

**KEC Electricity Committee Meeting Notes  
July 3, 2008**

**KEC Electricity Committee Members Attending:** Stuart Lowry, Committee Chair, Carl Holmes, Steve Johnson, Mark Parkinson, Bill Riggins, Tom Sloan, Dave Springe, Michael Volker

**KEC Staff:** Liz Brosius, Ray Hammarlund, Michael Deupree, Corey Mohn, Jennifer Knorr

**Opening remarks**

Stuart Lowry opened the meeting. He passed along some information from Sunflower Electric Cooperative regarding their May 2008 peak demand compared to May 2007 (it was 10% higher). Lowry and others commented (1) that these data were not weather normalized, (2) increase is likely tied to two additional ethanol plants now operating in Sunflower service area, fuel switching, and more cooling degrees days in 2008 than in 2007.

**Presentation on FPL Energy, wind integration, capacity, new technology, and the SPP market**

Lowry introduced Holly Starling from FPL Energy. Starling introduced herself, noting that she was a Kansas native. She gave a PowerPoint presentation that included an overview of FPL Energy, the Gray County Wind Energy Center, wind integration, and the SPP market (available on the KEC web site, under the July 3, 2008, meeting heading: <http://www.kec.kansas.gov/electricity/index.htm>).

Starling discussed FPL's approach to monitoring its wind facilities to optimize operations. She provided definitions of nameplate capacity and capacity factor, CF (differentiating between net and gross capacity factors), noting that wind facilities in Kansas operate with capacity factors between 35% - 45%.

There was some discussion of how capacity factors are calculated; Liz Brosius, KEC Director, asked whether it was essentially a historical calculation, based on annual average production; Starling agreed that it was. Bob Glass, KCC (audience) asked whether FPL reports net or gross CF to EIA? Starling said she would find out. Dave Springe said this is publicly available information.

In her comments about the recently launched SPP Energy Imbalance Market, Starling mentioned balancing authorities and there was some discussion. It was clarified that balancing authorities are responsible for integrating wind within their respective systems. (Examples of Balancing Authorities in Kansas within SPP are Westar, KCPL, Sunflower, Empire, Kansas City BPU.)

Starling discussed the importance of being able to accurately forecast the production from wind facilities. She said the forecast error rate is currently 15% one day ahead and 5% one hour ahead. She also mentioned some changes that wind developers would like to see

to make SPP ancillary service market more friendly to wind. She outlined changes to SPP that FPL recommends and said that these would lead to lower costs. Michael Volker said that it will only shift the costs, noting that cost allocation was a big concern for him. Tom Sloan noted that it was difficult for a small utility to integrate a lot of intermittent wind.

There was more discussion of having SPP serve as a single balancing authority to make it easier to integrate intermittent wind resources. Volker reiterated that this could work, but again the question is who pays for the integration costs?

Brosius noted that the committee (and Council) might need to better understand what is involved when a single utility (i.e., balancing authority) integrates wind on its system. What are the concerns and limitations?

Starling said that part of the wind integration issue relates to accredited capacity, and how SPP accredits wind capacity. SPP looks at it on a monthly basis, looking at the top ten hours.

Carl Holmes noted that when he drove through the Gray County facility yesterday afternoon, only twenty wind farms were turning on a 99 degree day, and he speculated that those were freewheeling. Starling agreed that the wind often isn't blowing at the times of peak demand. Holmes continued that his constituents were already paying 66% more than urban areas. How can we get our rates lower in our part of the state?

Starling agreed that wind is not a capacity resource; it is an energy resource. She also said that FPL doesn't see storage as commercially viable, though California is looking at it.

Volker said there is certainly a place on the grid for wind. Right now SPP has 900 MW in the queue for western KS and he wondered how the costs would be allocated?

There was some discussion of the impact of a national RPS of 20% or carbon tax. Starling said FPL had all sorts of models to predict what the carbon price will be. We believe something will happen in the near future. If there's a national RPS, the southeast will be looking for renewable resources. Brosius said the impact of the carbon tax on wind would depend on relative costs of the generation options. Riggins noted that cost would be less relevant if there were a national RPS. Holmes asked if FPL had a position on a national RPS, and Starling said she didn't think so. FPL is pushing for carbon regulation, a cap and trade. Holmes said the southeast states are opposed to a national RPS.

### **Presentation from Kansas City Board of Public Utilities**

Lowry introduced Blake Elliott, Director of Supply Planning at BPU. Elliott gave a PowerPoint presentation on the BPU's future generation needs and their current resource planning (available on the KEC web site, under the July 3, 2008, meeting heading: <http://www.kec.kansas.gov/electricity/index.htm>).

Elliott said resource planning is characterized by a lot of uncertainty these days. BPU is the largest municipal utility in Kansas, located within KCPL and Westar service territories.

BPU's 2003 integrated resource plan recommended investment in additional baseload and peaking units. Rapid changes in the industry prompted re-evaluation of plan in 2006-2007; this effort confirmed the need for a 235 MW base load coal unit by 2012. Plans to build such a unit are on hold due to (1) construction cost escalations and volatility, (2) legislative effort to define future coal-fired permit requirements, and (3) significant uncertainty regarding future impacts of state or federal carbon regulation.

Elliott noted that Wyandotte County had seen significant growth related to racetrack, Piper development. The net number of households was in decline until three years ago, but is now increasing. Elliott noted that, thanks to a substantial industrial load, BPU has 56% load factor (ratio of peak to base load demand) compared to the average of about 30% – 40%.

BPU buys short-term capacity contracts in summer to manage peak. Coal is cheapest fuel source, then natural gas, then oil. For a base load unit, the most cost-effective option was to build a 235 MW coal plant and sell 100 MW in the near term. Sloan asked if BPU took into account the closing of diesel plants or gas plants with the opening of new coal? Elliott said the plan accounted for the retirement of older, less-efficient units over the life of the study.

Elliott said they modeled different scenarios, including a very high-cost coal scenario. Said they initially looked at a \$15 carbon tax initially, but now are looking at a higher numbers. The 235 MW coal option continues to look good, even with consideration of these risks.

Elliott noted that, as with all models, some of the assumptions (e.g., the forecast price of natural gas) are off, and adjustments will need to be made. There was general discussion of the expected increases in natural gas prices.

BPU also analyzed addition of 35 MW of wind. Elliott noted that they've added 25 MW of Smoky Hill Wind Farm. In response to a question from Holmes about whether they were using coal-fired units to follow wind, there was a discussion of the stresses on machinery associated with cycling on and off (as with following wind) and the higher maintenance costs regardless of whether they use coal or natural gas units to follow wind.

Sloan asked what kind of coal plant technology BPU looked at; Elliott said pulverized coal, non-supercritical had the best economics. Elliott summarized some of the benefits from the Smoky Hill project, one of which was as a "hedge against high market purchase prices due to high gas prices of the units on the margin." Volker asked how wind is a hedge; Elliott said because BPU is short of baseload, it is a hedge for them.

Sloan asked if BPU has firm transmission service? Elliott referenced a 2007 SPP study which estimates additional transmission may be available in June 2011; they are buying short term in the interim. Sloan asked if they can get their power when they need it? Elliott said they had been curtailed 3-4 times since January.

With respect to wind, Springe asked how do you handle market purchases when you don't know when you need it? Elliott said wind doesn't really play into the buying and selling of power. Starling said that's why wind forecasting is so important. Sloan asked whether the contract is pay and take, and Elliott said they pay whether they take it or not.

Elliott concluded by saying that BPU's future generation plans are evolving. They plan to install a 25-to-75 MW simple cycle combustion turbine; base load coal is still needed, but timing is uncertain.

*[lunch break]*

### **Review of existing electric generation summary**

Before discussion of the power plant summary, Brosius pointed out the background information included in the folders and said staff would be preparing an annotated list of these and other resources (similar to document prepared for Greenhouse Gas Policy Committee) and that the resources would also be posted on the web site.

Turning to the latest draft of the electric generation summary, Brosius noted that Midwest Energy's units had been added to page four. She asked committee to review the introductory text and end notes, including the definitions, which were taken from the EIA glossary and send her feedback. She mentioned a question raised by Tom Hestermann at Sunflower about inconsistency in the calculation of CO2 emissions rates: rates for KCBPU and KCPL are based on gross generation, while others are based on net generation.

Bill Eastman, Westar, recommended that greenhouse gas emissions rates be calculated based on gross generation, not net. Brosius asked the committee to decide which it wanted; Paul Snider, KCPL, said their environmental folks would prefer using gross; following a bit more discussion, the committee decided to use gross generation as basis for annual emissions rates. Brosius said she would follow up with the utilities to get revised information and that the text would clarify that emissions rates were based on gross generation.

Brosius asked for other comments. Holmes pointed out that the Emporia unit needed to be included in Westar's generators. Sloan asked about wind generation. Brosius said the committee decided not to list intermittent sources in this summary, but to include major firm, dispatchable generation. Lowry asked if Bowersock should be eliminated; following some discussion, it was decided that run-of-river hydro is not really an intermittent resource (Sloan noted it was treated as base load).

### **Review of peak load forecast and capacity summary**

Brosius noted that Michael Deupree, the new KEC research assistant, had gone through the various presentations from the utilities and used that information to create the handout they were reviewing. She asked if this was essentially what the committee was looking for—a twenty-year forecast in 5-year increments.

In response to a question from Holmes, staff confirmed that the capacity numbers included both generation and PPAs. There was a general discussion of information that still needed to be gathered and it was agreed that staff would include KPP, as well as the information from BPU presented earlier at the meeting. Holmes suggested that it would be helpful to include 10 years of historical information.

Brosius asked the committee (and the utility representatives in the room) for direction regarding the type of forecast information that could be made public, noting that she wasn't interested in seeing proprietary information.

Mark Parkinson suggested that it would be useful to include bar graphs similar to the one in BPU's presentation (and in previous utility presentations) that show the forecasted peak loads plus required reserve capacity, along with the resources to meet that load. Volker agreed that this kind of information would be good to include. Following some discussion, it was agreed that staff might try to compile a combined graph or perhaps simply attach these graphs to the peak load forecast and capacity summary. Elliott said he'd be willing to share his Excel document for that graphic and noted that utilities are required to submit 10-year forecasts to EIA; he also noted that plans may or may not materialize.

Brosius asked Volker about the SPP statewide forecast, which had been mentioned at the previous meeting. Volker said he would check with Bill Dowling and get her that information.

Regarding the historical data that Holmes had requested be included in the summary, Steve Johnson suggested that it is already reflected in the forecast and wondered whether it was really necessary to include. Holmes said it was needed to avoid skewed numbers. A lot of utilities probably had a 20% reserve margin in the past; now it's probably 12%. Said the historical information would show the trend. He also said that these summaries should be regularly updated, so we can see compare the predictions with what actually occurs.

Brosius said staff would work to make the suggested changes and fill in the missing information. Elliott suggested that each utility's load and resources could be displayed on a single chart; Parkinson and Holmes agreed that this would be a good approach. Volker said it would be good to focus on the resources the utilities know they will have rather than estimates of what they might have, in order to highlight expected demand growth versus capacity shortfalls. Elliott clarified that this would include existing generation plus what is planned for construction (PPAs would also be factored in).

Discussion of updated objectives and work plan through December 2008

Lowry turned the discussion to a consideration of the committee's objectives and work plan through the end of this year's planning cycle. He noted that Brosius had prepared a revised listing of the committee objectives (projected on the screen and included as handout), which could be compared to the initial statement prepared in January.

Brosius said that the "updated objectives" reflected the work the committee had done so far: increasing their understanding of the existing electric generation capacity in the state, as well as the projected increases in demand going out 10 to 20 years. The committee was now beginning its consideration of whether there is a need for additional state policy. Another objective, which is consistent with overlapping efforts in the Greenhouse Gas Policy Committee, is to identify promising research trends and evaluate funding needs. Brosius noted that KEC member Rex Buchanan was working with her to coordinate a meeting with researchers at KU, KSU, and WSU. This meeting is tentatively scheduled for August; Brosius will notify email lists of date when it is confirmed. Brosius concluded the summary of the objectives by pointing out that she added the development of background information for possible inclusion in *Kansas Energy Report* as another committee objective.

Holmes questioned the dates (2018 and 2028) referenced in the first objective, noting that Sunflower will need more capacity by 2013. Brosius said she would revise language to reflect 5-year intervals going out 20 years.

Lowry said it appeared that the objectives were related to the two end products of the KEC—development of background information and policy recommendations, both of which are included in the report at the end of the year. Step 1 is to generate an initial list of policy recommendations and Step 2 is to narrow this down to what we want to take forward to the KEC meeting on August 13<sup>th</sup>.

Sloan said we're looking at only the generators, do we need to look at demand? Do we need to look at in-state and out-of-state contracts? Springe raised a concern about double counting, noting that different utilities look at things in different ways. Volker said the committee had asked the utilities to present their expected capacity needs and how they were planning to meet them. Sloan said the next step is to summarize where the state is with PPA expiration, for instance. Lowry said the bar charts that were discussed earlier would help us visualize on a utility-by-utility basis. Volker said the concern is when the gap widens for the entire state. Sloan said, as a policy maker, he wondered if there was a better way of keeping track of what the needs are so we can balance the overall load? Volker said presumably the wholesale power market is a competitive market. Sloan said it goes back to the number of balancing centers we need. Lowry said what you're asking is to what extent all utilities need to be involved in the planning process for one utility. Sloan said how do we facilitate the coordination of discussion of things like intermittent power?

Lowry said that the coordination with all utilities on planning is a policy consideration we may want to discuss. Sloan added that another question is whether we move energy more efficiently if we don't have all these control areas? Johnson asked if utilities keep track

on where they got their electricity on an annual basis, right? Volker said Midwest knows every month.

Parkinson said that from the administration's point of view, the work the committee has done so far in developing summaries of the state's base load capacity and expected needs for the next 5, 10, 15 years is really helpful. It gives us the ability to plan. Second, it helps spur the utilities to proactively capture future demand. Entrepreneurs are very apt to respond to opportunities.

Holmes added that if we had a map of the state showing the control areas, that would be helpful.

Lowry commented that the summaries we have so far reflect generation resources of all types. However, the discussion we have had to date has focused on base load needs. We have a lot of simple cycle gas generation (committee agreed that this is not base load). Do we need to identify the specific types of units that will provide base load generation?

Sloan said utilities have traditionally built baseload plants with enough capacity to meet future demand. As we are looking at defining this baseload, I would like to see us overbuild to anticipate future needs and grow into that. Holmes said he was concerned about utilities that currently have PPAs with Jeffrey, which will expire and whether this is reflected in the current summaries and estimates. Lowry asked if all the numbers had been verified by individual utilities; Brosius confirmed that they had.

Lowry asked if we can just take what the utilities need as equivalent to the state's need for base load capacity. Volker said the difference between what you have and what you need is only a starting point. Load factors, shape and other things determine what we really need. This will be reflected accurately if done correctly. I really don't care if the PPA is from in state or out of state.

Sloan said he needed a more global picture in order to make policy. He suggested the KEC should coordinate more with Commissioner Moffet, who serves on the SPP RSC.

Lowry reminded the committee that they had agreed to focus on base load generation this year, not the entirety of issues involved in electric generation and transmission. This is not to discount the SPP or transmission. Do we need to change the focus or just stick to base load? Johnson said we are blind if we don't discuss transmission.

Holmes suggested that the utility presentations be included as part of the *Kansas Energy Report*.

Holmes summarized recent KETA activities and planned transmission upgrades. Lowry asked if there is something we should be doing, given that both KETA and SPP were involved with state transmission issues (not to mention FERC). Holmes said he'd be happy to keep KEC informed, respond to any questions. Sloan said that Oklahoma and

Texas are more going after market for wind energy outside the state. He again said the KEC should be talking to Commissioner Moffet about the SPP cost allocation.

Springe said the state doesn't need to 765 kV lines to serve Kansas customers. Assuming we need another 365 kV line, we have no mechanism to determine who builds it and who needs it. The state's has no regulatory charge on who builds it and what is most economical. Lowry said he thought the committee agreed that it couldn't address transmission issues this year? Holmes said he was just concerned about cost recovery for the ratepayers.

Brosius pointed out an addition to the objectives regarding compilation of information about existing state and federal regulations related to air quality. She said she wanted to make sure the committee was OK with this additional work. Lowry asked if anyone objected to including a discussion of air quality standards? Rick Brunetti, KDHE, suggested that water quality and waste management regulations be included in that summary.

Sloan said he thought the KEC needed to coordinate with KETA and the SPP's RSC in a two-way information flow. Kimberly Gencur-Svaty (audience) said there were several issues pending with FERC: cost socialization and PJM/MISO updates across the entire RTO. What other RTOs exist to use as a template.

Lowry asked if these activities were within the sphere of the KEC? Is there a role for the council? Sloan said he might be a minority opinion, but utilities interact as individual entities. We should be interacting, we're not parochial in our interest. Holmes said we've got to get involved with wind exportation to other states if we're going to build the 765 lines. Sloan said it may mean that we get involved with a state agency. This is supposed to be the energy group for the state; we should be engaged in discussions with Commerce to promote development.

Holmes said the KEC needs to hear from the Wind Working Group. Starling said that Oklahoma ships energy to ERCOT; it depends on how the market is structured. Ray Hammarlund asked if she was referring to changing the SPP market structure; Starling said yes. Brosius asked if the KEC had decided that building and exporting lots of wind was necessarily a good thing? Is this something that needs to be discussed with the full Council? Sloan said the discussion of exporting energy shouldn't be limited to wind. No different than having Commerce talk to folks in other areas. Hammarlund said there were plenty of buyers out there; if there are market impediments, these need to be addressed and presumably this was handled by FERC?

Lowry asked if the import/export question lends itself to a policy recommendation? Sloan said he didn't believe we had anyone in the state to identify impediments. Hammarlund says who makes that decision about impediments? Lowry said if there's a buyer and a seller, where is the impediment? Sloan said that it still comes down to promoting Kansas energy like any other product.



Lowry asked if there were other comments. He said he thought the committee needed to meet again before the August 13<sup>th</sup> KEC meeting. Brosius suggested meeting the same day as the Greenhouse Gas Policy Committee, the afternoon of the 18<sup>th</sup>. Stuart said he liked the idea of being better able to coordinate with the Greenhouse Gas Policy Committee and suggested they plan on meeting that day. He asked committee members to send any further thoughts about policy recommendations to Brosius and she would email them out to the group.

Brosius said she was working with KU Center for Environmental Policy to find a date to have Dr. Repetto make a presentation on federal greenhouse gas emissions policies.

Meeting adjourned.