

ENERGY DEVELOPMENT AND TRANSMISSION COMMITTEE

The Energy Development and Transmission Committee was created in 2007 and was made permanent in 2011. Under North Dakota Century Code Section 54-35-18, the committee must study the impact of a comprehensive energy policy for the state and the development of each facet of the energy industry, from the obtaining of the raw natural resources to the sale of the final product in this state, other states, and other countries. The study may include the review of and recommendations relating to policy affecting extraction, generation, processing, transmission, transportation, marketing, distribution, and use of energy. In addition to its statutory study responsibilities, the committee was assigned three studies for the 2013-14 interim.

Section 8 of House Bill No. 1198 directed the study of the likely changes to oil industry practices, production, impacts, and tax policy in the foreseeable future, with the Legislative Management to obtain the services of an independent consultant with demonstrated insight into current and future production advances, including use of carbon dioxide and water or other means of enhancing production; effects of mature production areas on state and local tax policy; future infrastructure needs; and environmental considerations.

Section 41 of Senate Bill No. 2018 directed the study of the feasibility and desirability of the establishment of an energy corridor in the western portion of the state, including an examination of rights of way and state highway and county road easements necessary for the further development of energy resources in the state, and including the existing and necessary easements required to make United States Highway 85 a four-lane highway corridor to complement the development of energy transportation resources.

The Chairman of Legislative Management directed the study of the permitting, regulation, siting of oilfield waste landfills, and the disposal of waste related to oil and gas development.

The Legislative Management assigned six reports to be received by the committee:

- Under Section 17-07-01, the Energy Policy Commission is to report biennially on recommendations concerning a comprehensive energy policy.
- Under Section 16 of Senate Bill No. 2014, the Department of Commerce is to report before September 1, 2014, on the findings and recommendations of the department's study to evaluate value-added market opportunities related to renewable energy resources and oil and gas.
- Under Section 54-17.7-13, the North Dakota Pipeline Authority is required to deliver a written report on its activities each biennium.
- Under Section 17-05-13, the North Dakota Transmission Authority is required to deliver a written report on its activities each biennium.
- Under Section 57-60-02.1, a coal conversion facility that achieves a 20 percent capture of carbon dioxide emissions is entitled to a 20 percent reduction in the state general fund share of the coal conversion tax. In addition, the facility may receive an additional reduction of 1 percent for each two percentage points of capture of carbon dioxide emissions up to 50 percent and for 10 years. A coal conversion facility that receives a credit is required to report to the Legislative Management. The only project in this state at this time is at the Antelope Valley Station near Beulah. Basin Electric Power Cooperative owns the Antelope Valley Station that is part of an energy complex that includes the Great Plains Synfuels Plant and the Freedom Mine.
- As a part of Section 38-22-15, which establishes permit, fee, and title requirements for the geologic storage of carbon dioxide, the Industrial Commission is required to file a report beginning December 2014 and every four consecutive years on the amount of money in the carbon dioxide storage facility trust fund and if fees are sufficient to satisfy the fund's objectives. The committee did not receive a report because it is not required until after December 2014.

Committee members were Senators Rich Wardner (Chairman), John M. Andrist, Kelly M. Armstrong, David Hogue, Philip M. Murphy, and Connie Triplett and Representatives Tracy Boe, Chuck Damschen, Ben W. Hanson, Todd Porter, Mike Schatz, and Peter F. Silbernagel.

COMPREHENSIVE ENERGY STUDY

The committee has statutory authority to explore a broad area of study relating to energy. As part of these broad study areas, the committee studied pipeline safety, spills, flaring, propane, environmental regulation, hydraulic

fracturing, electricity and transmission, enhanced oil recovery, and transportation. The committee also received a report from the Energy Policy Commission, also known as the EmPower North Dakota Commission.

Energy Policy Commission

In 2009 the Energy Policy Commission was created by Section 17-07-01. The purpose of the commission is to develop a comprehensive energy policy, update that policy, and monitor progress in reaching the goals of the policy. The commission consists of the Commissioner of Commerce as Chairman and members appointed by the Governor to represent the agricultural community, the Lignite Energy Council, the North Dakota Petroleum Council, the biodiesel industry, the biomass industry, the wind industry, the ethanol industry, the North Dakota Petroleum Marketers Association, the North Dakota investor-owned electric utility industry, the generation and transmission electric cooperative industry, the lignite coal-producing industry, the refining or gas-processing industry, and additional nonvoting members. The Energy Policy Commission is charged with developing a comprehensive energy policy for the state, and the committee is charged with studying the impact of a comprehensive energy policy for the state.

The committee received the report of the Energy Policy Commission. The commission focused on five topics:

- Infrastructure;
- Workforce;
- Research and development;
- Regulatory environment; and
- Energy growth incentives.

The commission made the following recommendations for infrastructure:

- Support of the passage of legislation within the first 30 days of the 2015 legislative session providing infrastructure funding to oil and gas-impacted areas.
- Support of changes to the gross production tax distribution formula to provide additional funding to assist with local infrastructure needs.
- Support of the funding level that meets the needs identified in the Upper Great Plains Transportation Institute roads study.
- Create a regional infrastructure authority.
- Create a trigger mechanism that will make additional funds available to oil-impacted communities from the state share of oil tax revenue when revenue exceeds forecasted revenue by a certain amount.
- Support of the expansion of existing water systems.
- Support of increased access to Lake Sakakawea water.
- Monitor of the railroad infrastructure upgrade plan.

On workforce issues, the commission made the following recommendations:

- Continued support of the housing incentive fund and consideration of a trigger on an annual basis for additional funds.
- Increase efforts to educate youth on energy careers.
- Encourage collaboration between the energy industry and the North Dakota University System, Governor's Work Force Development Council, Job Service North Dakota, and other agencies to foster agency interaction with teachers and guidance counselors, to provide greater accessibility to career and technical education programs, and to increase funding for workplace safety and training.
- Support of legislation that recognizes the role of distance learning.

The committee was informed that the commission focused on distance learning so critical areas could be taught throughout the state by one teacher. The one teacher could be paid more to be competitive with jobs in the energy industry. The committee was informed that the Department of Commerce is addressing externship programs for educators in which the externship programs would provide a two-week stint to educators to understand the needs of industry for knowledge and would augment the salaries of teachers.

Committee discussion included that there has been considerable improvement in salaries for teachers in this state, this state is still behind, and that part of the need to catch up on salaries is in the nature of any economic boom. In addition, some teachers are in demand more than others. It was argued that school boards need flexibility to remove certain instructors from the restrictions of the salary schedule.

Regarding research and development, the commission made the following recommendations:

- Support of existing research and development programs and increased funding for lignite research and oil and gas research programs.
- Support of the additional appropriation of research dollars to be used by the lignite and oil and gas research councils to resolve technical problems associated with commercial deployment of carbon capture technologies and improve recovery of oil through enhanced oil recovery using CO₂ and other gases, and support of the development and funding of a front-end engineering and design study to identify commercial opportunities associated with the capture and use of CO₂.
- Create and implement a strategy to assist the development of viable petrochemical and biochemical industries.

Regarding the regulatory environment, the commission made the following recommendations:

- Support federal agencies working with state agencies to recognize environmental issues unique to North Dakota, support state agencies to working with the commission, and support the establishment of new venues for state and federal regulatory agencies to collaborate on federal rulemaking.
- Support the use of the commission to better understand the economic impact of federal regulatory proposals and comment on regulations with significant potential impact to this state.
- Provide adequate funding and staffing for state regulatory agencies in recognition of the additional burdens of new energy development and new regulations through competitive compensation and benefit packages.
- Support the identification of North Dakota-based solutions to manage waste generated from energy production.

Regarding energy growth incentives, the commission made the following recommendations:

- Provide a sales tax exemption for value-added energy facilities, including both equipment and building materials.
- Support incentives to enhance CO₂ capture, storage, and enhanced oil recovery.
- Support an extraction tax credit to encourage the development of technologies for the beneficial use of drill cuttings.
- Support enhanced remote natural gas capture technology to minimize flaring.
- Support an incentive to expand natural gas or liquid natural gas markets.
- Ensure tax certainty for wind.
- Support incentives for the collocation of energy-related infrastructure in the same right of way.
- Remove the beneficiation tax for coal conversion facilities that are subject to coal conversion tax.
- Remove the sunset on the severance tax exemption for beneficiated coal used in agricultural commodity processing facilities.
- Remove the sunset on the sales tax exemption for beneficiated coal when used in agricultural commodity processing facilities.
- Support a sales tax exemption for oil gathering lines.

The committee was informed that recent programs are not structured for a project that is a billion dollar investment, so the commission focused on incentives, but not providing large grants. The state has worked to be competitive with other states and is competitive. For example, there had been no refinery built since 1976, and one was built in North Dakota and permitted in six months. The committee was informed that this could not have been done in any other state.

As a result of the report of the Energy Policy Commission, the committee considered several bill drafts that were based on the recommendation supported by the commission. Some members expressed concern with the process used for the development of the commission's recommendations in that the committee was not able to review all of the

testimony and information used by the commission. Other members supported the commission process as being an open process that provides the same amount of information to the committee as state agencies. Committee discussion included the opinion that the commission has been good for North Dakota because it gets participating industries to cooperate and that should limit contentious issues among these industries during the legislative session.

Oil and Gas Strategic Planning Authority Bill Draft

The committee considered a bill draft [[15.0220.02000](#)] to create an oil and gas development strategic planning authority. The authority would be governed by the Industrial Commission and the authority would serve in an advisory capacity to the commission. The authority would develop a comprehensive strategic plan to address oil and gas-affected communities' needs. The focus of the authority's attention would be on infrastructure needs. The authority's duties would be to collect information and create and update a plan by analyzing funding, programs, and incentives. The main funding for the authority would come from the Oil and Gas Research Council administrative budget and the main expense would be staffing. The authority would report to the Legislative Council and the Industrial Commission. The Pipeline Authority and the Transmission Authority statutes were used as a model.

The committee was informed that last interim there were 15 studies, there was no coordination among the studies, and there was overlap among the studies. If the overlap of effort can be removed, it would save the state money. At present, no one has the responsibility to look at all the studies to make sure that the money is being wisely spent. It was argued that a person is needed to provide communication and coordination among all the studies being done. The committee was informed that this interim, there have been numerous studies, including a study by the Upper Great Plains Transportation Institute on roads, a workforce study, IHS chemical study, and other studies, and someone needs to follow through with these studies. A master planner could be a liaison, clearinghouse, and updater of studies.

Committee members suggested that the Director of the Department of Transportation (DOT) should be following the Upper Great Plains Transportation Institute study and the workforce study should be followed by Department of Commerce. It was argued that the authority would be usurping some functions of the Governor's cabinet. The Governor or the Industrial Commission could do what the authority does as part of their budget without any changes to the law. It was argued that the bill draft may create a barrier between the public and elected officials. However, the committee was informed that the intention is that the director of the authority would act as a liaison between the Industrial Commission and Legislative Assembly and local governments.

Committee discussion included the suggestion that the Legislative Assembly may conclude that it would be worthwhile to establish a strategic planning function and it was worth recommending the bill draft so that consideration and refinement can be done during the legislative session, if needed.

Supplemental Funding for Political Subdivisions if Oil and Gas Tax Revenues Exceed Legislative Forecast Bill Draft

The committee considered a bill draft [[15.0219.02000](#)] to provide supplemental funding to political subdivisions if oil and gas tax revenues exceed legislative forecast. The bill draft provides an automatic trigger mechanism and an appropriation if in the first six months of the biennium revenues exceed the forecast by 20 percent. There would be a \$200 million appropriation from the strategic investment and improvements fund to oil and gas-producing political subdivisions using the current funding formula and the funding would not be counted against the formula caps.

The committee was informed that this biennium the forecast was 30 percent low because of the underestimated price of oil and the unprecedented growth in oil and gas production. The committee was informed that oil tax revenue forecasting is necessarily conservative to avoid creating excessive revenue expectations. It was argued that when revenues far exceed estimates the communities that are in need of funds should be provided assistance from a portion of excess collections.

Committee members expressed the opinion that if the price of oil unexpectedly spikes to \$150 per barrel, this sort of law should be in place.

Licensing of Commercial Drill Cuttings Recyclers and Well Operator Tax Incentive Bill Draft

The committee considered a bill draft [[15.0233.01000](#)] to create a license for commercial drill cuttings recyclers to be issued by the State Department of Health. The State Department of Health would make rules and monitor recyclers. The facility owner would be responsible for costs of inspection and compliance. The goal of the bill draft is to provide beneficial uses for drill cuttings, which would benefit the landowner by having the drill cuttings removed from the landowner's property. In addition, the bill draft would take pressure off landfills because instead of cuttings going into landfills, materials can be taken out of cuttings for beneficial use. The well owner would not be liable for the cuttings after the cuttings are accepted by the recycler. Because removing cutting from the site would result in additional cost to well operators, the bill draft would provide a reduction in the extraction tax. If the well operator

causes 75 percent or more of the drill cuttings to go to a recycler, the first 50,000 barrels of oil produced during the first 18 months after completion would qualify for a reduced tax rate of 5 percent, instead of 6.5 percent. If the well operator also does not place drill cuttings in a reserve pit near the well site, the rate would be reduced to 4 percent, instead of 6.5 percent. The incentive sunsets in two bienniums.

The committee was informed that recycling cuttings is a new technology, but there are companies that can do it. There is approximately \$130,000 to \$150,000 of additional cost to the operator to remove the cuttings and this bill draft would provide a \$60,000 incentive. The committee was informed the reason for the incentive is to get the technology established in North Dakota.

The committee was informed that the 75 percent of drill cuttings threshold came from 25 percent of the cuttings being from the surface casing through the freshwater zone and 75 percent being from down hole. The character and makeup of cuttings is different for the first 25 percent than it is for the last 75 percent. There is beneficial use for almost 100 percent of the 75 percent and technology can remove the hydrocarbons for reuse.

Sales and Use Tax Exemption for Materials Used for Oil Gathering Pipelines Bill Draft

The committee considered a bill draft [\[15.0187.01000\]](#) to create a sales and use tax exemption for materials used for oil gathering pipelines. The sales and use tax exemption is similar to other sales and use tax exemptions because the exemption can be used through an exemption certificate or a refund. The goal of tax exemption for oil gathering lines is to reduce truck traffic and to place oil in the safest and most efficient means of transport.

The committee was informed that it costs \$150,000 to \$170,000 per mile to install a pipeline and the tax exemption is approximately \$22,500 per mile. Committee discussion included concerns over whether the exemption would encourage growth of gathering pipelines. It was suggested that the gathering pipeline industry does not need the incentive because gathering pipelines have the capital and are able to plan better to meet the needs. In addition, it was argued landowner fatigue is the greatest impediment to pipelines and the bill draft is not a direct benefit to landowners.

Committee discussion included a suggestion that there is difficulty in securing easements for gathering lines and saltwater lines and that incentives for landowners should be investigated. It was suggested all the incentives to companies do not help if the landowner will not give the companies an easement. It was also pointed out that regardless of the type of incentive, the more gathering pipelines, the less flaring and the more moving of product. The committee was informed that the commission had discussions on the landowner bottleneck and did not identify a mechanism to address it. The committee was informed that the commission looked at a property tax incentive for landowners, but it was too complicated.

Sales and Use Tax Exemption for Fertilizer or Chemical Processing Facility Bill Draft

The committee considered a bill draft [\[15.0240.02000\]](#) to create a sales and use tax exemption for tangible personal property used for a fertilizer or chemical processing facility. The bill draft would be retroactive to include all of 2015. The committee was informed that CHS, Inc., will begin building a fertilizer plant this spring and the retroactivity is required for CHS, Inc., to take full benefit of the exemption.

Committee discussion included the suggestion that maybe the Legislative Assembly should lower the sales tax instead of providing so many exemptions.

Coal Beneficiation Incentives Bill Draft

The committee considered a bill draft [\[15.0242.01000\]](#) to provide for an exemption from the coal conversion facilities privilege tax for beneficiated coal used within a coal conversion facility and to remove the sunset on the sales and use tax exemptions for beneficiated coal and the severance tax exemption for coal used in certain plants.

The bill draft provides for the removal of the expiration date for beneficiated coal tax reductions to make the reductions permanent. At the time the beneficiated coal tax reductions were created, the legislature was cautious about revenue effect and the reductions were put into law on a trial basis. There has been a report to the interim Tax Committee and the effect of the exemptions for beneficiated coal is minimal. The committee was informed that it appears concerns have been satisfied about this becoming a runaway exemption.

Commission discussion included the observation that beneficiated coal also provides the benefit of reduced coal plant emissions.

Wind Tax Incentive Bill Draft

The committee considered a bill draft [\[15.0241.01000\]](#) to increase the factor to determine taxable valuation on wind generation units commenced before January 1, 2015, and completed before January 1, 2017, from 1.5 to 3 percent, to provide a grace period for the income tax credit relating to those wind towers, to remove the sunset on the sales tax exemption for wind generators, and to remove the \$5 million cap on the sales and use tax exemption for new coal mines located in this state.

The property tax reduction on wind power has been extended three times and is being extended at this time because some projects were not able to meet the deadline because of federal actions. The rate will raise from 1.5 to 3 percent and then to a 4.5 percent equivalent rate that is equivalent with other energy producers and is based on a production capacity rate. If the projects are completed on schedule, the tax rate would have been 1.5 percent. The tax rate will be 3 percent if completed by the end of 2016 if the wind project has a purchase power agreement or a determination of prudence. The committee was informed that the industry is maturing and the bill draft provides tax certainty for wind and takes steps toward parity.

Committee discussion included that commercial property is valued at 10 percent, residential at 9 percent, and wind was 3 percent, and then lowered to 1.5 percent. This bill draft would bring wind back to 3 percent for certain unfinished projects.

Committee discussion included that without consultation with counties, the committee does not know how the change in valuation for property tax purposes will affect the counties. It was suggested the committee should have this information because counties make their budgets based upon property tax collections. It was argued that the bill will be thoroughly debated in the legislative session and counties will be able to raise any concerns.

Pipeline Safety

While the federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for state assumption of the intrastate regulatory, inspection, and enforcement responsibilities under an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible. A state also must provide for enforcement sanctions substantially the same as those authorized by the pipeline safety statutes. Once certified, the state is responsible for oversight of pipelines that do not cross state boundaries. Except for Alaska and Hawaii, every state is participating in the natural gas pipeline safety program. If a state decides not to participate, the United States Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) does the safety inspection on its own. At least 13 states participate in the liquid program. The lower number is most likely due to the significantly lower number of miles of liquid pipelines. At least 11 states act as interstate agents on behalf of the federal government. In this role, state personnel inspect interstate pipelines and submit reports to PHMSA, which carries out compliance and enforcement action as necessary.

States are allowed to adopt gas or liquid pipeline safety regulations that are stricter than federal government regulations, and the overwhelming majority of states do have more stringent requirements. These have been developed over the years based on specific results of state inspections, changing public priorities, and increased safety expectations of the local public.

Natural Gas Pipeline Jurisdiction

In North Dakota, through certification by PHMSA, the state inspects and enforces the pipeline safety regulations for intrastate gas pipeline operators in this state, in particular distribution and transmission lines. The work is performed by the Public Service Commission (PSC). Federal grant funds are used as an incentive to improve state program performance and to entice states to take more responsibility. The grants provide up to 80 percent of the state's cost. Interstate pipelines inspection and enforcement is done by PHMSA.

The PSC pipeline staff was increased from one individual to two individuals last legislative session. These reviews are desktop reviews, and the inspectors do not go onsite. The committee was informed that there are enough employees for the present program, but if oil pipelines were included, the PSC would need more employees. The number of inspectors is determined by PHMSA through a formula. The formula is the number of miles of pipeline divided by 20 to determine the number of inspection days.

Hazardous Liquids Pipeline Jurisdiction

Hazardous liquids include crude oil, refined petroleum products, and highly volatile liquids; for example, butane, ethane, and propane. In North Dakota, the regulation of intrastate liquid pipelines is different from the regulation of gas pipelines. Instead of the state inspecting and regulating the pipeline as is done for gas, in this state PHMSA has

jurisdiction over liquid pipelines. As for interstate pipelines, the regulation is the same and is done by PHMSA. At least five states are interstate agents for PHMSA for interstate regulation, but this state is not one.

The committee received information on the Tesoro pipeline leak near Tioga. The preliminary report on the spill was that it was caused by corrosion. The leak must be reported by the company within 24 hours, and the company reported the leak to State Radio. The State Department of Health was told initially that 750 barrels had been spilled, but after the company did more assessment, the department was told the estimated leak was 20,000 barrels. The Tesoro spill was 20,600 barrels of oil. The leak was immediately bermed, diked, trenched, and contained. The spill did not get into any water system.

The method of remediation is to remove all the dirt down to at least 30 feet, cook the dirt at 1,600 degrees Fahrenheit, and put the dirt back in place. Tesoro worked with soil professors from North Dakota State University to make sure the soil is rejuvenated by microbes and nutrients. This process will go on for at least two years, 24 hours a day. The State Department of Health visits the site at least once per week. The committee was informed that the quantity of this spill is not as important as where the spill occurs and getting rid of the contamination. This spill fortunately did not affect a water system.

The committee was informed that the prevention of leaks in a pipeline comes down to design, construction, and maintenance. Committee discussion included that the federal government does not have as many resources as in the past, and state agencies get blamed for what the federal government has jurisdiction over. It was urged that this state has to do more and this may include the PSC taking jurisdiction over oil pipelines so that this state ensures pipeline safety.

The PSC recommended the state should regulate intrastate hazardous liquid pipelines. Having the PSC take over hazardous liquids would be analogous to the PSC's program for natural gas. Committee discussion included that the PSC can regulate intrastate hazardous liquid pipelines without legislation.

Public Service Commission

The PSC regulates rates for common pipeline carriers for crude oil, coal, or gas purchased or sold in this state. Under Section 49-02-01, the PSC regulates "pipeline utilities engaged in the transportation of gas, oil, coal and water." Under Section 49-02-01.2, the PSC may establish minimum safety standards for gas distribution facilities and intrastate pipeline facilities used for gas or liquids, regardless of whether the pipeline is owned or operated by a public utility. However, under state law, the regulation may not be more stringent than federal law. Under Section 49-02-02, the PSC may cooperate with the federal government for the regulation of safety standards for pipeline facilities and the transportation through those pipeline facilities.

The PSC may order an operator to take corrective action if the pipeline is hazardous to life or property. In addition, under Section 49-07-05.1, the commission may impose a civil penalty not to exceed \$200,000 for each violation for each day, with a maximum of \$2 million, for a violation of rules under Section 49-02-02.1.

Under Chapter 49-19, the PSC regulates common pipeline carriers. Under Section 49-19-01, a common pipeline carrier is a person operating a gas or liquid pipeline operated for hire or from the place of production to any distributing, refining, or marketing center or reshipping point. The term includes a person who transports natural gas through right of way granted through eminent domain or a person is a common carrier under federal law. One benefit of being a common carrier is the availability of eminent domain and the use of public right of way. However, the rates of the common carrier are regulated.

Although eminent domain and siting are fairly mutually exclusive concepts, a pipeline company must be a common carrier to be entitled to exercise eminent domain. Not only does the pipeline company have to be a common carrier, under Section 49-22-07, a utility may not construct a pipeline or exercise the right of eminent domain without first obtaining a route permit from the PSC.

Chapter 49-22 provides for the siting of energy conversion and transmission facilities. Under Section 49-22-03, a transmission facility includes a gas or liquid transmission line and associated facilities, but does not include an oil or gas gathering system, a pipeline with an outside diameter of 4.5 inches or less that will not be trenched, or a pipeline less than one mile long. A gathering system includes pipelines used to collect oil from the lease site to the first pipeline storage site and pipelines used to collect gas from the well to the gas processing facility that produces end-use consumer-quality gas.

Under Section 49-22-16, the issuance of a permit is the sole route approval required to be obtained by the utility. A permit for the construction of a pipeline within a designated corridor may supersede and preempt any local land use;

zoning; or building rules, regulations, or ordinances upon a finding by the commission that the local rules, regulations, or ordinances are unreasonably restrictive in view of existing technology, factors of cost or economies, or needs of consumers regardless of their location. Without this finding, a route may not be designated which violates local land use; zoning; or building rules, regulations, or ordinances. In addition, the pipeline must obtain state permits required to construct and operate the pipeline and must follow the rules of any state agency.

Industrial Commission

The main regulation by the oil and gas industry by the Industrial Commission is contained in Chapter 38-08. Under Section 38-08-02, an underground gathering pipeline is a gas or liquid pipeline, including water, associated with the production of oil and gas that is not subject to PSC regulation. In addition, water and wastewater from drilling activities is not regulated under federal pipeline safety rules and states may regulate. Under Section 38-08-26, the commission has created a geographic information system database for pipeline shape files. The owner or operator of an underground gathering pipeline must submit the file to the commission. The files are confidential but may be used by the commission, the landowner or tenant of the property on which the pipeline is located, and the Tax Commissioner.

The committee was informed that the Industrial Commission undertook the largest rulemaking ever undertaken by the commission. The rules provide for the regulation of newly constructed underground gathering pipelines. This is for pipelines from the edge of the well site to the transmission pipeline or a processing plant and not for pipelines on the well site. The rules relate to all underground gathering pipelines, including freshwater and saltwater.

The rules provide that the pipelines must be made out of materials that resist external corrosion and corrosion from the transported fluids. The pipelines must minimize interference with agriculture, road and utility construction, the introduction of secondary stresses, and the possibility of damage. The buried pipelines must be locatable through electric current, and trenches must be properly backfilled. The number one complaint received as to pipelines is improper backfill and reclamation of trenches.

The program is a self-certification program, which requires geographic information system information and an affidavit within six months of completion. The information on an underground pipeline placed into service from August 1, 2011, to June 30, 2013, must be filed by Thursday, January 1, 2015. This is about 4,300 miles of pipeline.

An operator is subject to a fine of \$12,500 per day, and a purposeful violation could be a felony. The penalties will incentivize the use of competent contractors. Enforcement will be done through spot checks as the pipeline is being constructed. Three new field inspectors will be hired to implement these rules.

The Department of Mineral Resources informed the committee that five years ago, there were two to three complaints per year. Now there are 15 complaints that are not finalized. In the past, the theory was to have the company use the money that it would have to pay for a fine to correct the problem. This is no longer the case, and complaints are being filed sooner.

The rules provide for basic abandonment and reclamation rules. The operator is required to leave the pipeline in a safe condition. The operator must disconnect and isolate the pipeline from any operating facilities or other pipelines. The pipeline must be cut off below the surface at pipeline level. The pipeline must be purged with freshwater, air, or inert gas to remove fluid contaminants. The cathodic protection must be removed. The ends must be plugged or capped by mechanical means or weld. There must be a self-certification and location provided upon the abandonment of a pipeline. The committee was informed that removing the pipeline can be part of the right of way negotiation; however, removal can be more damaging than purging and leaving the pipeline in the ground.

Committee discussion included that this state is being watched as to how it regulates industry and to date the industry is regulated and responsive.

One-Call Notice System

The geographic information system database is separate from the One-Call excavation notice system in Chapter 49-23, although both provide the location of pipelines. The notification center does not know the location of underground facilities but knows the underground facility operators in the area and notifies these operators of a locate request by an excavator. The operator uses an online-based mapping software that the operator logs into and draws polygons in areas where the operator has underground facilities. When an excavator calls the One-Call center, a person at the center draws a polygon on a map of the excavator's dig site based on the information provided by the excavator. The software will populate a list of operators whose polygons intersect the one drawn by the person at the call center. All the information provided by the excavator is sent to each of the operators that have facilities in the dig area as a "ticket." It is then the operator's responsibility to locate the lines through staff or through contract locators.

The number one cause of pipeline leaks is damage caused by a third party. If there is a fine of a small amount for a One-Call violation, it is not cost-effective to litigate to collect the amount through the court system. The committee was informed that the PSC may need legislation to go after the license of individuals violating the One-Call system.

Spills

Saltwater Spills and Leaks

The committee received testimony on salt damage in Bottineau and Renville Counties. There are two situations that created the salt damage. The first is from old oil well pits that were trenched as a form of remediation. The second is from a saltwater pipeline spill. In particular, there was one large spill in Bottineau County. In both instances the salt caused damage because brine water spills have salinity that is over 10 times saltier than sea water.

The committee was informed about old wells. Most of the salt damage that occurred was on wells drilled in the 1950s and 1960s. Between 1951 and 1984, waste pits were unlined and were reclaimed by trenching and draining the liquids. Between 1984 and 1994, the liquids were removed and the solids were buried. The pit was not trenched and the reserve pits were lined. Between 1994 and 2012, the pits were lined and the liquids were removed prior to disposal and the cuttings stabilized, typically with fly ash and lime, and buried. The main issue with this process was that it took over a year to dry and the number of open pits was growing. Since 2012, the pits are lined and the cuttings are stabilized, encapsulated, and buried. Because of the actions taken, the size is one-fifth the size of a previous reserve pit.

The committee was informed that the Bakken wells are very salty and Bakken wells are in areas with shrinking and swelling clays which are most affected by salt. This state has the saltiest water and the most shrinking and swelling clays.

The committee was informed about the saltwater pipeline spill. The saltwater pipeline leak involved a pipeline that went to a disposal well that was created in the 1980s. The committee was informed that the installation of the pipeline was rushed, non-engineered, random, and unprofessional. In addition, remediation efforts are lacking. The committee was informed that the landowner's failure to give easements is not all fatigue, but includes being scared of spills, especially saltwater spills.

Landowners argued that there needs to be a better system that provides protection, not necessarily more regulation. It was argued that there is regulation but no policing. It was argued that there needs to be more monitoring, more enforcement, and stiffer penalties for spills.

The committee was informed of remediation efforts and possible means of remediation. There are two ways to deal with a salt spill--remove the salt or push the salt down. Removal may be done with a flood of water with drain tile and pumping the saltwater out. This process is very expensive to install. The estimated cost for drain tile and saltwater disposal for a site in a 1985 study was \$25,000. Calcium can be used to push the salt down. However, salt follows the water table down, and when the water table comes back up, the soil is bad again after it has been reclaimed. Landowners affected by salt spills were hesitant to endorse any method of remediation because none seemed to bring back the land to the previous level of production. It was suggested one way to deal with the issue is to have a fund that does a couple of projects a year.

For there to be remediation to a previous state, there needs to be baseline information on which to base reclamation. Landowners requested an accounting of the acres affected by salt. It was argued that the state has money to address old problems and save for future problems. It was argued that regardless of when the damage occurred, the state needs to protect the land for future generations.

As for Bakken wells, the amount of saltwater coming out of the ground is about the same as the amount of oil. Approximately half of the saltwater is disposed of through trucks and half through pipelines. Two of the significant spills in the Bakken were new systems that were not properly installed.

Railroad Spills

The committee remained updated on the Burlington Northern Santa Fe Railway Company spill near Casselton. The spill will be remediated by digging up and disposing of the soil. The contaminated soil is approximately 9,000 cubic yards. Remediation was expected to take under a year.

The committee received information on spill reporting by the State Department of Health. The issue was brought to light due to the train spill near Casselton and a delay in notifying the press. The committee was informed that the department wants to be transparent and the department is working on providing spill data on the website to the public.

The website will have two databases--one back to 1975 and one for the last 12 months. The department set a threshold for a news release of when a spill impacts water, affects the public safety, or if 150 barrels or more is spilled.

The department was working on this before the leak but accelerated the project. The department was working on the issue because of the numerous requests for information on leaks. There are 1,500 spills to 1,600 spills this year, and the majority are small. This state requires that everything is reported and therefore has a high level of incidents. The list of spills includes agricultural spills and hydraulic hose bursts. However, the department is not involved with a spill on a well pad because that is the jurisdiction of the Department of Mineral Resources.

The committee was informed that records for saltwater spills need to be updated because the spills spread over time. In addition, the spill record is of the barrels of the spill, not the concentration of salt in the spill.

Committee discussion included a request that the State Department of Health coordinate with the Oil and Gas Division so reports of spills on and off of well sites are reported in the same manner. The committee was informed that the Oil and Gas Division has a spills form and the State Department of Health accepts that form.

The committee was informed that the landowner is notified immediately of a spill. However, adjacent landowners are also notified if in harms way but are not notified otherwise. Adjacent landowners may contact the department, and the department will meet with adjacent landowners.

The committee was informed that the oil on trains today is much more stable than in recent history because it is being closely monitored and handled as is appropriate. The oil is being monitored as to the vapor point by the loading terminals because of insurance requirements. Train-loading facilities are in the planning stages to process oil before loading.

Saltwater Spills by Haulers

The committee was informed of incidents in which a hauler of saltwater had illegally dumped saltwater. The committee was informed that the Department of Mineral Resources was looking at better tracking of the waste. This state does not have a tracking process, but good companies do keep records.

The idea of having a hauler sign off when filling waste and dumping waste has been considered, but the procedure is easy to cheat. In Pennsylvania, all waste haulers are licensed and there is GPS on the trucks that transmit the weight of the truck and the location of the truck. The Department of Mineral Resources may recommend legislation to license all saltwater haulers and to require GPS with location and weight information. The saltwater hauling business is lucrative, and civil penalties are not that much of a deterrent. The department has pursued felony charges when a hauler has been caught in the act of illegal dumping and a felony conviction puts the business out of business.

Flaring

The committee received a report that was the result of meetings of the North Dakota Petroleum Council Flaring Task Force. The goal is to have 85 percent capture within two years and 90 percent capture by 2020 with the potential for 95 percent capture. The reduction in flaring will be accomplished through expanded processing, building out capacity, operation efficiencies, and value-added North Dakota markets. At the time of the report, flaring was 29 percent of state gas production, and 60 percent of flaring is from 216 well sites. Eighteen percent of natural gas that is flared is at wells that are connected to pipelines and the pipelines are insufficient in these instances.

The national average for flaring is 1 percent, but the committee was informed that comparing that to North Dakota is not fair. The Eagle Ford play is three plays: a gas play, natural gas liquid play, and oil play. The flaring under the oil play is 15 percent. The average flaring in Texas is 1 percent. The reason for the reduced flaring is the nearby location of refining and processing plants that are underutilized. In North Dakota, there was no infrastructure when the Bakken play began, and all of it has to be built.

The largest delay for connecting gas lines is securing landowner permission. To address this issue, the committee was informed that the Industrial Commission will develop and manage a hotline for reporting surface owner issues related to pipelines.

The report suggested the following legislative actions:

- Incentivize rapid buildout capacity for gas infrastructure through property tax incentives, low-interest loans, and production tax credits for producers.
- Incentivize intrastate value added markets through technological innovation and an infrastructure development fund.
- Support dense phase, high-pressure export pipelines to take gas to major markets without taking out the liquids.

The Industrial Commission made flaring rules. A gas capture plan is required with a permit to drill after June 1, 2014. The rules create flare capture targets. These targets are:

- October 1, 2014: 74% capture (26% flaring)
- January 1, 2015: 77% capture (23% flaring)
- January 1, 2016: 85% capture (15% flaring)
- October 1, 2020: 90% capture (10% flaring)

If the capture targets are not met, production restrictions are put in place. The restriction is 200 barrels per day if at least 60 percent of monthly produced gas is captured and 100 barrels per day if capture is below 60 percent of monthly produced gas.

The committee reviewed potential technologies and successful remote capture projects. Technologies exist that can be deployed to utilize flared gas, providing small incremental benefit to gas utilization. Gas flaring is the result of many factors, and each technology can address different challenges and can improve gas capture under certain conditions. The committee was informed that there is great promise in absorption towers.

The task force recommended separate tracking and reporting for tribal and nontribal wells. Six to seven percent of the 29 percent of flaring is on the reservation. There is 70 percent flaring on some parts of the reservation. For this to be reduced, the state needs to work with the federal government and tribes.

Propane

The committee was informed of the reasons for the shortage of propane at certain times. The committee was informed of a recent spike in prices which was caused by a huge demand and record cold. The extremely high prices were for approximately two weeks. The reason for the shortage was demand. In addition to this baseline, approximately 40,000 homes and approximately 1,000 to 2,000 businesses in this state use propane. Propane is used for drying corn. One corn drying system uses as much propane as a home may use in a year. A corn drying system may use 1,000 gallons of propane per day. Other reasons include that the demand for propane is increasing because the eastern part of the country is moving from heating oil to propane, an oil well uses 250,000 gallons of propane from completion to the end of fracking, and the United States exports 10 to 12 percent of the propane produced in the United States on an annual basis. This was increased to 25 to 30 percent this year because of the demand by China and Japan.

The committee was informed that the Hess - Tioga plant will produce approximately 17,000 barrels a day of propane. If Hess sees a market in this area, it will keep propane in this area that is needed. Not a lot of propane is stored in North Dakota. There are 10 million gallons stored at the Kinder Morgan storage area and the Hess plant at Minto has deep caverns.

Committee discussion included that consumers see gas being flared and high propane prices and may not understand the investment and processing needed to fractionate propane out of the gas stream.

Environmental Regulation

The committee received information on the climate action plan. The climate action plan contains three main pillars:

1. Cut carbon emissions in the United States.
2. Prepare for the impacts of climate change.
3. Lead international efforts to combat climate change and prepare for its impacts.

The first phase of the plan under Section 111(b) of the Clean Air Act, emphasis will be to establish carbon emission standards for new power generation facilities. The federal Environmental Protection Agency (EPA) believes the new natural gas-fired stationary combustion turbines can meet the proposed standard without the need for add-on control technology. Fossil fuel-fired boilers will require the implementation of partial carbon capture and storage. The EPA believes that with current and planned technology implementation of carbon capture and storage projects, combined with the availability of geologic storage sites, the proposed standards may be met. The State Department of Health had an initial concern with the cost and long-term viability of some of the technologies being proposed.

The second phase is for existing power generation facilities under Section 111(d) of the Clean Air Act. This is a state-based program for existing sources where the EPA establishes guidelines and states design programs to fit the

unique circumstances of the state. On June 2, 2014, the EPA issued proposed rules on existing source guidelines for limiting carbon dioxide. The proposed rules for Section 111(d) are intended to be final by June 2015.

The EPA rules call for a 30 percent reduction in carbon dioxide by 2030. North Dakota currently produces 1,994 pounds per megawatt-hour for all sources. The EPA wants reductions to 1,817 pounds per megawatt-hour by 2020 and 1,783 pounds per megawatt-hour by 2030. The EPA has provided a number of options for achieving the goals. One way to achieve the goals is to change fuel sources from coal to natural gas. The coal can be used, and there can be offsetting through renewable resources. There is a chance that the growth in wind energy production will aid in significantly reducing the amount of carbon dioxide to the level it needs to reach under greenhouse gas regulations. Efficiency can be used, but it is difficult to verify or account for energy efficiency gains.

Coal-fired electricity generation has become more efficient, and increased efficiency reduces the overall carbon dioxide released per unit of energy. It was argued that coal-fired plants that have increased efficiency should be given credit for what they have already done.

Drying coal produces less emissions and lowers carbon dioxide and the main customers for this technology are in China. Electric plants in the United States are inhibited from investing in this technology because there is not any certainty as to regulation by the EPA. If a coal plant uses clean coal technology and it is not good enough, there will be stranded costs and consumers will have to pay for the stranded costs in rates.

In short, the facilities we have today will not be built in the future due to carbon dioxide regulation and the jury is still out as to what will happen with existing plants.

Hydraulic Fracturing

The committee was informed the potential rules by the EPA and the Bureau of Land Management on hydraulic fracturing. The committee was informed that the concern with frac jobs started affecting water with the use of frac jobs in coalbed methane. Coalbed methane is near the surface and there is water in the coalbed. Diesel fuel was used as the frac fluid. Frac jobs in this state are two miles under the ground and use much less diesel fuel. There is .08 percent of petroleum distillate in the frac fluid.

The EPA guidance on diesel fuel in hydraulic fracturing could more than triple permit approval time. If fracturing rules regulate wells as Class 2 underground injection wells, there will need to be a hearing, order, and permit before the frac job and an undoing of those actions after the frac job. This will increase the time for permits from 20 days to 60 days.

The Bureau of Land Management hydraulic fracturing rule could more than double permit approval time. Twenty percent of production in this state comes from the Fort Berthold Reservation. Most of the land is allotted lands owned by individuals. The Bureau of Land Management has trust responsibility, but is treating these lands the same as fully owned federal lands. Eighty to ninety percent of Bakken spacing units have federal minerals. These federal minerals were taken back from farmers and ranchers in the 1930s. The proposed rules require the bureau to approve where water comes from, the route the water takes, and where the frac flowback is disposed.

Electricity and Transmission

The committee kept informed of a number of key projects. Montana-Dakota Utilities Company has been issued a certificate of site compatibility for an 88-megawatt gas turbine electric generator at the Heskett Station in Mandan. Basin Electric Power Cooperative has been issued a certificate of site compatibility for two 45-megawatt gas turbine electric generators at its Pioneer Generation Station northwest of Williston. Basin Electric has also filed a letter of intent for two additional 45-megawatt gas turbine electric generators to be located at Basin Electric's Lonesome Creek Station west of Watford City.

Over 70 percent of the load growth in the Williston Basin is the result of the Bakken oil play. There will be approximately a 9 percent increase per year from 2011 to 2025 from oil related entities. Each year there is an increase of over 130 megawatts of demand. The options to meet growth include building transmission lines, building generation facilities, entering power supply contracts, and joining a regional transmission organization.

The Minnkota 345kV line from Center to Grand Forks and the NSP CapX2020 line from Monticello to Fargo have been sited and are under construction. CapX2020 shores up reliability in eastern North Dakota. The next 10-mile line from Ellendale to the South Dakota border opens up the availability to transport energy from wind and from a coal mine in the center part of the state.

The committee was informed that recently certificates of site compatibility have been issued, and construction is underway or is expected to begin soon on 814.5 megawatts of new wind generation. The PSC issued a certificate of site compatibility for the 150-megawatt Thunder Spirit Wind Project near Hettinger and the 204-megawatt Bison 4 Project near Center.

Enhanced Oil Recovery

The committee was informed that enhanced oil recovery is the next phase of development for the Bakken. Around 5 to 6 percent of oil is recovered from the Bakken and an increase in production of 1 percentage point would provide 3 billion to 5 billion barrels of oil. Carbon dioxide is the leader for enhanced oil recovery because carbon dioxide mollifies Bakken oil very well in tests. Nitrogen was leading for a few years but has been found to be not compatible with Bakken oil. The committee was informed that there are pilot projects in the Parshall field using water.

The committee was informed that the demand for carbon dioxide to fully apply enhanced oil recovery in the Bakken Formation is 2 billion to 3.2 billion tons. This would conservatively yield 4 billion to 7 billion barrels of incremental oil. The main concern of the oil industry is not the technology, but having enough carbon dioxide. The output of carbon dioxide of all the power plants in this state is 33 million tons.

Transportation

The committee received updates on DOT projects in the western portion of this state to review what DOT was doing to meet the infrastructure needs. The committee was informed the total traffic count has increased 422 percent from 1950 to 2010 for certain roads in western North Dakota. Truck traffic has increased 22 percent statewide and 53 percent in the west from 2010 to 2012 and is still increasing. In addition, the size of loads is increasing. An increase in weight of 10 percent on a tandem axle increases the damage to the road by 44 percent. To address the transportation infrastructure needs, the Legislative Assembly appropriated approximately \$2.3 billion for highways, with approximately \$1.64 billion for highways on the state highway system and \$617 million for highways in cities, counties, and townships. There were over \$878 million in projects during 2013 by the state and political subdivisions.

The committee received information on numerous road projects including the Williston northwest bypass, the Watford City State Highway 23 southeast and United States Highway 85 southwest bypass, the Alexander bypass, the Dickinson interim bypass, and the New Town northeast bypass. The committee focused on United States Highway 85. The committee was informed that for the United States Highway 85 from Watford City to Williston project, the major concern is environmental challenges. Because the new bridge near the old Lewis and Clark Bridge by Williston affects pallid sturgeon, there needs to be a very indepth biological assessment requiring a separate federal environmental determination by the United States Fish and Wildlife Service, the Federal Highway Administration, the Army Corps of Engineers, and the Coast Guard. After environmental clearance, it will take two years to two-and-a-half years to build the bridge so there will be four lanes up to the present bridge without a four-lane bridge for a few years.

Another concern is wildlife. A wildlife crossing will be required at the cost of \$4.5 million to \$5 million for one crossing. The situation on United States Highway 85 south of Williston is the Game and Fish Department is leasing land from the federal government for two wildlife management areas and the road bisects these areas and a wider road will further separate these two areas. The wildlife crossing is one structure that will allow large game under the road and will also include a fence system maintained by the Game and Fish Department.

The committee received information on the Upper Great Plains Transportation Institute, study on the infrastructure needs for county, township, and tribal roads and bridges in this state. The study found statewide need for unpaved road investment for the next 10 bienniums is \$5,398,400,000. The unpaved road investment needs in the oil patch for the same time period is \$2,909,400,000. The need for investments in paved roads for the next 10 bienniums is \$2,685,000,000 statewide and \$1,162,000,000 in the oil patch. The needs for the 2015-17 biennium for the gravel roadways are \$548 million, for the paved roadway are \$377 million, and for the gravel-to-pavement option is \$58 million. The total needs for the 2015-17 biennium, excluding bridges, are \$983 million.

The committee was informed that the gravel-to-pavement option is for certain roads for which a cost-benefit analysis shows the roads should be changed from gravel to pavement. For the gravel-to-pavement roads, all had 500 trucks per day, and the amount will stay high. The study provided information so that governmental entities can decide whether roads should be paved based upon the review of the truck counts.

Transfer of Maintenance of County Roads to the Department of Transportation Bill Draft

The committee considered a bill draft on transferring highway maintenance from counties to DOT. The committee was informed about the relationship between the county road system and the state highway system. The committee was informed that DOT works closely with counties for a more integrated system. It was argued that when reviewing a

county's road to determine whether it should be transferred to DOT, the whole county needs to be reviewed because there may be roads that are maintained by the state that should be county roads.

The committee was informed that DOT is limited to the number of miles in the state highway system and to which roads can be placed in the system. At present, there are roads being added to the system through the new bypasses. After the bypass construction, there will be 56 miles of state highway available under the law. The Department of Transportation looks at the lifetime of the road when considering to add it to the state highway system, so heavy traffic when there is drilling is not a justification for adding a road to the system. However, DOT is revisiting adding roads to the system that have been previously rejected for addition to the system.

The committee was informed that the bill draft did not solve the problems counties have in maintaining county roads. It was argued that a mechanism or procedure should be available to formally consider whether routes warrant reclassification as state routes or some special consideration for funding improvements would be a better idea. The committee was informed that Section 24-05-18 provides for cost-sharing on county routes and does what most of what the bill draft does. The committee was informed that Section 24-02-36 limits the state's ability to expend state funds, and it would need to be amended for the bill draft to work.

The committee was informed the general intent of the bill draft was to provide an additional alternative for state assistance with road funding to counties and it was pointed out that a substantial increase in additional state road funding was provided to counties last legislative session. The bill draft would require the DOT budget authority to be adjusted to expend funds received from counties for doing maintenance for the county or DOT would have to fund the county maintenance work. The Department of Transportation would be required to outsource this work. In addition, if DOT took over county roadways, DOT would have to establish load limits, set a speed limit at 65 miles per hour, maintain road access control, and upgrade county roads to meet the state system standards.

Committee discussion included that the transfer could place a great burden on the state. However, it was suggested that the bill draft is a good idea in that it allows, not mandates, the transfer.

Recommendations

The committee recommends a bill [[15.0220.02000](#)] to create an oil and gas development strategic planning authority. The authority would be governed by the Industrial Commission and the authority would serve in an advisory capacity to the commission. The authority would develop a comprehensive strategic plan to address oil and gas-affected communities' needs. The focus of the authority's attention would be on infrastructure needs. The authority's duties would be to collect information and create and update a plan by analyzing funding, programs, and incentives.

The committee recommends a bill [[15.0219.02000](#)] to provide supplemental funding to political subdivisions if oil and gas tax revenues exceed legislative forecast. The bill provides an automatic trigger mechanism and an appropriation if in the first six months of the biennium revenues exceed the forecast by 20 percent or more. There would be a \$200 million appropriation available April 1, 2016, from the strategic investment and improvements fund to oil and gas-producing political subdivisions to be allocated using the current funding formula, but the funding would not be counted against the formula caps.

The committee recommends a bill [[15.0233.01000](#)] that creates a licensing process for commercial drill cuttings recyclers that would be administered by the State Department of Health. The bill provides a reduction in the extraction tax if the well operator causes 75 percent or more of the drill cuttings to go to a recycler, the first 50,000 barrels of oil produced during the first 18 months after completion would have a reduced tax rate of 5 percent, instead of 6.5 percent. If the well operator also does not place any drill cuttings in a reserve pit near the well site, the rate would be reduced to 4 percent, instead of 6.5 percent. The incentive would sunset in two bienniums.

The committee recommends a bill [[15.0187.01000](#)] to create a sales and use tax exemption for materials used for oil gathering pipelines.

The committee recommends a bill [[15.0240.02000](#)] to create a sales and use tax exemption for tangible personal property used for a fertilizer or chemical processing facility producing fertilizer from natural gas or crude oil components. The bill would be retroactive to include all of 2015.

The committee recommends a bill [[15.0242.01000](#)] to provide for an exemption from the coal conversion facilities privilege tax for beneficiated coal used within a coal conversion facility and to remove the sunset on the sales and use tax exemptions for beneficiated coal and the severance tax exemption for coal used in certain plants.

The committee recommends a bill [[15.0241.01000](#)] to increase the factor used to determine taxable valuation for property tax purposes for wind generation units commenced before January 1, 2015, and completed before January 1, 2017, from 1.5 to 3 percent, to provide a grace period for the income tax credit relating to those wind towers, to remove the sunset on the sales tax exemption for wind-powered electrical generation facilities, and to remove the \$5 million cap on the sales and use tax exemption for new coal mines located in this state.

STUDY OF THE FUTURE OF THE OIL INDUSTRY

Section 8 of House Bill No. 1198 required the study of the likely changes to oil industry practices, production, impacts, and tax policy in the foreseeable future, with the Legislative Management to obtain the services of an independent consultant with demonstrated insight into current and future production advances, including use of carbon dioxide and water or other means of enhancing production; effects of mature production areas on state and local tax policy; future infrastructure needs; and environmental considerations.

The committee made a request for proposals and received two proposals. The committee chose KLJ to do the study for \$125,000. The study contained three progress updates and a final report.

The final report provided an economic analysis of the Bakken/Three Forks Formation; information on the socioeconomic impacts of employment, population projections, and housing needs; and information on carbon dioxide enhanced oil recovery. Phase 1 of the study was a data gathering process that resulted in a list of baseline assumptions. Phase 2 was concerned with validating the assumptions. Phase 3 was to model and project future trends, draw correlations between trends and future infrastructure requirements, and summarize modeling and analysis. Phase 4 was the final report, based on a study period of five years into the future.

The study 2014-2019 trends forecast was that:

- North Dakota drilling levels will remain stable.
- North Dakota production could reach 2 million barrels per day.
- Oil prices will average between \$70 and \$100 per barrel.
- The global need for oil will absorb oil produced from United States shale.

The study found that the local and global economics:

- Result in drilling remaining concentrated in areas of high productivity potential.
- Will change if federal policies lead to increased drilling.
- Will be affected by high operation costs, slowing drilling in areas of lower productivity potential.

The study found that population growth potential will be:

- 25 to 32 percent in Bowman, Divide, Dunn, McKenzie, Stark, Slope, and Williams Counties.
- 15 to 24 percent in Adams, Billings, Golden Valley, and Hettinger Counties.
- 6 to 14 percent in Bottineau, McHenry, Mountrail, Renville, and Ward Counties.
- 0 to 5 percent in Burke, McLean, and Mercer Counties.

The study found that the housing need for:

- Williston is 16,000 housing units, requiring \$480 million in subdivision infrastructure.
- Dickinson is 10,000 housing units, requiring \$300 million in subdivision infrastructure.
- Minot is 6,000 housing units, requiring \$180 million in subdivision infrastructure.

Technology changes that could affect production include:

- Three dimensional field development.
- Batch development.
- Adequately sized gathering systems.
- Reliable systems to move product to market.

- Field consolidation.
- Automation.

Environmental changes that could affect production include:

- State regulations in border states.
- Tribal regulations and development requirements.
- Flaring regulations.
- Local regulation of crude oil trains.

Policy issues that could affect production include:

- Crude export rule changes.
- The tightening of oil supply due to international conflict.
- Federal regulation changes on depletion allowances.

It was estimated that North Dakota oil production could reach 2 million barrels per day. Each month, the North Dakota per day oil production amount is increasing by about 18,000 barrels.

The committee considered information on the markets for North Dakota oil. Canada produces heavy crude, which is different from the light sweet crude of the Bakken. Refineries either refine heavy crude or light crude, but not both. The Keystone Pipeline is intended to transport heavy crude to the Gulf of Mexico because the Gulf refineries shifted to heavy crude. The Keystone Pipeline would not compete with Bakken crude. The committee was informed that the East and West Coasts have enough markets for Bakken crude. The committee was informed that there is some additional refining potential at Cushing, Oklahoma, but as midcontinental shale plays mature, these plays will use up the additional potential.

The export of finished product must be shipped on a United States flagship, and there are not many of these ships. The export of crude oil is not allowed by law. If exports are opened, the light sweet crude of the Bakken will be valuable in the international market. It was suggested that in the next five years, oil companies may be able to export light sweet crude.

The committee was informed that drilling activity is very sensitive to profitability. In the Bakken, the amount of initial production greatly affects the amount of time it takes for wells to become profitable. There is 40 to 50 percent depletion in the first year of a Bakken well. As such, there needs to be higher oil prices for profitability in certain wells that are not in mature Bakken areas. Another factor affecting profitability is the amount of wastewater a well produces. As wells move away from the mature Bakken, the oil-to-water ratio is less favorable. In addition, this increases infrastructure impact because of the truck movement of the wastewater.

The committee was informed carbon dioxide enhanced oil recovery is not expected to be employed at high rates and will not substantially affect oil development in the next five years. However, the Dakota Gasification contract for the sale of carbon dioxide expires in two years and older oilfields near the existing carbon dioxide pipeline are capable of using carbon dioxide for enhanced oil recovery.

The committee was informed that the population growth will be higher than the job growth. The forecasted increase in population is 4.3 percent per year for western North Dakota. Permanent jobs will increase rapidly throughout the study period and temporary jobs will stay consistent. The need for permanent housing is based on permanent jobs. Using a medium scenario for the growth of Williston from 2014 to 2019, there will be a need for 26,000 housing units. Under the same conditions, there will be a need for 6,000 housing units in Minot, and 10,000 housing units in Dickinson.

The committee was informed the amount of capital for growth in the Bakken is presently good and will get better. Conservative banks have begun to finance projects in the Bakken because of the predictability of returns and regulations for the Bakken field. The industry is catching up on infrastructure because of the provision of new capital, including capital to midstream pipeline companies, but the infrastructure is at least one year behind.

The committee was informed it is harder to increase gas gathering than oil gathering capacity. Most gas gathering systems are overlaying two times the infrastructure to increase capacity. Oil gathering is designed with excess capacity, and there are other methods of increasing capacity. Large oil transmission lines are being built, and

gathering systems will have multiple choices. The committee was informed that because of batch drilling and large initial productions there will be issues with pipeline capacity.

In the past, a rig has moved on site and then has called for a frac job and a gathering line. Now gathering lines can be put in place sooner because operators have more information earlier on in the process. This is because previous drilling was to hold leases, and presently 90 percent of the drilling is pad drilling. Because of this batch drilling, gathering lines may have to absorb output from eight wells in a single week and it is difficult to size the line because of the drop off in production. Drillers will try to stage drilling in different areas so there is not so much production coming on line in one area at one time.

Class I railroads are making significant improvements by installing double track. This allows agricultural traffic to bypass stored cars and over time, the railroads will be able to move more agricultural product. However, the rail industry cannot recover fast enough to meet the needs of the oil industry and there will be car shortages.

Twenty-one percent of the mature Bakken is not produced because it is on federal or tribal land. The committee was informed that there are many reasons why the tribe has not developed the oil and gas resources on the reservation. For example, the tribe requires powerlines on the reservation to be buried while overhead powerlines are allowed outside the reservation. Burying the line requires that it is double jacketed and cooled and this is not economical for oil producers. In addition, there are long tribal permit approval times and relationships are very important when working on tribal lands and building relationships take time.

ENERGY CORRIDOR STUDY

Section 41 of Senate Bill No. 2018 directed study of establishment of an energy corridor in the western portion of the state. This required committee examination of rights of way and state highway and county road easements and easements required to make United States Highway 85 a four-lane highway corridor to complement the development of energy transportation resources.

The committee was informed that DOT owns most of the right of way along United States Highway 85, but DOT has only an easement through national park property. Allowing the oil and gas industry to use highway right of way would put DOT in a position of competition against landowners for sale of easements. The Department of Transportation expressed opposition to being in the position of competing with landowners.

The current practice on easements is that DOT grants utility permits that are limited to utilities to use right of way. The law requires a utility to have a public purpose to permanently locate facilities in the right of way. These permits are generally to cross highway right of way laterally, with limited longitudinal use. These limits are in place to prevent future highway construction from being hampered by the placement of facilities in the highway right of way.

The Department of Transportation recently adopted a policy for allowing the temporary use of highway right of way for moving fresh water in temporary pipelines. This permit process allows for fresh water to be transported in the ditch. As a condition of transporting the water on highway right of way, there needs to be evidence of the pipeline company unsuccessfully seeking easements from private landowners or that the terrain on private land is unsuitable for pipeline placement.

The North Dakota Petroleum Council has created a right of way task force. The task force will address potential energy corridors, section line easements, and legislation to improve right of way access to reduce flaring.

Oil and Gas Production Tax to Certain State Highways Bill Draft

The committee considered a bill draft [[15.0114.01000](#)] that would allocate \$75 million per biennium from the oil and gas production tax to the state highway fund for major improvements and construction of highway corridors impacted by energy development, with a priority of enhancement to four lanes for United States Highway 85. The \$75 million would be from the first percentage point of the 5 percent production tax to avoid decreasing revenues allocated among political subdivisions. The money in the fund could build over time.

Committee discussion highlighted the intent that the bill draft is to build up money for projects while waiting for the projects to begin. The southern portion of United States Highway 85 would be a priority to increase to four lanes and this funding source would assure that there will be money to do it. The \$75 million amount was chosen because it is considered a reasonable amount to draw from production tax revenues without impact to allocations to political subdivisions or other allocations from revenue anticipated to be generated by the production tax.

Committee discussion included some opposition based on the argument that it is not appropriate for the Legislative Assembly to choose one project over another and that DOT has a mechanism to prioritize projects. It was argued that

the bill draft is an example of legislative micromanaging and the Legislative Assembly should set policy and the executive branch should execute the law. Committee discussion also included the counterpoint that United States Highway 2 would still be two lanes if the Legislative Assembly had not required it to be four lanes because DOT had prioritized that highway for only two lanes. In addition, the Western Area Water Supply Authority was prioritized by the Legislative Assembly despite State Water Commission reluctance. It was argued that the Legislative Assembly has the benefit of being more in touch with the wishes of the public than agencies.

Recommendation

The committee recommends a bill [[15.0114.01000](#)] that would allocate \$75 million per biennium from the oil and gas production tax to the state highway fund for major improvements and construction of highway corridors impacted by energy development, with a priority of enhancement to four lanes for United States Highway 85.

PERMITTING, REGULATION, AND SITING OF OILFIELD LANDFILLS AND THE DISPOSAL OF WASTE STUDY

As part of the study of permitting, regulation and siting of oilfield waste landfills and the disposal of waste related to oil and gas development, the committee examined issues regarding radioactive waste and oil field waste.

Radioactive Waste

Radioactive material is generated from the physical process of concentrating naturally occurring radioactive materials during oilfield development. This radioactive material can collect in many areas, including filter socks, pipe scale, and sludge found in tank bottoms. The amount of radioactive waste is between 10,000 tons and 15,000 tons per year. At present most of this comes from filter socks, which concentrate radioactive material in the flowback water, but in the future more will come from sludge and scale. Much higher concentrations of radioactive waste will be in tank bottoms and pipe scale, than is collected in filter socks. This material necessitates special handling and disposal. In the North Dakota Administrative Code, a material is defined as radioactive if it exhibits a radioactive concentration of five picu/gram or more. This state has the tightest standards in the nation as it relates to radioactive waste. This concentration is considered very conservative and may be close to background concentrations.

Pursuant to state rule, any material that exhibits a radioactive concentration above this level must be transported to a facility approved to handle this waste. The only facilities approved to handle this waste at this time are located out of state. The vast majority of this waste in North Dakota goes to Colorado, but some goes to Montana and some goes to Texas. The committee was informed that the State Department of Health was studying this standard through the Technologically Enhanced Naturally Occurring Radioactive Material Task Force. The task force is reviewing whether the generation, handling, and design pose a risk to the public health.

The committee investigated an incident of radioactive socks being improperly disposed of by a person who was in the business of disposing of socks and who dumped collected socks in an abandoned building in Noonan. Soon after the discovery of the dumping of filter socks, the Oil and Gas Division required disposal wells to have a receptacle for filter socks. This was intended to remove any economic temptation to illegally dump the socks. In addition, the State Department of Health made it known to the public that if a person finds a filter sock and reports it, the department will notify an oil company and the oil company will pick up the sock even if it is not that oil company's sock.

The committee discussed the suggestion that this state should deal with waste material created in this state. However, the committee was informed there will always be a need for some waste to be shipped out of the state because of its high concentration of radioactivity.

Oilfield Waste

The committee explored the disposal of oil field waste on and off the spacing unit. The State Department of Health does not regulate oil waste pits on the well site. This is done by the Department of Mineral Resources. However, the State Department of Health regulates regional special waste landfills. The cuttings pit is usually on the well pad. Approximately 93 to 95 percent of cutting pits are on drill pads and 6 to 7 percent are on the spacing unit off the drill pad. Although recording of the location at the county recorder of dry cuttings pits is required by law, the committee was informed that this does not happen all of the time. The newer pits are larger because of multiwell pads so the chance of affecting a landowner in the future is greater.

Funding for Abandoned Oil and Gas Well Plugging and Site Reclamation Fund Bill Draft

The committee considered a bill draft [[15.0113.01000](#)] that would raise the deposit in the abandoned oil and gas well plugging and site reclamation fund from an amount not exceeding \$5 million to an amount not exceeding \$10 million per year. In addition, the bill draft would raise the cap for the fund from \$75 million to \$100 million. The money would come from the first percentage point of the 5 percent oil and gas gross production tax.

There are about 8,500 reclaimed sites in western North Dakota and most of these sites show no trace of the oil activity. There are approximately 3,000 abandoned pre-1981 sites. Of these 3,000 sites, 30 to 60 were described as pretty rough. The fund has been expanded to include remediation for saltwater wells and pipeline spills. This has added liability to the fund. It would be very expensive to clean up some of the old sites and could use the entire fund for one site. The committee was informed that a possible future phase for the reclamation fund will be to clean up old sites.

Crude Oil and Natural Gas Exploration Landfills Bill Draft

The committee considered a bill draft that would remove the special election vote option of a county which could prohibit a permit for an oil and gas exploration landfill from being issued by the State Department of Health.

Committee discussion included the suggestion that the bill draft is appropriate in eliminating the option of requiring waste created in a county to be disposed of elsewhere. The law at present provides for a "not in my backyard" vote and the bill draft would remove that option.

The committee received testimony in opposition to the bill draft. The committee was informed that the process is working well and that the special election has only been used once, and in that instance the result was that the landfill was allowed. Under the present provisions of law, landfills have been sited and the present landfills have enough capacity for more than all the special waste that could be created. There may be no need for new special waste landfills. Even if a new landfill is needed, it was argued that local control allows for a review that takes into account local knowledge. Another factor affecting special waste landfills is the potential growth of drill cuttings recyclers, which could remove most of the waste created in well drilling.

Recommendation

The committee recommends a bill [[15.0113.01000](#)] that would raise the deposit in the abandoned oil and gas well plugging and site reclamation fund from an amount not exceeding \$5 million to an amount not exceeding \$10 million per year. In addition, the bill would raise the cap for the fund from \$75 million to \$100 million.

STUDY TO EVALUATE VALUE-ADDED MARKET OPPORTUNITIES FOR NATURAL GAS LIQUIDS AND ETHANOL

The committee received a report from IHS Chemical on the study to evaluate value-added market opportunities for natural gas liquids (NGLs) and ethanol. The most important finding of the study is that there is enough feedstock available at competitive prices for there to be a petrochemical company in this state. The availability of feedstock and the price in North Dakota are the drivers for value-added petrochemical companies in this state. It was suggested that the way the state could incentivize a plant is providing easy permitting, labor resources, and support of general infrastructure surrounding the plant. The committee was informed that infrastructure and labor give companies the confidence to build a plant.

The products created by petrochemical companies are fungible and do not create issues for transportation and can be transported safely by rail. The plastics made by a petrochemical plant could be made into water pipes and other products that could be manufactured in this state.

The difference between NGLs and ethanol is that there is not a feedstock advantage in North Dakota for ethanol. Ethanol plants are small in relation to petrochemical plants. The drivers are different as well. The driver for ethanol chemical plants is the demand for environmentally friendly products. The price premiums for environmentally friendly products are expected to go away within five years. The committee was informed that these premiums are not reliable.

The committee was informed that it takes approximately \$25 million to convert an ethanol plant to make chemicals and would take around 18 months to complete. It would take two to three years for new construction at a cost of over \$100 million. The committee was informed that other states have incentives to provide low-cost capital, tax credits for job creation, and job training. In addition, an ethanol chemical plant in this state would be competing against much larger conventional plants for the creation of complex carbon chains.

Committee discussion included comments that the opportunities brought to light by the report have the potential to provide opportunities for graduating students to obtain a high-paying job and to remain in North Dakota.

NORTH DAKOTA PIPELINE AUTHORITY

The committee received multiple updates from the North Dakota Pipeline Authority on crude oil transportation and gas flaring. Flaring was addressed because if there were enough pipelines, there would be less flaring. The committee monitored the transportation of oil by rail and pipeline and natural gas by pipeline. The committee was

informed of pipeline projects affecting oil and gas development in this state including the Enterprise pipeline from Stanley to Cushing, Oklahoma, and the Energy Transfer Partners pipeline from North Dakota to Patoka, Illinois.

Early in the interim, the committee received an estimate that 64 percent of the oil leaving the Williston Basin leaves by train and 28 percent is exported by pipeline. Within the Williston Basin, 64 percent is trucked and 36 percent is moved by pipeline. High prices on the East Coast make rail an economically sensible choice for the transport of oil out of the Bakken. Later in the interim, the committee was informed there had been a drop in rail usage and rise in pipeline usage because the spread between coastal markets and midcontinent markets narrowed. Although there had been an increase in the percentage of product being piped, because of the growth in oil production, there has not been a decrease in the number of trucks on the road. The committee was informed that transportation should not constrain movement of oil as long as there is the availability of rail transport.

NORTH DAKOTA TRANSMISSION AUTHORITY

The committee received information from the North Dakota Transmission Authority on transmission projects. The committee was informed that the Manitoba hydro study is moving forward to investigate the benefit of providing Canadian hydroelectric power to balance wind power in the Midwest Independent Transmission Systems Operator (MISO). If Manitoba hydroelectric power is brought in, it would displace two-thirds of the production of electricity from a coal plant. The hydroelectric power is to be built and is not in existence. The northern area study was conducted by MISO to identify the economic opportunity for transmission development in the area on a regional rather than local perspective.

COAL GASIFICATION REPORT

Great Plains Synfuels is the only commercial coal gasification facility producing synthetic natural gas. The plant produces carbon dioxide, which is transported to Canada for sequestration. The facility receives a tax credit. If there is a 20 percent reduction in carbon dioxide emissions, there is a 20 percent reduction in coal conversion taxes that go to the state, not counties.

The incentive is:

- \$2.2 million for 2010;
- \$2.5 million for 2011;
- \$2.8 million for 2012;
- \$2.6 million for 2013; and
- \$1.78 million for January through June 2014.

The coal conversion taxes paid by the facility were \$8.1 million in 2013.