

MINUTES

SPECIAL COMMITTEE ON ENERGY AND ENVIRONMENTAL POLICY

October 2-3, 2008
Room 545-N—Statehouse

Members Present

Senator Carolyn McGinn, Chairperson
Representative Carl Holmes, Vice-Chairperson
Senator Jay Emler
Senator Janis Lee
Senator Roger Reitz
Representative Mitch Holmes
Representative Forrest Knox
Representative Tom Sloan
Representative Josh Svaty

Staff Present

Mary Galligan, Kansas Legislative Research Department
Raney Gilliland, Kansas Legislative Research Department
Cindy Lash, Kansas Legislative Research Department
Melissa Doebelin, Office of the Revisor of Statutes
Mike Corrigan, Office of the Revisor of Statutes
Renaë Hansen, Committee Assistant

Thursday, October 2 Morning Session

The meeting was called to order by Chairperson McGinn at 8:00 a.m.

Senator McGinn recognized John Felmy, Chief Economist, American Petroleum Institute, who gave an international overview of the petroleum industry. Dr. Felmy discussed many of the different factors worldwide that have an impact on the price of oil and gas. He noted that some countries have subsidies and price controls for petroleum products that do not allow their citizens to see the full price change based on the actual value of a barrel of oil. Dr. Felmy noted that there is no single answer in terms of what goes into the actual price of gasoline at the pump. He commented that you cannot make an argument that the petroleum industry is making excessive amounts of earnings in comparison to other industries, because their overall profit of 7.1 cents on the dollar is precisely in the same range as all other industries (Attachment 1).

In regard to refinery capacity, Dr. Felmy stated that the industry has been adding capacity equivalent to approximately one refinery per year. While new refineries have not been built, the total industry production capacity has increased steadily since 1996. Dr. Felmy described different ways the oil industry invests in new technology for oil production as well as renewable, alternative energy sources for the transportation industry. He noted the industries' contribution to the economy in terms of taxes (\$90 billion), rental payments, and royalties. He identified three things the United States needs to do in the future: increase supplies of all energy; improve efficiency by using energy more wisely; and invest in infrastructure to deliver the energy.

Senator Lee asked who is responsible for construction of pipelines from the point of oil extraction to refineries and on to the consumer. Dr. Felmy answered that all infrastructure, in terms of pipelines, refineries and ports, are the responsibility of the companies in the industries. He noted that he hopes state, federal, and local officials look at what the real needs are, and help companies meet those infrastructure needs. He commented that the industry will step forward, but that the funding, procurement, and permitting processes present real challenges.

Senator Lee also asked about construction of new refineries. Dr. Felmy noted that refinery economics currently are very bad, and that some have lost money this year. He commented that it is difficult for companies to invest billions of dollars when they are unable to make money in the business of refining.

Senator Lee asked whether cellulosic ethanol has economic potential. Dr. Felmy noted that whenever a waste product can be converted into fuel, it is a real plus economically. He noted that strides have been made in the chemistry involved in this process and in increasing production of switch grass, which is one of the feedstocks.

Senator Lee asked about crude oil and natural gas resources and how the costs in the future compare to current costs. Dr. Felmy noted that it depends on where the product is developed, the costs involved to extract the product, and how big a find there is.

Representative Carl Holmes noted that the International Energy Agency (IEA) reports that in six years, the demand for oil will be higher than worldwide production capacity. Dr. Felmy responded that demand is projected to increase from 86 million barrels per day to 110 million barrels per day. In order to meet that demand, an investment of \$4 trillion to \$5 trillion would be necessary. He also noted that some of the world oil supply has been off-limits in the Americas, Russia, and Saudi Arabia. This suggests there are tighter markets, which is not good news for consumers, and will ultimately result in higher prices at the pumps.

Representative Carl Holmes asked about reports that oil companies have leases that are not being developed. Dr. Felmy responded that most companies evaluate the resource potential and then extract oil and gas from areas where they have acquired leases. He noted that the main reason leases are not being developed is the lack of economic benefit from production in certain areas.

Representative Carl Holmes asked about refinery expansion possibilities in New England. Dr. Felmy responded that he thought that when a Naval base was closed in New England, it would be a good location for a new refinery. However, all the regulations and the potential costs to buy carbon credits have deterred the expansion of refineries in New England.

Representative Carl Holmes noted that there is additional oil potential as the technology improves for converting coal to gas. Dr. Felmy commented that there is a lot of uncertainty with the process, and many legal issues regarding carbon capture during the conversion process.

Representative Carl Holmes asked Dr. Felmy to comment on the subsidies for other nations and if those subsidies would stay in place as the price of gasoline goes higher. Dr. Felmy noted that subsidizing the price of gas to consumers in some countries has changed. He noted that dramatically changing the price of gas in any country will be a challenge for those governments. Those countries know they need to have more of a market situation, but it is a real challenge to change those policies currently in place.

Representative Sloan inquired about the chart on page 7 concerning potential offshore reserves. He asked what percentage of any find is recoverable and cost effective to extract. Dr. Felmy responded that as he recalls, the amount is 30 percent to 40 percent. He noted that the recoverable amount has increased dramatically over the years as the extraction technology has improved.

Representative Sloan noted that petroleum companies are vertically integrated and asked Dr. Felmy where he sees this vertical integration going in terms of infrastructure. Dr. Felmy noted that less than 10 percent of retail gasoline stations are now owned by the oil companies. He explained that refining breaks out into roughly three pieces: 50 percent are either owned by an integrated company or a large investor; 25 percent are independent refineries; and 25 percent are smaller, non-integrated companies. He noted that the integrated companies are getting completely out of the retail business. The retailer makes less than a penny per gallon and survives on sales of other products.

Representative Sloan asked about risk management techniques employed by companies that obtain oil in unstable parts of the world. Dr. Felmy commented that it is a huge challenge, and depends on the specifics of each area. He noted that diversification of the supply from around the world is the most important way to avoid potential problems. He mentioned that one of the best things that has happened is development of Canadian oil sands. Current estimates are that production from that source will double or triple.

Representative Mitch Holmes asked about how one reconciles the short-term economics of building new refineries with the long-term vision of increased demand from 80 million barrels a day to 115 million barrels a day worldwide. Dr. Felmy commented that the refinery business is cyclical and historically has been a low profitability business. At a world level, demand is forecast to increase, so one would think that more refineries could be supported. Refineries are typically built where they are needed. Dr. Felmy noted that it is a challenge to determine the economics of where to place new refineries.

Representative Knox asked whether subsidies for big oil companies could be explained. Dr. Felmy noted that there are not many, but that oil companies receive the same tax treatment as other companies. He noted that there are some tax provisions specific to the oil industry which amounts to about \$2 billion. He noted most of that is an accounting issue based on whether or not you capitalize certain expenses. He commented that if you take the amount of incentives the industry receives and compare it to the sheer volume of fuel supplied, it is the second lowest incentive per BTU of anyone else in the energy industry.

Representative Carl Holmes asked whether Venezuelan oil production would go to other nations. Dr. Felmy noted that Venezuelan oil has a high sulfur content, and that only the U.S. refineries on the Gulf coast currently are capable of refining it. He commented that China may convert refineries in the future to process that oil, but there are much higher transportation costs to get the unrefined oil to them.

Representative Carl Holmes asked Dr. Felmy what state government could do to help deal with refinery capacity shortfall so that Kansas does not experience gasoline shortages. Dr. Felmy noted that Kansas has been blessed with many hydro-carbon resources that result in jobs, taxes, and

various other economic resources. He commented that Kansas needs to practice prudent policies which do not discriminate against oil or gas resources, and Kansas also needs to look at what it is doing as far as fiscal rules for oil and gas and refinery operations.

Representative Carl Holmes noted that Kansas ranks between 8th and 10th in the nation for oil production, and he inquired about how much might be recoverable through enhanced oil recovery methods. Dr. Felmy noted that he is not a geologist so must give a qualified answer. He said that new technology has improved, so that oil can be extracted from coal and natural gas from shale economically.

Representative Sloan asked if the development of biofuels was changing the need for additional refinery capacity. Dr. Felmy noted that even with the development of these other resources, the demand for gasoline will outweigh the supply by about 4 percent, and therefore increased refinery production capacity will still be needed.

Representative Sloan asked if it was possible that the refining would be done closer to the extraction point. Dr. Felmy responded that if the refining capacity does not grow in the United States, but the demand grows, then refineries will be built in the middle-east closer to the extraction point and the refined product would be shipped.

Senator Lee noted that the federal mandate for 5 percent biofuels is to be in place by 2022 and asked how much of that is predicated on federal subsidies. Dr. Felmy responded that the 51 cents a gallon would remain, plus some incrementally higher amounts for biodiesel production. He noted that this subsidy has been essential for the expansion of corn-based ethanol production. He said that it is not clear whether that subsidy is enough to make the economics of cellulosic ethanol viable. He also commented that if the subsidies are deleted, then there would be a problem economically for the production of these alternative fuel sources.

Senator Lee noted that Kansas State University is doing some research on land availability for biofuel production and asked Dr. Felmy to comment. Dr. Felmy stated that if every acre of tillable land is used, and we actually got the corn-based ethanol yields predicted, we would only supply 100 to 110 billion gallons of the 140 billion gallons we use each year.

The meeting recessed at 9:30 a.m. The meeting resumed at 12:30 p.m.

Afternoon Session

The Chairperson recognized Stan Riemann, Chief Operating Officer of CVR Energy, who presented CVR Energy's perspective of the state of the petroleum business. He noted that CVR is the only nitric fertilizer producer in North America. Mr. Riemann commented that anything the Legislature can do to help the company continue to build the business would be appreciated as they, like all refineries, are experiencing a low economic pay out. He noted that regulatory certainty and any tax relief would be helpful (Attachment 2).

Senator Emler asked for CVR's definition on regulatory certainty. Mr. Riemann commented that it is defined primarily through the EPA and OSHA specifically and they tend to change the rules on a regular basis. He noted that consistency would be a better word to use so that CVR Energy could make concrete decisions regarding where to move forward with expansion projects.

Representative Knox asked about fertilizer economics. Mr. Riemann responded that the fertilizer business is very good, and the margin for profit currently is very good. He noted that this economic trend will most likely pass. He commented that the fertilizer business is not as difficult to predict as the oil market as it has a lot of the same characteristics of a commodity business. He noted that there are a lot of international facilities that will eventually affect the worldwide market price.

Senator McGinn asked how long we will see high fertilizer prices and what needs to take place to bring down the price. Mr. Riemann noted that if you look at all the charts of construction of fertilizer plants worldwide, you would see that in 2012 you will get a good supply of fertilizer in the market that should help to bring the price down.

Senator McGinn asked Mr. Riemann to explain the cost difference between using petrol-coke or natural gas in the production of fertilizer. Mr. Riemann responded that they currently are competitive. He noted that natural gas plants are cheaper to initially construct than petroleum-coke plants, but that natural gas plants' operating costs are much higher.

Representative Carl Holmes asked Mr. Riemann about the rules and regulations for CO₂ emissions and how they affect expansion plans. Mr. Riemann noted that they are in an expansion project and are trying to figure out where the CO₂ is going to go. They could sequester the CO₂ by 2010 using the existing rules, but they do not know what the rules will be for the year 2012 and what to predict for any projects in which they might invest.

Representative Carl Holmes noted that using the coal gasification for fertilizer production makes a lot of sense and wondered why their company does not have more competition nationally in this business. Mr. Riemann noted that if a company has a long-term perspective for their business, it does make a lot of sense. But he commented that when you see the capital cost of building coal gasification plants some companies tend to immediately disregard them as an economic expansion option. He also commented that with the recent national economic crisis it would be difficult to acquire the loans necessary to build a fertilizer plant.

Representative Sloan asked what type of incentives, in addition to what is already offered, would be necessary to have Mr. Riemann's company consider expanding its fertilizer production. Mr. Riemann noted that he needs time for thought but that he would get back to the Committee. [Subsequent to the Committee meeting, the representative of CVR Energy indicated that the volatility of financial markets would preclude further expansion of the company's operations at this time.] He commented that construction costs increase by several million dollars every 24 months or so. What would have cost \$800 million to build in 2005-2006, now will cost \$1.2 billion.

Representative Sloan asked whether demand also increased or whether we will see supply outstrip demand and a resulting lowering of the price. Mr. Riemann noted that demand has increased about 1.5 percent to 2 percent every year over the last 30 years but, as one graphs out the supply/demand curve, supply will eventually surpass the demand.

Representative Sloan inquired about how heavy of crude oil could be handled in their refinery processes. Mr. Riemann noted that they could take crude up to 1.1 percent sulfur, and they bring in 10 to 12 various grades of crude oil that they blend to get to more consistent overall oil before refining.

Senator Emler inquired about the fertilizer plants being built in the Middle East and China and whether the United States would be dependent on the Middle East for fertilizer. Mr. Riemann noted that ultimately, yes that would happen. He noted that production in the U.S. would be based on the

natural gas cost and whether it would be feasible to build additional production capacity. He believes we will continue to see migration of nitrogen fertilizer production out of the country.

Representative Sloan asked Mr. Riemann to indicate the impact a carbon tax would have on the fertilizer business and on the consumer price index. Mr. Riemann replied that any carbon tax without the ability to trade or give value to sequestration would kill the business. He also noted their profit would be moved into enhanced oil recovery production and the company hopes to be injecting CO₂ into oil wells before calendar year 2009.

Senator Lee asked why nitrogen production has moved offshore. Mr. Riemann responded that the migration is due to the cost to build the facilities and cost of production itself. He noted that some of the reasons why it costs more are: OSHA regulations, EPA regulations, other state and federal regulations, labor costs, and the costs of hiring special craftsmen to build the facilities.

Senator Lee asked for a description of how CO₂ is sequestered. Mr. Riemann explained that the CO₂ is captured coming out of the gasifier. Then, it is compressed, put in pipes, and injected into wells for oil recovery, or into water veins. He said there is no value to them of putting it into water. With the oil injection there is at least some enhanced oil recovered. Additionally, he noted that today if you are planning to produce fertilizer, then you better have a plan for use or disposal of the CO₂.

Representative Sloan noted that he learned from the Kansas Geological Survey, which was involved with the successful Russell oil recovery project, that the CO₂ went in a different direction than anticipated, and the neighbor received the benefits and was quite happy. Representative Carl Holmes commented that injection of CO₂ has been happening for 30 years in the Permian Basin, and as a result of the pipeline project there, they will be capturing pure CO₂.

The Chairperson recognized Jim Loving, CEO of National Cooperative Refinery Association (NCRA), who described to the Committee the refinery's role in gasoline production. He noted that the price of crude oil is driving the price of gasoline. He commented that the rapid rise in the price of crude oil in the last year has made the price of gasoline increase just as rapidly. He noted the benefits of having refineries in the State of Kansas. He commented that while the number of refineries has decreased, production capacity has increased due to expansion of existing refineries. He explained why he feels new refineries are not needed. Mr. Loving explained that NCRA believes that Kansas should not be the leader on environmental laws, as those laws would make Kansas less competitive economically in the refinery industry (Attachment 3).

Representative Carl Holmes asked how the refinery plans to capture CO₂ if a federal carbon tax is imposed. Mr. Loving noted that this gets back to regulatory certainty and commented that they would wait and see what the law is going to be before they make any decisions what to do with the CO₂. In response to another inquiry by Representative Holmes, Mr. Loving commented that it would be good to have legislative incentives to get CO₂ lines built so they might be able to capture their expelled CO₂.

Representative Carl Holmes asked a number of questions concerning the refineries' source of oil now and in the future. Mr. Loving commented that they receive 2/3 of their oil from Kansas producers. Of the other 1/3, 2/3 comes from off-shore drilling, and 1/3 from Canadian sources. He noted that NCRA has committed to purchasing 20,000 barrels of oil a day for the next 10 years from the pipeline that will be built through Kansas originating in the oil sand area of Canada.

Senator McGinn asked about the Kansas consumption of the output of Kansas refineries. Mr. Loving noted that Kansans use about 65,000 barrels of gasoline and 35,000 barrels of diesel fuel per day, thereby using most of what we produce. He also reiterated that if a carbon tax were added to the cost of production, the cost would be passed on to the consumer. He recommends that we

do not take the lead regarding carbon tax, as that would make Kansas non-competitive in the oil and gas market.

Senator Reitz asked Mr. Loving about Kansas' loss of a new \$9 billion refinery. Mr. Loving commented that the average American refinery runs at only 85 percent capacity, noting that we have enough refinery capacity. We only lack in capacity when a hurricane shuts down some of the gulf coast refineries.

Senator Emler asked Mr. Loving to comment about regulatory certainty. Mr. Loving said that when talking about regulatory certainty, one understands how large projects are built. They have a five-year lead time, and a company does not begin to get its money back until the end of the fifth year of operation. Because of that construction lead time, they would like to know what the rules are before a project is begun. Without knowing the long-term regulatory environment, it is difficult to pump money into the economy.

Senator Lee asked Mr. Loving to comment on the production in the United States and the transportation issues that arise in the southeast when a hurricane hits. Mr. Loving noted that when you shut down 2.5 to 4 million barrels of refining capacity, that oil does not get sent up the pipelines to various markets. A hurricane disrupts the flow of the product and severely impacts certain areas where that refined oil is marketed. We are fortunate in Kansas because we have three refineries here, and when a natural disaster hits the Gulf coast, Kansans are not as affected by higher prices at the pump as are some other areas.

Representative Carl Holmes asked they get oil for their refineries when the offshore oil is offline during hurricanes. Mr. Loving noted they have about a five to six-day supply of inventory in storage, but their crude oil supply department scrambles, and purchases some from west Texas and Cushing, Oklahoma, when Gulf supply is shut down.

Representative Mitch Holmes asked about regulatory certainty. In instances when rules change during a construction project, is the project governed by the rules in effect at the time they get the permit? Mr. Loving commented he was not aware of a situation that had been encountered like that, but that they have a never-ending stream of new rules coming at them.

Senator Emler commented that the answer to Representative Holmes' question is probably yes, they do have to comply with the new rules as they come down even though they are in the middle of the project.

Representative Sloan asked about what incentives the state could offer to help refineries when they have to make investments in non-productive, mandatory regulatory upgrades. Mr. Loving noted that they would like to have the ability to keep their refineries technically competitive, but he is aware that such incentives cannot be created legislatively.

The Chairperson recognized Kelly Harrison, Vice-President of Transmission and Environmental Services for Westar Energy. Mr. Harrison provided an overview of Westar's transmission expansion plan ([Attachment 4](#)).

Senator Lee asked how much wind generation Westar's system can handle. Mr. Harrison responded that the maximum would be about 20 percent, 1,200 megawatts, of their total generation capacity of 6,000 megawatts. He noted that they have plenty of adequate base load generation to support the intermittency of wind.

Representative Carl Holmes inquired about getting the postage stamp cost allocation rates on the proposed 765 KV line. Mr. Harrison noted that one of the reasons they went ahead with the

Charles River analysis, costing them \$100,000, was to show the benefit of the transmission line to each state so the cost can be cost allocated across the area.

Representative Carl Holmes noted his concern is that the transmission line will take all the wind from Oklahoma and there will be no capacity for Kansas wind left on the line. He commented that Kansas needs to have wind developers step to the plate in order to get the capacity space on the proposed lines.

Representative Carl Holmes asked, with the current grid we have in place plus what is being built from Wichita to Salina, how much more wind can be built and absorbed in the State of Kansas? Mr. Harrison responded that he does not see much more wind being able to be moved without a big line going east to west, and noted that perhaps 500 megawatts of expansion in existing spots, but with nothing in the west if there is no expansion of transmission lines.

Senator Emler asked whether the capital expenditures were from the ice storm natural disasters. Mr. Harrison responded that these expenses were over and above those for reconstruction of damaged lines due to the wind and ice storms. He also noted that the lower voltage lines were the ones that received most of the damage during the storms.

Senator Lee expressed concern about building a new high voltage transmission line and Kansans would have to help pay for it but not have any access to it for wind generated here in Kansas. Mr. Harrison noted that he is confident that the line will not be built without regional funding. In order to get that done, Kansas has to be able to tie into the line for export.

Senator McGinn asked what is driving Westar to equalize customer rates across its service area. Mr. Harrison responded that the time is appropriate to make the rate base equal, because there will be a minimal cost shift.

Representative Carl Holmes inquired about any system problems that would arise with all the wind being developed in Oklahoma and western Kansas while base load generation facilities are located in the eastern part of the state. Mr. Harrison responded that with the higher voltage 765 KV lines, generation is not sensitive to distance and load. He also commented that we need to keep moving east with the 765 KV lines once the western piece is built, to help with load balancing as we bring on more wind.

The Chairperson recognized Lisa Barton, Vice President of Transmission Strategy and Business Development for AEP. Ms. Barton described regional and national solutions for electric generation. She provided information on some of the new technologies that are being looked at to add into the 765KV lines ([Attachment 5](#)).

Representative Sloan asked whether the proposed 765KV line in western Kansas would be constructed with capacity to function as a 765KV line but operated as a 345KV line. Ms. Barton responded that they have always advocated operating as a 765KV line because it is more cost effective. She also commented that a 765KV line has to have 200 feet of right of way, which is 50 feet wider than existing right of way for a 345KV line.

The Chairperson recognized Mick Urban of Kansas Gas Services. Mr. Urban described to the Committee the natural gas industry from a state and local viewpoint. He described natural gas as efficient and clean. He noted that Kansas Gas Service sells 75 percent of its gas with long-term contracts with the balance sold via seasonal contracts. Mr. Urban noted that storage of natural gas during the late spring, summer, and early fall helps meet the needs of Kansans during the winter months. He described the two drivers that keep their price above the market price: the transportation lines to get the gas to the customer, and the storage of the gas during warm months for use in cold

months. He explained why Kansas Gas Service believes the price of gas has fluctuated over the last few years (Attachment 6).

Representative Carl Holmes asked about the price the company has locked in for storage this year. Mr. Urban responded that they have about \$9.75 locked in for this winter.

Senator Lee asked whether it is economical for them to promote conservation of natural gas. Mr. Urban responded that under the current rate structure it is not economical for them to promote conservation because in order for them to collect the monthly delivery fee necessary for them to show a profit, the consumer has to consume some gas. He commented it would be more palatable for the company to promote conservation of natural gas to the consumer if the rate structure was decoupled and not dependent on the consumer actually using some gas each month to collect the monthly service charge.

Representative Sloan commented that Kansas Gas Service currently has a rate case before the KCC that is unresolved and that Midwest Energy has a conservation program with their customers where they offer an energy audit to their customers. Representative Sloan also noted that if the nation moved in the direction of the T. Boone Pickens plan (fleet trucks moving to natural gas as an energy source, and use of natural gas as a fuel for base load electricity generation to back up increased wind production) that Kansas Gas Services business would be affected. Mr. Urban responded that it would affect their business but that more analysis would be needed to determine the extent of the impact.

The Chairperson recognized Ed Cross of the Kansas Independent Oil and Gas Association, who presented a regional and state overview of the independent oil and gas producers. Mr. Cross noted that the independent drillers account for drilling wells for 90 percent of the United States overall production. He commented that their costs will continue to rise as the cost of drilling continues to go up. He noted that the oil and gas industry pays taxes for the product at various points in the process of getting the product from its raw state in the ground to the marketable product point. He said that there is no other nation in the world that produces as much oil and gas from marginal wells as the United States (Attachment 7).

Representative Carl Holmes and Mr. Cross had a conversation about several issues.

- There is no one way of depreciating the equipment used to extract the oil from the ground, and that the accounting practice varies from county to county, making the cost of extraction seem different from place to place.
- In general, there is a good neighbor policy that allows farmers to harvest their crop before an oil extracting company comes onto a piece of land. Unfortunately, there are a few bad actors in the extraction process that give a bad name to the entire group of independent oil producers. It was noted that communication is the key to having a positive outcome in these surface rights issues.
- Concerning the plugging up of non-producing wells, it was noted that the industry is looking at creative ways to pay for the cost of plugging the abandoned wells.

Representative Sloan inquired about what the state could do to help fund research to extend the productive lives of wells or increase production of existing wells. Mr. Cross responded that they have lost some research funding from the U.S. Department of Energy. He noted that the Kansas Geological Survey has received some grants from the Research Partnership of America.

The Chairperson recognized David Bleakley of the Eastern Kansas Oil and Gas Association, who described extraction of oil and gas from shale and eastern Kansas coal beds. The process was described as de-watering the coal, which allows the gas to escape from the coal. This extraction method is unconventional, and therefore the expenses for production are higher. Mr. Bleakley talked about the benefits to the State of Kansas with the increased production of gas and oil from the shale beds and coal beds located in Kansas.

Representative Knox asked about the number of coalbed methane wells allowed per acre. Mr. Bleakley responded that the spacing of wells per acre varies widely across the country. He said they have found that certain areas can support a well per 80 acres and some have to go as high as one well per 160 acres. Additionally, wells must be 330 feet away from the property line per current Kansas law.

The Chairperson recognized Tom Smith of the BP Regional Office in Omaha, NE, who spoke to the Committee on the basics of natural gas production and transportation. He noted that research shows that there are 1,109 trillion cubic feet of natural gas left to recover in North America. He noted that new gas needs to be found to compensate for the declining production from existing gas wells and to meet increasing demand. He spoke about pipeline construction needed to move the gas from where it is produced to where it is used (Attachment 8).

Representative Carl Holmes inquired about the break even point in the Barnett Shale field because of the higher costs of continuing to extract natural gas. Mr. Smith responded that a recent paper by Duetch Bank put the break-even point for Marcelles at \$3.50 and Barnett at \$4.00. Other fields are in the range of \$5.00 to \$7.00. He commented that one must realize that as the newer technologies are used, the break even point of production is higher.

Representative Carl Holmes commented that once you put liquid natural gas on a tanker it can be shipped anywhere. When the market price is higher in other places, there is an incentive to ship North American natural gas to those other places. Mr. Smith noted that the key to the feasibility of the process is the gasification and the re-gasification as well as costs of the boat fees to ship the product, which run in the neighborhood of \$100,000 per day.

Representative Sloan asked about the proposed construction of the Alaskan Natural Gas pipeline. Mr. Smith noted that there are two proposals, one coming down the eastern side of Alaska and the other from the north shore. He noted that BP and ConocoPhillips have dedicated themselves to building the line from the north shore to the lower United States, with project completion between 2018 and 2020. The administration in Alaska has not yet determined who will be permitted to build the eastern line.

The Committee recessed at 5:20 p.m.

Friday, October 3 Morning Session

Chairperson Carolyn McGinn called the meeting to order at 9:00 a.m.

Senator Jay Emler moved to approve the minutes from the August 20, 2008, meeting as corrected, seconded by Representative Carl Holmes. Motion passed.

Chairperson McGinn recognized Carl Bauer of the National Energy Technology Laboratory, who presented information about electricity generation in Kansas. Mr. Bauer commented that according to the projected long-term reliability assessment, we will not be able to meet the increased peak demand in certain risk areas due to the lead time needed to construct new power plants. He elaborated on the specific projections of supply versus demand for each of the current energy sources. He also compared various scenarios of different energy uses in the Southwest Power Pool (SPP) footprint, based on changes in potential carbon taxes, wind production, or energy commodity cost changes. Mr. Bauer commented that if consumers implemented conservation measures, some of the changes in energy use would be altered. He noted that 80 percent of the cost of water is energy related (Attachment 9).

Senator McGinn asked for a definition of NATCARB. Mr. Bauer noted that NATCARB is a national carbon road mapping atlas data base. It includes potential storage places for carbon dioxide as well as the sources of carbon dioxide throughout the nation.

Representative Carl Holmes commented that SPP is doing a better job than the other regional transmission organizations in the United States and asked what that could be attributed to. Mr. Bauer noted that demographically the SPP maintains a consistent growth rate and the area had some additional capacity to begin with. He added that with more wind-generated electricity coming online we may not have that overcapacity in five years. He noted that overall there is good management within the SPP.

Representative Sloan asked how long the nation can delay building base load before we are going to be paying a price for the lack of that energy. Mr. Bauer noted that the Federal Energy Regulatory Commission (FERC) and the National Energy Reliability Council (NERC) are responsible for seeing to it that the nation has a reliable power supply. They predict that the nation will need 134 gigawatts of new power by 2030. The Energy Information Administration in the Department of Energy, in its 2008 report, only recognized the need for an additional 9 gigawatts. He noted that both of those projections used increases lower than anything the nation has seen in the last 20 years. Therefore, he believes there is a national need for new base load now. He also commented that we could slow down the demand increases with some concerted conservation efforts.

Representative Sloan asked about the nationwide capacity for wind-generated electricity production as compared to overall wind tower potential. Mr. Bauer noted that peak capacity of wind predicted by NERC is 20 percent of total generation. However he noted that the Energy Reliability Council of Texas (ERCOT) rates the Texas area at about 8.75 percent due to strong winds that shut the system down and the inability to produce energy during peak demand periods. Additionally, Mr. Bauer noted that improvements in storage technology are expected to help manage the peak demand periods.

Senator Lee asked about sales of energy to the southeast and asked if they would take our wind-generated electricity primarily or our base load generated energy as well. Mr. Bauer noted that they will probably want both, but one needs to realize that energy degrades significantly over 500 miles of transmission line. Additionally, he noted that an area must keep enough wind-generated electricity to meet its own RPS standard, and therefore may not transmit as much out of the area as you might think.

Senator Lee asked when we might anticipate having the technology necessary to store wind-generated electricity. Mr. Bauer noted that we have great batteries coming forward to be used but one must remember the magnitude of the need. He also commented that there are many other ways being researched that help store the energy for later use. About 30 percent of the energy is lost during those processes which thereby increases the cost of the energy that is delivered.

Senator Reitz asked whether we should begin looking at building another nuclear plant immediately. Mr. Bauer noted that he believes we need to increase energy production now, and the nation needs to look at increased production from a diverse portfolio including nuclear, coal, wind, and any other energy producing source.

Senator Reitz asked whether America is listening to these issues. Mr. Bauer responded that he believes a large number of people are starting to pay attention to the issues but are not necessarily looking at the overall situation.

Representative Carl Holmes asked about how much energy is lost when generating electricity through compressed stored air. Mr. Bauer noted that about 35 to 40 percent is lost when you store compressed air, and noted that the energy cost goes up as you increase the amount of wind that is stored. He noted that the energy generated from compressed air would be sold at peak demand periods so companies could get a higher price for the electricity generated. Mr. Bauer commented that if one could purchase energy necessary to compress air for storage during a low-demand period and sell the energy generated from the compressed air at a peak demand time, then a company could afford the waste involved.

Representative Knox asked about battery-stored energy and the efficiencies of that type of storage. Mr. Bauer noted there were some good things happening in that area. He commented that battery storage is still expensive, but if used as a supply for peak power, it is more economically feasible. He noted that battery storage is beginning to be used commercially where there is a chance to recover the cost.

The Chairperson recognized Rick Smead of Navigant Consulting, who presented an assessment of the North American natural gas supply. Mr. Smead noted that the industry has outperformed the predicted unconventional gas production levels every year since forecasts for that production were begun. He commented that onshore production in the last three years has maintained a steady 6.11 percent increase. He noted that gas shale production in the last 10 years has increased exponentially due to improvements in technology which have been accelerated by the increased price of gas. Mr. Smead commented that shale has a unique quality, in that the gas is extracted from small wells that can ramp up and ramp down quickly as necessary in response to increases and decreases in demand. He said that we will not be importing a lot of liquid natural gas because the price at which we are able to produce domestically through other advanced technologies is below the international price, including transportation. He believes that we have enough production potential to meet the demand that would be created by converting 10 percent of the transportation vehicles to natural gas, even before building up the wind farms, as suggested by T. Boone Pickens with his national energy plan ([Attachment 10](#)).

Senator McGinn asked how many miles per tank of natural gas a car would go. Mr. Smead noted that they are seeing about a 200-mile range per tank.

Representative Knox asked about the price of oil and how that affects the supply and demand of shale oil production. Mr. Smead responded that the price increases up to this point have enabled the technology to move forward faster. He noted that the business has become less like a resource business and more like a manufacturing business.

Senator Emler asked about the lease cost going up three to four times, and whether that was just the upfront cost or if it included the royalty portion. Mr. Smead replied that it was mostly the upfront bonus lease price for the use of the property and that the royalty portion remained a standard price. He noted that the initial lease payment is relatively inexpensive to the gas company.

Representative Mitch Holmes commented about natural gas being worth about 1/6 the BTU cost of crude oil, and inquired about the math for determining the coal BTU cost. Mr. Smead noted that coal, on a raw BTU basis, is about 30 percent cheaper than gas. He noted it was cheaper, but there is a lot more capital involved in using it.

The Chairperson recognized Cynthia Marple of the American Gas Association, who discussed with the Committee the market fundamentals of natural gas utilities. Ms. Marple noted that for the next few years the demand for natural gas will be flat. She noted that the most significant cost passed onto consumers is the natural gas supply costs. She added that those costs and the distribution costs are fairly stable while the costs of new infrastructure, bad debt, and management are very volatile and can increase rapidly. She commented that volumetric distribution of costs by unit of natural gas has led to utility companies not being motivated to promote energy efficiency and natural gas conservation. Ms. Marple explained the different ways to bill their costs to customers. She noted that California has had revenue decoupling for 30 years and has maintained their per-consumer usage amount, while the rest of the United States has had a per-person overall jump of 50 percent (Attachment 11).

Senator McGinn asked who the American Gas Association represents. Ms. Marple responded that the Association represents the natural gas distribution utilities in the United States, but that they do not represent the natural gas producers.

Representative Sloan asked about the impact of decoupling on bad debt collection. Ms. Marple noted that rate structure and debt collection are not tied together, so there is no impact.

The Committee recessed for lunch at 12:15 p.m. and reconvened at 1:30 p.m.

Afternoon Session

The Chairperson recognized Heather Starnes of the Southwest Power Pool (SPP), who discussed integration of wind-generated electricity into the transmission system. Ms. Starnes noted that 19 percent of existing transmission lines are at or near the end of their service life and need to be replaced. Ms. Starnes commented that the increased need for transmission lines to support wind-generated electricity was not anticipated two years ago. The SPP is working to meet the requests to resolve the potential additional load to the system. Additionally, she noted, SPP is trying to develop fair and equitable means for distributing the cost of building additional transmission lines. Ms. Starnes talked about the potential transmission line upgrade and commented that the estimated plan of upgrade would cost about \$8 billion with 2,250 miles of new 765KV and 500KV lines. She commented that the SPP footprint has been called the "Saudi Arabia of wind" and that if a national renewable portfolio standard is created, it would be necessary to build transmission lines to export that energy to other areas of the nation. The SPP's primary focus, at this time, is integrating wind-generated electricity into the system and being able to allocate the costs of the upgrade fairly to those who benefit from using the energy. She noted that the SPP is trying to analyze each new transmission line addition so that the benefit to cost ratio is at one or greater. Ms. Starnes commented that no one wants to have lines built that are not utilized completely, and thereby not meeting the cost demands of putting the lines in the ground (Attachments 12 and 13).

Representative Carl Holmes asked for a copy of the generation interconnection requests. [Subsequent to the Board meeting, Ms. Starnes responded that the generation interconnection queue list can be accessed at: <https://studies.spp.org/GenInterHomePage.cfm>.]

Senator Emler asked why the “super highway” transmission line expansion is only moving in one direction. Ms. Starnes noted that the east is giving encouragement to the Midwest to buy the energy. There has not been anyone come forward to convince them to move to the west with the transmission lines.

Representative Sloan asked if SPP was going to look at base plan funding. Ms. Starnes noted that they were required by FERC to look at base plan funding again within two years and that is their current plan. She commented that today’s economic upgrade is really tomorrow’s reliability upgrade.

Representative Sloan asked if there were any significant financial penalties for entering or exiting the queue once a study has begun. Ms. Starnes replied that they are working on that as one of the suggestions for people who are going into the queue and then going on suspension once they are in the queue. She commented that they hoped to have this issue resolved by the end of the year.

Representative Carl Holmes asked if anyone is opposing Nebraska’s’ entrance to the Southwest Power Pool. Mr. Starnes noted that the only concern is that their current transmission projects being built and the base plan funding of those projects be fair to those in the SPP footprint, otherwise they have not had any opposition to Nebraska entering the SPP.

Representative Carl Holmes also inquired about the possibility of looking further north to South and North Dakota as potential states to add to the SPP. Ms. Starnes responded that SPP is interested in anybody who is interested in them, and the Dakotas might be a logical choice.

The Chairperson recognized Carl Huslig, President, ITC Great Plains, who described to the Committee the definition of an independent transmission company as a non-discriminatory, low-cost energy carrier to the consumer market. He commented that without a robust transmission system our state will lose its ability to export extra renewable energy produced within the borders of Kansas. He noted that even with the economic problems the nation is having, ITC is not having any problems attracting capital to build new transmission lines. Mr. Huslig told the Committee that in addition to the big 765 KV lines, smaller lines also are needed. In regard to efficiency of the larger lines, Mr. Huslig said that 765 KV lines eliminate the need to produce an extra 250 KV during peak load times, which then becomes the ultimate in energy conservation, because you do not have to create the energy in the first place. He noted that ITC agrees with SPP that the queuing process needs to be altered. Mr. Huslig stated that he believes a national energy policy is necessary regarding who will pay to build and upgrade the improved robust transmission grid ([Attachment 14](#)).

Representative Sloan asked what the mix needs to be on a transmission line of intermittent wind energy and reliable base load generation. Mr. Huslig noted that one cannot justify the cost of transmission lines on just a renewable energy source. He said the maximum intermittent percent recommended is 50 percent.

Representative Sloan asked if the ITC model solves the balancing area issues in terms of not only making it easier to manage the system from the SPP, but also make it easier for the postage stamp rates. Mr. Huslig commented that ITC believes their model will get robust transmission built that will require a regional solution. ITC believes high voltage lines are regional in nature and provide benefit to other areas.

Representative Sloan asked what the Kansas Corporation Commission is recommending for the proposed transmission line building dispute. Mr. Huslig noted they are still reviewing the comments but basically the Commission just laid out the proposed regulatory schedule.

Representative Carl Holmes asked if wind farms will need to purchase two different sets of transformers if they build initially with 345KV transmission lines and subsequently 765KV lines

replace the 345KV lines. He then asked about the cost to the wind developers. Mr. Huslig noted that is one of the reasons it is imperative to develop the underlying plan for the supporting 345KV line system. Wind developers need to know what kind of connectivity they will be having long term into the grid, so that when the 765KV lines are built the transition is seamless.

Representative Holmes asked about the tower height of the 765KV lines. Mr. Huslig noted that the typical height is 130-150 feet. He noted ITC is looking at the leading technology in Korea on how to build high towers without buying any new right of way, or cutting any existing trees, and those towers are typically 250 feet high.

Representative Sloan asked if Mr. Huslig could provide the Committee with those 250 foot tower designs.

The Chairperson recognized Colin Whitley, CEO, Kansas Power Pool, who described how the KPP works to help municipalities deliver the municipality load of electricity throughout the state. Mr. Whitley noted that 60 percent of the Power Pool's base load comes from natural gas, 28 percent from coal, 8 percent oil, and 4 percent hydroelectric. The hydroelectric power is being transmitted to Greensburg because that city is trying to become a more green city as they rebuild after the 2007 tornado. Mr. Whitley distributed a document that was presented to the U.S. Senate Energy and Natural Resources Committee. Mr. Whitley commented that you cannot love renewable and hate transmission. He also commented that he believes transmission lines should be built with the need to serve customers in mind. As an organization of municipal utilities, the Power Pool does not care who builds new transmission lines, as long as they are built (Attachments 15, 16, and 17).

Representative Sloan asked about new, smaller transmission lines slated to be built. Mr. Whitley noted that they are working out some issues which should be resolved by next year.

Representative Knox asked whether any of the municipalities have investigated community wind. Mr. Whitley noted that they have looked at several cities on community wind and the cost per megawatt hour appears to be higher than the current costs of energy. He commented that if they could get a larger wind farm, around 12 to 12.5 megawatts, it would be more affordable.

The Chairperson recognized Les Evans, KEPCo, who described for the Committee the perspective of transmission dependent utilities. Mr. Evans noted that transmission lines have to be created in real time, and that they have to match the exact amount of energy produced to the exact amount of energy in demand. He explained the points that make up the wholesale price of electricity and that the wholesale price is combined with an access to transmission charge, and a distribution charge, to arrive at a retail rate for the electricity that the consumer uses. Mr. Evans noted that money is needed, and time is taken to build transmission infrastructure when a new electric generation unit comes on line. He commented that both new generation and new transmission are needed to meet the increased demand for energy. He reiterated that this energy issue is a national problem and it will require a national solution to solve the problem. He also commented that a national system that is planned and paid for fairly nationally is needed (Attachment 18).

Representative Sloan asked where KEPCo acquires its hydro-electric power. Mr. Evans responded that they purchase it from Missouri, Oklahoma, Arkansas, and small portion out of western grid that is generated in Colorado and Wyoming. He also noted that as far as transmission is concerned, until he knows where his supply is coming from, he does not know what transmission he will need, and that they can use all the transmission they can get so that power can be adequately transferred from region to region.

Chairperson McGinn opened the floor to discussion of additional topics for Committee consideration.

Chairperson McGinn suggested:

- Understanding the global climate issue;
- Cap and trade and understanding what that means and how it works, perhaps by an economist;
- Ethanol blending at the pump; and
- The relationship between fuel and food stock.

Representative Carl Holmes suggested:

- What other states have done in regards to CO₂ pipelines;
- YAGEE crude oil storage update;
- KCC and rules and regulations that were due out July 3; and
- KCC update on where they are with the competing transmission companies.

Representative Sloan suggested hearing from the KCC about the decoupling of natural gas.

Chairperson McGinn announced the next meeting is scheduled for December 4 and 5, and that the Committee would try to have a final meeting prior to the start of the session, perhaps the first part of January. She asked the Committee to be thinking of any legislative requests the Committee wanted to bring up at the next meeting.

The meeting was adjourned at 4:30 p.m.

Prepared by Renae Hansen
Edited by Mary Galligan

Approved by Committee on:

December 30, 2008

(Date)