Interior Energy Project

MEMORANDUM

To: John Springsteen, Executive Director
Alaska Industrial Development and Export Authority

From: Gene Therriault, IEP Team Lead
Mark Gardiner, IEP Team Member
Dan Britton, CEO Pentex/Fairbanks Natural Gas

Date: September 20, 2017

Re: Interior Energy Project – HB105 Required Project Plan

This memorandum and accompanying attachments constitute an IEP project plan that complies with specific requirements of Chapter 39, SLA 2015 (HB105). In addition, the documents assess the impact of current low fuel oil prices on the IEP. Finally, this memorandum recommends the AIDEA Board approve this plan through consideration and adoption of Resolution No. G17-13.

The IEP Team recommends adoption of the HB105 compliant plan for development of the natural gas system in the Fairbanks North Star Borough (FNSB) based on incremental investment in system capital and continued low-cost utility operations. The AIDEA IEP HB105 Plan achieves the IEP objectives for significant customer rate reductions sufficient to support a critical mass of space heating fuel conversion to natural gas. The plan is based on proven municipal utility principles, establishing the foundation for integration of the existing Fairbanks Natural Gas (FNG) and Interior Gas Utility (IGU) natural gas distribution infrastructure in the FNSB into a single, consolidated utility. The Plan invests the appropriated capital funds, deploys designated funds from the Sustainable Energy Transmission and Supply (SETS) fund and makes prudent use of authorized bond financing in the early years – thereby matching the financial requirements for capital investment to the conservative estimated conversion and gas demand growth rates.

Background

In 2013, the Alaska Legislature, at the request of Governor Parnell and the Interior community, acted to authorize a financing package designed to bring North Slope gas to the Interior via trucked Liquefied Natural Gas (LNG). Financing for the project (the Interior Energy Project or "IEP") included $57.5 million of state appropriated funds and $275 million of authorized project financing consisting of $125 million appropriated to the SETS fund and an authorization of $150 million in AIDEA bonds backed by a state "moral obligation" credit support. The financing portion of the project was contained in SB23 of the 2013 Legislative session.

In the remainder of 2013 and all of 2014, AIDEA proceeded to select a project partner and advance development of a LNG plant on the North Slope of Alaska. At the end of 2014, the project development Concession Agreement for the North Slope plant expired, leading to termination of the Concession Agreement in early 2015.

During the 2015 Legislative session, HB105 reauthorized the IEP financing with new language expanding alternatives (gas sourced from other than the North Slope, propane, or small diameter pipelines) for supplying energy to the Interior of Alaska. This legislation, introduced by Governor Walker and supported by the Interior community, passed both houses of the legislature unanimously and was signed into law June 30, 2015. One change in HB105 from the previous authorization was the addition of a requirement that the AIDEA Board approve, by resolution, a project plan for the Interior Energy Project. The specific language of that requirement states:

> *"(a) The Alaska Industrial Development and Export Authority, through the Alaska Industrial Development and Export Authority sustainable energy transmission and supply development fund (AS 44.88.660), may provide financing up to a principal amount of $275,000,000 for the development, construction, and installation of, and the start-up costs of operation and maintenance for, a liquefied natural gas production plant and system and affiliated infrastructure in the state that will provide natural gas to Interior Alaska as a primary market and natural gas delivery and distribution systems and affiliated infrastructure that will provide natural gas to Interior Alaska, if the members of the Alaska Industrial Development and Export Authority approve by resolution a project plan. The project plan must*
>
> 1. *identify the source of the natural gas;*
> 2. *include the estimated cost of the project;*
> 3. *and include the estimated price of natural gas supplied to natural gas utilities in Interior Alaska before distribution to consumers."*

This memorandum, and the associated attachments, provide the documentation for Board Resolution No. G17-13, RESOLUTION OF THE ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY APPROVING AN HB 105 COMPLIANT PROJECT PLAN FOR THE INTERIOR ENERGY PROJECT.

Project Plan

The project recommended by the IEP team to the AIDEA administration for action by the AIDEA Board is founded on a "Titan 2" LNG plant in the Cook Inlet area, co-located with the existing Titan LNG facility at Point MacKenzie presently serving Interior Alaska.

The proposed Titan 2 project will add approximately 100,000 gallons per day (3Bcf per year) of LNG capacity to the present output of the Titan facility. The existing Titan plant has a production capacity of 50,000 gallons per day. Estimated capital cost for the new plant capacity is $46 million. That number will be refined and confirmed by early works Front End Engineering and Design (FEED) efforts prior to presenting a Final Investment Decision (FID) recommendation.

Additionally, FNG will construct a new 5.25 million gallon LNG storage facility in Fairbanks. The cost of this project component is estimated to be $42 million and the storage facility is expected to qualify to receive a State of Alaska LNG storage payment of $15 million under the provisions of AS 43.20.047. This storage project will meet the RCA's requirement for five days of storage and provide an increased level of seasonal supply by storing LNG produced in the summer for use in the winter. Completion of this storage facility will allow the existing LNG tanks in South Fairbanks to be re-deployed to North Pole for initial supply to the existing IGU system.

The structure of the commercial and supply chain arrangements is as follows:

I. The IGU or AIDEA SETS fund will acquire Pentex Alaska, LLC from the AIDEA Revolving Fund. Pentex is the parent company of Fairbanks Natural Gas, LLC, Arctic Energy Transport, LLC, and Titan Alaska LNG, LLC. Pentex and its subsidiaries constitute an operating natural gas enterprise currently providing natural gas utility service to 1,100 customers in Fairbanks.

II. IGU and/or Pentex will continue to operate expanded liquefaction, transportation, storage, re-gasification, and distribution of the gas to existing and new customers in the FNG and IGU service areas.

III. AIDEA will provide financing to IGU and/or Pentex consistent with HB105 authorizations and IEP goals, maintaining fiscal controls through loan terms and covenants.

IV. IGU and/or Pentex will construct the Titan 2 addition integrated with the current Titan LNG plant. A copy of the Titan Expansion Development Plan is included as Attachment A.

V. Titan will purchase feed gas for the expanded liquefaction plant. Gas will be provided into the plant via a gas sales agreement between Titan and Hilcorp Alaska. A copy of the gas sales agreement executed by the parties is included as Attachment B.

VI. Titan will arrange for transport of the LNG to the Interior. Initially, this transport is expected to be accomplished via trucking in a manner similar to the present trucking arrangement. A summary of the large capacity trailer pilot project results and projected costs are included as Attachment C.

VII. FNG will construct new LNG storage capacity sufficient to meet the RCA required 5-day minimum storage requirement as well as provide increased seasonal supply during peak winter months. A summary of the LNG storage expansion project is included as Attachment D.

VIII. IGU and FNG will distribute natural gas from the LNG storage facilities to existing and new customers.

Specific HB 105 Required Components

(1) Source of Natural Gas

Titan recently executed a new gas supply contract with Hilcorp to provide Titan's current liquefaction facility with a term beginning April 01, 2018 and expiring March 31, 2021. The All Requirements Agreement provides Titan with enough capacity (5 MMCF/ Day) for its existing customers, and allows for the expansion of up to 15 MMCF/Day after Titan provides 18 months' notice to Hilcorp. This is enough capacity to allow for the expansion of the Titan facility as described in this memo.

(2) Estimated Cost of the Project

The estimated costs of the project, including future expansions of the combined distribution systems and LNG plant, are outlined in Table 1. The capital costs are split into three categories: Already Invested, Immediate, and Demand Dependent. The immediate capital costs will be incurred upon project sanction in order to meet the goals of the IEP. The immediate capital investment will allow for demand and corresponding revenue growth. Upon sufficient revenue growth, IGU and/or Pentex will have the financial ability to incur revenue-backed debt to finance additional expansion of the LNG plant and combined distribution systems within the FNSB.

IEP Capital Program	Already Invested	Stage 1 & 2 - Consolidated Utility - Immediate	Stage 3 - Demand Dependent	Total
SOURCES OF FUNDS				
Capital Appropriation	$ 15,060,000	$ 42,440,000	$ -	$ 57,500,000
SETS Loans	42,400,000	82,600,000	-	125,000,000
Bond Financing - Capital	-	19,451,400	121,092,600	140,544,000
Storage Tax Credits	-	18,500,000	-	18,500,000
Commercial Financing	-	1,825,000	2,920,000	4,745,000
Utility Revenues	-	-	-	-
Total - Sources of Funds	**$ 57,460,000**	**$ 164,816,400**	**$ 124,012,600**	**$ 346,289,000**
USES OF FUNDS				
Pentex Acquisition	$ -	$ 59,575,000	$ -	$ 59,575,000
Liquefaction Development	-	46,200,000	25,000,000	71,200,000
Transportation	-	1,825,000	2,920,000	4,745,000
Storage & Regasification	-	52,000,000	-	52,000,000
Distribution	42,400,000	5,216,400	96,092,600	143,709,000
Other Project Costs (NS, etc.)	15,060,000	-	-	15,060,000
Total - Uses of Funds	**$ 57,460,000**	**$ 164,816,400**	**$ 124,012,600**	**$ 346,289,000**

Table 1

(3) Estimated Price of Natural Gas Supplied to Natural Gas Utilities Before Distribution to Consumers

The estimated price of natural gas supplied to Interior customers is outlined in Table 2. Under the project plan, the LNG plant is owned by IGU and/or Pentex and the capital costs are integrated into the entire utility, including the storage and distribution system. For purposes of HB105, the estimated price of natural gas (LNG) supplied to utilities is shown in the line labeled "Subtotal – Cost to Utilities".

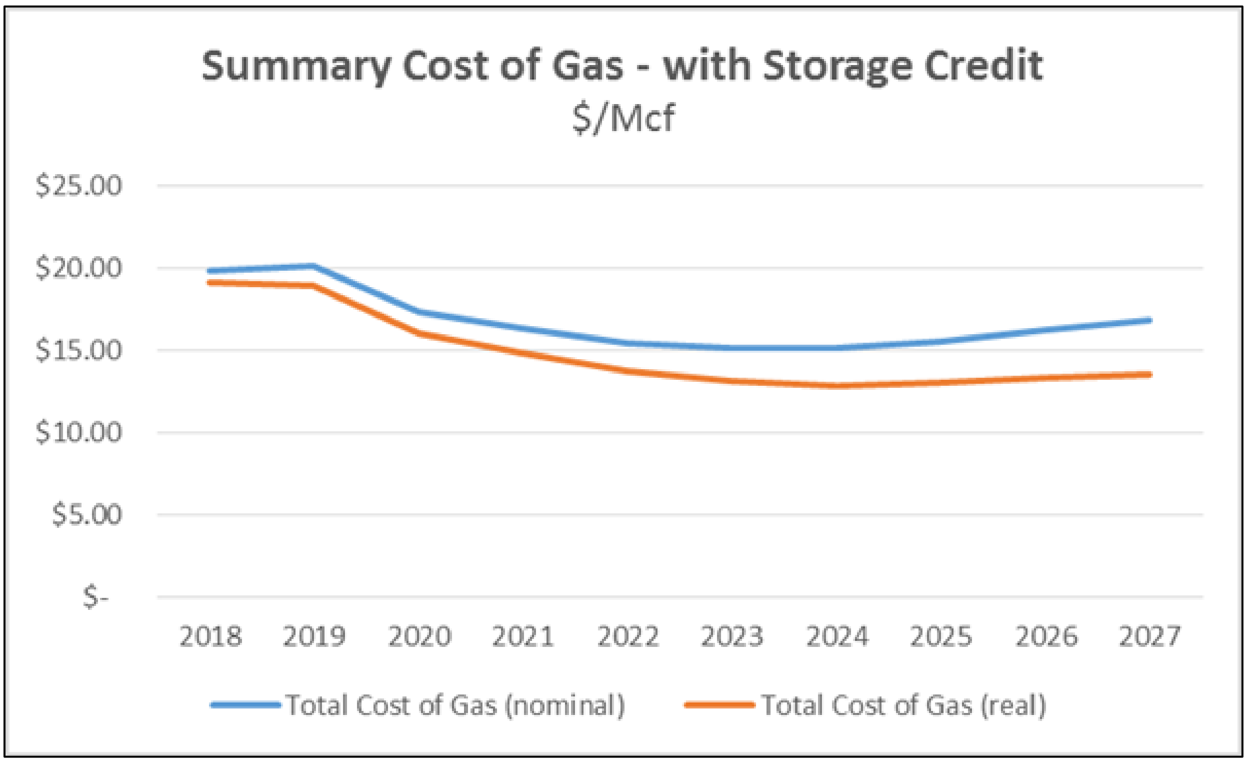
The cost of debt for the project recovers the pooled capital investment for all assets of the project identified in the category above. The total cost of gas is shown in nominal and inflation adjusted real dollars. The table below shows that after adjusting for inflation this project can meet the price goals of the IEP most years. It is anticipated that rates will be set slightly higher than costs in order to provide cash reserves and smooth out the impact to the end consumer of the year-to-year fluctuations in cost.

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**										

Table 2

Visual Comparison of Total Cost of Gas to customers (nominal vs real)

Graph 1 utilized values from Table 2 to provide a visual comparison of the Total Cost of Gas (nominal) and the Total Cost of Gas (real) over time.



Graph 1

Comparison of AIDEA IEP Projected Gas Cost to Notional IEP Target Cost

Table 3 provides a comparison of the projected AIDEA IEP cost of gas versus the pre-IEP Pentex gas price and the notional IEP price target. In order to reflect an apples-to-apples comparison, all of the costs in this table reflect an assumed 2.00% rate of inflation.

Cost of Gas (with inflation)	**2.00%**									
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Pentex Rate (pre-IEP)	$24.00	$ 24.48	$ 24.97	$ 25.47	$ 25.98	$ 26.50	$ 27.03	$ 27.57	$ 28.12	$ 28.68
IEP Notional Target Rate	$15.00	$ 15.30	$ 15.61	$ 15.92	$ 16.24	$ 16.56	$ 16.89	$ 17.23	$ 17.57	$ 17.93
AIDEA IEP Rate - w/ Storage Credit	$19.88	$ 20.10	$ 17.31	$ 16.35	$ 15.48	$ 15.11	$ 15.10	$ 15.54	$ 16.28	$ 16.87
AIDEA IEP Rate - no Storage Credit	$19.88	$20.10	$17.31	$16.96	$15.91	$15.46	$15.37	$15.80	$16.53	$17.11
% of IEP Target Savings										
AIDEA IEP Rate - w/ Storage Credit	45.8%	47.7%	81.8%	95.4%	107.8%	114.6%	117.7%	116.4%	112.2%	109.8%
AIDEA IEP Rate - no Storage Credit	45.8%	47.7%	81.8%	89.1%	103.3%	111.1%	115.0%	113.8%	109.9%	107.6%

Table 3

As Table 3 shows, the LNG storage credit/payment enables the AIDEA IEP HB105 Plan to achieve the same level of savings as the IEP Notional Target rate by 2022.

Recommendations for AIDEA Board action

The IEP Team and the AIDEA administration recommend the AIDEA Board vote to pass Resolution No. G17-13 approving this HB105 compliant project plan.

AIDEA Board passage of Resolution No. G17-13 will accomplish the following actions:

- Approve an IEP Project Plan with components specified in HB105
- Authorize AIDEA access to full IEP funding to be deployed in pursuit of the project goals
- Authorize AIDEA to consider sale of Pentex Alaska, LLC to the IGU or the AIDEA SETS fund under separate action

This action provides the commercial structure and financing tools for IGU or Pentex to control the IEP project. This includes constructing the Titan 2 LNG plant, building additional LNG storage in Fairbanks, integrating the existing FNG and IGU distribution infrastructure and, as demand and revenue permit, future expansions of the infrastructure needed to increase the natural gas availability and utilization in Interior Alaska.

The IEP Team and the AIDEA administration have determined that this project plan provides a path to lower the cost of natural gas to Interior residents and businesses.

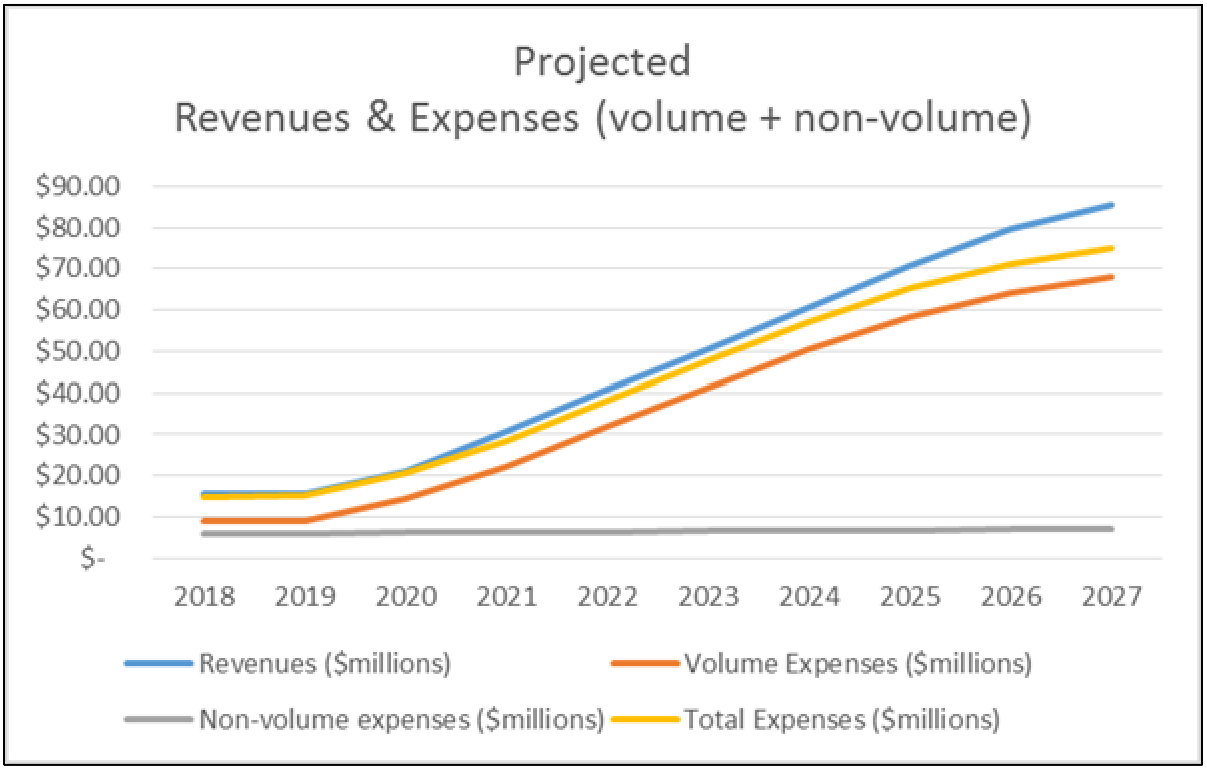
Attachments

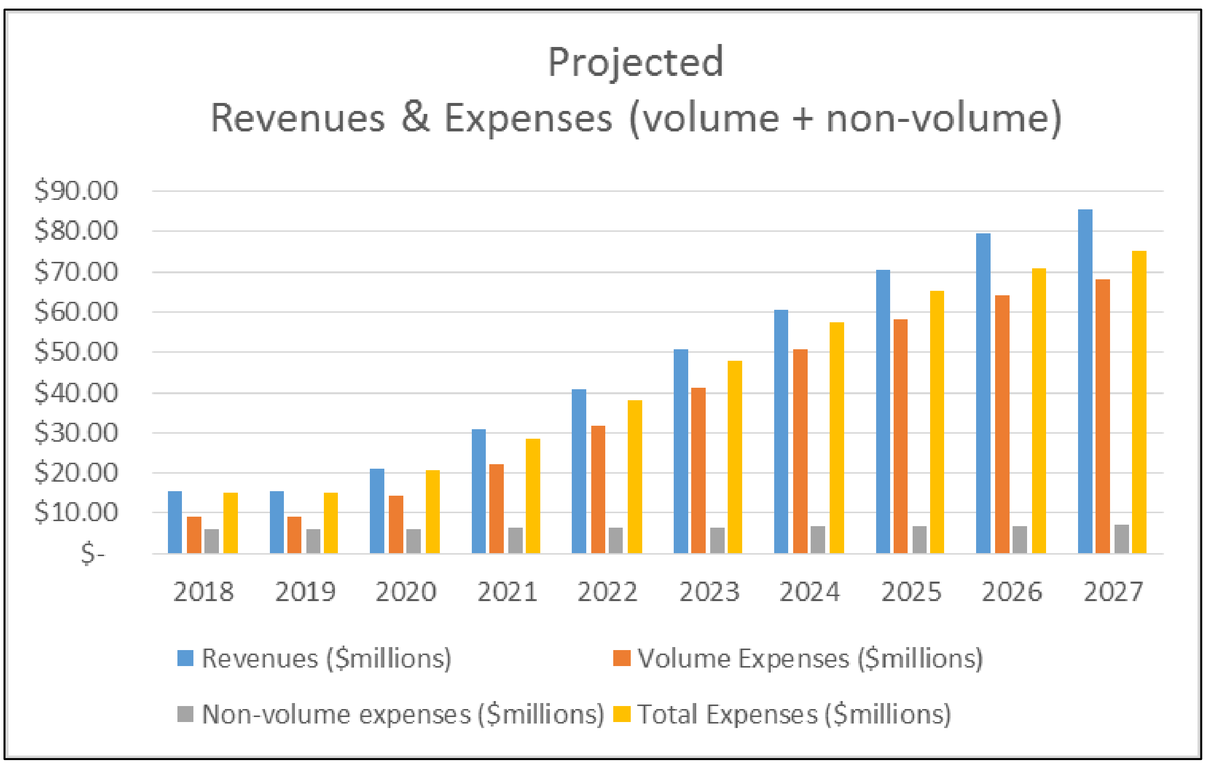
Attachment A: The development for the Titan 2 LNG plant expansion

Attachment B: Gas Sale Agreement between Titan Alaska LNG, LLC and Hilcorp Alaska

Attachment C: A summary of the large-capacity trailer pilot project results and projected costs

Attachment D: The development plan for expansion of LNG storage in Fairbanks


Projected
Revenues & Expenses (volume + non-volume)
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
Revenues ($millions)
Volume Expenses ($millions)
Non-volume expenses ($millions)
Total Expenses ($millions)


Projected
Revenues & Expenses (volume + non-volume)
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$-
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
Revenues ($millions)
Volume Expenses ($millions)
Non-volume expenses ($millions)
Total Expenses ($millions)

ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY

RESOLUTION NO. G17-13

RESOLUTION OF THE ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY APPROVING AN HB 105-COMPLIANT PROJECT PLAN FOR THE INTERIOR ENERGY PROJECT

WHEREAS, the Alaska State Legislature authorized the Alaska Industrial Development and Export Authority (the "Authority") to provide financing up to a principal amount of $275,000,000 for the development, construction, and installation of, and the start-up costs of operation and maintenance for, a liquefied natural gas production plant and system and affiliated infrastructure and natural gas delivery and distribution systems that will provide natural gas to Interior Alaska as a primary market (the entire project is known as the "Interior Energy Project");

WHEREAS, in 2015, the Alaska State Legislature passed chapter 39 of the 2015 Session Laws of Alaska (SCS CSHB 105(FIN) am S), hereafter referred to as "HB 105," which concerned the Authority and the Interior Energy Project

WHEREAS, among other things required by HB 105, Section 9 of the law specified that in order for the Authority to deploy the financing approved for the Interior Energy Project the Authority had to approve by resolution a project plan;

WHEREAS, the staff of the Authority, working in conjunction with the Authority's advisors, have developed a project plan for the Interior Energy Project, a complete copy of which with all attachments is appended to this Resolution;

WHEREAS, the proposed project plan for the Interior Energy Project meets all of the requirements of Section 9 of HB 105; and

WHEREAS, it is in the best interests of the Authority and in furtherance of the goals of the Interior Energy Project that the proposed project plan be approved.

NOW, THEREFORE, BE IT RESOLVED BY THE ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY AS FOLLOWS:

The project plan for the Interior Energy Project that is appended to this Resolution is hereby approved.

Dated at Anchorage, Alaska, this 21st day of September 2017.

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Chair

ATTEST
[SEAL]

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Secretary