

Report  
Submitted to the  
United States Congress  
by the Federal Energy Regulatory Commission

Second Report to Congress on Progress Made in Licensing  
and Constructing the Alaska Natural Gas Pipeline

July 10, 2006

# Second Report to Congress on Progress Made in Licensing and Constructing the Alaska Natural Gas Pipeline

## **I. Executive Summary**

This report by the Federal Energy Regulatory Commission (Commission) is submitted pursuant to section 1810 of the Energy Policy Act of 2005 (EPAct 2005).<sup>1</sup> Section 1810 of EPAct 2005 provides that within 180 days of the date of enactment, and every 180 days thereafter until the Alaska natural gas pipeline commences operation, the Commission shall submit to Congress a report describing the progress made in licensing and constructing the Alaska natural gas pipeline and any impediments thereto.

During the period covered by this report, the following events have occurred: an agreement on components of a draft contract between the State of Alaska and the Producer Group; the execution of the Federal Agency Memorandum of Understanding among 15 federal departments and agencies, which establishes a cooperative project management framework for the approval of an Alaska natural gas pipeline; and the nomination of a Federal Coordinator for Alaska Natural Gas Transportation Projects.

The United States energy market is moving forward to make arrangements to obtain adequate natural gas supplies to satisfy future demand. Significant progress has been made in developing infrastructure to support liquefied natural gas (LNG) projects that would satisfy this need. Many nations, in partnership with commercial entities, are quickly bringing LNG supply projects on-line. In the next two to three years, this worldwide capacity to supply LNG to the market will greatly increase.

This report describes the events and the progress that have transpired since the Commission's First Report on February 1, 2006. The report also explains the urgency of completing the next steps toward approval of an Alaskan gas pipeline so that Alaskan gas supplies also can be part of the solution to the nation's growing need for gas.

## **II. Status Report**

### **A. Status of Three Potential Projects**

The three potential projects described in the Commission's First Report are still being pursued by the project sponsors. One of these potential projects is the Alaska Natural Gas Transportation System (ANGTS) which is supported by the TransCanada Corporation. This project is proposed pursuant to the Alaska Natural Gas Transportation Act of 1976 (ANGTA), Canada's Northern Pipeline Act (1978), and a 1977 Agreement

---

<sup>1</sup> P.L. 109-58, 119 Stat. 594 (2005), 42 U.S.C §16,523.

on Principles between the United States and Canada. A second potential project is the Trans-Alaska Gas System (TAGS), an LNG export project which is being promoted by the Alaska Gas Port Authority. The third potential project involves an entirely new pipeline to transport gas from the North Slope of Alaska to the Canadian border, which would seek authorization pursuant to the provisions of section 103 of the Alaska Natural Gas Pipeline Act (ANGPA) <sup>2</sup> and section 7 of the Natural Gas Act (NGA).<sup>3</sup> The sponsor of this project is the Producer Group, which is composed of BP, ConocoPhillips, and ExxonMobil.

## **B. Progress on Alaska Stranded Gas Development Act Agreement Negotiations and Related Legislation**

### **1. Draft fiscal contract issued**

As stated in the Commission's First Report, the Producer Group has indicated that it will only begin to develop an application once it has successfully negotiated a contract establishing fiscal certainty in Alaska. On February 21, 2006, Governor Frank H. Murkowski announced that the State of Alaska and the Producer Group had reached agreement on the major components of an Alaska Stranded Gas Development Act fiscal contract. This agreement represents significant progress towards development of an Alaskan natural gas pipeline.

Under the terms of the draft agreement between the state and the Producer Group, the State of Alaska would own 20 percent of the primary project elements – the gas treatment plant, the mainline in Alaska, and the Alaska-to-Alberta pipeline. The state would own other elements of the project in proportion to its share of the expected throughput in those elements. The state also would receive its royalty gas in kind and receive gas, not cash, in payment of the producers' production tax obligations. In return for the state's participation in and financial support of the project, the producers would receive fiscal stability on their oil and gas obligations in Alaska for decades, as spelled out in the contract.

On May 10, 2006, Governor Murkowski provided the draft fiscal contract to the Alaska legislature for its review and to the public for comment and called the legislature into a special session. The special session was called to consider six subjects, all related to the natural gas pipeline. After the public comment period is completed, the governor's

---

<sup>2</sup> P.L. 108-324, 118 Stat. 1220 (2004), 15 U.S.C § 719.

<sup>3</sup> 15 U.S.C. § 717f.

staff will finalize the contract and formally submit it to the state legislature for its approval.<sup>4</sup>

The release of the proposed contract was followed by a series of statewide public hearings and a special session of the state legislature. The first special session that considered the new petroleum production tax changes (see details below) adjourned on June 8, 2006 without the legislature acting on the tax and credit rates. A series of amendments to the Stranded Gas Development Act that are necessary to make that Act conform to provisions of the draft fiscal contract with the producers were not voted on during the first special session and, therefore, will have to be reintroduced in the next special session for the legislature's consideration and vote. On June 23, 2006, the governor announced a second special session of the state legislature to begin on July 12, 2006 to consider the Petroleum Production Tax (PPT) and amendments to the Stranded Gas Development Act.

## **2. Oil tax revision**

On May 24, 2006, Governor Murkowski announced that state and industry negotiators had reached agreement on the oil fiscal certainty portion of the gas pipeline contract.<sup>5</sup> The governor introduced oil tax-reform/modernization legislation designed to link taxes to the oil companies' Alaska profits. The governor announced that state and industry negotiators had reached initial agreement on the PPT including a 20 percent tax rate with a 20 percent tradable tax credit to strike a balance between exploration and development incentives and a tax rate. He said that this tax revision was designed to encourage investment – which leads to more exploration, which leads to more barrels of oil, which leads to more state tax revenue than a higher tax might bring.

The new PPT would change the existing oil taxation system in Alaska. The current production tax on oil is based on a percentage of the gross value of production. The proposed new tax structure would be based on a percentage of the net profit. The current production tax rate is driven by the Economic Limit Factor, or ELF. The governor has said that the ELF-based system is no longer working for Alaska. The Alaska legislature adjourned both its regular session and the special session without completing action on the PPT. As noted above, the governor called another special session to begin on July 12, 2006.

---

<sup>4</sup> The governor extended the public comment period an additional 45 days, until July 23, 2006.

<sup>5</sup> An amendment (to be addressed in the next special session of the Alaska Legislature) to the Stranded Gas Production Act would allow the governor to negotiate existing oil and gas tax agreements as part of the gas contract. Current law prohibits significantly altering tax and royalty rates on existing oil and gas production.

### **C. Federal Interagency Memorandum of Understanding**

In June 2006, the Federal Interagency Memorandum of Understanding for the Alaska Natural Gas Transportation Project (MOU) was fully signed and executed by senior executives and heads from 15 federal departments and agencies.<sup>6</sup> The signing of an MOU by this large number of agencies demonstrates that the federal agencies are prepared to work together to expedite the permitting and construction of an Alaska natural gas pipeline project.

The MOU establishes a project management framework for cooperation among participating federal agencies with responsibilities related to the approval of an Alaska natural gas transportation project. In particular, the MOU provides for early agency coordination in order to streamline regulatory reviews of applications for permits needed to construct and operate the project. Coordination among these agencies on issues such as project review and implementation schedules, data requirements, and mitigation measures is critical to enable agencies to discharge their responsibilities expeditiously. A coordinated project management approach will facilitate and expedite completion of an Alaska natural gas transportation project. Because federal loan guarantees are authorized, the federal government may bear a significant portion of the financial risk associated with this project. Therefore, it is of critical importance that the project be completed on time and within budget, and the MOU will help the federal government achieve that goal.

The MOU includes agreement by the Participating Agencies to participate and work within the pre-filing time frame set by the Commission to identify and seek to resolve issues at the earliest stages of project development. The Commission's pre-filing process, which is initiated by a request of the project sponsor, serves as a mechanism to meet requirements of the National Environmental Policy Act of 1969 (NEPA) while optimizing scheduling. The Commission agreed to consult with the Federal Coordinator and relevant Participating Agencies as it establishes a schedule for the project review process. The schedule established by the Commission will be as expeditious as possible while consistent with any statutory permit review periods. To the extent practicable and

---

<sup>6</sup> Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Department of Homeland Security, Department of the Interior (Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, and National Park Service), Department of Labor, Department of State, Department of Transportation (Pipeline and Hazardous Materials Safety Administration and Federal Highway Administration), Department of the Treasury, Advisory Council on Historic Preservation, Council on Environmental Quality, Environmental Protection Agency, Federal Coordinator for Alaska Natural Gas Transportation Projects (acting), and the Federal Energy Regulatory Commission.

permitted by law, the relevant Participating Agencies agree to implement, with the assistance of the Federal Coordinator, their related agency review and permitting processes on a concurrent rather than sequential basis to enable completion of the environmental impact statement (EIS) within the time limits required by ANGPA .

#### **D. Nomination of Federal Coordinator**

On June 12, 2006, President George W. Bush nominated Drue Pearce, of Alaska, to be Federal Coordinator for Alaska Natural Gas Transportation Projects, for a term ending one year following the completion of the Alaska Natural Gas Transportation Project. Under section 106 of ANGPA, the Federal Coordinator will head the Office of the Federal Coordinator for Alaska Natural Gas Transportation Projects. The advice and consent of the United States Senate is required before Ms. Pearce can begin her service as the Federal Coordinator. Until the nominee's confirmation, ANGPA temporarily vests the Federal Coordinator authority in the Secretary of Energy.

The Federal Coordinator shall be responsible for: (1) coordinating the expeditious actions of all Federal agencies with respect to an Alaska natural gas transportation project; and (2) ensuring the compliance of Federal agencies with the provisions and deadlines of ANGPA.

#### **E. U.S. Department of Energy Activities**

##### **1. In-state Demand/Needs Study**

###### **a. Purpose of Study**

In June 2006 the U.S. Department of Energy (DOE) released a report, "Alaska Natural Gas Needs and Market Assessment" (Needs Study), which estimates the potential demand for natural gas in South Central and other areas of Alaska directly associated with a potential spur pipeline connecting the proposed Alaska North Slope gas pipeline to the Cook Inlet pipeline infrastructure. The Needs Study is a conceptual engineering and socio-economic analysis intended to provide an independent estimate of in-state natural gas demand and supply options for the years 2015 through 2035. The study could be used to satisfy the Commission's Order No. 2005 requirement that applicants desiring to build an Alaskan natural gas pipeline conduct a study to determine in-state natural gas needs prior to holding an open season.<sup>7</sup> The applicants could adopt this study to design their proposed in-state service which would be bid upon in the open season.

---

<sup>7</sup> Order No. 2005 110 FERC ¶ 61,095 (Feb. 9, 2005); 70 Fed. Reg. 8,269 (Feb. 18, 2005); *rehearing*, Order No. 2005-A 111 FERC ¶ 61,332 (June 1, 2005), 70 Fed. Reg. 35,011 (June 16, 2005).

## b. Study Results

The Needs Study looked at future South Central Alaska yearly-average natural gas demand use for residential/commercial consumption and electric power generation estimated for 2015, 2025, and 2035, the relevant 20-year period that could be the initial years of Alaska pipeline operation. The study found a modest predicted natural gas demand ranging from 280 million cubic feet (MMcf) per day in 2015 increasing to over 500 MMcf per day by 2035.

While this study examined opportunities presented by a spur line that would start at a take-off point from the North Slope pipeline near Fairbanks or other Central Alaska locations near the pipeline route, it does not dismiss the assumption that South Central Alaska demand can potentially be met by increasing natural gas reserves from the Cook Inlet basin through exploration and development. There are both positive and negative assessments of the success expected for the exploration and development of Cook Inlet natural gas resources. The remaining option for South Central Alaska is importing LNG to meet basic demand.

The Needs Study also examined alternative cases of including additional natural gas markets for LNG, gas-to-liquids, petrochemicals and propane, and lower prices. If these alternative cases prove valid, a much larger spur pipeline would be needed; one with a capacity of 700 MMcf per day to 1,300 MMcf per day. The Needs Study notes that such a large local market withdrawal of petrochemical and propane from a natural gas pipeline from the North Slope could require design changes in the pipeline and cause significant economic and political hurdles for that project.

## c. Commission Staff's Role

One element of the Needs Study involves an estimate of the transportation tariff rate for the Alaskan pipeline and any potential spur pipeline for use in the natural gas market modeling programs. The Commission staff was asked to review the appendix to the Needs Study which supports the transportation tariff rate calculations. The Commission staff advised DOE that there is insufficient detail in the Appendix to do anything other than say that the underlying bases of the analysis are generally consistent with the approach the Commission uses to develop gas transportation rates for interstate pipelines, *e.g.*, the calculations reflect the net book value of the pipeline and related facilities, a 30-year, straight-line depreciation, federal and state taxes, and fuel and non-fuel costs. The approach used could yield ballpark estimates of per unit transportation charges.<sup>8</sup>

---

<sup>8</sup> There are many issues raised by the calculations that cannot be adequately analyzed or addressed absent a specific proposal, including: the appropriate capital

The Commission staff noted that the study correctly takes into account the very high pressure design of an Alaskan gas pipeline that will make treatment and economics of natural gas liquids an important factor of the overall assessment. Another adequate assumption of the Appendix is the use of the *Panhandle Eastern* equation for the evaluation required for the examination of a range of potential off-take volumes that the spur line would receive.<sup>9</sup>

## **2. Alternative Means of Construction Study**

DOE has undertaken a pre-scoping study to evaluate options, risks, and resources needed for further study. Section 109 of ANGPA states that if no application for the issuance of a certificate or amended certificate of public convenience and necessity authorizing the construction and operation of an Alaska natural gas transportation project has been filed with the Commission by the date that is 18 months after the October 13, 2004 date of enactment, the DOE shall conduct a study of alternative approaches to the construction and operation of such an Alaska natural gas transportation project. On April 13, 2006, the DOE commenced an Alternative Means of Construction Study as required by section 109 of ANGPA.

In conducting the actual alternatives study, the Act requires DOE to consult with the Secretary of the Treasury and the Secretary of the Army (acting through the Chief of Engineers) and include in the scope of the study consideration of the feasibility of establishing a Federal Government corporation to construct an Alaska natural gas transportation project. The study must also take into consideration the feasibility of securing alternative means of providing federal financing and ownership (including alternative combinations of Government and private corporate ownership) of the Alaska natural gas transportation project. Upon completion of the study, DOE must submit a report to Congress that describes the results of the study and any recommendations (including proposals for legislation to implement such recommendations).

## **3. Federal Loan Guarantee**

The DOE program for the federal loan guarantee for the Alaskan natural gas transportation project is monitoring the progress of the commercial negotiations with the State of Alaska and the bills before the Alaska state legislature. When the commercial project emerges, DOE will proceed with structuring the loan guarantee.

---

structure, the return on equity level, the presumed debt cost, the lack of amounts for general and intangible plant, the lack of inclusion of certain taxes, and rate design.

<sup>9</sup> Handbook of Natural Gas Engineering, Katz, et al., p. 626 (1959).

## **F. Commission's Environmental Review - Update**

As described in the First Report, the Commission has been active for the past several years in preparing to fulfill its NEPA and certificate application responsibilities. The First Report includes a list of the siting activities associated with an Alaska natural gas pipeline in which the Commission staff has participated. Since that time, the staffs of the Commission and the Department of the Interior have met to continue discussions of resources and training needs for the EIS and project permitting. In April 2006, representatives of the steel industry met with Commission staff to present their perspective about the design, testing, and manufacturing of the great amount of steel pipe that will be needed for the Alaskan pipeline project. As discussed above, the Commission staff participated in the completion of the Federal agency MOU. Finally, the Commission staff plans to tour the route of the northern segment of the pipeline in July 2006.

With the release of the draft fiscal contract by Governor Murkowski in May 2006, the governor's administration and the Producer Group have provided more details on a schedule for planning, permitting, and constructing the project. In summary, the Producer Group estimates a period of 10 years from the beginning of formal project planning activities to date of first gas deliveries. The project planning activities would commence within 90 days after the signing of the fiscal contract. Following the planning phase would be the Front-End Engineering Design, the open-season process, field data collection (the open season and field work could occur simultaneously), and preparation of an application for a FERC certificate of public convenience and necessity.

In its conceptual schedule, the Producer Group estimates it could file permit applications at the end of 2008 if the commercial negotiations are completed with the State of Alaska in 2006. This timeline reflects the complexity of the project, which requires more than two years from initial planning to the filing of permit applications. The Commission staff and the participating federal agencies have committed to assisting in the development of the application through the Commission's pre-filing process. The purpose of the pre-filing process is to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the Commission. Based on its consultations with the industry, the Commission staff had previously estimated that the development of the application, and the concurrent pre-filing process, could take as long as 18 months in order to complete the substantial field data collection and engineering design. This timeframe fits easily within the Producer Group's estimated two years.

The Commission's First Report described some of the difficulties associated with the development of an application for an Alaska pipeline project. Specifically, it noted that two field seasons may be necessary to complete the required field studies and surveys due to the shortened field season in Alaska and that mobilization needs to begin

early in the calendar year to get the personnel and equipment into the field the following summer. The First Report concluded that any realistic expectation for the development of an application in 2006 was dependent on the legislative approval of a fiscal contract with the State of Alaska under the Stranded Gas Development Act soon after issuance of the First Report in February. Because no agreement has been finalized at the time of this report, the opportunity for beginning meaningful development of an application in 2006 has been missed.

If a project sponsor is ready to begin developing its application and conducting field surveys in the spring of 2007, it is possible that an application would be filed at the Commission before the end of 2008. The ANGPA streamlines the time from the filing of a complete application to final certificate from the Commission, mandating that the EIS be completed within 18 months, and that the Commission must issue a final certificate order no more than 60 days after the EIS is final. The Commission staff stands ready to begin processing any complete application that is filed for an Alaska natural gas transportation project and to meet the processing timelines established by the ANGPA. Whether the project sponsor begins developing an application and conducting field surveys in the spring of 2007 depends largely on the Alaska state legislature acting this summer. If not, the Alaska gas pipeline will be further delayed.

## **G. Developments in Canada**

The Mackenzie Gas Project continues under consideration by the Government of Canada. The Mackenzie Gas Project includes development of natural gas fields, gathering lines, and processing facilities in the Mackenzie River Delta of Canada's Northwest Territories, and a transportation pipeline along the Mackenzie River Valley to deliver the natural gas to market. This major pipeline project consists of over 750 miles of 30-inch natural gas transmission pipeline that would transport 1.2 billion cubic feet (Bcf) per day of new Arctic gas to market. The capital cost of this project is estimated at over \$7 billion, and it is planned to be in operation by 2011. However, it has been reported in the press that Imperial Oil Ltd., the lead partner proposing the project, will revise the project's cost estimate and construction schedule within the next six months.

Although this project is neither a complement to nor competitor of an Alaska natural gas pipeline, its development presents certain problems and risks to an Alaskan project. First, industry reports indicate that there will not be enough pipeline grade steel available to construct both projects at the same time. Similarly, there could be a shortage of the skilled labor force required to build two technically-challenging Arctic projects of such magnitude at the same time.

Sponsors of the Mackenzie Gas Project have been discussing royalty and fiscal issues concerning the project with the Government of Canada, but it is reported that these talks have paused pending the review of the project's cost estimate and construction

schedule. However, the regulatory review process in Canada for the Mackenzie Gas Project is continuing as scheduled. The Joint Review Panel is examining issues and impacts in the areas of the natural and human environments associated with the proposed Mackenzie Gas Project to determine how the project could affect the land, environment and lives of people and communities in the project area.<sup>10</sup> The National Energy Board (NEB) is reviewing the technical aspects, such as engineering, economic feasibility, tolls and tariffs, and lands issues associated with the proposed project. The NEB will consider the Joint Review Panel's report in deciding whether the project is in the public interest. If at the end of the process the NEB Panel decides the project is in the public interest, the federal Cabinet must then decide whether to authorize the NEB to issue a certificate so that the project can proceed. If the NEB Panel decides that a project is not in the public interest, then no further approval of its decision is required.

### **III. Need for Greater Progress**

#### **A. Overview**

Government and industry in the United States are acting in various ways to obtain adequate natural gas supplies to satisfy future demand. There are projects being developed to access: imported LNG, deepwater Gulf of Mexico reserves, non-conventional sources – coal bed methane, tight sands and, shale – in the U.S. and Canada, Canadian Arctic reserves, as well as Alaskan natural gas. At best, it appears that the non-conventional sources of natural gas, along with production from the deepwater Gulf of Mexico, only will serve to replace declining conventional sources, albeit at higher cost. In addition, our major source of imports, pipeline gas from Canada, is expected to decline as Canadian domestic demand increases and gas production from its major production area, the Western Canadian Sedimentary Basin, declines over time.

The U.S. natural gas market increasingly is turning to imported LNG to meet incremental growth. Many nations, in partnership with commercial entities, are quickly developing LNG supply projects. In the next two to three years, the worldwide capacity to supply LNG to the market will greatly increase. Alaskan North Slope gas can also be part of the solution to the nation's natural gas needs in this generation. Alaskan gas is not the only option available to the Lower 48. Twenty years ago, Alaskan gas would have been in competition only with other North American gas production. Now, Alaskan natural gas production will also face competition from low-cost production in LNG exporting countries across the globe. Natural gas markets have changed significantly over the past 20 years, and are becoming increasingly international markets.

---

<sup>10</sup> The Joint Review Panel for the Mackenzie Gas Project is a seven-member, independent body that will evaluate the potential impacts of the project on the environment and lives of the people in the project area.

Prompt action by the project sponsors, Governor Murkowski and the Alaska legislature is necessary to enable Alaska to provide a reliable continental source of natural gas for the Lower 48 that will not only assist in the growth of the U.S. economy, but also contribute to the economic well being of the State of Alaska. Timely action on an Alaska natural gas project will allow North Slope gas to reach the Lower 48 states.

## B. Reserves: Alaska vis-a-vis the World

It is estimated that as of January 1, 2005 there are 6,044 trillion cubic feet (Tcf) of proved gas reserves in the world, 5,780 Tcf of which is located outside of North America.<sup>11</sup> Of the North American total (264 Tcf), the North Slope of Alaska contains about 35 Tcf of proved reserves. To put this in perspective, while North Slope natural gas reserves represent approximately 13 percent of North American gas reserves, they are less than 1 percent of the world's gas reserves. Consequently, potential importers and energy infrastructure developers are realizing that there is an opportunity to secure substantial new gas supplies for the U.S. by looking abroad.

Of the top five countries with the most proved natural gas reserves, Russia has 28 percent of the world total. The following chart displays the total world proved reserves and compares the top ten countries' proved reserves along with those of the Lower 48 and Alaska.



Source: Based on data from EIA International Energy 2004, Table 8.1 World Crude Oil and Natural Gas Reserves (January 1, 2005).

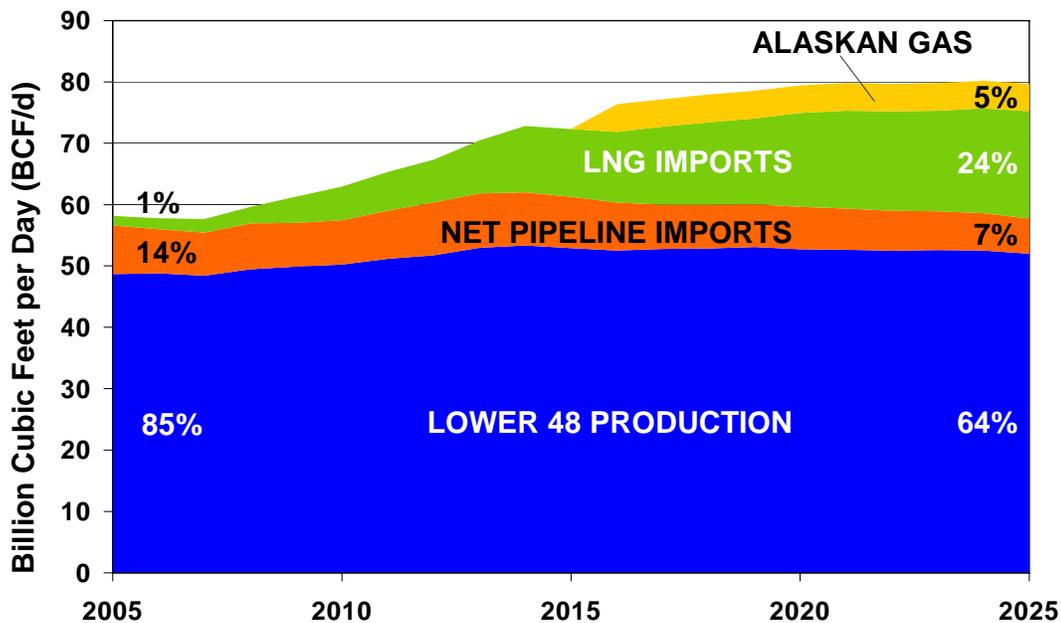
## C. Alaska Gas's Potential Market Share

Gas supply from Alaska, estimated to flow at about 4.5 Bcf per day, will only partially fulfill the nation's future natural gas needs. LNG also will be a major source of future U.S. gas supply and the necessary infrastructure is being developed. For Alaska to

<sup>11</sup> PennWell Corporation, *Oil & Gas Journal*, Vol. 102, No. 47 (December 20, 2004).

be a meaningful part of the natural gas supply mix of the U.S. in the coming years, action needs to be taken now. At best, if the draft contract were approved under the Alaskan Stranded Gas Development Act, gas would not flow in significant quantities to the Lower 48 prior to 2016. As U.S. energy markets make decisions regarding where future supplies will be obtained, they will carefully examine the likelihood that particular supplies will be available when needed. To the extent that Alaska gas is to play a role in meeting future needs, progress towards the construction of an Alaska gas pipeline is crucial.

The following chart shows the role that Alaskan gas is expected to play in the future composition of U.S. natural gas supply.



Source: Lower 48 Production, Net Pipeline Imports, and LNG Imports: Energy Information Administration, Annual Energy Outlook 2006; Alaskan Gas: Assumed Flow Rate of 4.5 Bcf per day.

#### D. The Closing Window for Alaska Gas Delivery

The Energy Information Administration (EIA) of DOE projects that demand for natural gas in the U.S. will grow by more than 23 percent between 2005 and 2025, while domestic production in the Lower 48 is expected to increase by close to 7 percent, further widening the existing gap between supply and demand.<sup>12</sup> During this same time period, the EIA projects that net pipeline imports to the U.S. will decline by 55 percent. Even if the Mackenzie Gas Project in Canada goes into operation, it is doubtful that the U.S. will

<sup>12</sup> “Annual Energy Outlook 2006,” Energy Information Administration, Reference Case Tables 13, 14 (February 2006).

see any of this gas due to the development of the Canadian oil sands in Alberta (necessitating natural gas for the mining operations), increased demand in Canada, and the decline in production from the Western Canadian Sedimentary Basin. In fact, the National Energy Board of Canada projects that by 2015, the oil sands will have a gas requirement of 2.1 Bcf per day; the oil sands gas requirement was about 0.5 Bcf per day in 2002.<sup>13</sup>

Therefore, the largest sources for growth in U.S. gas supply are Alaskan gas and LNG. As previously stated, gas flow from the Alaskan North Slope is expected to be 4.5 Bcf per day, a not inconsiderable amount. However, this amount pales in comparison to recent LNG infrastructure activity at the Commission. Beginning with the approval of the Cameron (formerly, Hackberry) LNG terminal in September 2003, the Commission has approved eleven new LNG terminals in the Lower 48 that have a total redelivery capacity of 20.6 Bcf per day. In addition, the Commission has also approved an expansion of an existing LNG terminal and an expansion of an approved (but not yet in operation) LNG terminal, totaling an additional 2.2 Bcf per day of deliverability. When combined with the nation's existing deliverability of 5.8 Bcf per day, there is the potential for 28.6 Bcf per day of deliverability from LNG. Further, there are ten new LNG sites that have been proposed to the Commission with a total delivery capacity of 11.5 Bcf per day and pending expansions for about 4.6 Bcf per day at three LNG terminals (existing and approved).

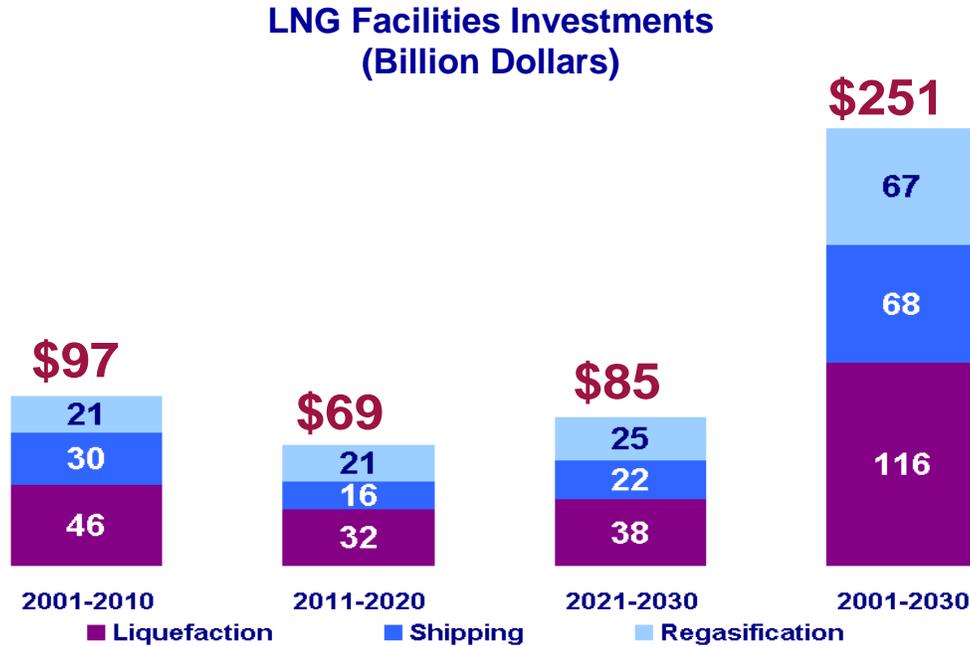
Given the large capital investment in LNG liquefaction facilities, LNG exporters will prefer to negotiate long-term arrangements to sell their LNG to provide the necessary cash flow to finance their facilities. While some LNG volumes are sold in the "spot" market, the execution of long-term arrangements will serve to make this supply a reliable source. Gas buyers in the Lower 48 are more likely to enter into long-term LNG contracts if there is no substantial progress on building an Alaska pipeline. And, the longer an Alaskan pipeline is delayed, the more strength is gained by the proponents of LNG.

Currently, much work is being done to develop the supply "chain" (production, liquefaction, shipping and regasification) that will deliver LNG to the U.S. and other countries that do not have adequate domestic production to satisfy their gas needs. The International Energy Agency states that, through the year 2030, over \$250 billion will be invested worldwide to develop LNG infrastructure. This large investment in LNG infrastructure necessarily requires commitments and establishes long-term relationships.

---

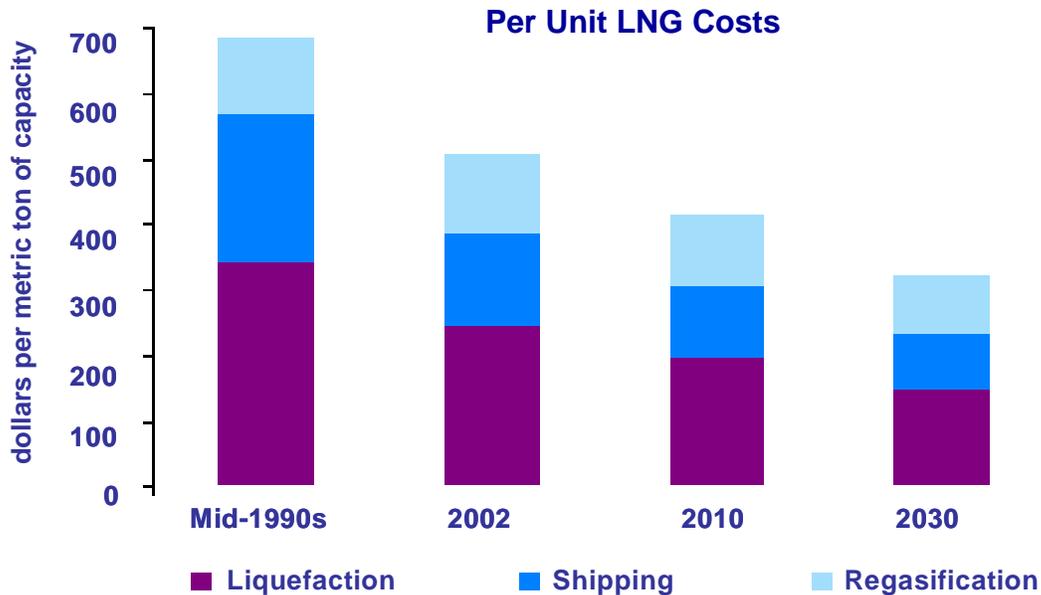
<sup>13</sup> "Canada's Oil Sands, Opportunities and Challenges to 2015: An Update," National Energy Board, p. 16 (June 2006).

The chart below shows worldwide LNG investments for the three sectors of the LNG supply chain already made or underway for the period 2001-2010, expected expenditures for the next two decades, and then a column summing the entire period.



Source: Based on data from "World Energy Investment Outlook 2003".

Also, the chart below shows that there has been a decline in investment required per unit of LNG produced, which is expected to continue as technology progresses.



Source: Based on International Energy Agency, The Global Outlook for LNG, 2004

At the time of ANGPA, an Alaskan pipeline generally following the ANGTS route had been estimated to cost \$18-20 billion. Now, estimates are running as high as \$25 billion. Any further delays may serve to make the Alaska gas pipeline uneconomic in comparison to LNG imports. As demonstrated by the magnitude of monies being invested in LNG facilities and the falling costs per unit of LNG infrastructure, Alaska is at risk of being marginalized in the search for new natural gas supplies for U.S. consumption.

#### **IV. Conclusion**

The Federal Government has made great strides to prepare for the review of a final proposal to build a natural gas transportation project for Alaskan natural gas. Significant progress on an Alaska natural gas pipeline is needed for North Slope gas to become part of the supply mix which will satisfy the U.S. need for natural gas in this generation. Alaska offers a reliable continental source of natural gas for the Lower 48 States that will help the U.S. economy to grow and thrive, and also contribute to the economic well being of the State of Alaska. Whether the long-term arrangements needed to make delivery of Alaska gas a reality are put into place in the near future will determine Alaska's role as a supplier as the dynamic global gas market moves forward to match supply with demand.