

MINUTES OF THE SENATE UTILITIES COMMITTEE

The meeting was called to order by Chairman Jay Emler at 9:30 A.M. on January 30, 2007 in Room 526-S of the Capitol.

Committee members absent:

Committee staff present: Tatiana Lin, KSU Legislative Fellow
Mike Corrigan, Revisor of Statutes
Ann McMorris, Committee Secretary

Conferees appearing before the committee: Dr. Tim Carr, Kansas Geological Survey
Kimberly Gencur, ITC Great Plains

Others in attendance: See attached list

Introduction of bills

Tom Day of the Kansas Corporation Commission requested introduction of two bills: (1) legislation that would allow the KCC the ability to charge a fee for applications of intent to drill wells. Fees for drilling intents would be set by administrative rules and regulations; and (2) legislation regarding the powers and duties of the Kansas Corporation Commission relating to energy resources and emergency management.

(Attachment 1)

Moved by Senator Francisco, seconded by Senator Apple, approval of the committee to introduce the two pieces of legislation proposed by the Kansas Corporation Commission. Motion carried.

Announcement

Senator Apple announced the Subcommittee on **SB 20** comprised of Senators Apple, chairman; Francisco and Taddiken, would meet on January 31 at 12:00 Noon in Room 241-N.

Approval of Minutes

Moved by Senator Reitz, seconded by Senator Taddiken, the minutes of the Senate Utilities meeting on January 25, 2007 be approved. Motion carried.

Presentation on Tar Sands Oil

Dr. Tim Carr, Energy Research Section of the Kansas Geological Survey at the University of Kansas, provided background on heavy and extra-heavy oil and bitumen (tar sands) production and resources on a world-wide and Kansas basis. He defined Heavy Oil according to its measured API gravity and noted the price is dependent on the location of its origin. He explained various aspects of tar sands oil; (1) oil resources vs. reserves; (2) distribution of natural bitumen and extra-heavy oil; (3) production of heavy oil and bitumen; and (4) the impact to Kansas. He noted the increased use by Kansas refineries of imported heavy crude oil from Canada should help to stabilize oil prices. It may also encourage the increased production of Kansas heavy crude oil. (Attachment 2)

Overview of ITC Great Plains

Kimberly Gencur, Vice President, Government Affairs and Community Relations, made a power point presentation. She stressed that ITC Great Plains is a Kansas company dedicated to customers of Kansas. They are a transmission-only entity committed to constructing, owning, operating and maintaining transmission assets. ITC Holdings is the first fully independent transmission company in the U.S. and the only publicly traded company engaged exclusively in the transmission of electricity. ITC Great Plains will operate a fully-regulated, high-voltage transmission system that transmits electricity to local electricity distribution facilities from generated stations through Kansas and surrounding area. The transmission system is infrastructure not a commodity.

The benefits to transmission customers include singular focus on transmission, independence, access to capital, increased reliability, pricing and uniformity and non-discrimination equal access for generation resources. She explained the steps they were taking to become a utility in Kansas. ITC Great Plains is committed to: (1) improving Kansas' electricity transmission infrastructure to further improve reliability; (2) creating the most efficient and cost-effective transmission system for the Kansas consumer; (3) Ensuring low

CONTINUATION SHEET

MINUTES OF THE Senate Utilities Committee at 9:30 A.M. on January 30, 2007 in Room 526-S of the Capitol.

cost energy is available to the Kansas economy to support economic development and attract business to the State; (4) helping Kansas once again be a net exporter of energy; (5) removing the market participant bias from both the planning and operation of the transmission system; and (6) constructing a more robust transmission system across the state as soon as prudently possible. (Attachment 3)

Adjournment.

Respectfully submitted,

Ann McMorris, Secretary

Attachments - 3

SENATE UTILITIES COMMITTEE GUEST LIST

DATE: JANUARY 30, 2007

Name	Representing
- Rex Buchanan	Kansas Geological Survey
Bill Harrison	" " "
Tom Day	KCC
Don Bush	KS F4
Wes Ashton	Aquila
Paul Snider	KCPD
Kimberly Green	ITC Great Plains
Steve Johnson	Kansas Gas Service / ONEOK
Ken Peters	KS Petroleum Council
Tim Gunn	Kansas Geological Survey
Tom Bruno	FEROGA
Mark Schreiber	Westar

KANSAS

CORPORATION COMMISSION

KATHLEEN SEBELIUS, GOVERNOR
BRIAN J. MOLINE, CHAIR
ROBERT E. KREHBIEL, COMMISSIONER
MICHAEL C. MOFFET, COMMISSIONER

January 30, 2007

Honorable Jay Scott Emler, Chairman
Senate Utilities Committee
Statehouse, Room 449-N
Topeka, Kansas 66612

Dear Senator Emler:

The Kansas Corporation Commission (KCC) would respectfully request the Senate Utilities Committee to introduce the following legislation. The first piece of legislation would allow the KCC the ability to charge a fee for applications of intent to drill wells. Fees for drilling intents would be set by administrative rules and regulations. The second piece of legislation regards the powers and duties of the Kansas Corporation Commission relating to energy resources and emergency management.

Attached please find the proposed statutory amendments to the oil and gas statutes found in chapter 55 of the Kansas Statutes Annotated. In addition are the statutory amendments to chapter 74 of the Kansas Statutes Annotated.

The Corporation Commission respectfully seeks introduction of the bills through the Senate Utilities Committee. Should you have questions, please feel free to call me at 271-3190.

Thank You,



Thomas A. Day
Legislative Liaison

Senate Utilities Committee
January 30, 2007
Attachment 1-1

55-151. Application of intent to drill wells; fee and contents; copies to department of health and environment and county clerk; approval of application, when; conditions; compliance with rules and regulations. (a) Prior to the drilling of any well, every operator shall file an application of intent to drill with the commission. Such application shall include such information as required by the commission and shall be on a form prescribed by the commission. No change in the use of a well shall be made without express approval of the commission. ~~No fee shall be required to accompany any application of intent to drill a well.~~ Any fee, or adjustment to such fee, required for such an application shall be set by commission regulation. No drilling shall be commenced until the authorized agents of the commission have approved the application. The agent, in giving approval, shall determine that the proposed construction of the well will protect all usable waters. Such approval shall include the amount of pipe necessary to protect all usable water, plugging requirements upon abandonment and such other requirements deemed appropriate by the commission. The commission may refuse to process any application submitted pursuant to this section unless the applicant has been in compliance with all rules and regulations adopted pursuant to this act.

(b) The commission shall ~~send~~ make available to the secretary of the department of health and environment ~~copies of~~ information relative to all notifications of intents to drill. The commission shall ~~send~~ make available to the clerk of any county in which a well will be drilled ~~a copy of~~ information relative to the intent to drill for such well.

74-616. State corporation commission; powers and duties relating to energy resources. In addition to other powers and duties provided by law, in administering the provisions of this act the state corporation commission shall:

- (a) Adopt rules and regulations necessary for the administration of this act;
- (b) develop a comprehensive state energy conservation plan and the procedures for implementing the plan according to federal requirements;
- (c) make requests for and accept funds and other assistance from federal agencies for energy conservation and other energy-related activities in this state, including, but not limited to, the state energy conservation program, ~~the energy extension service program and the institutional building conservation program;~~
- (d) administer federal energy conservation programs in this state;
- (e) collect and compile necessary data on energy resources and monitor energy resources supplies in this state;
- (f) prepare an energy resources emergency management plan for natural gas and electric energy to be adopted adoption during any energy resources emergency activation of Emergency Support Function 12 of the Kansas Response Plan established under K.S.A. 48-920 et seq. proclaimed to exist by the governor under K.S.A. 74-619, and amendments thereto, which plan shall include the system of priorities for natural gas and electric energy resources allocation and curtailment of energy resources consumption established under K.S.A. 74-620, and amendments thereto;
- ~~—(g) cooperate in the implementation of any emergency energy rationing program which may be imposed by the federal government or any agency thereof;~~
- ~~—(h) prepare and have available for public inspection an annual report which describes the energy resources emergency management program; and~~
- ~~(i) — make and enter into all contracts and agreements and do all other acts and things necessary or incidental to the performance of functions and duties and the execution of powers under this act.~~

74-618. Energy resource defined. As used in K.S.A. 74-616 to 74-621, inclusive, unless the context requires otherwise: "Energy resource" means any recognized substance or process which can be utilized to obtain energy, or any form of energy, and shall include but not be limited to:

- ~~(a) Propane, butane, gasoline, kerosene, home heating oil, diesel fuel, other middle distillates, aviation gasoline, kerosene-type jet fuel, naphtha-type jet fuel, residual fuels, crude oil, and other petroleum products and hydrocarbons as may be determined by the state corporation commission to be of importance;~~
- ~~—(b) all natural gas, including casinghead gas and all other hydrocarbons not defined as petroleum products in paragraph (1) and including liquefied petroleum gas;~~

- ~~—(c) all types of coal and products derived from its conversion and used as fuel;~~
- ~~—(d) all agricultural fertilizers which are manufactured or derived from hydrocarbons or other fossil materials;~~
- ~~—(e) all types of nuclear energy and special nuclear material;~~
- ~~—(f) all electrical energy; and~~
- ~~(g) every other energy resource, whether natural or man-made, which the the state corporation commission determines to be important to the production or supply of energy, including but not limited to, energy converted from solar radiation, wind, hydraulic potential and geothermal sources.~~

74-619. Proclamation of energy emergency by governor; findings; effective period. (a) Whenever it appears from an evaluation of conditions in the state by the governor that the supply of natural gas and electric energy is inadequate to meet the demand for such energy resources in the state or any geographic areas of the state and that the public health, safety and welfare are threatened thereby, the governor may proclaim that an energy resources a state of disaster emergency exists pursuant to K.S.A. 48-924 within the state with regard to one or more types of energy resources, subject to approval by the state finance council, by the affirmative vote of the governor and of six legislator members of the state finance council, acting on this matter which is hereby characterized as a matter of legislative delegation and subject to the guidelines prescribed in subsection (c) of K.S.A. 75-3711c and amendments thereto, except that such approval also may be given when the legislature is in session.

~~(b) The energy resources emergency proclamation of the governor shall recite the governor's findings, shall declare that an energy resources emergency exists, shall specify the area of the state in which such energy resources emergency exists and the one or more energy resources to which such energy resources emergency applies, and shall specify the period of time during which a system of priorities for the allocation of available energy resources or the curtailment of consumption of such energy resources, or both, may be imposed. Such period of time may be extended or reduced after a reevaluation of conditions within the state and a further proclamation of findings by the governor which require such extension or reduction.~~

~~—History: L. 1983, ch. 258, § 4; July 1.~~

74-620

Chapter 74.--STATE BOARDS, COMMISSIONS AND AUTHORITIES Article 6.--STATE CORPORATION COMMISSION

74-620. System of priorities for natural gas and electric energy resource allocation; rules and regulations. The state corporation commission shall adopt rules and regulations establishing a system of priorities for the allocation of available natural gas and electric energy or for the curtailment of the consumption of such energy resources, or both, during any energy resources emergency an activation of Energy Support Function 12 of the Kansas Response Plan proclaimed by the governor pursuant

to K.S.A. ~~74-619~~ 48-920. Such rules and regulations shall apply to all suppliers and consumers of natural gas and electric energy.

74-617. State corporation commission; powers and duties relating to energy resources. In addition to other powers and duties provided by law, in administering the provisions of this act the state corporation commission shall:

- (a) Adopt rules and regulations necessary for the administration of this act;
- (b) develop a comprehensive state energy conservation plan and the procedures for implementing the plan according to federal requirements;
- (c) make requests for and accept funds and other assistance from federal agencies for energy conservation and other energy-related activities in this state, including, but not limited to, the state energy program;
- (d) administer federal energy conservation programs in this state;
- (e) collect and compile necessary data on energy resources and monitor energy resources supplies in this state;
- (f) prepare an emergency management plan for natural gas and electric energy to be adopted during activation of Emergency Support Function 12 of the Kansas Response Plan established under K.S.A. 48-920 et seq., which plan shall include the system of priorities for natural gas and electric energy allocation and curtailment of consumption established under K.S.A. 74-620, and amendments thereto;

74-618. Deleted.

74-619. Proclamation of energy emergency by governor; findings; effective period. (a) Whenever it appears from an evaluation of conditions in the state by the governor that the supply of natural gas and electric energy is inadequate to meet the demand for such energy in the state or any geographic areas of the state and that the public health, safety and welfare are threatened thereby, the governor may proclaim that a state of disaster emergency exists pursuant to K.S.A. 48-924

74-620

Chapter 74.--STATE BOARDS, COMMISSIONS AND AUTHORITIES Article 6.--STATE CORPORATION COMMISSION

74-620. System of priorities for natural gas and electric energy allocation; rules and regulations. The state corporation commission shall adopt rules and regulations establishing a system of priorities for the allocation of available natural gas and electric energy or for the curtailment of the consumption of such energy, or both, during an activation of Energy Support Function 12 of the Kansas Response Plan proclaimed by the governor pursuant to K.S.A. 48-920. Such rules and regulations shall apply to all suppliers and consumers of natural gas and electric energy.

Testimony before the Senate Utilities Committee January 30, 2007

Written Summary of Testimony

Chairperson Emler and Members of the Committee:

My name is Timothy R. Carr. I am Chief of the Energy Research Section of the Kansas Geological Survey, at the University of Kansas. I do not come as an advocate of any legislation before the committee, but to provide background on heavy and extra-heavy oil and bitumen (tar sands) production and resources on a world-wide and Kansas basis. This is a summary of material that is publicly available from numerous sources and researchers, but any opinions and interpretation are my responsibility.

WHAT IS HEAVY OIL?

First I should define what is meant by these categories of crude oil. Crude oil is classified as light, medium or heavy, according to its measured API gravity¹.

- Light crude oil is defined as having API gravity higher than 31.1 °API
- Medium oil is defined as having API gravity between 22.3 °API and 31.1 °API
- Heavy oil is defined as having API gravity below 22.3 °API.
- Extra-Heavy or Bitumen (“Tar Sands”) is defined as oil which will not flow at normal temperatures or without dilution. The API gravity is generally less than 10 °API, which means the crude has a density higher than water. Bitumen derived from the oil sands deposits in Alberta, Canada area has an API gravity of around 8 °API. It is 'upgraded' to an API gravity of 31 °API to 33 °API and the upgraded oil is known as synthetic oil. A similar process of upgrading is used on the Venezuelan extra-heavy crude prior to shipment.

The price of a barrel (which is 42 gallons or about 0.16 cubic meter) of oil is highly dependent on the location of its origin (e.g., "West Texas Intermediate, WTI", Kansas Common, or "Brent") and its relative weight and viscosity ("light", "intermediate", "heavy" or “extra heavy”). Refiners may also refer to it as "sweet," which means it contains relatively little sulfur, or as "sour," which means it contains substantial amounts of sulfur and requires more refining in order to meet the new more restrictive product specifications and environmental regulations (e.g., Ultra Low Sulfur Diesel). Each crude oil has unique molecular characteristics which are understood by the use of crude oil assay analysis in petroleum laboratories. All of these characteristics including geography affect the price of a particular crude oil.

Senate Utilities Committee
January 30, 2007
Attachment 2-1

¹ The American Petroleum Institute gravity, or *API gravity*, is a measure of how heavy or light a petroleum liquid is compared to water. If its API gravity is greater than 10, it is lighter and floats on water; if less than 10, it is heavier and sinks. API gravity is thus a measure of the relative density of a petroleum liquid and the density of water, but it is used to compare the relative densities of petroleum liquids. For example, if one petroleum liquid floats on another and is therefore less dense, it has a greater API gravity. Although mathematically API gravity has no units (see the formula below), it is nevertheless referred to as being in “degrees”. API gravity is graduated in degrees on a hydrometer instrument and was designed so that most values would fall between 10 and 70 API gravity degrees. Generally speaking higher API gravity degree oil values have a greater commercial value and lower degree values have lower commercial value. This rule only holds up to 45 degrees API gravity as beyond this value the molecular chains become shorter and less valuable to a refinery.

OIL RESOURCES VS. RESERVES

Extra-Heavy crude and bitumen usually occurs as deposits of oil sands, which consist of a mixture of crude bitumen (a semi-solid form of crude oil), silica sand, clay minerals, and water. “Tar Sands” are part of the hydrocarbon resource pyramid (Figures 1, 2). In an abstract way, the amount of oil or gas in the world can be viewed as a pyramid with a small amount of high quality resource that is cheap and easy to extract, and with increasing amounts of lower quality resource that are more difficult and expensive to extract. The upper part of the pyramid is well defined, as these resources are mostly known and are generally considered “conventional.” The lower part of the pyramid is less well understood and the amount of petroleum in accumulations that are now largely uneconomic — such as hydrates or oil shale — is speculative.

Over time, the relative positions within the pyramid of the various accumulations of the world’s oil and gas vary. The geological abundance of petroleum (prior to extraction) remains the same, but our perception of its economic viability changes for a variety of reasons. Hydrocarbon accumulations that were once thought to be only of scientific interest are transformed into “unconventional resources” and eventually become “conventional” as they rise higher in the pyramid. Over the last decade, Alberta oil sands have moved from the bottom of the pyramid. Similarly, a significant amount of U.S. and Kansas natural gas production now comes from coal and shale, sources once considered unconventional but now viewed as conventional. Resources may also fall in the pyramid. In 1860, Titusville was the oil resource at the top of the pyramid. In 1901, Spindletop was. Although they still produce, western Pennsylvania and eastern Texas are no longer near the top of the pyramid. At the beginning of the 20th century, the Middle East as an oil resource was viewed at the bottom of the pyramid.

Since Colonel Drake’s well in 1859, we have produced in the lower 48 states approximately 183 billion barrels of oil. Adding proved reserves of 22 billion barrels provides a total of 205 billion barrels of produced or proven reserves (Figure 1, 2). However, this represents only a small fraction of our domestic resource pyramid. Whether we can and will produce this additional resource depends on price, technology and policy.

DISTRIBUTION OF NATURAL BITUMEN AND EXTRA-HEAVY OIL

Natural bitumen and extra-heavy oil are closely related types of petroleum, differing from each other, and from the petroleum from which they are derived, only to the degree by which they have been degraded. Chemically, bitumen is degraded to a greater extent than extra-heavy oil, so that it is not unlike the residuum from a refinery. This alteration, through bacterial attack and water washing, has resulted in severe loss of the light ends of the petroleum, notably the aromatic rings and paraffins, and subsequent relative enrichment of the heavy molecules, leading to increased density and viscosity. Of these molecules, the asphaltenes are very large and incorporate such non-hydrocarbons as nitrogen, sulphur, oxygen, and metals, in particular nickel and vanadium. The result of this chemistry is an array of problems beyond those encountered with conventional petroleum with respect to exploitation, transportation, storage, and refining. This, of course, is reflected in the increased cost of extraction and processing and the physical limitations on production capacity.

Although natural bitumen and extra-heavy oil are worldwide in occurrence, a single extraordinary deposit in each category is dominant. The Alberta, Canada natural bitumen deposits comprise at least 85% of the world total bitumen in place. Together, the Alberta (Athabasca) oil sand deposits cover about 141,000 km² of sparsely populated boreal forest and muskeg, an area approximately 2/3 the area of Kansas (Figure 3). The resource has been estimated to amount to about 1,700 to 2,500 billion barrels of bitumen in place. Alberta estimates that the Athabasca deposits alone contain 5.6 billion cubic meters (35 billion barrels) of surface mineable bitumen and 15.6 billion cubic meters (98 billion barrels) of bitumen recoverable by in-situ methods. These estimates of Canada's oil reserves caused some astonishment when they were first

published but are now largely accepted by the international community. This volume places Canadian proven oil reserves second in the world behind those of Saudi Arabia (Figure 4).

The method of calculating economically recoverable reserves that produced these estimates was adopted because conventional methods of accounting for reserves gave increasingly meaningless numbers. They made it appear that Alberta was running out of oil at a time when rapid increases in oil sands production were more than offsetting declines in conventional oil, and in fact most of Alberta's oil production is now non-conventional oil. Conventional estimates of oil reserves are really calculations of the geological risk of drilling for oil, but in the oil sands there is very little geological risk because they outcrop on the surface and are extremely easy to find. The only risk is economic risk of low oil prices and with the oil price increases of 2004-2006, the economic risk evaporated.

The Alberta estimates in some ways are extremely conservative, since they assume a recovery rate of around 20% of bitumen in place, whereas oil companies using the new steam assisted gravity drainage method (SAGD) of extracting bitumen report that they can recover over 60%. These much higher recovery rates probably mean that the ultimate production could be several times as high as government estimates.

At current rates of production, the Athabasca oil sands reserves would last over 400 years. However, they are unlikely to stay that way given the current supply shortage in the world. Assuming that Alberta quadrupled its production of oil, exporting most of it to the United States, the oil sands would last over 100 years. If production increased to the same level as Saudi Arabia, 10 million barrels per day, the life of the resource would be cut to a bit over 40 years.

Similarly, the extra-heavy crude oil deposit of the Orinoco Oil Belt, a part of the Eastern Venezuela basin, represents nearly 90% of the known extra-heavy oil in place. These two deposits, each located up-dip against a continental craton, represent about 3,600 billion barrels of oil in place, and represent the degraded remnant of petroleum deposits once totaling as much as 18,000 billion barrels. The Venezuelan Orinoco tar sands site may contain more oil sands than Athabasca. However, while the Orinoco deposits are less viscous and more easily produced using conventional techniques (the Venezuelan government prefers to call them "extra-heavy oil"), and are too deep to access by surface mining. Changes in government policies (ownership and taxation) have placed new investment and production efforts on hold.

Extra-heavy oil is recorded in 219 separate deposits; some of these are different reservoirs in a single field, some are producing, some are abandoned. The deposits are found in 30 countries and in 54 different geological basins.

Kansas has medium to heavy oil deposits within numerous sinuous reservoirs covering approximately 4000 km² scattered throughout a thirteen (13) county area of the Cherokee basin in southeast Kansas (Figure 5). While oil densities can vary widely in a single field, in general, oil densities from near the surface to approximately 1250 feet range from 10 ° to 25 °API. Deeper in the basin recorded density ranges upwards to 35 ° to 42 °API. Kansas heavy oil is relatively high quality heavy crude with 80% saturated and aromatic hydrocarbons and 20% non-hydrocarbon material. In comparison, Alberta tar samples consist of 50% hydrocarbons. Kansas heavy crude has lost both the light ends and the heavy normal paraffins as a result of waterwashing and biodegradation from aquifer recharge at the outcrop in Missouri and Arkansas. It has been estimated that the unrecovered resource in sandstone reservoirs thicker than 10 feet and at depths of less than 3,000 feet ranges from 350 to 750 million barrels (mmbo).

HEAVY OIL AND BITUMEN PRODUCTION

Production in Alberta is up 61 percent over the past four years (Figure 6). This year, Alberta's oil sands are expected to produce 1.2 million barrels a day, roughly equal to the production of Texas. The recovery costs for oil from Alberta's oil sands have fallen dramatically over the last 20 years and are estimated now about \$8 per barrel. The numbers have not been lost on U.S. policymakers eager for a source of oil in a politically stable place. Canada is already the United States' largest source of foreign oil, providing 18 percent of its current supply and will probably grow to over 20% in the short term. In 2005, fully 10 percent of North America's oil production came from Alberta's oil sands. Production from 29 companies

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now operating in the three regions exceeds 1 million barrels per day, most of which is shipped to U.S. markets. Production is expected to triple -- to near 3 million barrels a day by 2015, making Canada the world's fifth largest crude oil producer.

The biggest bottleneck to increased Canadian imports is pipeline transportation. The lack of transport has depressed oil prices in the Northern Rockies and Northern Plains.

Canada's and Alberta's royalty and tax regime are attractive. The royalty regime consists of an initial 1% before project payout and 25% after recovery of project costs plus a designated return on capital. The royalties are paid based on the price of bitumen. Corporations are not taxed until after capital is recovered, so companies have an ever-increasing incentive to reinvest in growth. As a result of increased production and price, Alberta government revenues were \$14.3 billion (Canadian) with an \$8.7 billion surplus after annual increases in education spending (8.4%) and health spending (7.2%). These are significant inputs to a province with approximately the same population as Kansas (3.2 million compared to 2.7 million).

Kansas heavy oil is a much smaller scale than Alberta, Venezuela or even California. Also the divided mineral ownership and small operating leases have a negative effect on what are by necessity large capital projects. The tax structure (ad valorem) that imposes significant taxes on facilities would also have an affect.

IMPACT TO KANSAS

The planned Keystone Pipeline would transport through 1,830 miles of pipe approximately 435,000 barrels per day of crude oil from Alberta, Canada to markets in the U.S. (Figure 7). The pipeline would interconnect with other existing crude oil pipelines that could supply refinery markets in Kansas, Cushing, Okla., Wood River, Ill. and the U.S. Gulf Coast. It would have an affect on the supply of crude to Kansas refineries. Currently Kansas refineries process approximately 300,000 barrels of oil per day. Kansas produces approximately 90,000 barrels of oil per day. The difference is primarily imported oil brought up from the Gulf Coast. The natural disasters of the last few years (Katrina and Rita) and the political turmoil among U.S. suppliers suggest that Kansas should evaluate being tied to a single supply point for a significant portion of our liquid hydrocarbon requirements.

The increased use by Kansas refineries of imported heavy crude oil from Canada should help to stabilize oil prices. It may also encourage the increased production of Kansas heavy crude oil.

Thank you for your time and I hope this presentation provides some useful information.

Tim Carr

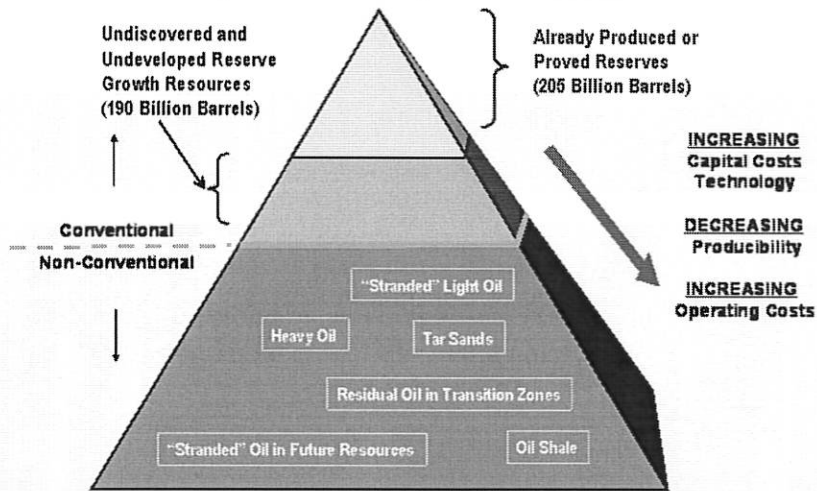
Phone 785.864.2135

Email: tcarr@kgs.ku.edu

2-4

The Domestic Oil Resource Pyramid

Original Resource in Place: 1,335 Billion Barrels
Undeveloped Oil In Place: 1,130 Billion Barrels

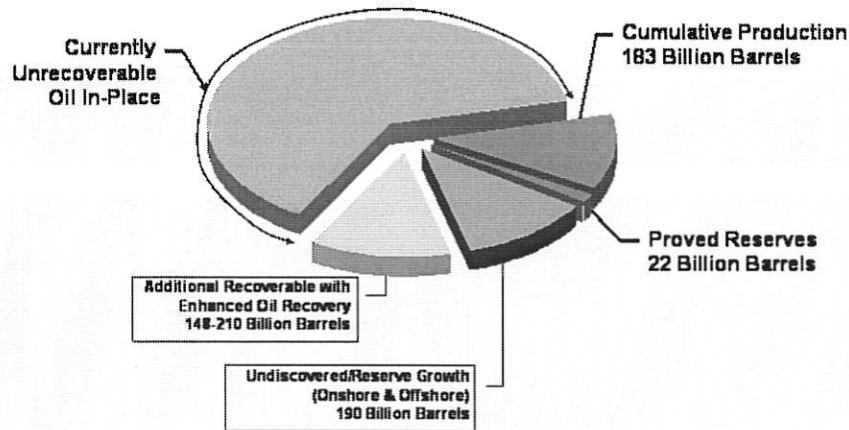


Source: Advanced Resources International, Inc. 2005

3

Domestic Oil Resources

Original Oil In Place: 1,335 Billion Barrels*



*Includes light oil, heavy oil, tar sands and residual oil in transition zones.

Source: Advanced Resources International, 2004

4

Figures 1, 2.-- Slides modified from data obtained from *Undeveloped Domestic Oil Resources: The Foundation for Increased Oil Production and a Viable Domestic Oil Industry*. Prepared for U.S. Department of Energy Office of Fossil Energy Office of Oil and Natural Gas by Advanced Resources International, February 2006.

http://www.fossil.energy.gov/programs/oilgas/publications/eor_co2/Undeveloped_Oil_Document.pdf, and presentation entitled *Opportunities for Increasing Revenues from State and Federal Lands: Pursuing the "Stranded Oil" Prize* by David J. Beecy, Director, Future Oil and Gas Resources Office of Oil and Natural Gas/Office of Fossil Energy, U.S. Department of Energy, April 2005, www.fossil.energy.gov/programs/oilgas/publications/eor_co2/doe_eorco2_present.ppt

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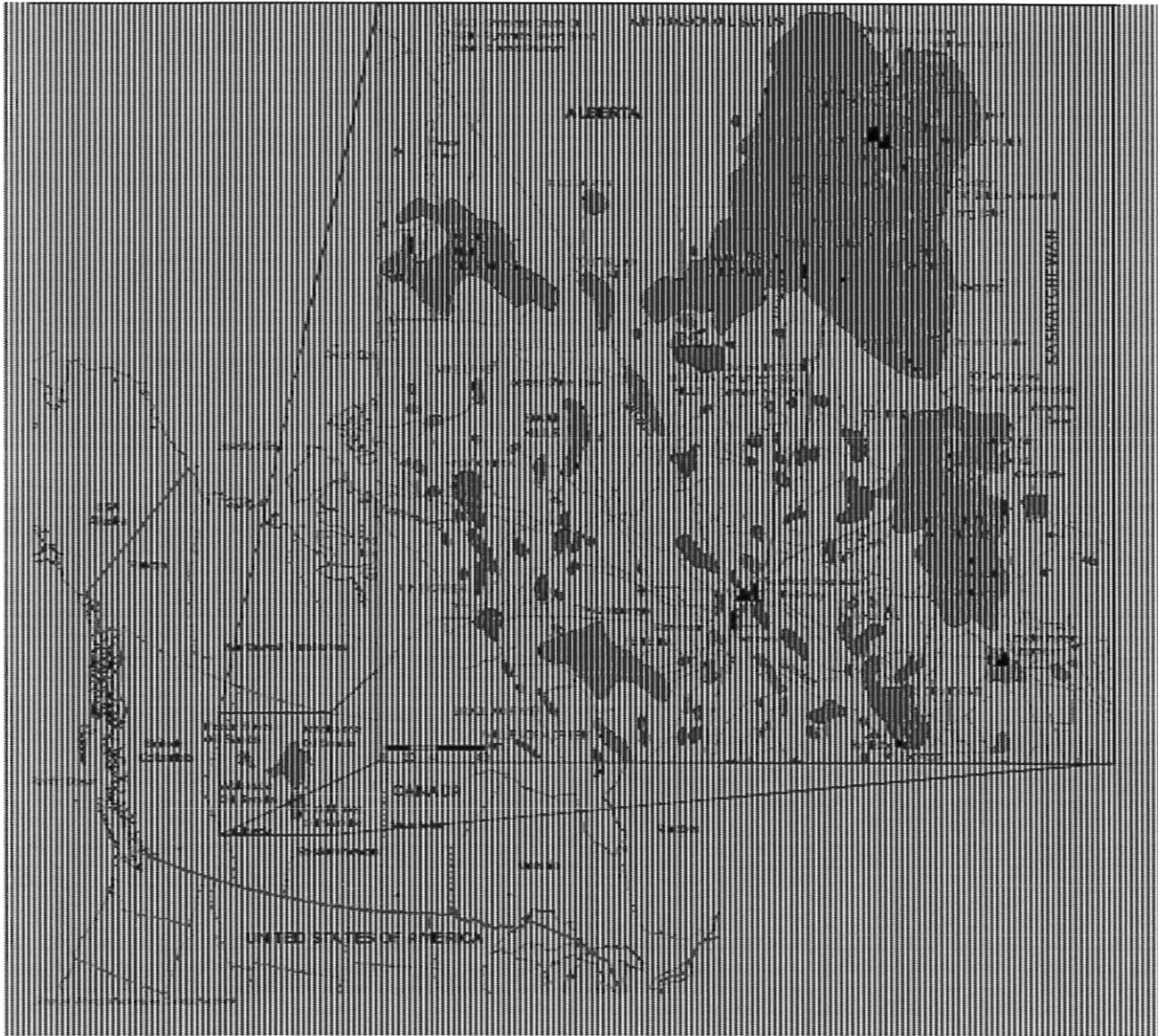


Figure 3.-- Area of Canadian Oil Sands plays.

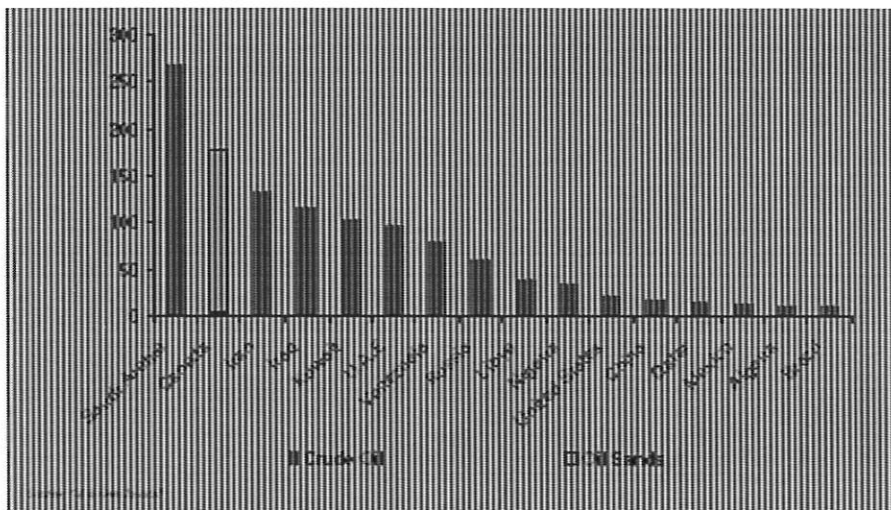


Figure 4.-- Estimated proved oil reserves in billions of barrels

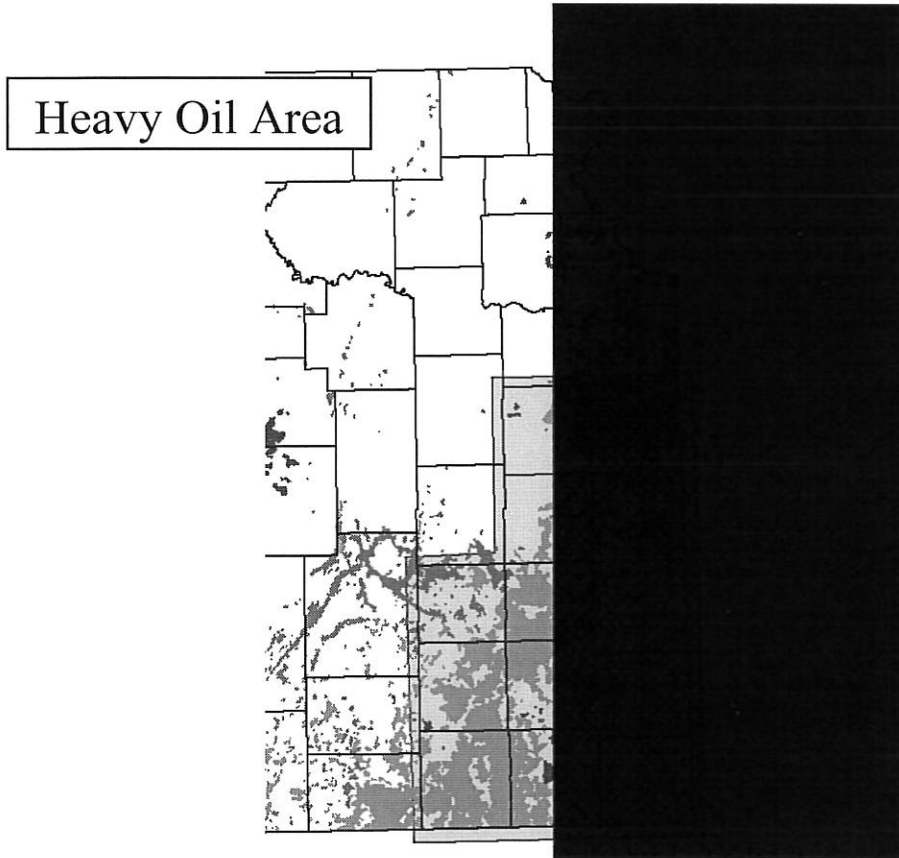


Figure 5.—Thirteen county area of southeast Kansas that contains heavy oils. Heavy oils continue into Missouri, Oklahoma and Arkansas.

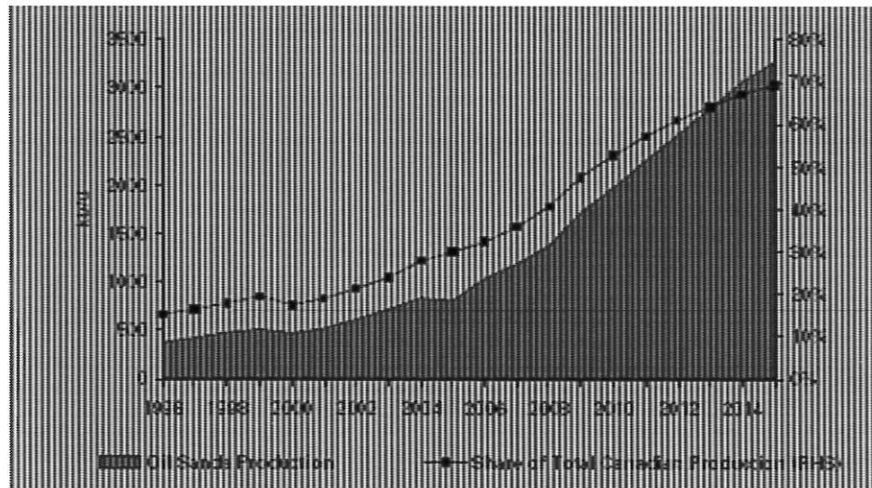


Figure 6.-- Canadian oil sands production and forecast in thousand barrels of oil per day.

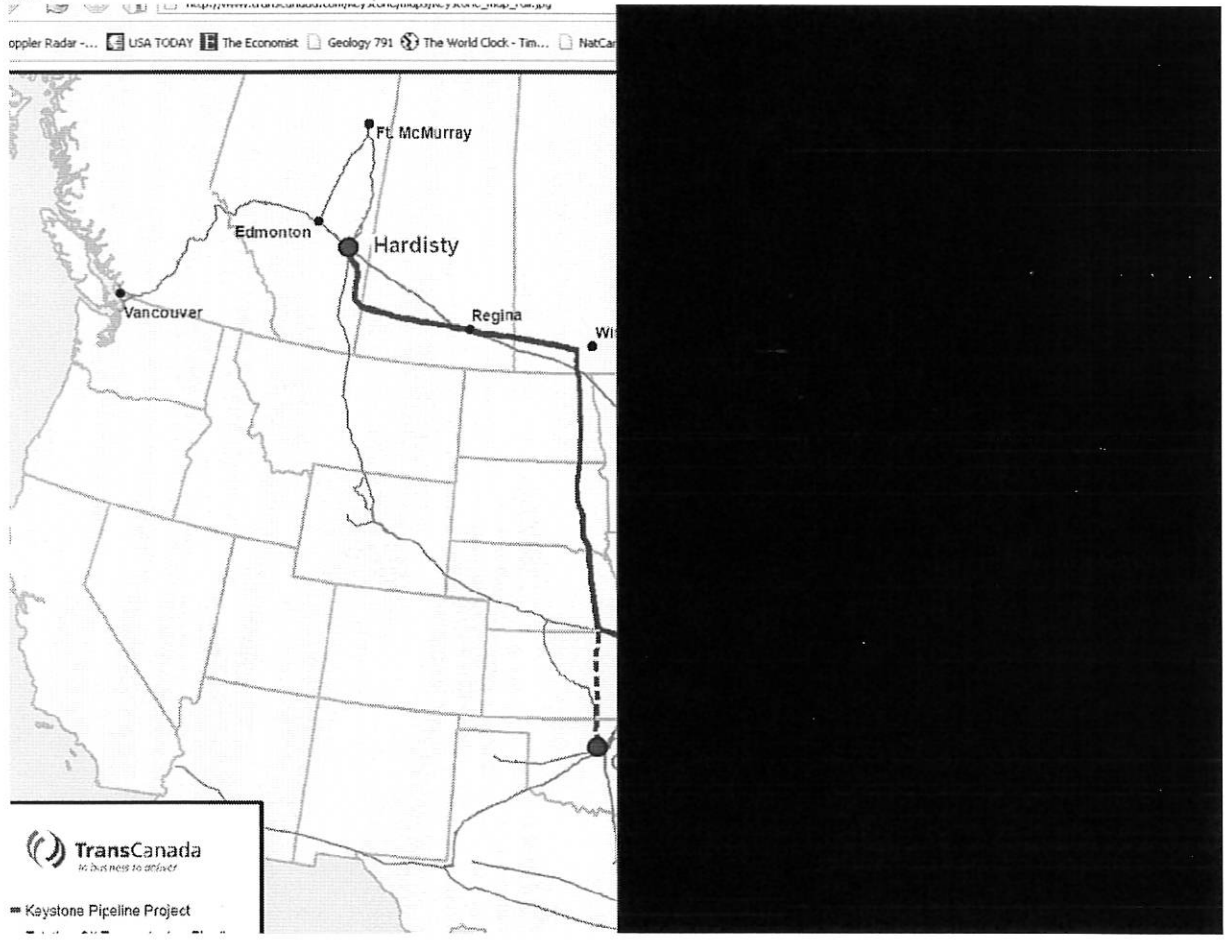


Figure 7.—Proposed route of keystone Pipeline project to increase the supply of Canadian heavy oil to the U.S.

2-8

ITC Great Plains



- ◆ In July 2006 ITC Great Plains opened its doors in Topeka, Kansas
- ◆ ITC Great Plains is a Kansas company dedicated to customers of Kansas
 - **Transmission-only** entity committed to constructing, owning, operating and maintaining transmission assets
 - Mission is to enhance the Kansas transmission system and provide the framework for lower electric energy costs
 - Recognize that the Kansas transmission system lacks regional transfer capability and are dedicated to solving that problem
- ◆ **ITC Great Plains is committed to working with all Kansas stakeholders including the Governor, state and local elected & appointed officials, the KCC, KETA, municipals and the coops to identify and solve transmission issues**

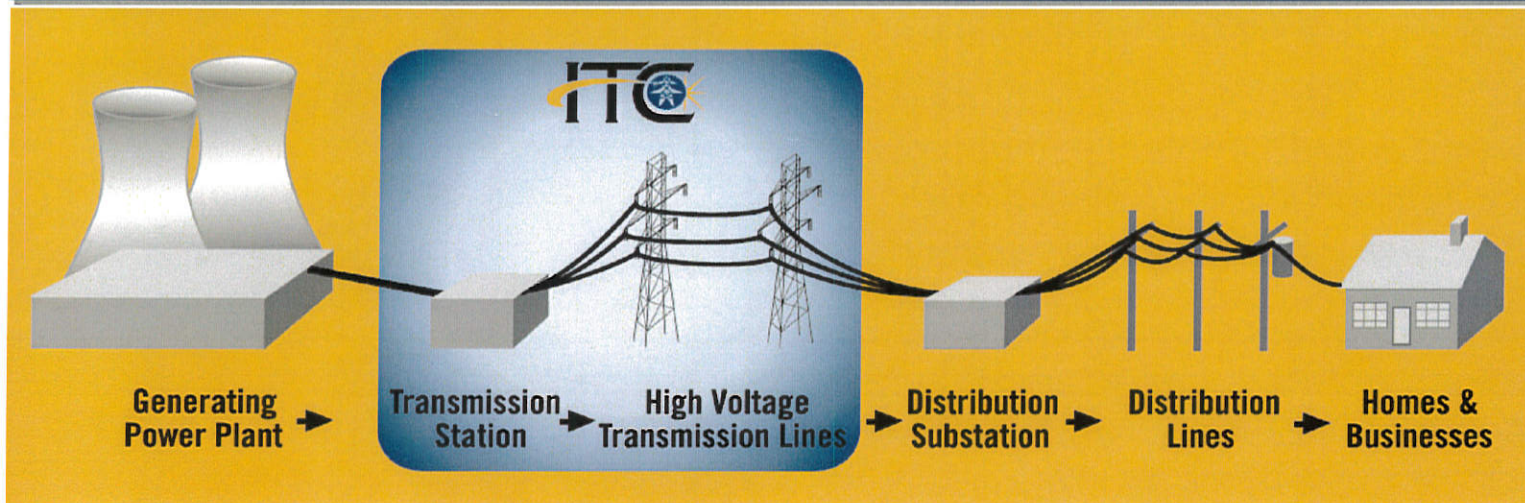
What Is Our Business?



3-2

- ◆ ITC *Great Plains* will operate a fully-regulated, high-voltage transmission system that transmits electricity to local electricity distribution facilities from generating stations throughout Kansas and surrounding areas
- ◆ ITC *Great Plains* wants to ensure that every Kansas electric customer will have access to **reliable, non-discriminatory, and low-cost energy** procured through competitive wholesale markets

We Serve as the Conduit Between Generation and End-Use Customers



Transmission System Overview



3-3

- ◆ Historic underinvestment in transmission systems creates considerable need for significant investment in nation's transmission infrastructure
 - Investor owned utility investment in transmission assets declined \$12.8B between the 10-year periods from 1975-1984 and 1992- 2001
 - The grid will require \$50-\$125B in investment
 - Lack of investment has created antiquated infrastructure, system congestion, reduced service quality and even spawned blackouts



- ◆ Transmission is infrastructure not a commodity- Similar to the interstate highway system feeding state byways and roads
- ◆ ITC Great Plains seeks to build a more robust transmission system that will
 - Enhance transmission system reliability
 - Provide equal access to all generation resources including renewable energy
 - Levelize electricity rates
- ◆ ITC Holdings is the first fully independent transmission company in the U.S. and only publicly traded company engaged exclusively in the transmission of electricity
- ◆ Estimated enterprise value of \$1.6 billion
- ◆ ITC Holdings owns 95% of the transmission in Michigan
- ◆ As a public company ITC and its subsidiaries have an added level of transparency available to customers, stakeholders and shareholders

Maintenance Activities



3-4

Vegetation Management & Physical Tower Inspections

Before

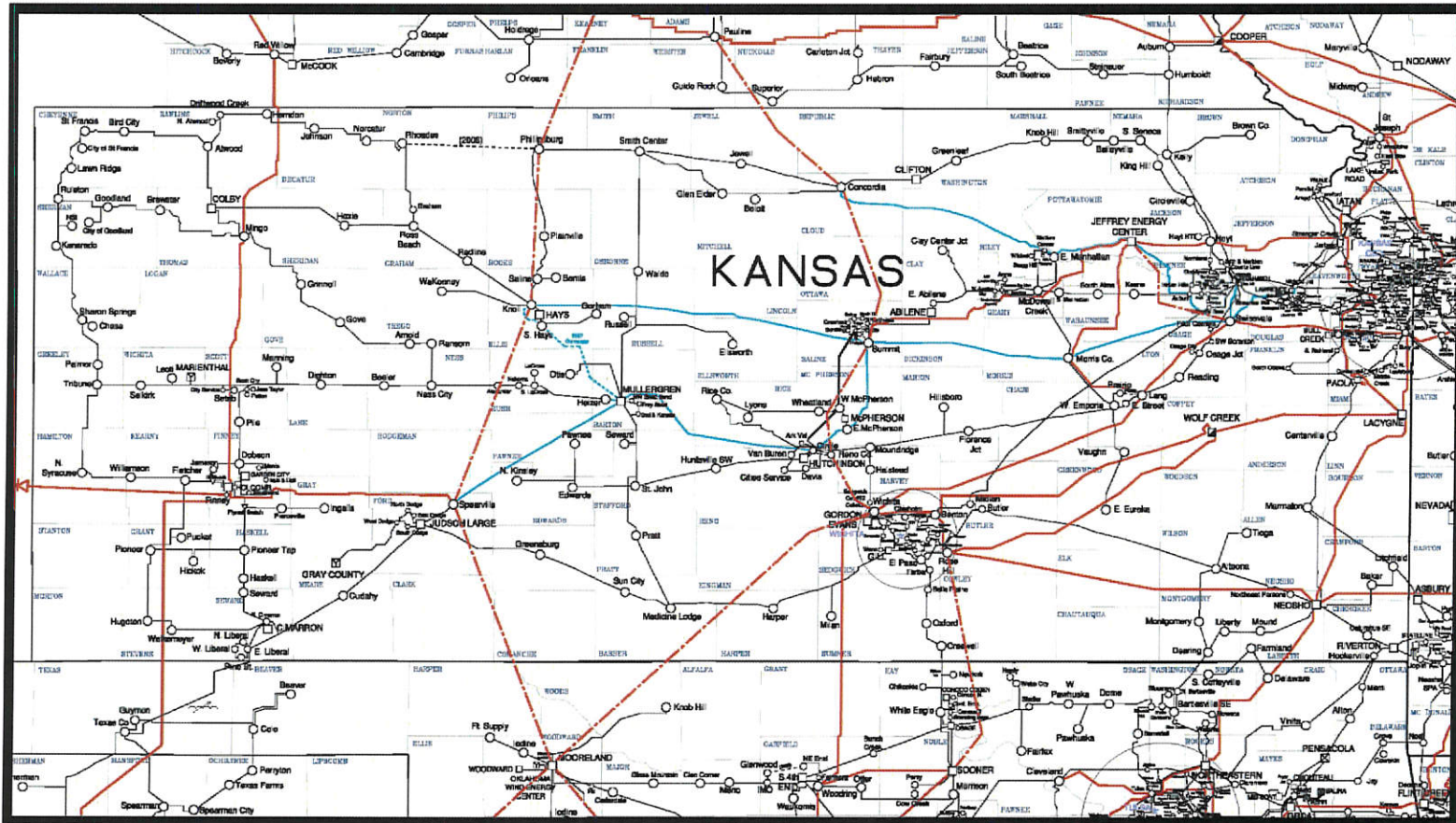


After



Transmission in Kansas

3-5



Uncommitted Projects

Committed Projects

Moving Forward

3-6



◆ **ITC Great Plains is committed to:**

- Improving Kansas' electricity transmission infrastructure to further improve reliability
- Creating the most efficient and cost-effective transmission system for the Kansas consumer
- Ensuring low cost energy is available to the Kansas economy to support economic development and attract business to the State
- Helping Kansas once again be a net exporter of energy
- Removing the market participant bias from both the planning and operation of the transmission system
- Constructing a more robust transmission system across the state as soon as prudently possible