



Interior Energy Project

Quarterly Report to the Alaska State Legislature Interior Energy Project

January 5, 2018



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LIST OF ATTACHMENTS

Attachment A:	House Bill 105 Plan Memorandum
Attachment B:	IGU Resolution 2017-06R
Attachment C:	AIDEA Resolution G17-16A
Attachment D1:	LNG Storage Memorandum
Attachment D2:	Large Storage Tank Project Development Plan
Attachment D3:	AIDEA Resolution No. G17-20
Attachment E:	AIDEA Resolution No. G17-14
Attachment F:	AIDEA Resolution No. G17-21
Attachment G:	AIDEA Resolution No. G17-22

ACRONYMS LIST

ADOT&PF	Alaska Department of Transportation & Public Facilities
AIDEA	Alaska Industrial Development and Export Authority
ARRC	Alaska Railroad Corporation
CDBG	Community Development Block Grant
FA	Financing Agreement
FEED	Front End Engineering and Design
FID	Final Investment Decision
FNG	Fairbanks Natural Gas
FNSB	Fairbanks North Star Borough
HB	House Bill
IEP	Interior Energy Project
IGU	Interior Gas Utility
LNG	Liquefied natural gas
MMCF	Million cubic feet
MOU	Memorandum of Understanding
PACE	Property Assessed Clean Energy
Pentex	Pentex Alaska Natural Gas Company, LLC
PSA	Purchase and Sale Agreement
RUS	Rural Utilities Services
SETS	Sustainable Energy Transmission and Supply Development Fund
SLA	Session Laws of Alaska
Titan	Titan Alaska LNG, LLC
USDA	United States Department of Agriculture

INTRODUCTION

House Bill (HB) 105 passed the 29th Alaska Legislature on April 27, 2015, and was signed by Governor Bill Walker on June 30, 2015. This legislation was enacted to advance the Interior Energy Project (IEP), a project designed to bring low-cost energy to as many residents and businesses of Interior Alaska as possible, as quickly as possible. The financing package designed by this legislation provided the Alaska Industrial Development and Export Authority (AIDEA) the tools necessary to develop an integrated supply chain bringing low-cost natural gas or propane to residents and businesses through local utilities.

A critical component of the original financing for the IEP is the ability to provide financing for the project that will permit the development of a unified gas utility with competitive rates (Chapter 26, SLA2013). HB 105 provided AIDEA with several financial tools and a designated deposit of \$125,000,000 into the Sustainable Energy Transmission and Supply Development (SETS) Fund (AS 44.88.660). The legislation included a limitation on interest charged for the project financing and an allowance for AIDEA to waive “any limitations or requirements of its regulation that are otherwise applicable to the Alaska Industrial Development and Export Authority sustainable energy transmission and supply development fund.” This language was retained in the IEP financing tools when HB 105 became law on June 30, 2015.

HB 105 requires AIDEA to provide written quarterly reports to the Alaska State Legislature on the status of the IEP. The specific bill language includes:

“The Alaska Industrial Development and Export Authority shall submit quarterly to the legislature a written report on the Interior Energy Project. The authority shall deliver the report to the senate secretary and the chief clerk of the House of Representatives and notify the legislature that the report is available. The report must include:

- (1) a description of project progress on all components;*
- (2) an update on the status of local distribution infrastructure buildout;*
- (3) to-date and anticipated conversions; and*
- (4) a financial accounting of funds expended and funds anticipated to be spent, including loans, grants, and bonds.”*

On September 21, 2017, the AIDEA Board considered and approved a development plan that met the requirements of HB 105 outlined above. Reaching this milestone provided the Authority access to the remaining IEP financial tools. AIDEA continued to advance the IEP goals by pursuing consolidation of the existing natural gas utility infrastructure owned by AIDEA, under Pentex LLC, and infrastructure owned by the Interior Gas Utility (IGU). The combined utility is proposed to be owned and controlled by IGU. If IGU chooses to not proceed with assuming the IEP responsibility, AIDEA will be able to advance the project under its own authority.

A copy of the HB 105 plan memorandum is included with this report as Attachment A. The projected cost of delivered natural gas to residential customers from the HB 105 plan memorandum is included as

Table 1. Information contained in Table 1 is based on reduced expectation of customer conversions down to 50% over an eight-year period of time.

Table 1: Summary Cost of Gas with Storage Tax Credit

Summary Cost of Gas - With Storage Tax Credit										
Anticipated Demand (Bcf)	0.75	0.75	1.19	1.83	2.55	3.25	3.90	4.41	4.75	4.95
Cost of Gas (\$/Mcf nominal)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Natural Gas - Cook Inlet	\$7.72	\$7.72	\$7.72	\$7.72	\$7.87	\$8.03	\$8.19	\$8.36	\$8.52	\$8.69
Pipeline Trans. Cost to Pt. Mac. (3rd-party)	0.65	0.66	0.68	0.69	0.70	0.72	0.73	0.75	0.76	0.78
LNG Production - Titan Plant	4.28	4.34	3.22	2.53	2.19	2.02	1.92	1.88	1.87	1.89
Trucking - Pt. Mac. To Fairbanks	2.48	2.53	2.58	2.63	2.68	2.73	2.79	2.84	2.90	2.96
Subtotal - Cost to Utilities	\$ 15.12	\$ 15.25	\$ 14.19	\$ 13.57	\$ 13.45	\$ 13.50	\$ 13.64	\$ 13.83	\$ 14.06	\$ 14.32
Distribution, Storage, Vaporization	4.76	4.85	3.13	2.07	1.51	1.21	1.03	0.93	0.88	0.86
Total Cost of Gas before Financing	\$ 19.88	\$ 20.10	\$ 17.31	\$ 15.64	\$ 14.96	\$ 14.71	\$ 14.67	\$ 14.76	\$ 14.94	\$ 15.18
Debt	-	-	-	0.72	0.51	0.40	0.43	0.78	1.34	1.69
Total Cost of Gas (nominal)	\$ 19.88	\$ 20.10	\$ 17.31	\$ 16.35	\$ 15.48	\$ 15.11	\$ 15.10	\$ 15.54	\$ 16.28	\$ 16.87
Total Cost of Gas (real)	\$ 19.11	\$ 18.94	\$ 16.00	\$ 14.81	\$ 13.74	\$ 13.16	\$ 12.88	\$ 13.00	\$ 13.36	\$ 13.57
Equivalent Fuel Oil Price (nom. \$/gal)	\$ 2.74	\$ 2.77	\$ 2.39	\$ 2.26	\$ 2.13	\$ 2.08	\$ 2.08	\$ 2.14	\$ 2.25	\$ 2.33
Equivalent Fuel Oil Price (real \$/gal)	\$ 2.64	\$ 2.61	\$ 2.21	\$ 2.04	\$ 1.90	\$ 1.81	\$ 1.78	\$ 1.79	\$ 1.84	\$ 1.87
Planned Average Customer Rates*	\$20.20	\$20.20	\$17.31	\$16.35	\$15.48	\$15.11	\$15.10	\$15.54	\$16.28	\$16.87
Equivalent Fuel Oil Price (nom. \$/gal)	\$ 2.79	\$ 2.79	\$ 2.39	\$ 2.26	\$ 2.13	\$ 2.08	\$ 2.08	\$ 2.14	\$ 2.25	\$ 2.33
*Differs from Total Cost of Gas in 2018 and 2019 due to utility consolidation										

The supporting documents for the HB 105 plan can be downloaded at www.interiorenergyproject.com/resources.html.

This is the tenth quarterly report submitted under the requirements of HB 105. Each section of the report will correspond to one of the four items required by HB 105. This report augments the information previously provided, and covers the period from October 1, 2017 through December 31, 2017.

DESCRIPTION OF PROJECT PROGRESS ON ALL COMPONENTS

The IEP effort is structured on the following project components: Supply, Liquefaction, Transportation, Distribution (including Storage and Regasification), and Conversions.

Following negotiations in 2016, a non-binding Utility Integration Memorandum of Understanding (MOU) was approved by the IGU and AIDEA Boards in January 2017. The purpose of the MOU was to provide guidance and structure for a separate Financing Agreement (FA) and Purchase and Sale Agreement (PSA) designed to form a single, investment-grade natural gas sourcing and distribution utility within the Fairbanks North Star Borough (FNSB), through the consolidation of IGU with the AIDEA-owned Pentex natural gas system commonly referred to as FNG.

Negotiations continued on the FA, PSA and supporting documents through much of 2017. Work concluded in November 2017 leading to IGU Board approval of the FA and PSA on December 5th, through the adoption of IGU Amended Resolution # 2017-06R (Attachment B), and AIDEA Board approval of the documents on December 7th through the adoption of AIDEA Resolution G17-16A (Attachment C). As authorized, the PSA and FA documents were signed on December 13, 2017. The signed PSA and FA can be found at www.interiorenergyproject.com. Final closure of these agreements will utilize the IEP project financing authorized under Chapter 26, SLA2013 and capital funds appropriated in sec. 11, ch. 38. SLA 2015, page 32, lines 17–25.

As required by HB 105, the status of Supply, Liquefaction, Transportation, Distribution (including Storage and Regasification), and Conversions are summarized below.

Supply

Titan Alaska LNG, LLC (Titan), a Pentex subsidiary, has a current natural gas supply agreement for the existing Titan facility through April 2018.

Titan concluded negotiations on a new gas supply contract with Hilcorp to provide the current liquefaction facility with a term beginning April 1, 2018 and expiring March 31, 2021. The “All Requirements” Agreement provides Titan with enough capacity (5 million cubic feet [MMCF]/ day) for its existing customers, and allows for the expansion of up to 15 MMCF/Day upon 18 months’ advance notice to Hilcorp. The terms of the contract:

- Allow the IEP to engage with other Cook Inlet producers as early as 2021.
- Amend the existing supply contract to avoid a scheduled price increase of 4 percent slated to start on January 1, 2018.
- Offer the IEP a great deal of volume flexibility without any take or pay risk.
- Contain no price escalation over its duration.
- Remove a price differential for peak winter gas that is contained in the current supply contract.

Liquefaction

Under the terms of the signed FA and PSA documents, steps will now be taken to finalize the optimal design and commercial structure to increase the availability of liquefied natural gas (LNG) through a Front End Engineering and Design (FEED) process. At the completion of FEED, a determination will be made whether to make a Final Investment Decision (FID). If the FID is approved, a commercial solicitation will be initiated to increase the capacity of LNG available for shipment to the Interior.

Transportation

Rail option update

FNG continues to explore the potential for future shipments of LNG with the Alaska Railroad Corporation (ARRC) as part of the overall IEP effort. As work proceeds to increase LNG storage capacity in the FNSB, consideration will be given to facilitate delivery by rail in the future.

Trucking update

Three new large-capacity HEIL trailers have been fully integrated into the Pentex LNG transportation fleet. In order to enhance future options, the new trailers are configured to facilitate adding a hitch at a later date. This modification will allow pulling an additional “pup” trailer with each LNG load if this proves to be feasible.

Distribution

Systems expansion

No major changes have been made to the distribution system since the October 1, 2015, IEP Quarterly Report. Detailed maps of the build-out accomplished in 2015 are included in that report, available at www.interiorenergyproject.com.

FNG continued to work with the City of Fairbanks, FNSB, and the Alaska Department of Transportation & Public Facilities (ADOT&PF) to perform minor pipe installs in conjunction with major roadwork.

On June 29, 2017, the AIDEA Board approved Resolution No. G17- 09 authorizing Pentex subsidiaries FNG and Cassini to proceed with FEED work for the proposed Fairbanks LNG storage facility expansion in an amount not to exceed \$1,500,000. Funds for this effort are available from the FY 2014 capital appropriation made to the Authority to advance the Interior Energy Project.

On December 7, 2017, the AIDEA Board was presented with a memorandum outlining the Interior Energy Project – Fairbanks Large Storage Project plan to expand the existing LNG storage in Fairbanks through the construction of a 5.25 million gallon LNG tank. Following discussion, the AIDEA Board approved Resolution No. G17-20 authorizing additional IEP

financing of up to \$45,500,000 for LNG storage expansion. The LNG storage memorandum, project plan, and AIDEA Resolution No. G17-20 are included with this report (Attachments D1, D2, and D3).

Under the terms of the signed consolidation FA and PSA, IGU concurrence on the LNG storage expansion was required before construction could begin. This concurrence was provided by the IGU at a Board of Directors Special Meeting on December 12, 2017.

A competitive request for proposals was issued for this work with a close date of October 31, 2017. Following the end of this period, proposals received were evaluated and a contractor selected. The contract for engineering, procurement and construction of the tank and associated foundation and civil works was executed on December 22, 2017. Preliminary construction activities have begun.

Systems consolidation

As detailed above, negotiations continued throughout 2017 resulting in the signing of the Financing and Purchase and Sale agreements on December 13, 2017. These documents allow the consolidation of the AIDEA-owned Pentex assets and the IGU assets into a single, investment-grade natural gas sourcing and distribution utility within the Fairbanks North Star Borough. Closure under these contractual agreements is anticipated to take place before May 31, 2018.

Costs incurred by IGU, in its review of the technical and business integration of IGU and the Pentex assets into a single consolidated natural gas utility, and associated IGU due diligence, were approved by the AIDEA Board for inclusion in the existing IGU SETS loan. Actions to approve these inclusions were taken through the adoption of AIDEA Resolution No. G17-14, on September 21, 2017 (Attachment E) and adoption of AIDEA Resolution No. G17-21 on December 7, 2017 (Attachment F).

Cost incurred by AIDEA to facilitate and achieve signing of the FA and PSA on December 13, 2017 were authorized to be covered with IEP funds through the adoption of AIDEA Resolution No. G17-22 (Attachment G).

Conversion

Efforts to assist consumers with conversion to natural gas have centered primarily on identification of low-cost loan funds and access to favorable financing mechanisms. Work has also been done with furnace and boiler manufacturers regarding new boiler components that may reduce the cost of individual customer conversion to natural gas.

Consumer interest in conversion assistance

The Cardno Entrix *Interior Energy Project Natural Gas Conversion Analysis*, finalized in January 2014, identified a high level of interest in converting to natural gas as a lower cost,

cleaner source fuel for space heat if the delivered price approached the target of \$15 Mcf. At the time the Cardno Entrix analysis was performed, many homeowners indicated a desire to forego financing conversion and instead expressed a willingness to fund this action from personal savings due to the high cost of fuel oil. For individuals without personal funds for this purpose, the ability to finance all, or a portion, of the cost over an extended period of time scored high as a necessary tool to support their conversion to gas.

The ability to pass the obligation for repayment of conversion financing to a new owner of a building proved to be very attractive to residential owners. The ability to spread natural gas conversion costs over a 10- to 20-year period and the use of transferable financing are both attributes of two energy efficiency financing mechanisms described below that have achieved widespread use across the Lower 48.

The current low price of home heating fuel oil increases the importance of conversion assistance that will incentivize individual property owners in the FNSB to switch to natural gas when it becomes available. The original Cardno Entrix conversion estimates and demand model was modified to reflect the lower price of fuel oil and expected reduction in natural gas conversions. However, just as the price of home heating oil declined unexpectedly, the future price is uncertain.

Property Assessed Clean Energy financing

Property Assessed Clean Energy (PACE) is a means of financing improvements that increase the energy efficiency of commercial buildings. The improvements are financed with repayment accomplished through a voluntary assessment placed on the annual property tax bill. PACE financing is often structured to allow a longer payback period than is possible with conventional business loans. The strength of the PACE collection mechanism results in low default/low risk loans, which may justify a lower interest rate.

PACE legislation (HB 80) was passed by the 30th Alaska Legislature on April 17, 2017. HB 80 was signed into law by Governor Walker on October 6, 2017. The Alaska Energy Authority is now working with municipalities to determine how to best implement the law.

On-bill financing

On-bill financing allows utility customers to borrow funds that are repaid via a voluntary line item added to their standard utility bill. This financing mechanism is often used by utilities to assist new customers in overcoming the initial cost of accessing a utility service.

The current ownership and governance structure of IGU and FNG allow these local utilities the flexibility to offer an on-bill financing mechanism. Previous conversion surveys and focus groups indicated that access to such a transferable financing mechanism would help incentivize conversion to natural gas. Coupling this tool with low cost loan funds will be helpful.

Although FNG and IGU currently have access to on-bill financing as a means of assisting consumers with conversion to natural gas, it is unclear whether utilities that are rate-regulated by the Regulatory Commission of Alaska have such latitude. As a result, there is interest in legislation that would amend existing Alaska statutes to clearly allow this opportunity.

Identified funding sources for conversion assistance

The Local Conversion Working Group has identified the following possible funding sources for conversion assistance:

- I. Commercial lenders
 - a. Commercial loans as part of a community-wide conversion program
- II. Local government
 - a. PACE-enabled conversion loans
 - b. Possible local government back-stop funding for PACE loans
- III. State sources
 - a. Air quality programs
 - b. Community Development Block Grants (CDBG)
- IV. Federal sources
 - a. United States Department of Agriculture (USDA) Rural Utilities Service (RUS) Energy Efficiency and Conservation Loan Program
 - b. USDA RUS Rural Energy Savings Program loans
 - c. Clean Water Fund
 - d. United States Environmental Protection Agency Targeted Airshed Grants

CDBGs were added as a potential funding source based on work performed by IGU staff that identified specific areas within the combined FNG and IGU service territory with income characteristics that may support access to CDBG funds.

UPDATE ON THE STATUS OF LOCAL DISTRIBUTION INFRASTRUCTURE BUILD-OUT

No major changes were made to the distribution system in the last quarter other than work with the City of Fairbanks, the FNSB, and the ADOT&PF to coordinate pipe installs that could be efficiently constructed along with roadwork taking place. Detailed maps of the build-out accomplished in 2015 were included in the October 1, 2015 IEP Quarterly Report.

TO-DATE AND ANTICIPATED CONVERSIONS / CONNECTIONS

To-Date Conversions / Connections

Due to limited gas supply, no conversions are currently occurring. Until the supply is increased, there is not sufficient gas in the winter to ensure uninterrupted service to additional customers. Expanded

distribution lines installed previously have been pressurized and are available to supply gas to homes and businesses when additional natural gas is available.

Anticipated Conversions

The number of anticipated conversions provided in the October 1, 2015 IEP Quarterly Report was based on the analysis undertaken by Cardno Entrix. The report assessed “willingness to convert” based on a number of factors related to conversion costs, prior conversion history, survey data, and potential savings. A copy of that report can be found at interiorenergyproject.com/Resources%20and%20Documents/IEP_Conversion_Analysis_Final.pdf.

The significant change in the price of heating fuel required a fresh look at the “willingness to convert” with specific attention paid to the closing of the cost gap between heating fuel and the IEP natural gas price targets. Cardno Entrix was engaged to update the analysis of “willingness to convert” based on a range of scenarios of lowered heating oil prices. In the most conservative scenario, expected conversions were projected to drop by approximately one-third from the original analysis.

The change in projected willingness to convert, combined with an extension of the time needed to reach conversions from six years to eight years, results in a revision to the number of anticipated conversions and the anticipated demand for the project. Table 2 depicts the anticipated number of conversions, by year, based upon the revised Cardno Entrix analysis.

Table 2: Natural Gas Customer Projection

	2015	2016	2017	2018	2019	2020	2021	2022	2023
FNG	959	959	1,506	2,183	3,031	3,732	4,362	4,635	4,807
IGU	-	-	167	576	1,285	2,255	3,502	4,818	5,998

Anticipated / Potential Connections

The anticipated mission expansions to the Department of Defense bases in the FNSB provide an opportunity to add significant natural gas demand for the consolidated utility system by installation of natural gas heating systems in the new housing units that will be required. The IEP team is working with the FNSB and the cities of Fairbanks and North Pole to explore mechanisms to ensure those new housing units use natural gas space heating. Options to be considered include incentives (e.g., reduced cost connections) and potential building code or other mandates. The financial viability of the consolidated FNSB natural gas utility – and its ability to offer low rates attractive enough to drive conversion of existing residences – can be substantially enhanced by adding demand from the new housing units.

FINANCIAL ACCOUNTING OF FUNDS EXPENDED AND FUNDS ANTICIPATED TO BE SPENT, INCLUDING LOANS, GRANTS, AND BONDS

Table 3 outlines the IEP expenditures related to the \$57.5 million capital appropriation, the \$125 million of SETS fund capitalization, and the \$150 million of SETS bond authorization.

Table 3: Expenditures from and Remaining Funds of Legislative Appropriation & Authorization(s)

Expenditures* from and Remaining Funds of Legislative Appropriation & Authorization(s):				
	HCS CSSB 18 \$57.5 mill Cap Approp	SB 23 SLA 2013 \$125 mill SETS	SB 23 SLA 2013 \$150 mill Bonds	Total
Development Costs	IEP Phase 1 (Pre HB 105)			
	LNG Plant	7,585,150	-	7,585,150
	North Slope Pad	6,003,418	-	6,003,418
	Distribution	500,005	-	500,005
	Total	14,088,573	-	14,088,573
	IEP Phase 2 (Post HB 105)			
	Commodity	91,673	-	91,673
	LNG Plant	430,030	-	430,030
	Trucking	14,075	-	14,075
	Storage	1,517,594	-	1,517,594
Loans & Investments	Distribution	26,000	-	26,000
	Project Management	444,375	-	444,375
	Due Dilligence & Deal Structuring	534,388	-	534,388
	Total	3,058,135	-	3,058,135
	Total	17,146,708	-	17,146,708
	LNG Plant	-	-	-
	Trucking	-	-	-
	Storage	-	-	-
	Distirubtion	-	-	-
	FNG Loan	-	15,000,000	15,000,000
	IGU Loan	-	37,780,000	37,780,000
	Total	-	52,780,000	52,780,000
Total	Total Expenditure	17,146,708	52,780,000	69,926,708
	Remaining Funds	40,353,292	72,220,000 **	150,000,000
Notes Financial data per unaudited accounting system records as of 01/02/2018. * Expenditures include Actuals, Encumbrances, and Commitments as of 01/02/2018 Legislative Appropriation & Authorization(s) only include those identified above and do not include AIDEA operating, Economic Development Fund, or other sources. ** As directed by adoption of AIDEA Resolution G17-20 on 12/7/17, an additional \$45,500,000 of SETS financing has been authorized to Fairbanks Natural Gas to expand LNG storage in the FNSB.				

SUMMARY

The adoption of a HB 105 Plan by the AIDEA Board on September 21, 2017 provided access to IEP financing tools necessary to finalize, approve, and sign:

- a Purchase and Sale Agreement, and
- a separate Financing Agreement.

As a result, steps are underway to expand LNG storage capacity and LNG production capacity, and to consolidate the separate natural gas distribution infrastructure owned by AIDEA (Pentex) and the IGU under ownership and operation of the IGU.

The next quarterly report is due in early April 2018.