Approved: March 24, 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 March 5, 2009, in Room 783 of the Docking State Office Building.

All members were present except:
Representative Carl Holmes-excused
Representative Margaret Long-excused
Representative Josh Svaty-excused

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

Conferees appearing before the Committee:
Tom Sloan, State Representative
Ray Dean, Retired KU Professor

Others attending:
Twelve including the attached list.

The committee sang happy birthday to Representative Tom Sloan.

Hearing on:

HR 6011 - Requesting the State Corporation Commission to convene a group of stakeholders to study certain aspects of energy storage and to address cost recovery for and earnings on investments relating to energy storage.

Proponents:

Tom Sloan, Representative (Attachment 1), offered testimony in support of **HR 6011**, giving the committee an explanation of why this resolution is needed. Representative Sloan noted a technical change necessary to clarify the intent of the resolution.

Questions were asked and comments made by Representative Annie Kuether.

Ray Dean, Retired KU Professor (Attachment 2), offered technical testimony in support of **HR 6011.**

Questions were asked and comments made by Representatives: Don Myers, Vern Swanson, Tom Moxley, and Forrest Knox.

There were no opponents to **HR 6011.**

The hearing on **HR 6011** was closed.

The next meeting is scheduled for March 6, 2009 as a tour of Lawrence Energy Center and Bowersock Hydroelectric Energy.

The meeting was adjourned at 9:32 a.m.

HOUSE ENERGY AND UTILITIES COMMITTEE
GUEST LIST

DATE: March 5, 2009

NAME	REPRESENTING
Ray Dean	private citizen
Mari Tucker	Dept of Commerce
Tom DAY	KCC
Joe Mosimann	Hein Law
Mick Urban	Kansas Gas Service
Scott Jones	KCPL
Tom Thompson	Sierra Club
Mark Schreiber	Westar
Ron Gaches	CBA

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STATE OF KANSAS

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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 HR 6011 - Regarding Energy Storage
House Energy & Utilities Committee March 5, 2009

Mr. Chairman, Members of the Committee: HR 6011 requests the Kansas Corporation Commission to convene a group of stakeholders to study energy storage as a cost-effective way to stabilize renewable energy generation, address transmission congestion costs, increase system reliability, increase the potential for distributive generation, and such other energy storage issues as the Commission may identify. The Commission is requested to provide a report to the Legislature by January 1, 2010 on their findings, recommendations, and any actions taken.

It also requests that the Corporation Commission work with the Southwest Power Pool to address regional electric systemic issues.

Energy storage is slowly becoming economically and technologically viable as a means of addressing renewable energy intermittency issues and system congestion. What has not been addressed within the Southwest Power Pool or by the Kansas Corporation Commission is how such investments shall be treated for regulatory purposes (KCC) and within the generation/transmission system cost allocations (SPP).

HR 6011 essentially calls for Kansas to be the leading U.S. policy center promoting the appropriate use of energy storage technologies. We heard testimony promoting compressed air storage and included that as one component of HB 2014. HR 6011 requests the KCC and SPP to address the larger issues of where is storage technology today and tomorrow, where within the electric system will it be appropriate to use, how will costs and benefits be determined to identify appropriate cost recovery mechanisms, and what public policies must be addressed to maximize the potential benefits of energy storage.

Thank you for your attention.

HOUSE ENERGY AND UTILITIES
DATE: 3/5/2009
ATTACHMENT 1

HOUSE RESOLUTION No. 6011
Committee on Energy and Utilities

5 March, 2009
783 Docking Bldg.
testimony by
Raymond H. Dean, Prof. Emeritus, EECS, Univ. of Kansas

With ten 1.5-MW wind turbines per square mile, a 40% capacity factor, and electricity at $0.06/kWh, Kansas wind generates revenue at about $3.15 million per year per square mile. At this density (10 turbines per square mile), wind turbines in just one of the larger counties in western Kansas could provide nearly all the electric energy currently used in Kansas. Or, if we put wind turbines at this density on 30% of the land in the western 70% of Kansas (about 17,300 square miles), we could supply about 22% of all electric energy used in the United States in 2007, and this would increase Kansas gross domestic product by about $54 billion per year.

However, to be useful as a general source of power, wind power needs storage. To be salable to the rest of the country wind power needs transmission and that transmission needs storage.

An important feature of electricity storage is versatility. But to exploit this feature, electricity-storage facilities must be able to supply different services to different clients at different times, and it must be fairly compensated for all these services. Electricity storage needs to be a "system resource".

For 12-hour or longer storage times, the most cost-effective form of electricity storage is compressed-air energy storage (CAES). But a CAES facility can also provide short-term services. Specifically, it can do any of the following:

(1) Smooth the *output* from renewable energy sources, like wind and solar, to make them fully "dispatchable"-- thereby increasing the value of the power wind and solar provide.

(2) Smooth the *input* to transmission lines, to increase and stabilize their load factors -- thereby increasing transmission ROI.

(3) Provide *ancillary services* to the electrical system -- thereby improving grid reliability. Ancillary services include:
   a. Quick real-power injection or extraction
   b. Voltage support or "reactive power"
   c. Frequency regulation

   To optimize part-load efficiency, a CAES compressor (an electrical load) and its associated expander (an electrical source) will often run simultaneously. This automatically makes a CAES system look like fast-acting "spinning reserve" -- an especially valuable system element.

Kansas has copious underground resources for CAES, and CAES can be an extremely valuable resource for Kansas, but CAES must be positioned to serve and get paid by more than one client. Because House resolution 6011 helps address this problem, it's an excellent initiative.