conservation and Environmental Education (KACEE) to deliver K-12 energy conservation education as one component of its Kansas Green Schools Program, a joint initiative with KDHE.

Kansas Energy Council
Recommendations included in *Kansas Energy Report 2009*

The Kansas Energy Council approved the following recommendations for inclusion in the 2009 version of the *Kansas Energy Report.* The *Report* was delivered to the Governor, Legislature, and Kansas Corporation Commission on January 7, 2009.

Chapter 2, Section 2.3: Energy, Economics, and the Environment: Greenhouse Gas Emissions and Global Climate Change

1. If a cap-and-trade policy or carbon tax is passed, it should be done at the federal level.
2. Endorse policies that promote declines in greenhouse gas emissions, not policies that merely shift emissions within or between regions.
3. Urge Congressional delegation to include agricultural sequestration as an offset in any federal cap-and-trade policy.

Chapter 8, Section 8.4: Electricity: Electricity Generation and Carbon Dioxide Emissions

1. Encourage federal funding of research and development of all technologies that can provide base-load power while achieving reduced CO_2 emissions.
2. Encourage the Kansas Bioscience Authority to allocate some of their funds to research and development related to biomass-fueled electric generation, including the analysis of carbon footprint.
3. Endorse collaborative development of advanced generation technologies in Kansas that can provide base-load power while reducing greenhouse gas emissions. Such collaboration could be between Kansas utilities, between Kansas utilities and regional utilities, or between Kansas utilities and other stakeholders.

Chapter 9, Section 9.4: Energy Conservation and Efficiency: Public Sector

1. The State of Kansas should adopt a goal of increasing energy efficiency such that the rate of growth in electricity peak demand and total energy is 50% less than it would have been absent the energy efficiency initiative.
2. Establish minimum building design standard for all new and renovated, occupied, majority State-funded construction in accordance with LEED Platinum or design equivalent.

Chapter 10, Section 10.1: Energy Use in the Transportation Sector: Cars, Light Trucks

1. Encourage State agencies to develop guidelines for telecommuting for appropriate state employees, giving broad discretion to State agencies on how such an option would be applied.

Chapter 11, Section 11.1: Energy Use in the Agricultural Sector: Crop Agriculture

1. Increase state agency and private sector efforts to educate farmers (and agricultural landowners) about the benefits—reduced CO_2 emissions, energy and dollar savings—associated with no-till agriculture and existing state and federal conservation programs.

The *Kansas Energy Report* is available online at http://www.kec.gov/energy_plan.htm

Kansas Electric Generation: Summary of Existing Power Plants, as of September 30, 2007

Kansas Energy Council (KEC) Staff Summary, Prepared for the KEC Electricity Committee

The table below contains information on the major electric generation facilities currently operating in Kansas, exclusive of intermittent power generation sources.[1] Generating units are identified as base load, intermediate, peaking, standby, and load-following.[2] Basic information in the first five columns comes from U.S. Department of Energy, Energy Information Administration (EIA) Form 860 for 2006,[3] supplemented in some instances by updates from the utilities. Gross and net generation and carbon dioxide (CO_2) emissions data were provided by the individual utilities (with a few exceptions), with the emissions rates based on gross generation and Continuous Emissions Monitoring System (CEMS) data, where available.[4]

Utility / Operator	Power Plant Name Unit / Primary Fuel Source / Type (B = Base load, I = Intermediate, P = Peaking, S = Standby, LF = Load following)	County	Summer Capacity (MW)	Initial Year of Operation	Gross Generation (MWh) 10/1/2006 - 9/30/2007	Net Generation (MWh) 10/1/2006 - 9/30/2007	CO_2 Emissions Rate (Gross) (tons/MWh) 10/1/2006 - 9/30/2007
Wolf Creek Nuclear Generating Corp. *(owned by Westar, KCP&L, KEPCo)*	**Wolf Creek** 1: Nuclear (B)	Coffey	1,160	1985	9,697,461	9,343,797	0
Westar *(includes KGE assets; Emporia Energy Center came online in 2008[5])*	**Jeffrey Energy Center**	Pottawatomie					
	1: Coal (B)		730	1978	5,670,669	5,189,383	1.024
	2: Coal (B)		730	1980	5,776,659	5,325,549	1.029
	3: Coal (B)		730	1983	5,220,786	4,800,520	0.957
	Lawrence Energy Center	Douglas					
	3: Coal (B)		48	1955	397,840	352,074	1.283
	4: Coal (B)		110	1960	865,604	756,339	1.214
	5: Coal (B)		373	1971	2,599,968	2,402,377	1.025
	Hutchinson	Reno					
	GT1: Natural gas (P)		51	1974	1,260	891	0.693
	GT2: Natural gas (P)		55	1974	1,162	726	0.612
	GT3: Natural gas (P)		56	1974	2,297	1,863	0.795
	GT4: Distillate fuel oil		75	1975	69	69	1.59
	H1DG: Distillate fuel oil (S)		3	1983	19	19	0.88
	ST1: Natural gas (P), retired 12/06		17	1950	NA	NA	NA
	ST2: Natural gas (P), retired 12/06		16	1950	NA	NA	NA
	ST3: Natural gas (P), retired 12/06		28	1951	NA	NA	NA
	ST4: Natural gas (I)		170	1965	150,872	133,240	0.610
	Abilene	Dickinson					
	GT1: Natural gas (P)		72	1973	6,835	6,739	0.693

1-12

Utility / Operator	Power Plant Name Unit / Primary Fuel Source / Type (B = Base load, I = Intermediate, P = Peaking, S = Standby, LF = Load following)	County	Summer Capacity (MW)	Initial Year of Operation	Gross Generation (MWh) 10/1/2006 - 9/30/2007	Net Generation (MWh) 10/1/2006 - 9/30/2007	CO_2 Emissions Rate (Gross) (tons/MWh) 10/1/2006 - 9/30/2007
	Tecumseh	Shawnee					
	1: Natural gas (P)		19	1972	129	-135	0.98
	2: Natural gas (P)		20	1972	123	-141	0.98
	7: Coal (B)		74	1957	596,101	530,575	1.164
	8: Coal (B)		130	1962	1,009,622	914,065	1.076
	Gordon Evans *(formerly KGE)*	Sedgwick					
	ST1: Natural gas (P)		152	1961	127,743	112,134	0.594
	ST2: Natural gas (S)		374	1967	390,933	363,756	0.657
	5: Distillate fuel oil (P)		3	1969	41	41	0.880
	GT1: Natural gas (P)		74	2000	11,969	10,044	0.641
	GT2: Natural gas (P)		72	2000	10,099	9,190	0.738
	GT3: Natural gas (P)		150	2001	44,363	44,162	0.660
	Murray Gill *(formerly KGE)*	Sedgwick					
	1: Natural gas (P)		40	1952	4,935	3,349	0.622
	2: Natural gas (P)		71	1954	16,204	13,329	0.585
	3: Natural gas (P)		104	1956	76,809	68,474	0.731
	4: Natural gas (P)		102	1959	74,250	66,022	0.631
	Neosho *(formerly KGE)*	Labette					
	3: Natural gas (P)		67	1954	9,681	7,187	0.555
KCP&L	**LaCygne**	Linn					
	1: Coal (B)		736	1973	5,515,799	4,994,470	1.016
	2: Coal (B)		682	1977	5,766,795	5,436,128	1.005
	Osawatomie	Miami					
	1: Natural gas (P)		77	2003	10,180	9,536	0.781
	West Gardner	Johnson					
	1: Natural gas (P)		77	2003	26,933	26,184	0.733
	2: Natural gas (P)		77	2003	25,586	24,800	0.742
	3: Natural gas (P)		77	2003	26,171	25,414	0.736
	4: Natural gas (P)		77	2003	24,541	23,895	0.726
KCBPU	**Quindaro**	Wyandotte					
	GT1: Natural gas (P)		13	1969	346	174	0.930
	GT2: Distillate fuel oil (P)		56	1974	2,452	2,101	1.099
	GT3: Distillate fuel oil (P)		46	1977	1,055	737	1.214
	ST1: Coal (B)		72	1965	529,203	494,038	1.136
	ST2: Coal (B)		111	1971	689,347	626,947	1.156

Utility / Operator	Power Plant Name Unit / Primary Fuel Source / Type (B = Base load, I = Intermediate, P = Peaking, S = Standby, LF = Load following)	County	Summer Capacity (MW)	Initial Year of Operation	Gross Generation (MWh) 10/1/2006 - 9/30/2007	Net Generation (MWh) 10/1/2006 - 9/30/2007	CO_2 Emissions Rate (Gross) (tons/MWh) 10/1/2006 - 9/30/2007
	Nearman Creek	Wyandotte					
	ST1: Coal (B)		229	1981	1,790,658	1,628,875	1.232
	GT1: Natural gas (P)		76	2006	24,734	23,925	0.875
Sunflower *(Cimarron River, Clifton, Fort Dodge, and Great Bend stations owned by Mid-Kansas Electric Company)*	**Holcomb Station**	Finney					
	H1: Coal (B)		360.0	1983	3,031,141.5	2,823,615	0.9945
	Garden City Station	Finney					
	GC3: Natural gas (I)		8.7	1962	21	-372	1.367
	S2: Natural gas (I)		98.0	1973	40,309	34,187	0.577
	S3: Natural gas (P)		14.5	1968	62	-58	1.519
	S4: Natural gas (P)		51.0	1976	9,620	9,399	0.820
	S5: Natural gas (P)		53.0	1979	6,486	6,138	0.754
	Cimarron River Station	Seward					
	CR1: Natural gas (I)		61.0	1963	153,160	142,999	0.704
	CR2: Natural gas (P)		15.5	1967	54	54	0.735
	Clifton Station	Washington					
	CL1: Natural gas (P)		73.1	1974	20,058	19,476	0.922
	CL2: Distillate fuel oil (P)		2.5	1974	6	6	0.861
	Fort Dodge Station	Ford					
	FDS4: Natural gas (LF) *(formerly Judson Large)*		144.6	1968	461,134	427,579	0.640
	Great Bend Station	Barton					
	GB3: Natural gas (I) *(formerly Arthur Mullergren)*		98.5	1963	139,625	128,117	0.641
Empire	**Riverton**	Cherokee					
	10: Natural gas (P)		16	1988	2,138	2,138	0.978
	11: Natural gas (P)		16	1988	187	187	0.985
	12: Natural gas (I)		150	2007	91,193	90,150	0.708
	7: Coal (B)		38	1950	205,626	190,137	1.369
	8: Coal (B)		54	1954	359,098	337,254	1.292
	9: Natural gas (P)		12	1964	880	880	0.985
City of McPherson	**McPherson 2**	McPherson					
	GT1: Natural gas (P)		51.8	1973	3,251	3,234	0.813
	GT2: Distillate fuel oil (P)		52.5	1976	408	405	0.993
	GT3: Natural gas (P)		52.2	1979	1,758	1,748	0.800
	McPherson 3	McPherson					
	NA1: Natural gas (P)		79.3	1998	25,639	25,404	0.792

Utility / Operator	Power Plant Name Unit / Primary Fuel Source / Type (B = Base load, I = Intermediate, P = Peaking, S = Standby, LF = Load following)	County	Summer Capacity (MW)	Initial Year of Operation	Gross Generation (MWh) 10/1/2006 - 9/30/2007	Net Generation (MWh) 10/1/2006 - 9/30/2007	CO_2 Emissions Rate (Gross) (tons/MWh) 10/1/2006 - 9/30/2007
Midwest Energy *(Note: Goodman Energy Center came online in 2008)*[5]	**Colby** GT: Dual Fuel (P)	Thomas	13.0	1970	0	296	N/A
	Great Bend 1: Dual Fuel (P) 2: Dual Fuel (P) 3: Dual Fuel (P) 4: Dual Fuel (P) 5: Dual Fuel (P) 6: Dual Fuel (P)	Barton	 1.0 1.0 1.0 1.0 3.0 3.0	 1948 1948 1948 1948 1956 1956	38	-41	N/A
	Bird City 1: Distillate fuel oil (P)	Cheyenne	2.0	1965	0	-69	N/A
Bowersock	**Kansas River Project** 1,3-7: Hydro (B)	Douglas		1922-1925		10,329	0

Notes

[1] An intermittent electric generator or resource is "an electric generating plant with output controlled by the natural variability of the energy resource rather than dispatched based on system requirements. Intermittent output usually results from the direct, non-stored conversion of naturally occurring energy fluxes such as solar energy, wind energy, or the energy of free-flowing rivers (that is, run-of-river hydroelectricity)." From EIA's Energy Glossary (http://www.eia.doe.gov/glossary/glossary_i.htm; accessed May 2008).

[2] *Base load units* produce electricity at an essentially constant rate and run continuously; they are operated to maximize system mechanical and thermal efficiency and minimize system operating costs. *Peaking units* are normally reserved for operation during the hours of highest daily, weekly, or seasonal loads. *Intermediate units,* as their name suggests serve the load in between base load and peak load. *Standby units* support a utility system and generally run under no-load. *Load following units* are used to maintain scheduled system frequency and are ramped up or down in response to changes in system frequency, tieline loading, or the relation of these to each other.

[3] EIA, 2008, Electric Generation Capacity, Existing Electric Generating Units in the U.S., 2006: http://www.eia.doe.gov/cneaf/electricity/page/capacity/capacity.html (link to table; accessed January 2008).

[4] Generation data for Bowersock is from EIA Form 906-920 (for 2006 and 2007). CO_2 emissions rates for McPherson BPU were calculated based on gross generation and fuel type by multiplying total consumption by the appropriate emissions coefficient for a fuel type, divided by the amount of production in MWh over the desired time period. Emissions coefficients come from the EIA's CO_2 Uncontrolled Emissions Factors webpage (http://www.eia.doe.gov/cneaf/electricity/epa/epata3.html). Generation data for Sunflower (and MKEC) units are based on actual plant watt-hour meter readings. KCBPU's emissions rates for Quindaro GT1, GT2, and GT3 were calculated from fuel data and EPA Emissions Factors.

[5] Westar Energy's Emporia Energy Center has 300 MW (natural gas units) of peaking capacity; another 300 MW is scheduled to come online in 2009. Midwest Energy's Goodman Energy Center has 9 natural gas peaking units, each with a summer capacity of 8.4 MW.

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Kansas Electric Generation: Capacity and Peak Load, 2008 to 2028

Kansas Energy Council (KEC) Staff Summary, Prepared for the KEC Electricity Committee

The tables presented below (Tables 1–3) contain information on current (2008) and forecasted (through 2028) capacity and peak load for the major utilities (and other entities) operating in Kansas. This information represents each utility's current forecasted position, including wholesale power contracts expected to be renewed in the future; it does not include new generation that is not currently approved or under construction. Data presented for KCP&L and Empire represents only the capacity and peak load associated with serving their Kansas customers.

Capacity from jointly owned generation facilities, exclusive of wind generation, is allocated among the owners as follows: **Wolf Creek (current):** Westar 47% (545 MW), KCP&L 47% (545 MW), and KEPCo 6% (70 MW); **Wolf Creek (2011 through 2028, due to improvements in operation):** Westar (565 MW), KCP&L (565 MW), and KEPCo (72.5 MW); **LaCygne:** Westar (709 MW) and KCP&L (709 MW); **State Line:** Westar 40% (200 MW) and Empire 60% (300 MW); **Iatan 1:** KCP&L 70% (455 MW), Aquila 18% (117 MW), and Empire 12% (78 MW).

Capacity from wind generation is either calculated from historical performance or estimated. For wind farms with sufficient historical performance data, capacity is calculated according to Southwest Power Pool's (SPP's) criterion:[1] **Gray County Wind Farm:** 10 MW; **Elk River Wind Farm:** 7 MW; **Spearville Wind Energy Facility:** 15 MW; and **Smoky Hills Wind Farm (2009 through 2028):**[2] 26 MW. Capacity for the following facilities, which will become operational at the end of 2008, are estimated as 5% of nameplate capacity: **Meridian Way Wind Farm** (10 MW), **Flat Ridge Wind Farm** (5 MW), and **Central Plains Wind Farm** (5 MW). Where the power is owned or purchased by more than one utility, capacity is allocated as follows: **Meridian Way Wind Farm:** Empire (5 MW) and Westar (5 MW); **Smoky Hills Wind Farm:** Sunflower (7.8 MW).[3]

In general, the information for these tables was provided by the individual utilities, including their presentations to the KEC Electricity Committee (available on the KEC web site: http://kec.kansas.gov/electricity/index.htm). In addition, staff made calculations for KEPCo, whose forecasted peak load was calculated from data provided, and extended Westar's 10-year forecast to 20 years.

KEC staff thanks the following utility representatives for their assistance in compiling these data and for their presentations to the KEC Electricity Committee: Jim Ludwig, Executive Vice President of Public Affairs and Consumer Services, Westar Energy; Mark Schreiber, Director of Government Affairs, Westar Energy; John Grimwade, Senior Director of Strategic Planning, Kansas City Power and Light (KCP&L); Paul Snider, Manager of Government Affairs, Kansas City Power and Light (KCP&L); Blake Elliott, Director of Electric Supply Planning, Kansas City Board of Public Utilities (KCBPU); Corey Linville, Manager of Generation Expansion, Sunflower Electric Power Corporation; Kyle Nelson, Senior Vice President and Chief Operating Officer, Sunflower Electric Power Corporation; Todd Tarter, Manager of Strategic Planning, Empire District Electric Company; Bill Dowling, Vice President of Energy Management, Midwest Energy; Les Evans, Vice President of Power Supply, Kansas Electrical Power Cooperative (KEPCo); Jim Widener, General Manager, Kansas Municipal Energy Agency (KMEA); Neil Rowland, Director of Electric Operations, Kansas Municipal Energy Agency (KMEA); and Colin Whitley: General Manager, Kansas Power Pool (KPP).

[1] Southwest Power Pool's Generation Working Group (GWG), September 2004, Wind Power Capacity Accreditation White Paper, Southwest Power Pool (SPP): http://www.spp.org/publications/WindWhite04Sept8_rev5.pdf. Rated capacity for wind is defined as the minimum capacity value that can be expected 85% of the time during the top 10% of load hours in a given month.

[2] Phase 1, roughly 40% of the Smoky Hills Wind Farm, was completed in February 2008 and generation data during the summer of 2008 was used to calculate capacity for the entire project, which is expected to be operational at the end of 2008. Capacity from Smoky Hills during 2008 is not included in these tables.

[3] Buyers Midwest and KC Board of Public Utilities do not include rated capacity from Smoky Hills Wind Farm within their net capacity totals.

Table 1—Overview of current and projected net capacity and capacity responsibility for major utilities and other entities in Kansas, 2008–2028. Net capacity includes existing and planned capacity from generating units (including rated capacity provided by wind generation), as well as any capacity purchased and sold though wholesale power contracts. Capacity responsibility reflects current and projected peak-load demand plus the minimum 12% capacity margin required by Southwest Power Pool (SPP).[1] Capacity responsibility is calculated as projected peak-load demand divided by 0.88.

Utility	Current (2008)		2013 Projected		2018 Projected		2023 Projected		2028 Projected	
	Net Capacity (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Capacity Responsibility (MW)
Westar	5,796.0	5,578.4	6,418.0	6,009.5	6,560.0	6474.0	6,680.0	6974.3	6,622.0	7513.3
KCP&L	1,970.8	1,942.0	2,225.5	2,043.8	2,234.2	2,166.5	2,260.4	2,270.9	2,288.7	2,405.9
KC Board of Public Utilities	560.5	573.9	560.5	602.3	548.0	636.4	406.3	664.8	315.5	693.2
Sunflower and MKEC	1,185.5	1,163.6	1,350.3	1,328.4	1,350.3	1,364.8	1,178.1	1,360.2	1,178.1	1,395.5
Empire	69.1	67.4	68.3	70.6	63.0	74.3	58.7	78.7	54.7	83.6
Midwest Energy	359.0	354.5	379.0	369.5	362.5	378.4	358.0	388.6	358.0	398.9
Kansas Electrical Power Coop.	447.0	419.5	488.4	460.7	411.3	517.5	380.4	572.2	388.5	626.1
Kansas Municipal Energy Agency	323.0	219.2	277.0	247.2	273.0	268.6	273.0	289.4	228.0	311.8
Kansas Power Pool	445.6	331.9	625.8	449.2	618.8	484.3	534.8	507.7	534.8	532.6

[1] Per SPP criteria, load satisfied by firm power contracts and contracts that include reserve responsibility are included in capacity responsibility numbers without the additional capacity margin.

Table 2—Annual forecasted peak load, capacity responsibility, and net capacity for major utilities and other entities in Kansas, 2008–2028. Peak load is the amount of consumption during the period of maximum demand and, in this table, is synonymous with summer peak load. Capacity responsibility reflects current and projected peak-load demand plus the minimum 12% capacity margin required by Southwest Power Pool (SPP).[1] Capacity responsibility is calculated as projected peak-load demand divided by 0.88. Net capacity includes existing and planned capacity from generating units (including rated capacity provided by wind generation), as well as any capacity purchased and sold though wholesale power contracts (see Table 3 for details). Peak-load data was provided by the individual utilities except where noted.[2]

	Westar			KCP&L			KC Board of Public Utilities		
	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)
2008	4,909.0	5,578.4	5,796.0	1,709.0	1,942.0	1,970.8	505.0	573.9	560.5
2009	4,982.6	5,662.1	6,118.0	1,721.0	1,955.7	1,992.3	510.0	579.5	560.5
2010	5,057.4	5,747.0	6,426.0	1,738.9	1,976.0	2,121.9	515.0	585.2	560.5
2011	5,133.2	5,833.2	6,437.0	1,755.9	1,995.3	2,183.7	520.0	590.9	560.5
2012	5,210.2	5,920.7	6,428.0	1,775.7	2,017.9	2,201.0	525.0	596.6	560.5
2013	5,288.4	6,009.5	6,418.0	1,798.5	2,043.8	2,225.5	530.0	602.3	560.5
2014	5,367.7	6,099.7	6,600.0	1,826.3	2,075.3	2,231.3	535.0	608.0	560.5
2015	5,448.2	6,191.2	6,590.0	1,847.2	2,099.1	2,234.2	540.0	613.6	548.0
2016	5,530.0	6,284.0	6,580.0	1,870.0	2,124.9	2,223.0	545.0	619.3	548.0
2017	5,612.9	6,378.3	6,570.0	1,888.7	2,146.3	2,228.1	550.0	625.0	548.0
2018	5,697.1	6,474.0	6,560.0	1,906.5	2,166.5	2,234.2	560.0	636.4	548.0
2019	5,782.6	6,571.1	6,724.0	1,930.2	2,193.4	2,240.4	565.0	642.0	548.0
2020	5,869.3	6,669.6	6,713.0	1,951.0	2,217.1	2,244.3	570.0	647.7	492.0
2021	5,957.3	6,769.7	6,702.0	1,968.8	2,237.3	2,250.1	575.0	653.4	492.0
2022	6,046.7	6,871.2	6,692.0	1,982.7	2,253.0	2,254.2	580.0	659.1	419.7
2023	6,137.4	6,974.3	6,680.0	1,998.4	2,270.9	2,260.4	585.0	664.8	406.3
2024	6,229.5	7,078.9	6,669.0	2,022.1	2,297.9	2,267.2	590.0	670.5	426.3
2025	6,322.9	7,185.1	6,658.0	2,046.9	2,326.0	2,272.9	595.0	676.1	426.3
2026	6,417.7	7,292.9	6,646.0	2,066.7	2,348.6	2,276.3	600.0	681.8	315.5
2027	6,514.0	7,402.3	6,634.0	2,091.5	2,376.7	2,282.8	605.0	687.5	315.5
2028	6,611.7	7,513.3	6,622.0	2,117.2	2,405.9	2,288.7	610.0	693.2	315.5

Table 2, continued.

	Sunflower and MKEC			Empire			Midwest Energy		
	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)
2008	1,024.0	1,163.6	1,185.5	59.3	67.4	69.1	312.0	354.5	359.0
2009	1,040.0	1,181.8	1,352.3	59.9	68.0	70.5	318.0	361.4	364.0
2010	1,096.0	1,245.5	1,350.3	60.4	68.6	71.7	320.0	363.6	369.0
2011	1,131.0	1,285.2	1,350.3	60.9	69.3	70.6	322.0	365.9	369.0
2012	1,147.0	1,303.4	1,350.3	61.5	69.9	69.4	324.0	368.2	379.0
2013	1,169.0	1,328.4	1,350.3	62.1	70.6	68.3	325.0	369.3	379.0
2014	1,175.0	1,335.2	1,350.3	62.7	71.3	67.1	326.0	370.5	375.5
2015	1,182.0	1,343.2	1,350.3	63.3	72.0	66.0	328.0	372.7	371.5
2016	1,189.0	1,351.1	1,350.3	64.0	72.7	65.0	330.0	375.0	362.5
2017	1,196.0	1,359.1	1,350.3	64.7	73.5	64.0	332.0	377.3	362.5
2018	1,201.0	1,364.8	1,350.3	65.4	74.3	63.0	333.0	378.4	362.5
2019	1,173.0	1,333.0	1,178.1	66.1	75.1	62.1	335.0	380.7	358.0
2020	1,179.0	1,339.8	1,178.1	66.9	76.0	61.2	337.0	383.0	358.0
2021	1,185.0	1,346.6	1,178.1	67.6	76.9	60.4	339.0	385.2	358.0
2022	1,191.0	1,353.4	1,178.1	68.4	77.8	59.5	340.0	386.4	358.0
2023	1,197.0	1,360.2	1,178.1	69.2	78.7	58.7	342.0	388.6	358.0
2024	1,203.0	1,367.0	1,178.1	70.1	79.6	57.9	344.0	390.9	358.0
2025	1,210.0	1,375.0	1,178.1	70.9	80.6	57.0	345.0	392.0	358.0
2026	1,216.0	1,381.8	1,178.1	71.8	81.6	56.3	347.0	394.3	358.0
2027	1,222.0	1,388.6	1,178.1	72.7	82.6	55.5	349.0	396.6	358.0
2028	1,228.0	1,395.5	1,178.1	73.6	83.6	54.7	351.0	398.9	358.0

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Table 2, continued.

	Kansas Electrical Power Coop.[3]			Kansas Municipal Energy Agency			Kansas Power Pool		
	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)	Peak Load (MW)	Capacity Responsibility (MW)	Net Capacity (MW)
2008	412.0	419.5	447.0	192.9	219.2	323.0	295.4	331.9	445.6
2009	419.2	427.1	451.3	199.9	227.2	275.0	318.4	355.0	499.2
2010	426.5	434.9	485.6	204.8	232.7	277.0	383.0	428.0	625.3
2011	434.0	442.7	492.5	210.1	238.7	277.0	389.4	434.8	625.8
2012	441.6	450.8	497.0	213.8	242.9	277.0	395.8	441.9	625.8
2013	449.3	460.7	488.4	217.5	247.2	277.0	402.1	449.2	625.8
2014	457.2	469.0	492.8	221.2	251.4	277.0	408.6	456.6	625.8
2015	465.2	477.5	497.3	224.9	255.6	277.0	415.2	464.1	625.8
2016	473.3	486.2	501.9	228.9	260.1	273.0	421.9	471.7	625.8
2017	481.6	508.6	406.5	232.9	264.7	273.0	428.8	479.5	625.8
2018	490.1	517.5	411.3	236.4	268.6	273.0	433.1	484.3	618.8
2019	498.6	533.7	364.0	239.9	272.7	273.0	436.9	488.7	618.8
2020	507.4	543.1	368.0	243.5	276.7	273.0	441.0	493.4	534.8
2021	516.2	552.6	372.1	247.2	280.9	273.0	445.2	498.1	534.8
2022	525.3	562.3	376.2	250.9	285.1	273.0	449.4	502.9	534.8
2023	534.5	572.2	380.4	254.7	289.4	273.0	453.7	507.7	534.8
2024	543.8	582.2	384.6	258.5	293.7	273.0	458.0	512.6	534.8
2025	553.3	594.4	375.0	262.4	298.1	273.0	462.3	517.5	534.8
2026	563.0	604.8	379.4	266.3	302.6	228.0	466.7	522.5	534.8
2027	572.9	615.3	383.9	270.3	307.1	228.0	471.1	527.5	534.8
2028	582.9	626.1	388.5	274.3	311.8	228.0	475.5	532.6	534.8

[1] Per SPP criteria, load satisfied by firm power contracts and contracts that include reserve responsibility are included in capacity responsibility numbers without the additional capacity margin.
[2] Peak load data for the years 2018 through 2028 were calculated by KEC staff from the 10 year forecast provided by Westar, assuming 1.5% annual growth.
[3] Peak load data were calculated by KEC staff, using a 1.75% annual growth rate, based on the numbers provided in "Power Supply Overview," Kansas Electrical Power Cooperative PowerPoint presentation to the KEC Electricity Committee: http://kec.kansas.gov/electricity/index.htm.

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Table 3—Current and forecasted capacity breakdown for major utilities and entities in Kansas, 2008–2028. Capacity from generation is the summation of the rated capacity of all of the power plants owned by the utility or entity, including wind generation. Net contracts represent capacity purchased and sold through wholesale power contracts, such as Power Purchase Agreements (PPA's), and is calculated as contracts purchased minus contracts sold (a negative number indicates that more capacity is sold than purchased, while a positive number indicates that more capacity is purchased than sold). Net capacity is the summation of capacity from generation and net contracts

	Westar			KCP&L			KC Board of Public Utilities		
	Capacity from Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Capacity from Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Capacity from Generation (MW)	Net Contracts (MW)	Net Capacity (MW)
2008	6,635.0	-839.0	5,796.0	1,915.9	54.9	1,970.8	613.5	-53.0	560.5
2009	6,965.0	-847.0	6,118.0	1,937.3	55.0	1,992.3	613.5	-53.0	560.5
2010	6,965.0	-539.0	6,426.0	2,171.8	-49.9	2,121.9	613.5	-53.0	560.5
2011	6,985.0	-548.0	6,437.0	2,190.9	-7.2	2,183.7	613.5	-53.0	560.5
2012	6,985.0	-557.0	6,428.0	2,207.5	-7.7	2,201.0	613.5	-53.0	560.5
2013	6,985.0	-567.0	6,418.0	2,208.7	16.8	2,225.5	613.5	-53.0	560.5
2014	6,985.0	-385.0	6,600.0	2,214.5	16.8	2,231.3	613.5	-53.0	560.5
2015	6,985.0	-395.0	6,590.0	2,217.4	16.8	2,234.2	601.0	-53.0	548.0
2016	6,985.0	-405.0	6,580.0	2,223.0	0	2,223.0	601.0	-53.0	548.0
2017	6,985.0	-415.0	6,570.0	2,228.1	0	2,228.1	601.0	-53.0	548.0
2018	6,985.0	-425.0	6,560.0	2,234.2	0	2,234.2	601.0	-53.0	548.0
2019	6,985.0	-261.0	6,724.0	2,240.4	0	2,240.4	601.0	-53.0	548.0
2020	6,985.0	-272.0	6,713.0	2,244.3	0	2,244.3	545.0	-53.0	492.0
2021	6,985.0	-283.0	6,702.0	2,250.1	0	2,250.1	545.0	-53.0	492.0
2022	6,985.0	-293.0	6,692.0	2,254.2	0	2,254.2	472.7	-53.0	419.7
2023	6,985.0	-305.0	6,680.0	2,260.4	0	2,260.4	421.3	-15.0	406.3
2024	6,985.0	-316.0	6,669.0	2,267.2	0	2,267.2	421.3	5.0	426.3
2025	6,985.0	-327.0	6,658.0	2,272.9	0	2,272.9	421.3	5.0	426.3
2026	6,985.0	-339.0	6,646.0	2,276.3	0	2,276.3	310.5	5.0	315.5
2027	6,985.0	-351.0	6,634.0	2,282.8	0	2,282.8	310.5	5.0	315.5
2028	6,985.0	-363.0	6,622.0	2,288.7	0	2,288.7	310.5	5.0	315.5

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Table 3, continued.

	Sunflower and MKEC			Empire			Midwest Energy[1]		
	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)
2008	980.2	205.3	1,185.5	63.1	6.0	69.1	71.0	288.0	359.0
2009	988.6	364.7	1,352.3	62.1	8.4	70.5	101.0	263.0	364.0
2010	988.6	364.7	1,350.3	68.7	3.0	71.7	101.0	268.0	369.0
2011	988.6	364.7	1,350.3	67.6	3.0	70.6	101.0	268.0	369.0
2012	988.6	364.7	1,350.3	66.5	2.9	69.4	101.0	278.0	379.0
2013	988.6	364.7	1,350.3	65.4	2.9	68.3	101.0	278.0	379.0
2014	988.6	364.7	1,350.3	64.3	2.8	67.1	101.0	274.5	375.5
2015	988.6	364.7	1,350.3	65.5	0.5	66.0	97.0	274.5	371.5
2016	988.6	364.7	1,350.3	64.5	0.5	65.0	88.0	274.5	362.5
2017	988.6	364.7	1,350.3	63.5	0.5	64.0	88.0	274.5	362.5
2018	988.6	364.7	1,350.3	62.5	0.5	63.0	88.0	274.5	362.5
2019	988.6	189.5	1,178.1	61.6	0.5	62.1	88.0	270.0	358.0
2020	988.6	189.5	1,178.1	60.7	0.5	61.2	88.0	270.0	358.0
2021	988.6	189.5	1,178.1	59.9	0.5	60.4	88.0	270.0	358.0
2022	988.6	189.5	1,178.1	59.1	0.5	59.5	88.0	270.0	358.0
2023	988.6	189.5	1,178.1	58.2	0.5	58.7	88.0	270.0	358.0
2024	988.6	189.5	1,178.1	57.4	0.5	57.9	88.0	270.0	358.0
2025	988.6	189.5	1,178.1	56.6	0.5	57.0	88.0	270.0	358.0
2026	988.6	189.5	1,178.1	55.8	0.5	56.3	88.0	270.0	358.0
2027	988.6	189.5	1,178.1	55.0	0.5	55.5	88.0	270.0	358.0
2028	988.6	189.5	1,178.1	54.2	0.4	54.7	88.0	270.0	358.0

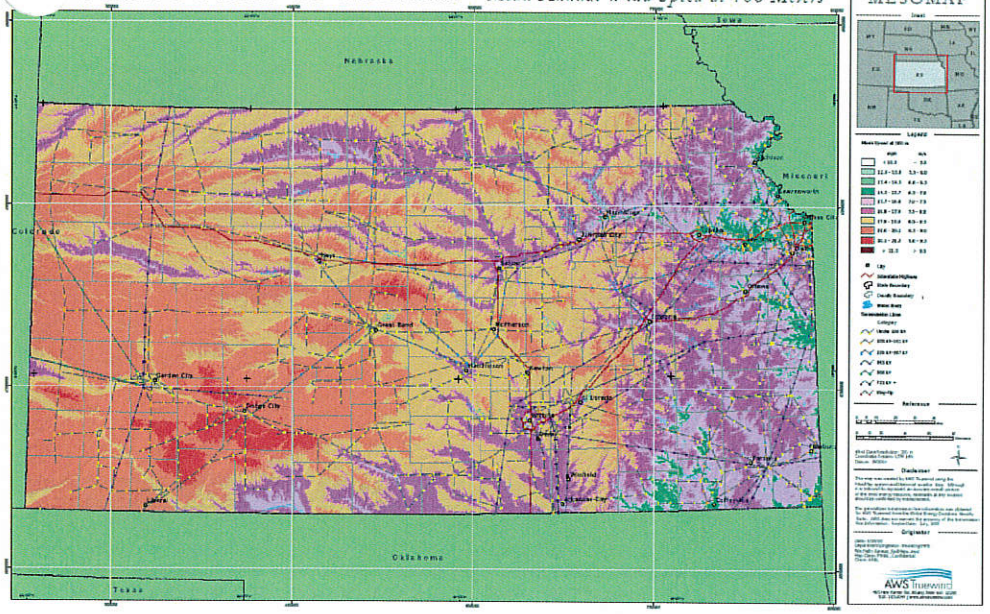
Table 3, continued.

	Kansas Electrical Power Coop.[2]			Kansas Municipal Energy Agency			Kansas Power Pool		
	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)	Generation (MW)	Net Contracts (MW)	Net Capacity (MW)
2008	90.0	357.0	447.0	205.0	118.0	323.0	234.5	211.1	445.6
2009	90.0	361.3	451.3	205.0	70.0	275.0	237.7	261.5	499.2
2010	120.0	365.6	485.6	205.0	72.0	277.0	359.3	266.0	625.3
2011	122.5	370.0	492.5	205.0	72.0	277.0	359.3	266.5	625.8
2012	122.5	374.5	497.0	205.0	72.0	277.0	359.3	266.5	625.8
2013	122.5	365.9	488.4	205.0	72.0	277.0	359.3	266.5	625.8
2014	122.5	370.3	492.8	205.0	72.0	277.0	359.3	266.5	625.8
2015	122.5	374.8	497.3	205.0	72.0	277.0	359.3	266.5	625.8
2016	122.5	379.4	501.9	205.0	68.0	273.0	359.3	266.5	625.8
2017	122.5	284.0	406.5	205.0	68.0	273.0	359.3	266.5	625.8
2018	122.5	288.8	411.3	205.0	68.0	273.0	359.3	259.5	618.8
2019	122.5	241.5	364.0	205.0	68.0	273.0	359.3	259.5	618.8
2020	122.5	245.5	368.0	205.0	68.0	273.0	359.3	175.5	534.8
2021	122.5	249.6	372.1	205.0	68.0	273.0	359.3	175.5	534.8
2022	122.5	253.7	376.2	205.0	68.0	273.0	359.3	175.5	534.8
2023	122.5	257.9	380.4	205.0	68.0	273.0	359.3	175.5	534.8
2024	122.5	262.1	384.6	205.0	68.0	273.0	359.3	175.5	534.8
2025	122.5	252.5	375.0	205.0	68.0	273.0	359.3	175.5	534.8
2026	122.5	256.9	379.4	205.0	23.0	228.0	359.3	175.5	534.8
2027	122.5	261.4	383.9	205.0	23.0	228.0	359.3	175.5	534.8
2028	122.5	266.0	388.5	205.0	23.0	228.0	359.3	175.5	534.8

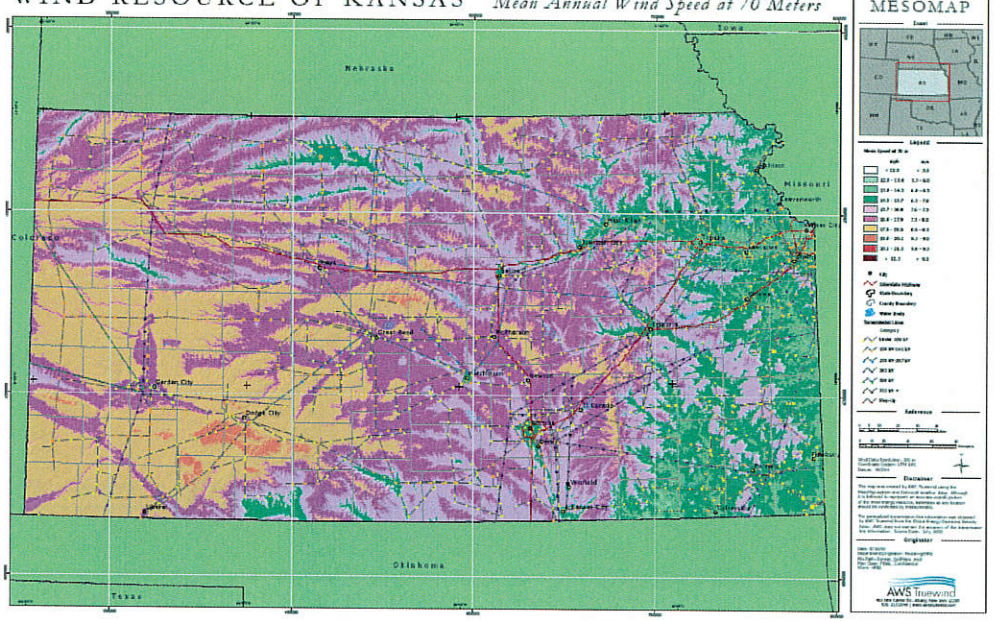
[1] Net contract data for Midwest Energy includes wholesale contracts that are under negotiation as of Fall 2008.
[2] "Power Supply Overview," Kansas Electrical Power Cooperative PowerPoint presentation to the KEC Electricity Committee, May 21, 2008: http://kec.kansas.gov/electricity/index.htm. Generation data for the years after 2010 include a 3.5% ownership of Iatan 2, currently under construction by KCP&L. Additionally, net contract data include contracts that adjust based on changes (growth) in peak load; for these, peak load growth is assumed to be 1.75% per year.

KANSAS WIND RESOURCES - MEAN ANNUAL WIND SPEED – 100, 70, 50, 30 meters

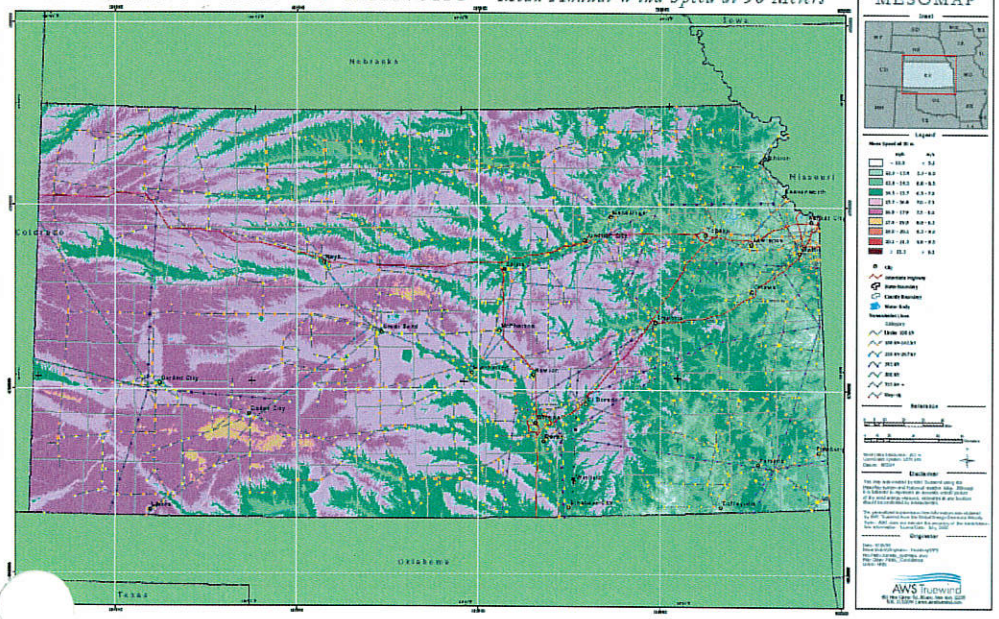
D RESOURCE OF KANSAS *Mean Annual Wind Speed at 100 Meters*



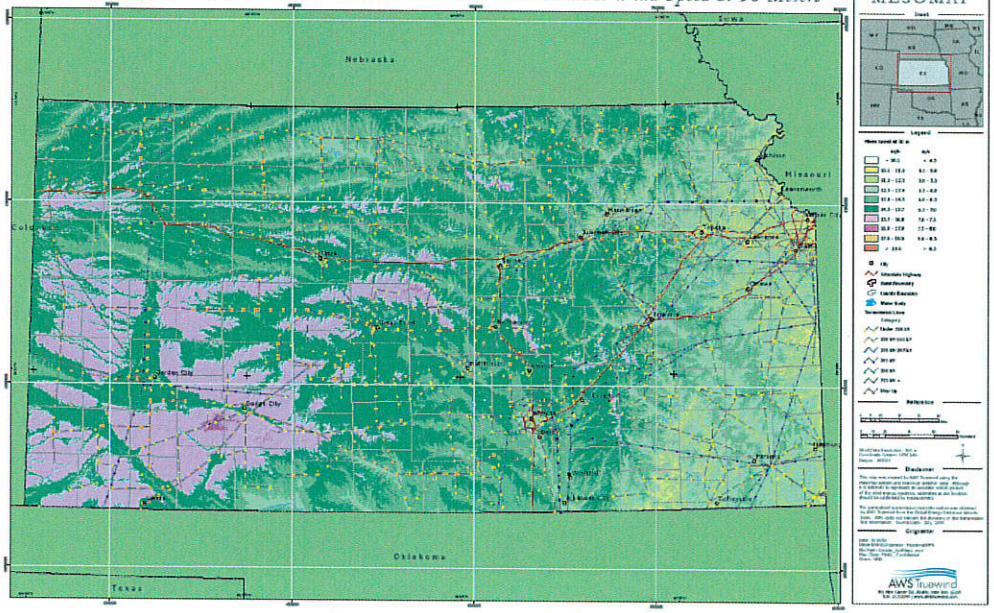
WIND RESOURCE OF KANSAS *Mean Annual Wind Speed at 70 Meters*



WIND RESOURCE OF KANSAS *Mean Annual Wind Speed at 50 Meters*

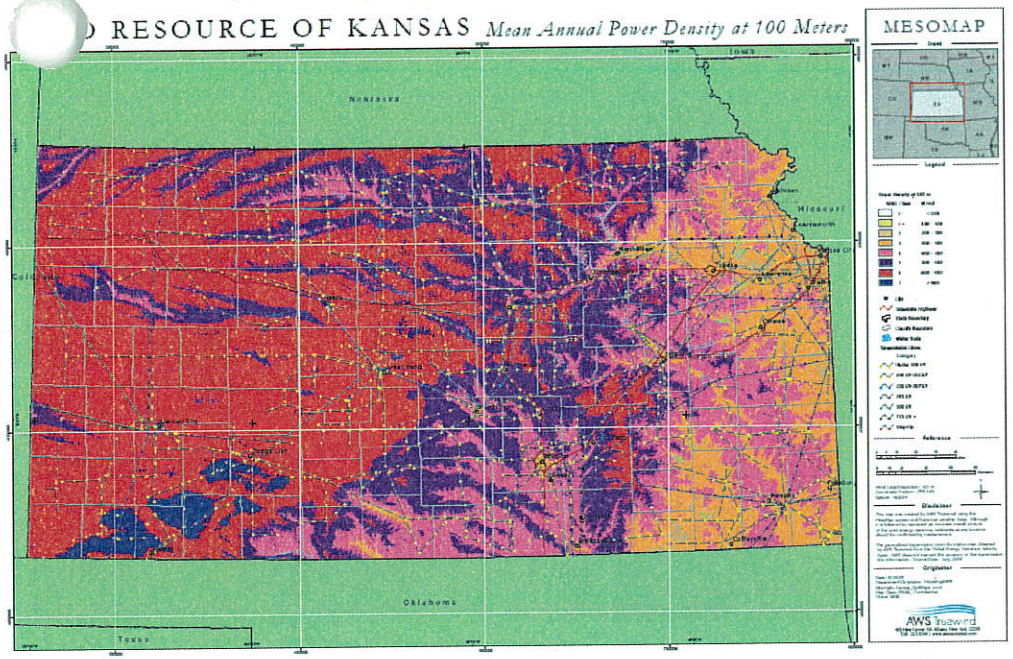


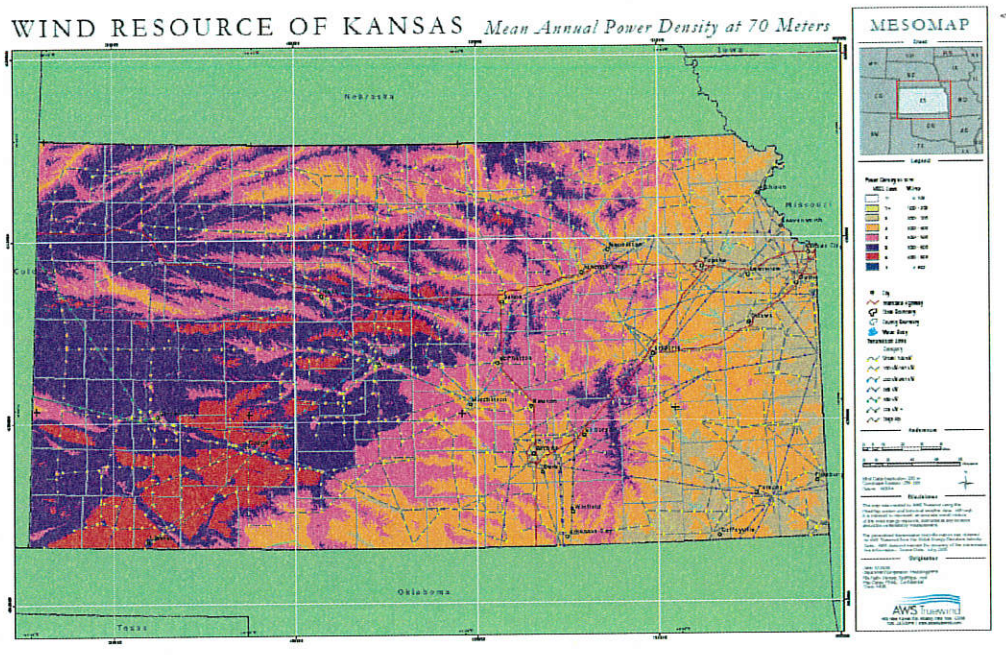
WIND RESOURCE OF KANSAS *Mean Annual Wind Speed at 30 Meters*

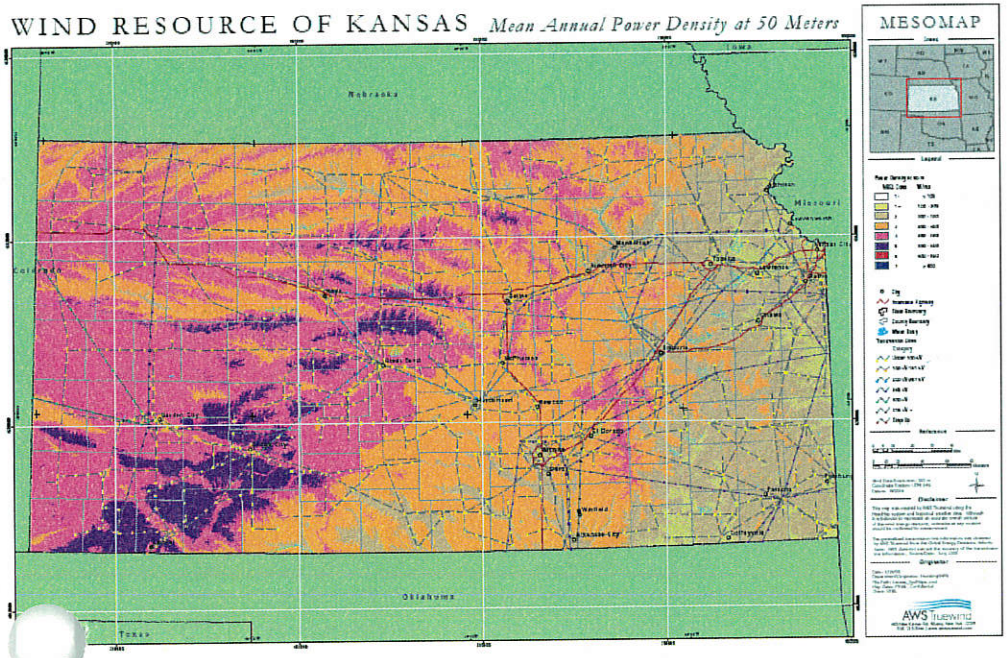


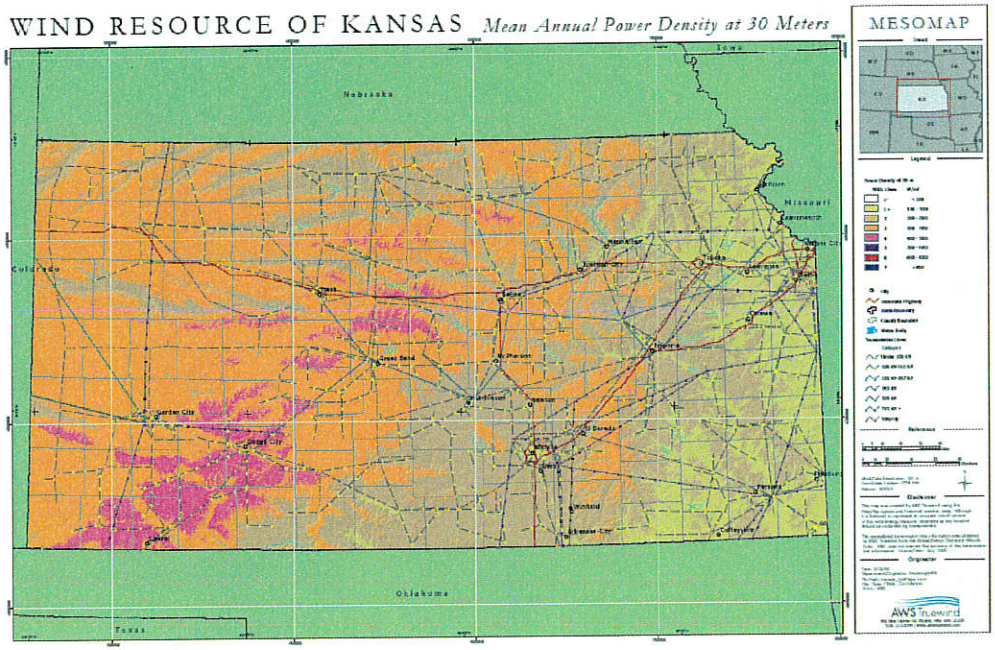
KANSAS WIND RESOURCES - MEAN ANNUAL POWER DENSITY – 100, 70, 50, 30 meters

1-24

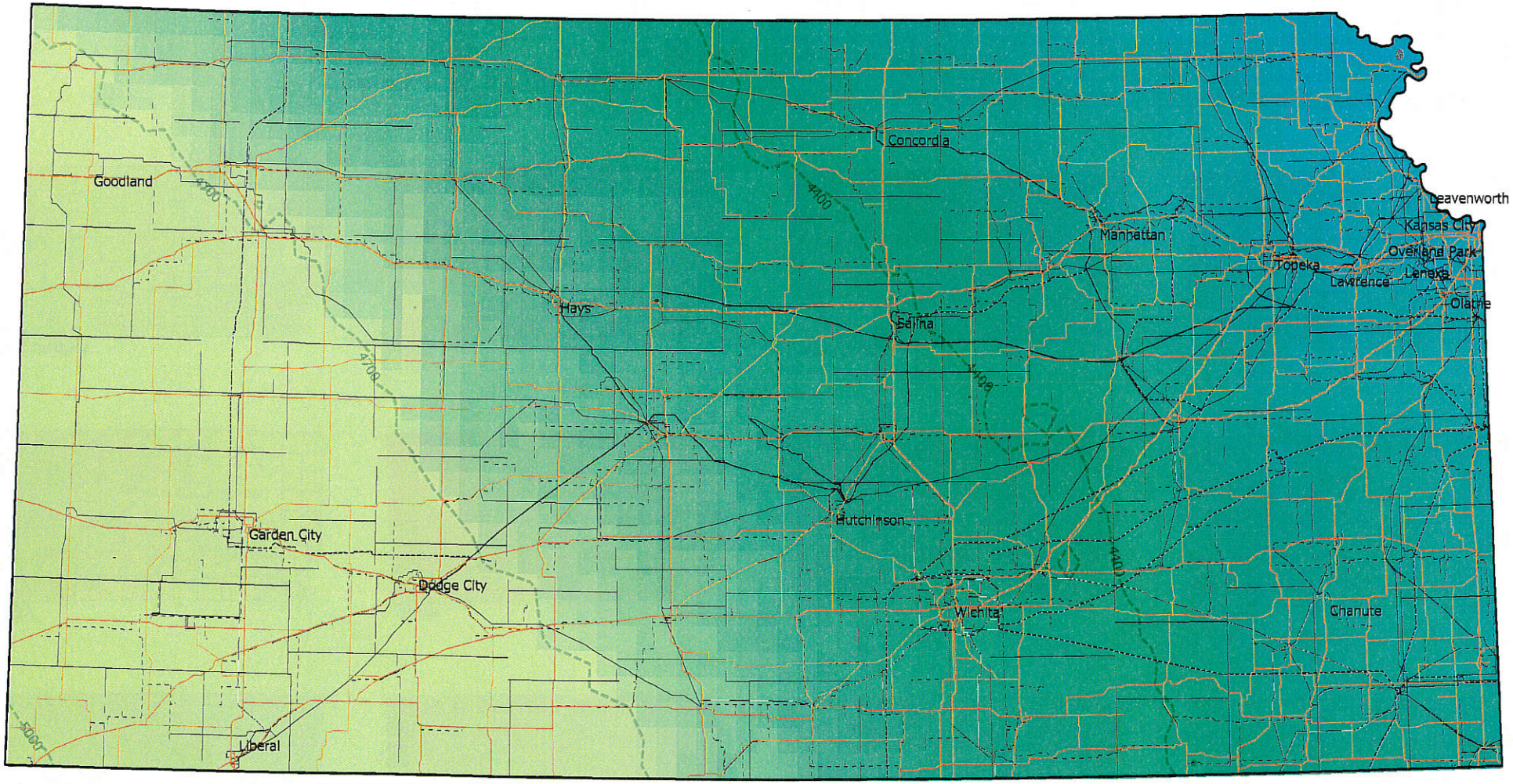








Kansas Solar Resource Map



voltage in kV	Kansas Roads	Solar Radiation
34.50	State Route	W-Hr/m^2
69.00	US Route	Value line
115.00	Interstate Route	4100
138.00		4400
161.00		4700
230.00		5000
345.00		

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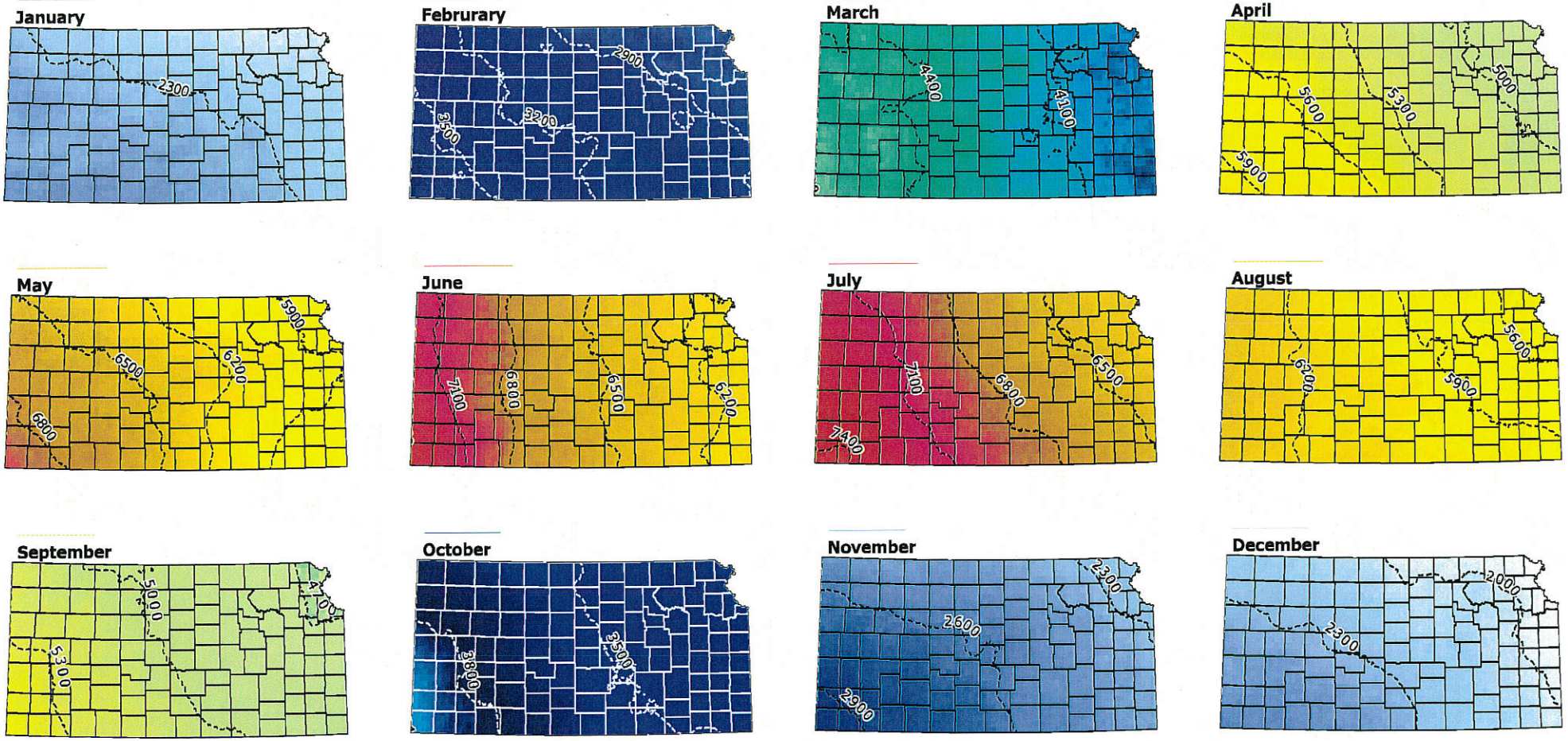
Kansas Corporation Commission
Energy Programs

This material was prepared with the support of the U.S. Department of Energy (DOE) Grant No. DE-FG26-07NT43197. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of DOE.

Map printed in Lambert Conformal Conic coordinate system, page center=-98.33

Kansas Solar Resource Map



Solar Radiation W-Hr/m^2								
1700	2900	4400	5900	7100
2000	3200	4700	6200	7400
2300	3500	5000	6500	7700
2600	3800	5300	6800	
	4100	5600		

The average annual solar energy falling on one square mile in central Kansas is about four billion KWh or fifteen trillion Btu, the equivalent of two and one-half million barrels of oil. About 70 square miles receive solar energy equal to Kansas's annual energy consumption. Plants using photosynthesis might convert 1% or lessof this energy to biomass. Solar thermal systems might convert 30-40% to useful heat, and solar photovoltaic systems might convert 5-20% to high value electricity. Matching the availability of the resource to the demand for energy is an important factor in making solar energy systems feasible, technically and economically. The maps above show monthly solar energy in Watt-hours per square meter for Kansas.

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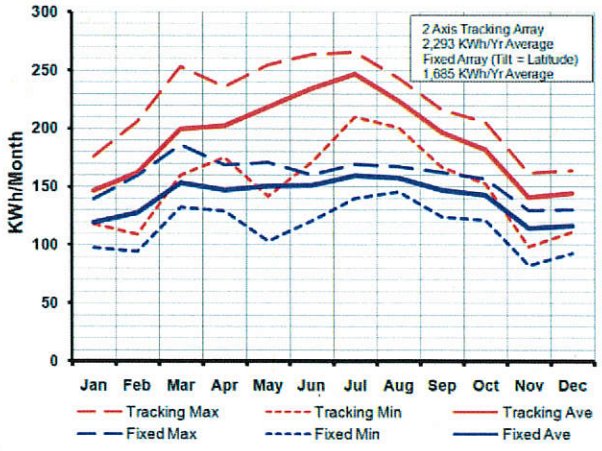
Kansas Corporation Commission
Energy Programs

Photovoltaic Electrical Energy Production in Kansas

1991 - 2005 National Solar Radiation Database (NSRDB)

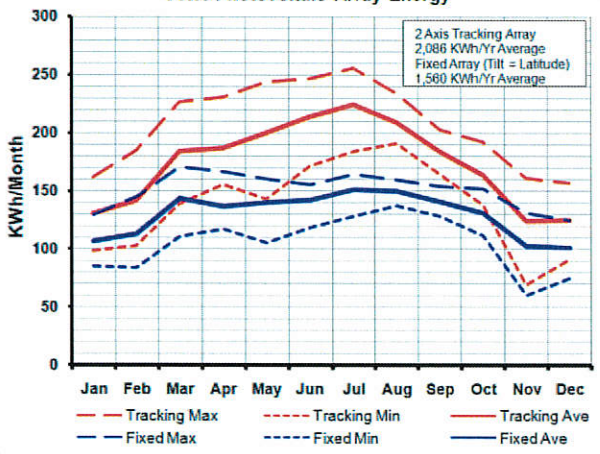
Goodland

1 KW Photovoltaic Array Energy



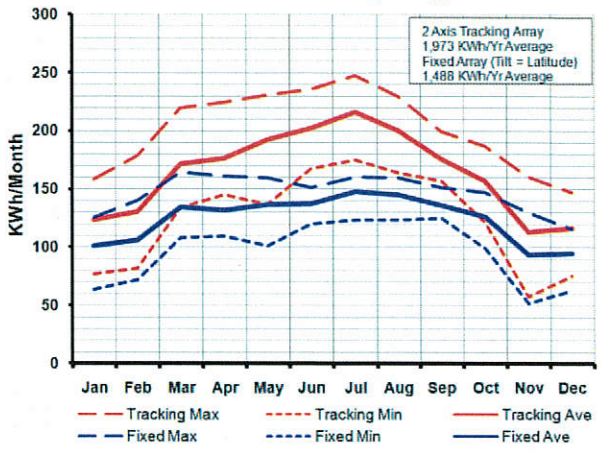
Concordia

1 KW Photovoltaic Array Energy



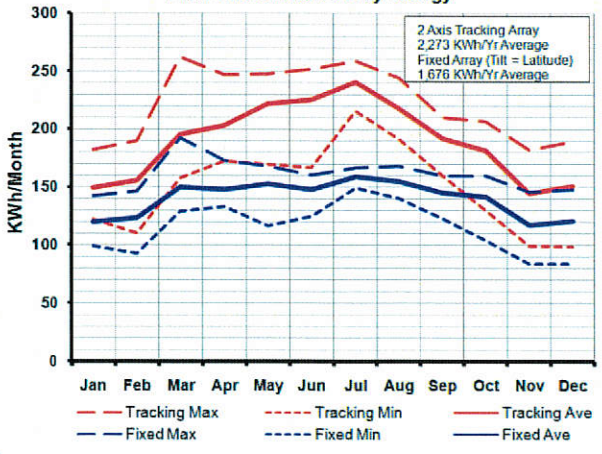
Topeka

1 KW Photovoltaic Array Energy



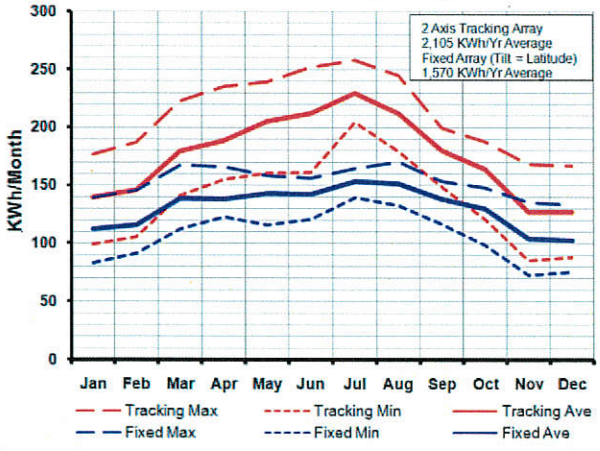
Dodge City

1 KW Photovoltaic Array Energy



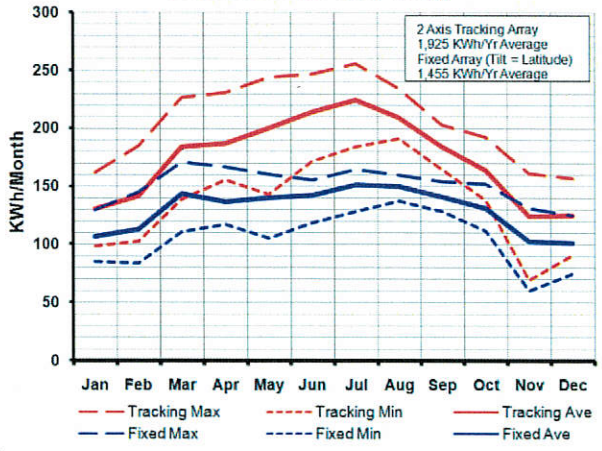
Wichita

1 KW Photovoltaic Array Energy



Chanute

1 KW Photovoltaic Array Energy



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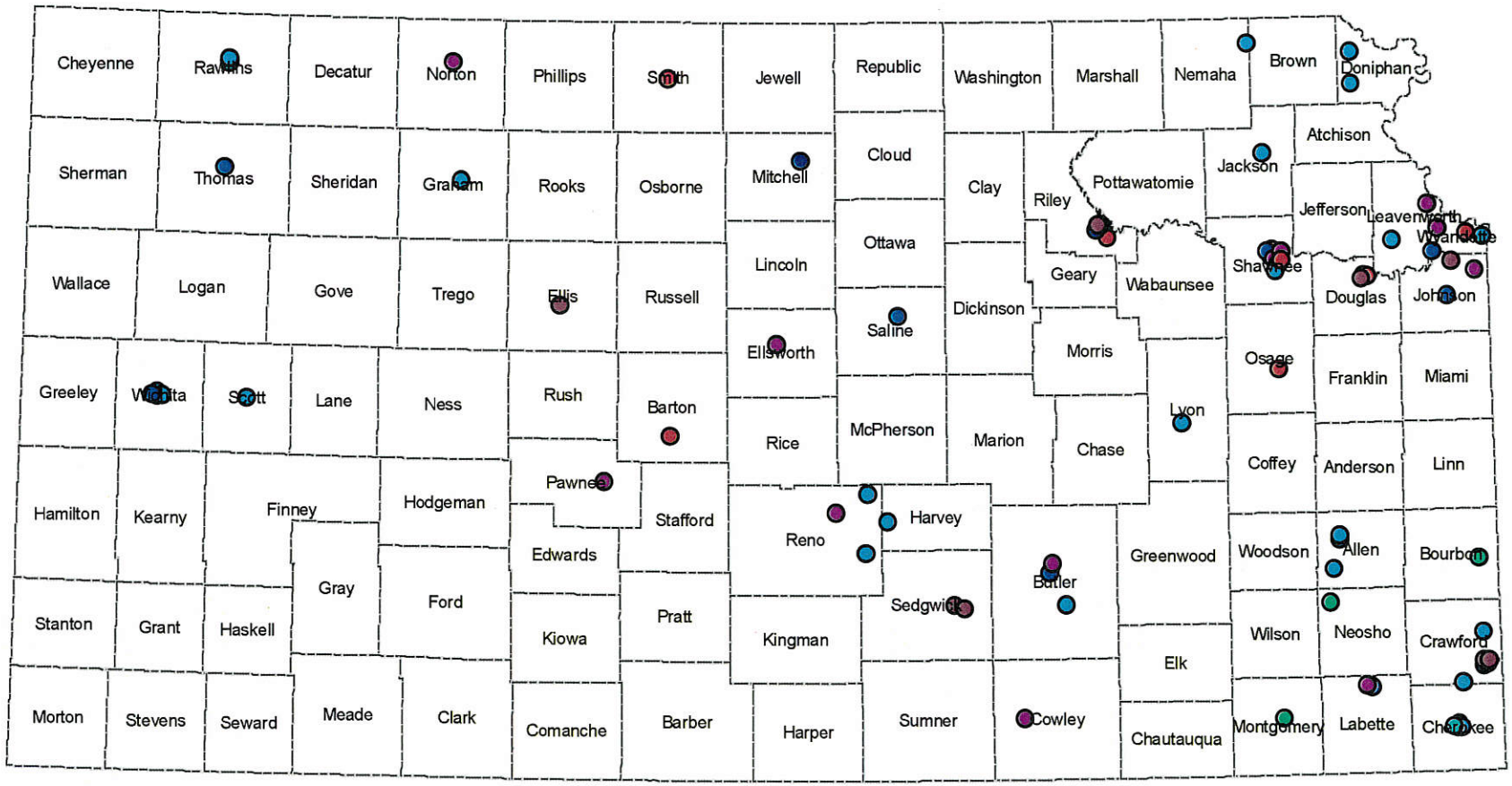
Kansas Corporation Commission
Energy Programs

Photovoltaic (PV) production of electricity is one way to produce high value renewable energy from sunlight (solar insolation). The graphs above show the estimated monthly electricity production from a one kilowatt (KW) PV system for six representative Kansas communities. The analysis was based on 15 years (1991-2005) of hourly solar insolation data contained in the National Solar Radiation Data Base (NSRB) acquired through the National Renewable Energy Laboratory at http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/. The analysis was based on a commonly available PV panels using PV-DesignPro software available from Maui Solar Energy Software Corporation at http://www.mauisolarsoftware.com/. Inverter losses for converting DC to AC current are included. Other system losses were assumed to be minimal. Maximum, minimum, and long term average values are shown for two panel mounting conditions, one fixed at a tilt equal to the latitude of the site, the second on a two axis tracker that keeps the panels perpendicular to the sun.

FCIP Projects in Kansas

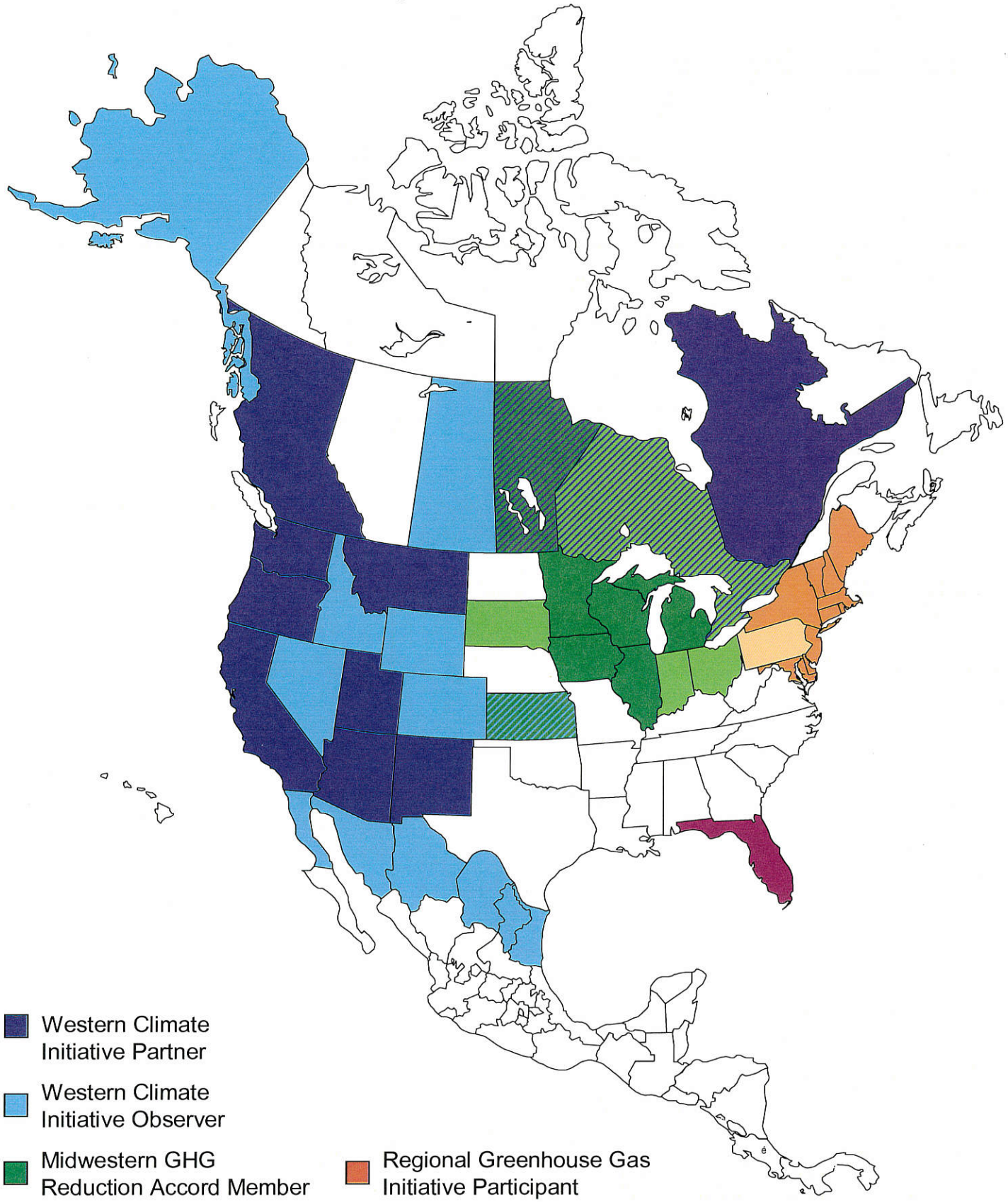


FCIP Projects 2008

- CITY
- COMMUNITY COLLEGE
- COUNTY
- HOSPITAL
- OTHER
- STATE
- TECHNICAL COLLEGE
- UNIVERSITY
- USD

January 2009

North American Cap-and-Trade Initiatives



Kansas Electric
Power Cooperative, Inc.

HOUSE ENERGY AND UTILITIES COMMITTEE
H.B. 2033

Testimony on behalf of Kansas Electric Power Cooperative, Inc.

Mr. Chairman and members of the committee:

I am Phil Wages, Director of Member Services, Government Affairs, and Business Development for Kansas Electric Power Cooperative, Inc (KEPCo). KEPCo is a not-for-profit generation and transmission utility, providing electricity to nineteen member rural electric cooperatives serving the eastern two-thirds of the state.

KEPCo stands in opposition of HB 2033. The bill states that only a carbon dioxide inventory shall be prepared. However, in order to join The Climate Registry, a member shall inventory and report entity-wide direct and indirect greenhouse gas emissions, according to the guidance provided by The Climate Registry and the emissions will be verified through a Registry approved verifier. A new set of protocols are currently under development that will address emissions at the electricity generating unit (EGU) level. However, it is uncertain at this time how extensive, or simple, those reporting requirements will be. It is KEPCo's understanding that generating units less than 25 MW may be exempted from inclusion in a filing. If this exemption is enacted, KEPCo would not have any greenhouse gas emitting resources to report. In addition, if a filing was made, KEPCo is uncertain how the information will be used or disseminated.

KEPCo does not believe it should be mandated to join an organization that it only became vaguely familiar with last week. Since the new protocol has not been established and KEPCo can not estimate the complexity of compliance, the use and dissemination of the information, or the qualifications of the organization and its ultimate mission, KEPCo respectfully asks the committee to vote House Bill 2033 unfavorable.

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www.kepco.org

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Topeka, KS 66604-0877

600 Corporate View
Topeka, KS 66615

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 2-1

Submit by Email | Print Form

The Climate Registry

Statement of Intent Form

_____ will participate in The Climate Registry.

We will:

- Inventory and report entity-wide direct and indirect greenhouse gas (GHG) emissions, according to the guidance provided by The Climate Registry (the Registry).
- Verify our emissions through a Registry approved verifier.
- Report our total emissions through the Registry's online reporting software.

Signed: _____

Name: _____

Title: _____

Address: _____

_____

Phone: _____

Email: _____

Date: ____/____/20____

Organization's Annual Revenue/Budget:
(Check to determine annual fee)*

Annual Revenue/Budget
- ☐ Over $2 billion
- ☐ $500 million - $2 billion
- ☐ $100 million - $500 million
- ☐ $20 million - $100 million
- ☐ Under $20 million

Organization Type
- ☐ Academic
- ☐ Commercial/Industrial
- ☐ Government
- ☐ Non-profit

1st year of data to be reported for verification
- ☐ 2008
- ☐ 2009
- ☐ Prior year**_____

Official Contact for the Registry

Name: _____

Title: _____

Address: _____

_____

Phone: _____

Email: _____

Technical Contact (if different from Official)

Name: _____

Title: _____

Address: _____

_____

Phone: _____

Email: _____

Return to:
The Climate Registry, P.O. Box 712545, Los Angeles, CA 90071 or Fax to 213-623-6716

The Climate Registry

*Annual Fee Structure

Commercial and Industrial Organizations with Revenues:

Over $2 billion	$10,000
From $500 million - $2 billion	$6,000
From $100 million - $500 million	$3,500
From $20 million - $100 million	$1,700
Under $20 million	$600

Non-profit, Government and Academic Organizations with Budgets:

Over $2 billion	$5,000
From $500 million - $2 billion	$3,500
From $100 million - $500 million	$2,500
From $20 million - $100 million	$850
Under $20 million	$450

**Reporting Historic Data: Reporters may choose any year to begin reporting historical data, as long as they report consecutive years of data up through the year in which they join the Registry

- **To report 1-3 years of historical data**: One time fee of 25 percent of a Reporter's annual reporting fee
- **To report 4 or more years of historical data**: One time fee of 50 percent of a Reporter's annual reporting fee

Please provide a 100-word (or less) description of your organization:

Return to:
The Climate Registry, P.O. Box 712545, Los Angeles, CA 90071 or Fax to 213-623-6716

Testimony of Scott Jones
Before the House Energy and Utilities Committee
Neutral to House Bill 2033
January 26, 2009

Kansas City Power & Light appreciates the challenges of trying to provide energy in an affordable and environmentally conscious manner. Over the last several years KCP&L has collaborated with our customers, regulators, environmental groups and others to create optimal solutions to meet our growing energy needs.

Much of the debate the last few years has been on the control of carbon dioxide emissions. KCP&L, like other utilities, has reported carbon dioxide stack emissions to the EPA since the 1990s. This bill requires KCP&L to join The Climate Registry (TCR), which would compel KCP&L to provide the same data that is already required and provided to the EPA. This bill will unnecessarily increase costs for KCP&L, without providing any benefits.

Our chief concern is writing into statute a prescribed organization to work with. The EPA is working on a program to register greenhouse gases. Many believe this will be the preferred reporting method going forward.

Thank you for your consideration.

Scott Jones – KCP&L
Manager, Kansas Government Affairs
816-556-2458; scott.jones@kcpl.com

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 3

CEP
climate + energy project

Mr. Chairman, members of the committee, thank you for the opportunity to present written testimony on HB 2033, an act requiring membership in The Climate Registry (TCR).

The Climate Registry is the prototype carbon registry. Kansas is already a participating state.

Founding TCR members include Alcoa, National Grid, Shell Oil, Duke Energy, and our own Westar Energy.

TCR tracks greenhouse gases, including carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons, sulfur hexafluoride. Third party verification is required.

TCR and EPA have a data-sharing agreement that should ensure minimal redundancy when EPA greenhouse gas regulations are in place (widely expected within twelve to eighteen months).

Potential benefits of participation:

- credit for early actions,
- participation in policy decisions,
- access to technological resources.

Two aspects of HB 2033 beg clarification, however.

First, inventories are typically created – and reporting performed – toward a specific goal: replacement, increase, or reduction.

The mandatory reporting required by HB 2033 has no apparent goal. Without one, it seems to place an unnecessary burden on utilities.

CEP would support reporting requirements toward a specific reduction goal. For example, one consortium of major U.S. corporations and national environmental organizations has endorsed greenhouse gas emission targets of: 2005 levels by 2012, 80% of 2005 levels by 2020, 58% of 2005 levels by 2030, and 20% of 2005 levels by 2050. Several states have adopted similar goals.

Secondly, HB 2033 specifies protocols developed by TCR that were in effect on October 29, 2007. Since then (in March and April of 2008, respectively), TCR issued final protocols for general reporting and general verification. Should the committee advance HB 2033, CEP would support specification of the most current protocol.

| Nancy Jackson | Executive Director, CEP | jackson@climateandenergy.org | 785.331.8743 | www.climateandenergy.org

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 4

Westar Energy®

MARK A. SCHREIBER
Director, Government Affairs

Testimony of Mark Schreiber
Director Government Affairs, Westar Energy
Before the House Energy and Utilities Committee
On HB 2034
January 26, 2009

Good morning Chairman Holmes and members of the committee. Thank you for the opportunity to provide testimony in opposition to HB 2034.

This bill would require utilities to establish a voluntary program to help businesses inventory and assess their greenhouse gas emissions and develop practices for the businesses to use to reduce such emissions. Westar Energy believes a public utility's main responsibilities are to provide safe, reliable electricity at a reasonable cost. Sources of greenhouse gasses not only include fossil-fueled generation, but also transportation and land uses. To expand the utility's role to inventory and assess the greenhouse gasses that our business customers emit is beyond the scope of a utility. This bill envisions a program that is more appropriate for a statewide agency than a local utility. In fact, on Saturday January 31, the city of Wichita in cooperation with the Kansas Department of Health and Environment's Small Business Environmental Assistance Program is holding a workshop addressing among other things how to reduce your carbon footprint.

Thank you again for the opportunity to testify in opposition to HB 2034. I will stand for questions at the appropriate time.

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 5

818 South Kansas Avenue / P.O. Box 889 / Topeka, Kansas 66601
Telephone: (785) 575-8369 / Fax: (785) 575-8119 / Mobile: (785) 230-0897
mark.schreiber@WestarEnergy.com

Testimony of Scott Jones
Before the House Energy and Utilities Committee
Neutral to House Bill 2034
January 26, 2009

Kansas City Power & Light is aware of the consequences generating power can have on our air, water and the many types of life that depend on both. Because of this, we have helped pioneer a number of efforts to reduce the environmental impact of electric generation.

Last year KCP&L helped develop and implement the Greater Kansas City Climate Protection Partnership whose mission is to reduce greenhouse gas emissions and improve the quality of life. The Climate Protection Partnership, coordinated by the Greater Kansas City Chamber of Commerce, offers businesses and organizations the opportunity to lead the community toward the complementary goals of reduced regional greenhouse gas emissions and increased economic competitiveness.

KCP&L, Burns & McDonnell and BNIM Architects are members of the Climate Protection Assessment Team (CPAT) that offer their expertise and experience in energy and environmental issues. CPAT helped to create both a carbon footprint calculator and an energy assessment form to help businesses accurately gauge their current carbon footprint and give suggestions on how to reduce their carbon emissions.

Within the first two months the Partnership had over 70 members; currently there are 162 Climate Protection Partners representing well over 100,000 employees. Approximately half of the Climate Partners are active participants in the partnership and continue to take a vested interest in it. KCP&L has proactively contacted all members in our service territory to offer assistance with the carbon footprint calculator and provide energy usage data in the calculation.

This is just one example of voluntary environmental conservation programs KCP&L is involved in to assist businesses and institutions. We urge the committee to be cautious about requiring in law initiatives such as this when companies and organizations are voluntarily undertaking them for the betterment of their communities.

Thank you for your time.

Scott Jones – KCP&L
Manager, Kansas Government Affairs
816-556-2458; scott.jones@kcpl.com

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 6

CEP
climate + energy project

Mr. Chairman, members of the committee, thank you for the opportunity to present written testimony on HB 2034.

Many Kansas utilities have already launched substantial energy efficiency programs. Reducing energy use – and thereby lowering customers' bills and reducing exposure to greenhouse gas risks – makes good sense.

Investor-owned utilities will most fully embrace such programs when they are at least held harmless (avoiding lost revenues from declining use) and at best assured cost recovery and a modest return on investment (which CEP supports with achievement of a clear performance standard, say annual reductions of 1%).

HB 2034 appears to encourage conservation of energy, but the language of greenhouse gas emissions, including indirect emissions, may confuse some.

Many businesses and institutions are already pursuing greenhouse gas inventories and assessments. That assistance is available from myriad sources including performance contractors who guarantee projected savings. It seems unnecessary to place that burden on utilities.

Our utilities' obligation and opportunity – provided they are rewarded for doing so – would seem to be to help us reduce our energy use. If successful, they lower their fuel and capital costs and build a bridge to the technology of tomorrow while reducing their own greenhouse gas risk and customers' exposure to rising rates.

| Nancy Jackson | Executive Director, CEP | jackson@climateandenergy.org | 785.331.8743 |
www.climateandenergy.org

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 7

TOM SLOAN
REPRESENTATIVE, 45TH DISTRICT
DOUGLAS COUNTY

STATE CAPITOL
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tom.sloan@house.ks.gov

STATE OF KANSAS

TOPEKA

HOUSE OF

REPRESENTATIVES

COMMITTEE ASSIGNMENTS
CHAIRMAN: VISION 2020

MEMBER: ENERGY AND UTILITIES
GOVERNMENT EFFICIENCY
AND FISCAL OVERSIGHT
JOINT COMMITTEE ON ENERGY
AND ENVIRONMENT

Testimony on HB 2038 – Semi-Comprehensive Energy Plan

Mr. Chairman, Members of the Committee: HB 2038 addresses issues that are part of the comprehensive energy plan debates in Kansas and nationally and seeks to provide new perspectives. The components of the bill should challenge you as it seeks to address greenhouse gas emissions, regulation of emissions, cost to consumers, increasing renewable energy generation in Kansas, and more.

A. Page 1, line 25

1. Fossil-fuel generation units commenced after January 1, 2009, must capture and sequester or use for commercial purposes WHICHEVER IS GREATER: at least 90% of potential mercury, sulfur dioxide, and nitrogen oxide emissions OR meet emission standards established by the U.S. EPA. Records documenting the capture and sequestration or commercial use must be maintained and KDHE shall adopt fines for failure to comply. (This recognizes that emission and technology requirements may change over time.)

2. New fossil-fuel generation units commenced after January 1, 2009, must capture and sequester or use for commercial purposes at least 45% of flue gas carbon. Increased levels of carbon must be captured as KDHE or the U.S. EPA identify cost-effective technologies and establish higher standards (currently no carbon emission standards exist and neither KDHE nor EPA have proposed any).

3. Any utility purchasing electric power shall purchase from baseload plants that utilize carbon capture and sequestration/commercial use IF the purchase of such energy will not raise consumer electric rates by more than 15%. (This recognizes that the cost of carbon capture may be significant and that a balance between environmental protections and energy costs to consumers must be addressed.)

4. Fossil-fuel generation units whose construction started before January 1, 2009, shall put in place emission controls for carbon dioxide to achieve at least a 20% reduction from 2007 levels, through capture and sequestration/commercial use by January 1, 2015, OR off-set the carbon with renewable energy or documented energy conservation savings in excess of any other statutory requirements. (This section provides three options to address CO2 emissions from existing plants and recognizes that existing plants have

HOUSE ENERGY AND UTILITIES
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higher emission levels than new generation units.) KDHE shall establish fines for failure to comply.

B. Page 2, line 31

1. On or before July 1, 2015, for each electric generator in excess of 50 MW located in Kansas and serving wholesale or retail customers, based on a three year average peak load, shall have at least 15% renewable energy in its portfolio. (This renewable portfolio standard section is based on energy, not nameplate capacity, and thus represent a higher standard of RPS.)

2. The renewable requirement shall be no less than 18% by 2018; 20% by 2020.

3. To meet the above requirements, the electric generator shall acquire 5% from Kansas-owned generators of 5 MW or less. (This section addresses the need to promote Community Wind, but should be modified to recognize that such power may not be available.)

C. Page 3, line 15

1. On or before January 1, 2011, and annually thereafter, KDHE shall propose and submit to the Legislature or establish through rules and regulations carbon air emission standards for carbon emitters for which carbon capture or reduction technologies are available and cost effective. (KDHE shall establish criteria for regulating carbon.)

D. Page 3, line 22

1. New fossil-fuel generation units commenced after January 1, 2009, shall invest at least 10% of the total cost to construct the generation in new or upgraded high voltage transmission lines. This investment is above and beyond that necessary to connect the generation unit to the grid. The investment shall improve interstate transmission connections, improve transmission connections between eastern and western Kansas, or assist in a more efficient delivery of renewable energy generated in the state to the grid. (This is designed to address the transmission system inadequacies that result in higher

electricity costs in western Kansas and for transmission dependent municipal and rural electric cooperatives, and to "move" wind energy to load centers/markets.)

E. Page 3, line 36

1. KDHE, KCC, or KS Bio-Science Authority may request a Regents' institution's school of engineering to evaluate any innovative renewable or distributive generation technology or innovative transmission technology patented by a Kansas resident. The Regents' faculty will evaluate the technology and refer the appropriate ones to the Dept. of Commerce or KTEC for possible commercial development. (This will promote the entrepreneurial spirit of Kansans.)

F. Attachment

1. Numerous committees have been established by the Governor and Legislature to examine climate change and electric generation issues. Each of these committees has been dominated by non-scientists. This 2008 bill requires the establishment of a scientist-based advisory group to advise on the science of controlling greenhouse gases and the costs (direct and indirect) to consumers of possible actions. (This is a tacit recognition that lay people do not have the knowledge to critically evaluate all of the climate data and that scientists should make recommendations to policy-makers.)

Mr. Chairman, this bill represents a deliberate effort to raise issues that otherwise may not be considered by the Legislature as we attempt to craft a comprehensive and responsible energy policy. It addresses costs to consumers, environmental and public health protections, technological possibilities, Kansans' innovative ideas, developing and marketing the state's renewable energy potential, carbon and other greenhouse gas emission standards, emissions from new and existing generation units, and more.

It is easy for opponents to find fault with these proposals – the standards are "too tough," the requirements are "too costly," fossil-fuels are "mentioned." As policy-makers we are charged with being responsible for the protection of our citizens and the maximization of opportunities. This bill seeks to pro-actively address the public's desire for affordable electricity, increased development of renewable energy, and the utilities' requirements to operate a reliable electric system. If you agree with the premises of this bill, but do not like some of the specifics – offer alternatives. Simply saying "no" is not responsible.

If and when a carbon cap and trade or carbon tax is imposed at the federal level, if the provisions of HB 2038 are in place our electric customers – residential, commercial, and industrial – will have lower electric bills than they otherwise would.

Thank you Mr. Chairman, I will respond to questions at the appropriate time.

5-8

Session of 2008

HOUSE BILL No. 2639

By Committee on Energy and Utilities

1-17

AN ACT establishing the energy resources commission; relating to powers and duties thereof.

Be it enacted by the Legislature of the State of Kansas:

Section 1. (a) There is hereby established the Kansas energy resources commission. The commission shall be made up of the following members:

(1) Two members appointed by the speaker of the house of representatives;

(2) two members appointed by the president of the senate;

(3) one member appointed by the minority leader of the house of representatives;

(4) one member appointed by the minority leader of the senate; and

(5) one member appointed by the governor.

All appointments shall be from persons recognized for their breadth of knowledge on energy issues and initiatives. All appointments shall be residents of Kansas. Except as provided in subsection (b), members shall be appointed for a term of four years and until a successor is appointed and qualifies. Nothing in this section shall be construed as prohibiting the reappointment of members to the commission.

(b) The appointing authorities indicated in subsection (a) shall make initial appointments on or before August 1, 2008. The terms of these initial appointments shall be as follows, as designated by the appointing authority:

(1) One appointment by the speaker of the house of representatives shall expire on June 30, 2009, and the other appointment shall expire on June 30, 2011;

(2) one appointment by the president of the senate shall expire on June 30, 2009, and the other appointment shall expire on June 30, 2011;

(3) one appointment by the minority leader of the house of representatives shall expire on June 30, 2010;

(4) one appointment by the minority leader of the senate shall expire on June 30, 2010; and

(5) one appointment by the governor shall expire on June 30, 2012.

(c) The member appointed by the speaker of the house of represen-

tatives whose term expires June 30, 2011 shall call the first meeting. The members of the commission shall choose their own chairperson, vice-chairperson and secretary-treasurer for the commission, who shall serve for terms of two years and are eligible for re-election.

(d) The commission is hereby granted such specific powers as are necessary to carry out the functions enumerated in this section. The commission shall submit annual reports of the activities and recommendations of the commission to the governor and the legislature. A preliminary report shall be submitted on or before September 1, 2009. The commission shall:

(1) Develop strategies to maximize productive use of the existing resources in Kansas, including, but not limited to: water, coal, oil, natural gas, coal-bed methane, wind, solar, municipal and other waste, agricultural ground, bio-mass and such other energy resources as shall be identified by the commission members as having economic value to the state;

(2) identify means of sustaining and, if possible, increasing production and use of identified resources;

(3) identify emerging technologies and technological opportunities to sustain or increase production and make better use of existing and potential resources, and recommend state investments in specific research projects. Development of sustainable policies shall include conservation, enhanced production technologies and other strategies;

(4) investigate and research scientifically derived literature on public health impacts of greenhouse gases and particulates emitted from all natural and man-made sources and the technological ability to capture or reduce such emissions. Recommend emission limits for primary man-made emissions by type of emitting source. Such recommendations shall be based on a consensus of the main-stream scientific community and regulatory recommendations and shall note the cost-benefit ratio of limiting or capturing such gases and particulates. Recommendations shall recognize the technological feasibility of capturing or significantly reducing such emissions and the cost to consumers of the recommended actions;

(5) recommend reallocations of existing state budget resources;

(6) recommend permanent funding sources for energy sustainability research; and

(7) pursue such other issues as the council members may deem necessary.

(e) The commission shall hold meetings at least once in each quarter, and additional meetings as deemed necessary. Meetings shall be called and held at the discretion of the chairperson, or upon written request of a majority of the members of the commission. A majority of the members of the commission shall constitute a quorum for the exercise of powers

conferred upon the commission. Members of the commission attending meetings of such commission, or subcommittee meetings thereof authorized by the commission, shall be paid compensation, subsistence allowances, mileage and other expenses as provided in K.S.A. 75-3223, and amendments thereto.

(f) In the event of a vacancy in the membership of the commission by reason of expiration of any member's term of office, a successor of like qualifications shall be appointed in the manner and for the term of office prescribed herein. In the event of a vacancy in the membership of the commission, before the expiration of the member's term, a successor of like qualifications shall be appointed by the appointing authority for the remainder of the unexpired term.

(g) The commission may receive and expend moneys appropriated to the commission and received from any other source, whether public or private, to further the purposes of this act.

(h) The staff of the office of the revisor of statutes, the legislative research department and the division of legislative administrative services shall provide such assistance as may be requested by the energy resources commission and authorized by the legislative coordinating council. The Kansas corporation commission shall also provide such assistance as may be requested.

Sec. 2. This act shall take effect and be in force from and after its publication in the statute book.

6-8

New crystals can absorb CO2, study finds

Chemist says process could be applied to emissions from coal plants

By Alan Zarembo
Los Angeles Times

Scientists at the University of California, Los Angeles, have synthesized a class of spongelike crystals that can soak up carbon dioxide, the primary greenhouse gas in industrial emissions.

The crystals — zeolitic imidazolate frameworks, or ZIFs — are grids of metal atoms and organic molecules that loosely trap carbon dioxide as it drifts into microscopic pores. The researchers believe that atomic charges hold the gas in place.

One variety, ZIF-69, is so absorbent that a single liter of the material can hold 83 liters of carbon dioxide, according to a study published Friday in the journal Science.

The crystals could be tailored to capture carbon dioxide emissions from coal-fired power plants, factories and other industrial sources, said Omar M. Yaghi, the chemist from UCLA who led the study.

The material also could be used to line vehicle exhaust systems. When drivers fill their gas tanks, they also could have the carbon dioxide removed.

The idea is to line the insides of smokestacks with a layer of ZIF. Carbon dioxide that enters the pores could be sucked out periodically and sequestered underground.

Yaghi said the material also could be used to line vehicle exhaust systems. When drivers fill their gas tanks, they also could have the carbon dioxide removed.

"That is a little bit more challenging than in the power plants," he said.

Capturing industrial carbon dioxide emissions is considered a key strategy for staving off global warming.

The leading method relies on a chemical reaction to trap carbon dioxide in a toxic liquid — a process deemed too expensive to implement on a commercial scale. The U.S. Department of Energy has estimated that retrofitting a power plant with such a system at least would double the cost of generating electricity.

More testing is needed to determine if ZIFs can reduce the cost, said Thomas Feeley, a DOE technology manager who was not involved in the research.

Rep. Tom Slatter
1/5th District

8-8

Green-Light Specials, Now at Wal-Mart

By STEPHANIE ROSENBLOOM
and MICHAEL BARBARO

IT was billed the Choice Meeting: a secret two-day conference in Arkansas in 2005 pairing **Wal-Mart Stores**, a symbol of scorched-earth global capitalism, with some of the nation's most influential environmentalists. And it began with a zinger.

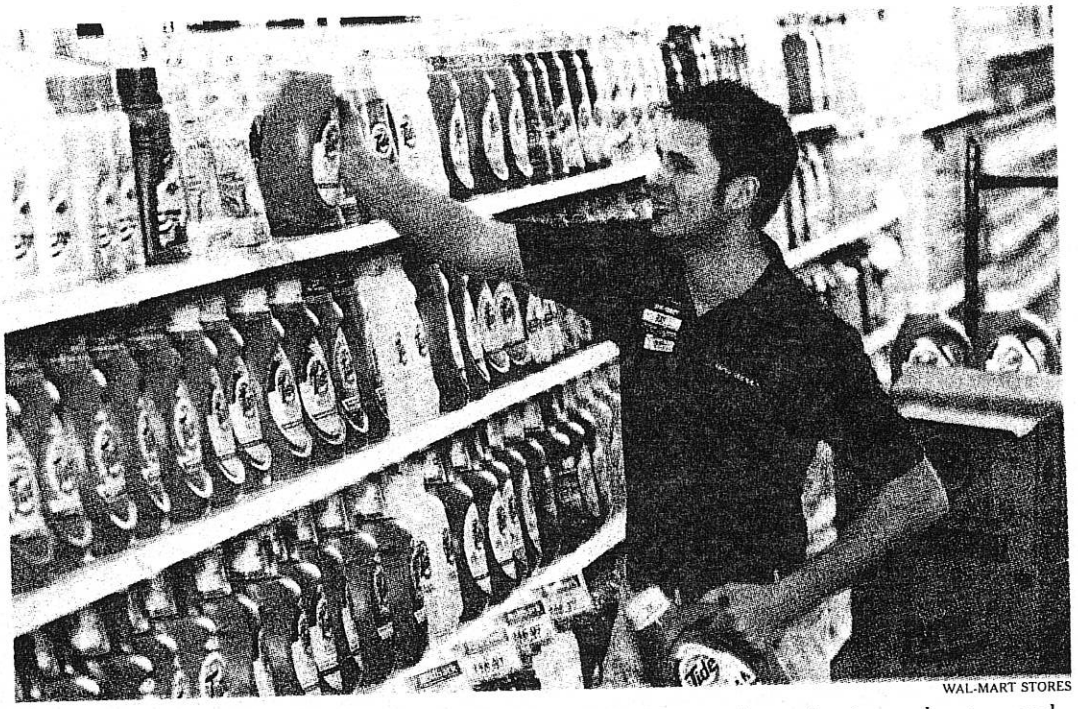
"Tell me why I should care about an endangered mouse in Arizona?" asked H. Lee Scott Jr., the retail giant's chief executive, only partly in jest.

At the time, Wal-Mart was the target of a well-orchestrated assault focusing on its labor practices and environmental record. It was also straining to keep its legendary growth on track. Mr. Scott, hungry for ways to protect and transform his company, began to see environmental sustainability as a way to achieve two goals: improve Wal-Mart's bottom line and its reputation.

So he presented his colleagues with a radical option — the "choice" that gave the meeting its name — encouraging them to adopt a sustainability program to remake the entire company, from the materials used to build stores to the light bulbs stocked on its shelves. Although participants were conflicted, a vote on the initiative was unanimous: Wal-Mart, the world's largest retailer and biggest buyer of manufactured goods, would go green.

By virtue of its herculean size, Wal-Mart eventually dragged much of corporate America along with it, leading mighty suppliers like **General Electric** and **Procter & Gamble** to transform their own business practices.

Under Mr. Scott, who is retiring this month at the age of 59, the company that democratized consumption in the United States — enabling working-class families to buy former luxuries like inexpensive flat-screen televisions, down comforters and porterhouse steaks — has begun to democratize environmental sustainability.



WAL-MART STORES

Wal-Mart sells only concentrated liquid laundry detergent, to cut the packaging and water used.

For decades, many consumers felt that going green was a luxury, too, reserved primarily for those with enough money — and time on their hands — to buy groceries at natural food stores and organic clothing from specialty retailers.

Today, the roughly 200 million customers who pass through Wal-Mart's doors each year buy fluo-

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Green-Light Specials

From Page 1

rescent light bulbs that use up to 75 percent less electricity than incandescent bulbs, concentrated laundry detergent that uses 50 percent less water and prescription drugs that contain 50 percent less packaging.

"If all this sustainability stuff is just for the well-to-do, it's not going to make a difference," said Jib Ellison, the founder of Blu Skye, a sustainability consultant who has worked with Wal-Mart.

As the saying goes, Wal-Mart has also done well by doing good. Along with the McDonald's Corporation, it was one of only two companies in the Dow Jones industrial average whose share price rose last year.

When Wal-Mart first embraced green initiatives, its fortunes were sagging. After blanketing the country with its giant, all-in-one stores, it began cannibalizing its own sales. Older stores looked tattered and tired, and Wal-Mart's flirtation with higher-end merchandise, like skinny jeans with fur trim, alienated low-income shoppers who preferred unadorned basics.

By renovating thousands of its stores, ratcheting down the pace of its breakneck expansion and all but abandoning its upscale ambitions, it turned around its lagging sales. But its deft financial rejiggering still didn't burnish its reputation, which had become a business problem, too.

A confidential 2004 report, prepared by McKinsey & Company for Wal-Mart, found that 2 percent to 8 percent of Wal-Mart consumers surveyed had ceased shopping at the chain because of "negative press they have heard." Wal-Mart executives and Wall Street analysts began referring to the problem as "headline risk."

So the company, known for bitterly rebutting critics or simply ignoring them, began working closely with activists to improve its labor, health care and environmental records.

It is hard to measure the financial return of a good image. But no one at Wal-Mart talks about headline risk anymore because the headlines have become largely positive.

Profits climbed to $12.7 billion in the 2008 fiscal year, from $11.2 billion in the 2006 fiscal year, while sales jumped to $375 billion, from $312.4 billion, during the same period. The percentage of employees on Wal-Mart's health insurance plan rose to 50.2 percent, from 44 percent.

And since the Choice Meeting, sustainability efforts have saved Wal-Mart hundreds of millions of dollars, according to people familiar with the company's environmental initiatives. Wal-Mart declined to provide exact figures about its savings.

"It wasn't a matter of telling our story better," said Mr. Scott said in recent interview. "We had to create a better story."

WAL-MART, of course, didn't change overnight. It was pushed — or, more accurately, shoved — into wrenching reforms.

When Mr. Scott became chief executive in 2000, the company was a Wall Street darling. With nearly 4,000 stores and more than a million employees, it had edged out Goliaths like Sears and Kmart. But its size and success invited scrutiny. In 2005, two union-backed groups, Wal-Mart Watch and Wake Up Wal-Mart, set up shop in Washington and started a public relations assault against the company.

At one point, Wal-Mart Watch set up an automated phone system to recruit whistle-blowers to share secrets about the retailer.

In 2005, Wal-Mart Watch obtained an internal memorandum showing that 46 percent of Wal-Mart workers' children were uninsured or on Medicaid. The memo proposed further ways to cut employees' health and retiree benefits — at a time when the company was ringing up annual earnings of more than $11 billion.

Meanwhile, environmental groups accused Wal-Mart of being a polluter. Mr. Scott and his team hunkered down, hurling back a litany of statistics and facts in Wal-Mart's defense.

As the company's reputation unwound, so did its business. Its stock price fell roughly 20 percent between 2000 and 2005, a drop that executives and analysts attributed, in part, to investors' anxieties about Wal-Mart's image. Sales growth lagged behind that of its chief rival, Target, and Wal-Mart faced growing resistance to its expansion.

Inside Wal-Mart headquarters, in Bentonville, Ark., rumors swirled about Mr. Scott's future, and board members became restless. In the end, directors stood by Mr. Scott, but told him he had to overhaul Wal-Mart's image.

MICHAEL TEMCHINE FOR THE NEW YORK TIMES

"It wasn't a matter of telling our story better," said H. Lee Scott Jr., the chief of Wal-Mart. "We had to create a better story."

"What I would tell Lee is that there was a great deal of misunderstanding about the company and that we had to address it head on," said Jose H. Villarreal, a director from 1998 to 2006 and a partner in the law firm Akin Gump Strauss Hauer & Feld.

MR. SCOTT — the son of a gas-station owner — joined Wal-Mart's trucking department in 1979 and rose to the C.E.O. post in 2000. He acknowledged in an interview that while he was running Wal-Mart, his board "sensitized" him to critics.

He began meeting with minority groups, politicians and environmentalists. Some meetings were awkward; others were punctuated by tirades. But as it turned out, most critics did not want Wal-Mart to disappear. They wanted it to be better.

Mr. Scott used some of his opponents' ideas to make that happen, believing that sustainability could become an advantage — saving the company money, reinvigorating its culture, allowing it to sell better merchandise and attracting and retaining talent.

Engaging outside consultants and critics to help with that transformation was a huge change for the retailer, which prized its independence. To outsiders, it was a sign that Wal-Mart was adopting a new attitude.

"There was a time where people in business believed all they had to do was run their business," said David D. Glass, Mr. Scott's predecessor as C.E.O. "But it doesn't work that way anymore. There is an accountability that goes way beyond that."

After the Choice Meeting, Mr. Scott went through a kind of Outward Bound phase, known within Wal-Mart as "Eat What You Cook" — a mantra that encourages executives to experience firsthand the impact of their decisions.

For Mr. Scott, that meant driving to a New Hampshire mountaintop to discuss climate change with scientists. He slept on a bunk bed in submarine-size quarters with visitors including Steven Hamburg, then an environmental studies professor at Brown University and author of a 1994 report criticizing Wal-Mart's environmental efforts.

Mr. Hamburg, now chief scientist for the Environmental Defense Fund, told Mr. Scott that Wal-Mart's earlier green initiatives were just window dressing. "So he challenged me back and said, 'Well, we've taken another run at this and we'd love to have your input,'" Mr. Hamburg recalls.

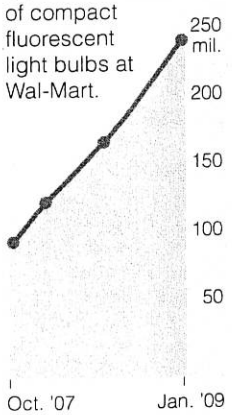
Shortly after that conversation, Mr. Scott told the world that Wal-Mart was embracing sustainability. He laid out ambitious, possibly unattainable, long-term goals for the company: running its operations solely on renewable energy, creating zero waste and selling products that sustain the earth's resources and environment.

Wal-Mart's suppliers had little choice but to follow its lead.

In came the fluorescent bulbs. In 2007 alone, Wal-Mart sold more than 100 million of them. For a manufacturer, selling a

Lights On

Cumulative sales of compact fluorescent light bulbs at Wal-Mart.



Source: Wal-Mart

THE NEW YORK TIMES

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ulb that lasts longer means fewr sold. But it would hurt to lose Val-Mart as a customer. So G.E. nd others ramped up production f fluorescent bulbs.

By selling only concentrated quid laundry detergent, an efort it began last year, Wal-Mart ays, its customers will save nore than 400 million gallons of vater, 95 million pounds of plasic resin, 125 million pounds of ardboard and 520,000 gallons of iesel fuel over three years.

"Lee pushed me," said A. G. afley, chief executive of Procter Gamble, and "we totally, totally hanged the way we manufacure liquid laundry detergents in he U.S. and, now, around the vorld."

Wal-Mart says it now saves itelf $3.5 million a year just by reycling loose plastic and selling it o processors. After changing the lesign of its trucks and how effiiently it loads them, its fleet had 25 percent improvement in fuel fficiency. Amory B. Lovins, a MacArthur fellow and chairman nd chief scientist of the Rocky Mountain Institute, a nonprofit esearch organization, said Wal-Mart would save nearly $500 million a year in fuel costs by 2020.

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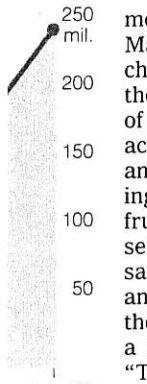

V YORK TIMES

While environmentalists give Wal-Mart kudos for the changes it has made, they say that much of what it has achieved so far amounts to collecting low-hanging fruit. The company sells tens of thousands of products, and has demanded the overhaul of only a handful, they say. "The jury's out in the long term," Mr. Hamburg says.

Wal-Mart has revised health care plans and labor practices in recent years, also important facets of its makeover.

In the last few years, it has helped its employees get access o lower-cost prescription drugs nd taken steps to prevent labor buses. For years, some store nanagers forced employees to work without pay, after clocking ut, according to scores of lawsuits. To prevent this, Wal-Mart as programmed cash registers o shut down after an employee as exceeded a certain number of ours. It has also told managers o make sure that employees take unch and rest breaks.

Last month, Wal-Mart settled dozens of lawsuits contending that it forced employees to work off the clock. The settlement will cost Wal-Mart at least $352 million, possibly far more, according to the company.

Still, many activists, especially in the labor world, remain deeply dissatisfied.

A major class-action sexual discrimination lawsuit is pending against the company. And labor leaders argue that Wal-Mart has simply found new ways to fatten its profits without tangibly improving the lives of its employees. It pays its workers, on average, less than $20,000 a year, and many of them pay thousands of dollars a year in medical bills.

"He had the chance to be the Henry Ford of his generation, especially in the last few years, as the stock price soared," said Andy Stern, president of the Service Employees International Union, of Mr. Scott. "He could have found a way to share the wealth. Instead, he became the epitome of the greed that has brought our economy to where it is today."

Mr. Scott declined to comment. But Wal-Mart says that its average wage, $10.83 an hour for full-time workers, are competitive in the retailing industry, and that its health plans are accessible to a wider range of workers than those of some of its rivals.

Wal-Mart will need to keep building on its recent successes. While most retail chains have had double-digit declines during the current economic turndown, Wal-Mart had a 1.7 percent sales increase in December at stores open at least a year.

Yet that number was lower than analysts' expectations, leading some to predict more trouble ahead for Wal-Mart and the rest of the retail industry.

Come February, it will be the job of Michael T. Duke, 58, who has led Wal-Mart's international operations since 2005, to steer the company through the downturn.

As for Mr. Scott, he will serve as chairman of the executive committee of Wal-Mart's board until 2011. And he intends to increase the retailer's lobbying muscle in Washington, especially regarding health care, energy and sustainability.

"As businesses, we have a responsibility to society," he said this month, speaking to members of the National Retail Federation in his last public speech as Wal-Mart chief. "Let me be clear about this point. There is no conflict between delivering value to shareholders, and helping solve bigger societal problems." □

8-10

Testimony of Scott Jones
Before the House Energy and Utilities Committee
In Opposition to House Bill 2038
January 26, 2009

Kansas City Power & Light questions the origin, need and usefulness of the majority of House Bill 2038. Instead of critiquing the many components of the bill, we will focus on the provision we believe has benefit – smart grid investments and the cost recovery of associated investments.

On page 2, lines 2 through 7, the bill permits cost recovery of investments in the modernization of the transmission and distribution grid. However, we question the five percent figure in the section. Requiring a five percent increase in efficiency conflicts with the need to do pilot projects prior to full scale rollouts and ignores the many reliability and other benefits of a smart grid.

While recovery of such investments hasn't been denied, or even questioned, this provides certainty and a policy direction for the state to work toward.

An evolution toward a smart grid is an active part of KCP&L planning process. KCP&L was an early adopter to invest in an automated meter reading system and is actively planning for investments in a two-way interactive system.

Such a system will allow us to better communicate with our customers and manage the flow of electricity on the grid. A smart grid will enable and optimize the integration of distributed generation, provide better grid reliability, and provide consumers more transparency and control of their energy usage. We would be pleased to present additional information to the committee on smart grid and its benefits.

KCP&L recommends the definition of smart grid be broadened to include: "technology that permits real-time or near real-time, high-speed, two-way communication throughout the transmission and distribution grid, conversion of substations and distribution circuits capable of remote monitoring, near real-time data and optimized performance, installation of programmable in-home control devices and the necessary systems to fully automate home energy use, and infrastructure that easily supports dispatched distributed resource technologies."

KCP&L suggests you isolate the smart grid portion of the bill and move it forward.

Scott Jones – KCP&L
Manager, Kansas Government Affairs
816-556-2458; scott.jones@kcpl.com

HOUSE ENERGY AND UTILITIES
DATE: 1/26/2009
ATTACHMENT 9

SUNFLOWER ELECTRIC POWER CORPORATION

A Touchstone Energy® Cooperative

January 26, 2009

Before the House Energy and Utilities Committee

House Bill 2038 – Fossil Fuel Electric Generation Standards

Conferee: Wayne Penrod, Executive Manager, Environment

- **POSITION:** Sunflower opposes this legislation.
- **SUMMARY:**
  - **Sec. 1(b) should be modified.**
    - We suggest this language should be replaced by Section 2 contained in HB 2016.
    - These pollutants are already regulated by the KDHE and EPA through the Clean Air Act.
    - We support the legislature establishing emission rates for these pollutants and suggest they should be 0.050 lbs/MWh for NOx, .065 lbs/MWh for SO2, and 0.020 lbs/GWh for mercury. These are levels recommended by the professional staff at the KDHE during our permit negotiations.
  - **Sections 1(c), (e), (f), (h), and (i) should be removed.**
  - **Section 1(g) should be replaced by the RPS language in HB2013**
- **CONCLUSION:** This bill should not be agreed to by the Committee. It should be replaced by HB2013 and HB2016.

HOUSE ENERGY AND UTILITIES
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301 West 13th Street ~ P.O. Box 1020 ~ Hays, Kansas 67601-1020 ~ Tel. 785.628.2845 ~ Fax 785.623.3395 ~ www.sunflower.net

SPECIFIC CONCERNS ABOUT HB2038

- **Section 1(b):** This section requires new plants to capture and sequester 90% of the sulfur dioxide (SO2), nitrogen oxide (NO_X), and mercury and requires the KDHE to establish fines for failure to comply.
    - **We suggest that Section 2 of HB 2016 replace this language.** These pollutants are already regulated by the KDHE and EPA through the Clean Air Act. We support the legislature establishing emission rates for these pollutants and suggest they should be 0.050 lbs/MWh for NOx, .065 lbs/MWh for SO2, and 0.020 lbs/GWh for mercury. These are levels recommended by the professional staff at the KDHE during our permit negotiations.
    - SO_2, NO_X, and mercury are not greenhouse gases.
    - BACT procedures under the New Source Review rules for SO_2 and NO_X do not result in establishing percentage reduction limits, rather they yield emission limitations expressed in lb/mmBtu.
    - Determining the percentage reduction for NO_X requires establishing what the pre-combustion limitation might be. Since NO_X does not exist pre-combustion the normal method for making this determination does not exist.
    - These requirements would be applicable to natural gas facilities and neither mercury nor SO2 are emitted from either of these technologies.
    - We have attached a copy of the 2007 emissions performance (or permit levels) for various emission rates for the large new units becoming commercial (or under construction) after January 1, 2006. You will notice that existing Holcomb 1 performance was comparable or better than most of these units.
        - After reviewing this information, we believe the legislature should have confidence that the requirements proposed in HB 2016 assure the very latest performance possible for coal-based generating units.

- **Section 1(c) Capture 45% CO_2 Emissions**
    - Most importantly, there is not any known commercially available process that could achieve this goal. A requirement to capture 45% of the flue gas carbon is simply unrealistic.
    - Sunflower is working with Kansas State University to develop an integrated bioenergy center that could capture a large amount of the flue gas CO_2, but we have been stymied to date because of the uncertainty of this project.
    - We can't ask our retail electric ratepayers to invest millions of additional dollars in furthering the development of this technology without the

assurance we can build the plants. Even then, I'm not certain it would be feasible to achieve this lofty requirement.

- Also please note that flue gas contains carbon dioxide, not carbon.
- Requiring the installation of carbon capture and sequestration (CCS) on a new power plant adds significantly to both the operational and capital cost of a new plant, whether it is fueled by coal or by natural gas. The process would increase the fuel requirement of a plant with CCS by about 25% for a coal-fired plant and about 15% for a gas-fired plan. The cost of this extra fuel, as well as storage and other system costs are estimated to increase the costs of energy from a power plant with CCS by 30-60%.[1]
- **We suggest this section be removed.**

- **Section 1(e):** The section requires utilities to "give preference" to CCS plants, but they are not mandated to do so if the costs to consumers increase by 15%. The IPCC estimates that the fuel cost for a CCS plant will increase by 30-60%, so obviously this section is either irrelevant because of the costs or your need to support rate increases at the level quoted by the IPCC[2].
  - **We suggest this section be removed.**

- **Section 1(f): 20% Reduction of CO_2 on existing units**
  - We have hopes that the provisions outlined in this section might be able to be achieved, but frankly, the adversities we've faced on this project make us question whether this goal is realistic.
  - We still believe this could be achieved, but we're leery that this language may cause our customers to face an unnecessary financial risk.
  - We firmly believe that Kansas should wait for the federal government to act on CO_2 before we burden all Kansans with financial costs that may never be agreed to in Washington. Or, if they are agreed to, we should follow the programs established at the federal level.
  - The requirement for further increase of reduction of 5% of SO_2 NOx and mercury emissions is not equitable. Some units are already controlled, some are having controls installed now, and some do not plan the installation of any controls. An additional 5% reduction requirement then will be accomplished for those units now installing technology, while those that have always operated technology will not be able to accomplish the task without significant financial penalties for their ratepayers.

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[1] CCS - *Assessing the Economics*, Mckinsey, 2008 http://www.mckinsey.com/clientservice/ccsi/pdf/CCS_Assessing_the_Economics.pdf

[2] [IPCC, 2005] *IPCC special report on Carbon Dioxide Capture and Storage*. http://www.ipcc.ch/pdf/special-reports/srccs/srccs_wholereport.pdf

- **We suggest this section be removed.**

- **Section 1(g)(1) thru (g)(4) renewable portfolio requirement**
  - This is a different renewable portfolio standard (RPS) based on energy rather than nameplate rating. The levels required in this section are not reasonable and could not be achieved with current technology.
  - The requirement that 5% of the requirement must come from Kansas generator of 5 megawatts or less presupposes that type of unit would be available.
  - **We suggest this section be replaced by the language in HB2013.**

- **Section 1(h) KDHE propose CO_2 regulations**
  - Secretary Bremby has testified before a Congressional committee that CO_2 should be regulated at the federal level. We agree with his position and believe Kansas should follow the lead of the federal government.
  - **We suggest this section be removed.**

- **Section 1(i) Requirement to build transmission lines with new plants**
  - The scope of transmission improvements associated with the addition of any generating resource is determined by the Southwest Power Pool (SPP), the Kansas Corporation Commission and KETA.
  - The section does not seem practical from a regulatory perspective, and will undoubtedly lead to unintended consequences. It is not limited to the area around the plant, or even to the state in which the generation resource is to be constructed.
    - Consider the generation improvements such as those we have proposed at Holcomb; these will lead to essential reliability-based transmission improvements in Colorado, Oklahoma, and Texas, as determined by the SPP.
  - If this is to be our policy in Kansas, why should nuclear-based plants, wind, and other renewable facilities be free from this burden? Again, if you support this provision, we would advocate that every generator should pay these costs.
  - Most importantly, if the Legislature agrees with this provision, you can be confident that every new base load plant will be built in states surrounding Kansas. Those states will be the ones to benefit from the economic impacts of these multi-billion dollar investments.
  - **We suggest this section be removed.**

Emission Levels (Operating or Permit Levels) for New Coal-Fired Power Plants							
Plant	**Unit**	**Size (MW)**	**Commercial Online Date**	**Super-critical (Y/N)**	**2007 SO_2 Emission Rate (lb/mmBtu)**	**2007 NO_x Emission Rate (lb/mmBtu)**	**2007 CO_2 Emission Rate (lb/MWh)**
Walter Scott	ST4	790	6/30/07	Y	0.08	0.04	1,910
Cross	3	600	1/1/07	N	0.08	0.14	1,975
Springerville	ST3	450	7/28/06	N	0.10	0.08	2,099
Weston	4	500	6/2/08	Y	0.07	0.07	1910
Hawthorn	5	565	7/1/2001	N	0.09	0.07	2,275
Holcomb 1	1	360	8/1/83	N	0.07	0.31	2,106
Holcomb Exp.	2&3	2x700	TBD	Y	0.065	0.05	1,905
Iatan	2	850	6/1/10	Y	0.090	0.08	1,900
• *All of these plants are expansion with the exception of the Holcomb 1 and Hawthorn plants.*							

KANSAS
CORPORATION COMMISSION

BEFORE THE
HOUSE COMMITTEE ON ENERGY AND UTILITIES

PRESENTATION OF THE KANSAS CORPORATION COMMISSION

HB 2038
January 26, 2009

Thank you, Chairman and members of the Committee. I am Don Low, Director of the Kansas Corporation Commission's Utilities Division. I appreciate the opportunity to testify on behalf of the Commission on HB 2038.

This bill has various mandates on electric generation aimed at reducing greenhouse gases and encouraging renewable energy. The Commission certainly supports the general goals of the bill but has concerns about the potential consequences of the bill's specific provisions.

With regard to capture and sequestration of greenhouse gases, there is currently no proven technology for doing so and it is unknown when such technology will be developed in commercially viable way. Since this bill nonetheless contains deadlines for utility adoption of capture and sequestration, it could be mandating use of technology that is immature and costly. Some sections of the bill do contain safeguards so that only "cost-effective" technologies are required or a cap of a 15% rate impact is imposed. However, those safeguards don't appear to apply to all the mandates. Thus, there could be unintended consequences with these mandates.

I should also note that Section 1(g) of the bill, dealing with a renewable portfolio standard, mixes apples and oranges by requiring the amount of energy sold (which is usually expressed as kilowatt-hours or megawatt-hours) to be a percentage of "peak load, expressed in megawatts."

Thank you for your consideration. I would be pleased to answer questions.

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KANSAS
DEPARTMENT OF HEALTH
AND ENVIRONMENT

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

www.kdheks.gov

Testimony on House Bill 2038

Presented to House Energy and Utilities Committee
By
Thomas Gross, Bureau of Air and Radiation

January 26, 2009

Chairman Holmes and members of the Committee, I am Tom Gross, with the Bureau of Air and Radiation in the Kansas Department of Health and Environment. I am pleased to appear before you today to present testimony on House Bill 2038.

The bill is an act concerning utilities; relating to fossil-fuel electric generation standards and innovative renewable, distributive generation and transmission technology. I will offer testimony on those sections potentially affecting the Department of Health and Environment. I will start with addressing section 1(b). This section establishes standards for mercury, nitrogen oxides and sulfur dioxide from new coal fired power plants built after January 1, 2009. Requirements in this section establish at least a 90% reduction of potential emissions for each of these pollutants or that the pollutants meet emissions standards established by the United States Environmental Protection Agency, whichever is greater. KDHE is the permitting authority that implements the emissions standards for these pollutants. The United States Environmental Protection Agency establishes a limit or a method to arrive at a limit. A requirement to control potential emissions would be problematic for those sources whose actual emissions were much less than their potential emissions. The requirement to sequester or use for commercial purposes these captured pollutants may also be difficult for new power plants to meet as the waste products from the capture of these pollutants is generally disposed of and has little commercial value. This section also refers to mercury, nitrogen oxides and sulfur dioxide as greenhouse gases. These pollutants are not considered greenhouse gases.

The requirements under section 1(f) would require a reduction of 5% of the discharge of sulfur dioxide, nitrogen oxides and mercury from fossil-fuel generation units which commenced construction before January 1, 2009. The units subject to this requirement must achieve these reductions from that permitted by the Environmental Protection Agency. KDHE is the permitting authority for these pollutants for Kansas sources, not the Environmental Protection Agency. It appears the intent is to reduce actual air emission releases "discharges" by 5% from that allowed on January 1, 2009. It is not clear how this reduction would be determined or when it would be required.

Section 1(h) directs KDHE to annually propose carbon dioxide air emissions standards for carbon emitters for which carbon capture or reduction technologies are available and cost effective. It is unclear if this applies only to fossil-fuel electric generation units, or to other stationary sources such as refineries and cement kilns.

Thank you for the opportunity to present testimony on this bill. I will now stand for questions.

Westar Energy®

MARK A. SCHREIBER
Director, Government Affairs

Testimony of Mark Schreiber
Director Government Affairs, Westar Energy
Before the House Energy and Utilities Committee
On HB 2038
January 26, 2009

Good morning Chairman Holmes and members of the committee. Thank you for the opportunity to provide testimony in opposition to HB 2038. I would like to concentrate my testimony on three areas of concern.

In section 1(b) of this bill, the capture and sequestering of mercury, SOx and NOx is required. Although we have technologies to reduce these emissions, we don't know of technology that captures and sequesters them.

In Section 1(e), the bill would require utilities to give preference to purchase power from plants utilizing carbon capture and sequestration (CCS). Commercial utility-scale CCS is non-existent and most authorities predict it won't be for another 15 years. This restriction on the utility would undoubtedly raise costs to consumers. We don't approach the KCC before each energy purchase to see how it may affect rates or our fuel adjustment clause. We must purchase that energy immediately for our customers. Thus saying the mandate does not exist if the rate increase exceeds 15% is too late in the process.

Section 1(i) proposes a certain percentage of construction costs for new fossil-fueled generation to go towards new transmission. Whenever a utility seeks to build a new fossil-fueled plant, they look at the availability of water, transmission and an adequate transportation network for the fuel (e.g. natural gas or coal) If transmission is not available at the site, then the plant won't be built at that site until conditions change or an alternative site is developed. To require the expenditure of monies to build transmission that is most likely not needed based on a percentage of the cost of the plant does not seem to be a wise use of capital. Transmission is developed based on what is required to serve customers and maintain reliability, not based on a percentage of generation construction costs.

Thank you again for the opportunity to testify in opposition to HB 2038. I will stand for questions at the appropriate time.

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Kansas Electric
Power Cooperative, Inc.

HOUSE ENERGY AND UTILITIES COMMITTEE

H.B. 2038

January 26, 2009

Written Testimony on behalf of Kansas Electric Power Cooperative, Inc. (KEPCo)

Mr. Chairman and members of the committee:

I am Les Evans, Vice President Power Supply for Kansas Electric Power Cooperative, Inc. KEPCo is a not-for-profit generation and transmission utility, providing electricity to nineteen member rural electric cooperatives serving the eastern two-thirds of the state.

KEPCo stands in opposition of HB 2038. Technology for carbon capture and sequestration does not currently exist on a commercially viable basis. The bill would prohibit the construction of any new fossil-fuel generation units in the state of Kansas until such time as carbon capture and sequestration technology was developed on a commercially viable and demonstrated basis. It is KEPCo's belief that commercially viable carbon capture and sequestration technology will not be available for at least ten to fifteen years. Additionally this bill would call into question the ability of existing fossil-fuel generators to operate beyond 2015. In order for Kansas to continue to meet new and expanding business energy needs, new fossil-fuel generation units will be required sooner than ten to fifteen years in the future and existing fossil-fuel units will be required to continue operation beyond 2015. Intermittent renewable generating technology can provide a portion of the future energy requirements, but cannot provide the capacity that fossil-fuel generation technology provides.

A 5% threshold for cost recovery for prudent investments in new technology is unreasonable and arbitrary. Any prudent cost effective investment in technology by an electric utility that cost effectively improves the efficiency of the system should be allowed full cost recovery.

This bill mandates that for future power purchases, preference be given to baseload plants that utilize carbon capture and sequestration. This would have the effect of mandating purchases from fossil-fuel technology

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sources over other baseload technologies such as nuclear or hydro and increasing not reducing green house gas emissions. This section would actually mandate a preference for purchasing carbon emitting baseload generating technologies over non carbon emitting baseload generating technologies such as nuclear or hydro.

This bill requires existing fossil-fired generating units to reduce current levels of sulfur dioxide, nitrogen oxides and mercury permitted by the environmental protection agency on January 1, 2009 by at least 5%. It is unclear from this bill how existing fossil-fuel generating units which do not have a current environmental protection agency restriction on one or more of the listed flue gas emissions would meet a 5% reduction. For illustrative purposes, natural gas fired generating units do not have limits on mercury since there are only trace amounts if any at all of mercury in natural gas.

Finally KEPCo would respectively point out that mercury, sulfur dioxide and nitrogen oxides are not greenhouse gases, but language in this bill would classify them as greenhouse gases [Sec. 1.(a)(3)(b)].

KEPCo respectfully asks the committee to vote House Bill 2038 unfavorable.

Citizens' Utility Ratepayer Board

State of Kansas
Kathleen Sebelius, Governor

David Springe, Consumer Counsel
1500 S.W. Arrowhead Road
Topeka, Kansas 66604-4027
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HOUSE UTILITIES COMMITTEE
H.B. 2038

Testimony on Behalf of the Citizens' Utility Ratepayer Board
By David Springe, Consumer Counsel
January 26, 2009

Chairman Holmes and members of the committee:

Thank you for this opportunity to offer testimony on H.B. 2038. The Citizens' Utility Ratepayer Board is opposed to this bill for the following reasons:

- This bill requires new "fossil-fuel" generation units built after January 1, 2009 to have emission controls that capture of sequester 90% of emitted sulfur dioxide, mercury and nitrogen oxides, and 45% of flue gas carbon. While the technology to control emissions of sulfur dioxide, mercury and nitrogen oxides is well understood, the technology to capture and sequester carbon is not well understood and generally not commercially available.

- The bill does not define "fossil-fuel" generation unit. This could include natural gas generation units, which are necessary to economically meet growing peak generation needs in the summer. If the intent of the bill it to reduce carbon emissions over time, natural gas units can provide a lower carbon generation option to bridge the gap in time until carbon capture and sequestration technology is available. However, without carbon capture technology commercially available, no natural gas generation unit can meeting the requirements of this act and none will be built.

- The bill mandates (Section d) the "commission *shall* permit full cost recovery and a return on investment" for any electric utility that adopts certain specified technologies. This language eliminates any ability of the KCC to disallow any expenditure on these technologies regardless of how excessive and regardless of how imprudent. This eliminates any ability of the KCC's (and CURB) to protect consumers and insure just and reasonable rates.

- The bill (Section e) creates a preference to purchase electric baseload power, when necessary, from plants that utilize carbon capture and sequestration technology, unless the purchase will increase "rates to consumers by more than 15%". Purchase power costs are a small percentage of most utility consumer "rates". This preference may be impossible to actually comply with in the market since carbon capture and storage does not appear readily available anytime in the near future, and a market purchase may not be

unit specific. However, if this section is passed, it must be clarified that the purchase power preference is applicable only power less than 15% above the cost of other power options in that market, rather than the overall "rates" to consumers.

- The bill creates a renewable portfolio standard, requiring 15% of a utilities peak load be generated from renewable sources by 2015, 18% be renewable by 2018 and 20% be renewable by 2020. CURB supports expanding the level of renewable energy in utility generation portfolios, but does not support laws that mandate a specific percentage of renewable generation by specific dates. This removed the cost to consumers from the decision criteria and removes utility bargaining power to acquire renewable resources at the lowest cost for consumers.

The mandates contained in this bill, especially those related to carbon capture and storage will have a large impact on consumer rates. Before placing these types of mandates on generation CURB believes that additional study should be conducted on the availability of technology to capture and sequester carbon and the economic cost of applying this technology. Further, under no circumstance should the legislature pass a bill with the language contained in Section d, requiring the KCC "shall allow cost recovery". This type of blank check with no oversight only serves to harm consumers.

Thank you.

KANSAS

DEPARTMENT OF HEALTH
AND ENVIRONMENT

Kathleen Sebelius, Governor
Roderick L. Bremby, Secretary

www.kdheks.gov

Testimony on House Bill 2038

Presented to House Energy and Utilities Committee
By
Thomas Gross, Bureau of Air and Radiation

January 26, 2009

Chairman Holmes and members of the Committee, I am Tom Gross, with the Bureau of Air and Radiation in the Kansas Department of Health and Environment. I am pleased to appear before you today to present testimony on House Bill 2038.

The bill is an act concerning utilities; relating to fossil-fuel electric generation standards and innovative renewable, distributive generation and transmission technology. I will offer testimony on those sections potentially affecting the Department of Health and Environment. I will start with addressing section 1(b). This section establishes standards for mercury, nitrogen oxides and sulfur dioxide from new coal fired power plants built after January 1, 2009. Requirements in this section establish at least a 90% reduction of potential emissions for each of these pollutants or that the pollutants meet emissions standards established by the United States Environmental Protection Agency, whichever is greater. KDHE is the permitting authority that implements the emissions standards for these pollutants. The United States Environmental Protection Agency establishes a limit or a method to arrive at a limit. A requirement to control potential emissions would be problematic for those sources whose actual emissions were much less than their potential emissions. The requirement to sequester or use for commercial purposes these captured pollutants may also be difficult for new power plants to meet as the waste products from the capture of these pollutants is generally disposed of and has little commercial value. This section also refers to mercury, nitrogen oxides and sulfur dioxide as greenhouse gases. These pollutants are not considered greenhouse gases.

The requirements under section 1(f) would require a reduction of 5% of the discharge of sulfur dioxide, nitrogen oxides and mercury from fossil-fuel generation units which commenced construction before January 1, 2009. The units subject to this requirement must achieve these reductions from that permitted by the Environmental Protection Agency. KDHE is the permitting authority for these pollutants for Kansas sources, not the Environmental Protection Agency. It appears the intent is to reduce actual air emission releases "discharges" by 5% from that allowed on January 1, 2009. It is not clear how this reduction would be determined or when it would be required.

Section 1(h) directs KDHE to annually propose carbon dioxide air emissions standards for carbon emitters for which carbon capture or reduction technologies are available and cost effective. It is unclear if this applies only to fossil-fuel electric generation units, or to other stationary sources such as refineries and cement kilns.

Thank you for the opportunity to present testimony on this bill. I will now stand for questions.

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Testimony before the House Energy and Utilities Committee
January 26, 2009
Neutral Testimony on H.B. 2038

Chairperson Holmes and Honorable Members of the Committee:

My name is Tom Thompson and I represent the Kansas Chapter of the Sierra Club. I have come today to present neutral testimony on HB 2038.

The Sierra Club recognizes this bill as one that attempts to do something to decrease the amount of carbon dioxide in the atmosphere and to control atmospheric toxins like nitrogen oxide, sulfur dioxide and mercury. Sierra Club supports decreasing or eliminating all of these. Not building more coal generation plants is the best way of doing this.

This bill also includes a Renewable Portfolio Standard and encourages the building of new transmission lines. These too are conceptually supported by the Sierra Club.

The Sierra Club would very much like to work with leaders of Kansas to develop a plan and legislation to decrease the emission and production of greenhouse gasses, nitrogen oxide, sulfur dioxide and mercury in Kansas. However, the Sierra Club has some concerns about 2038 that as yet make it unsuitable for doing this,

Section 1(b) refers to emissions of mercury, sulfur dioxide and nitrogen oxides. In line 30 it says of two measures of these", whichever is greater." This would mean "higher" setting a standard above that set by the USEPA. The Sierra Club believes that would be illegal and suggests that the word "stricter" be used. Furthermore, in line 31, these gases are referred to as greenhouse gases, which they are not.

Section 1 (b) and (f) say that there should be records kept for documentation. These will only be as good as the techniques used. Sierra Club recommends that KDHE be directed to develop valid and acceptable methods of testing and monitoring of both inputs and actual stack emissions of listed pollutants.

HB 2038 also requires "carbon emitters" to install emission reduction techniques that are "available" and "cost effective." The Sierra Club believes these terms need to be defined in detail for this law to be practical and enforceable.

Thank you for allowing me to testify.

Sincerely

Tom Thompson
Sierra Club

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Mr. Chairman, members of the committee, thank you for the opportunity to present written testimony on HB 2038.

CEP applauds the renewable generation goals enumerated (15% in 2015, 18% in 2018, 20% in 2020), as well as support for community ownership, smart grid technology, and for new or upgraded transmission. We further applaud the bill's pollution reduction goals.

We would ask the committee to consider possible amendments to sections 1, (3)(b), (c), (d), (e), and (f) for consistency and clarity.

- Penalties for noncompliance: For new generating units, HB 2038 establishes "a fine for each failure to comply" with mercury, sulfur dioxide, and nitrogen oxides reductions. Existing units similarly face a fine should they miss their carbon dioxide control targets. New generating units, however, appear to face no such fine should they fail to comply with carbon dioxide requirements (3, c). Would existing and new generation face the same penalties for noncompliance?
- Off-set definition: Subsection (3)(f) requires existing generators to reduce carbon dioxide emissions by 20% or "off-set with renewable energy or documented energy conservation savings in excess of any other statutory requirements." Off-set, in carbon dioxide control terms, is typically understood as a 1:1 reduction – one ton of emissions is off-set by one ton of sequestration (geologic or terrestrial) or one ton of emissions avoided from current level. By this definition, renewable generation would need to replace emitting generation; energy conservation savings would need to eliminate the need for specified amount of emitting generation. Is off-set so defined herein?
- Carbon dioxide control: Carbon dioxide is limited to manage the risks of climate change. To achieve that aim, carbon emissions must literally be contained: either fixed in the soil by growing things or captured, highly pressurized, and injected deep in the earth's crust. Recycling of carbon dioxide – capturing temporarily for release later – fails to achieve the goal of limiting emissions. Therefore, CEP requests consideration of further definition of "commercial processes" in subsections (3)(c), (d), (e), (f). Commercial processes – enhanced oil recovery, for example – that represent a path toward permanent sequestration would best achieve the goal.

We appreciate the committee's intent to treat all generators equitably. In that regard, at least with respect to carbon dioxide emissions, a simple target for reduction across utility systems might allow maximum flexibility and efficiency in meeting the goal.

| Nancy Jackson | Executive Director, CEP | jackson@climateandenergy.org | 785.331.8743 |
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