Interior Energy Project

Quarterly Report to the Alaska State Legislature

Interior Energy Project

January 5, 2016

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

ACRONYMS LIST

AEA	Alaska Energy Authority
AET	Arctic Energy Transportation
AHFC	Alaska Housing Finance Corporation
AIDEA	Alaska Industrial Development and Export Authority
ARRC	Alaska Railroad Corporation
BAFO	Best and Final Offers
BP	BP (Alaska)
CPAI	ConocoPhillips Alaska, Inc.
FNG	Fairbanks Natural Gas
FNSB	Fairbanks North Star Borough
GVEA	Golden Valley Electric Association
IEP	Interior Energy Project
IGU	Interior Gas Utility
LNG	liquefied natural gas
NLG	Northern Lights Gas
PACE	Property Assessed Clean Energy
RFI	Request for Information
RFP	Request for Proposals
SETS	Sustainable Energy Transmission and Supply Development Fund

INTRODUCTION

HB105 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 provides 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.

HB105 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."

This is the second quarterly report submitted under the guidance of HB105. Each section of the report will correspond to one of the four items required by HB105. This report provides an update to the information compiled for the first quarterly report which covered the period of July 1, 2015 through September 30, 2015. The remaining 2016 reports will be submitted on the first day of April, July, and October.

DESCRIPTION OF PROJECT PROGRESS ON ALL COMPONENTS

The IEP work effort is structured based on the following project components: Supply; Liquefaction (or Alternate Supply), Transportation, Distribution (including Storage and Regasification), and Conversions. As required by HB105, the status of each of these components is summarized below.

Supply

Gas supply for the IEP remains sourced from either the North Slope of Alaska or the Cook Inlet basin. North Slope gas may be available from the existing supply contract between Golden Valley Electric Association (GVEA) and BP (Alaska) (BP). GVEA has formed a joint venture with MWH, Northern Lights Gas (NLG), to market the gas from the contract between GVEA and BP. Discussions have been held between AIDEA and NLG to determine the terms and conditions under which NLG will sell North Slope gas to the IEP partners. Initial drafts of a gas supply contract will be exchanged under a non-disclosure agreement. Potential gas supply contracts from other North Slope producers are also under evaluation.

It should be noted that Fairbanks Natural Gas (FNG) has an existing contract with ConocoPhillips Alaska Inc. (CPAI) for back-up supplies of liquefied natural gas (LNG) from CPAI's plant in Nikiski, AK. Certain parties have also evaluated the potential of importing LNG from British Columbia to offload at a Cook Inlet location for trucking or rail transport to the Interior.

Identification of the selected gas supply, costs, and expected terms for IEP supply will result from AIDEA's Request for Proposals (RFP) process to select the recommended project partner, a process outlined in detail in the Liquefaction component description. Copies of the RFP and the Request for Information (RFI) solicitation documents related to the selection of a liquefaction plant partner and Cook Inlet gas supply were included as attachments in the quarterly report submitted October 1, 2015.

Liquefaction

As of September 30, 2015, the RFP process had resulted in the identification of five top-ranked finalists for additional consideration and review. The five finalists (in alphabetical order) were: Harvest Alaska, LLC (Hilcorp Alaska, LLC); Phoenix Clean Fuels, LLC; Salix, Inc. (Avista Corporation); Spectrum LNG, LLC; and WesPac Midstream, LLC. AIDEA issued a request for Best and Final Offers (BAFO) to the five identified finalists on October 16, 2015. Information provided to the finalists on submission of BAFOs included: Instructions to Offerors; Supplemental Information; Updated Demand Profiles; Sustainable Energy Transmission and Supply Development Fund (SETS) financing schedules; and the Town Hall meeting notice. Copies of these documents are included as Attachment A of this report. All finalists submitted BFAOs by the required October 30, 2015 submittal date.

As part of the call for BAFOs, the finalists were invited to participate in a Town Hall meeting in Fairbanks on November 4, 2015. Finalists were offered an opportunity at the Town Hall meeting to provide detailed information and respond to community questions on each proposer's project. Four of

the five finalists participated in the Town Hall meeting. Each offered a public presentation 15-20 minutes in length. Each participant staffed an information table to interact with the public for the 30 minutes prior to and the 30 minutes following the public presentations. Copies of the PowerPoint slides presented by each of the four finalists are included as Attachment B of this report. Attachment B, along with the five-page finalist summaries submitted by the finalists in September (included with Attachment C of the October 2015 quarterly report) represents the publically available information on the proposals submitted by the finalists. A summary of the proceedings of the Town Hall meeting is included as Attachment C of this report.

On November 12, 2015, the RFP Evaluation Committee met to rate and rank the BAFOs submitted by the five finalists. To rank submissions, the Evaluation Committee used the process and criteria detailed in the information provided to the finalists in the request for BAFOs. The ranking process resulted in the identification of two top ranked proposers: Salix, Inc. and Spectrum LNG, LLC. Salix offered a Cook Inlet natural gas liquefaction tolling plant with an initial capacity of 3B (3 billion cubic feet) per year. Spectrum offered a North Slope natural gas liquefaction tolling plant with an initial capacity of 6B (6 billion cubic feet) per year. Committee members determined that additional information and clarifications were necessary to differentiate and choose between the two top ranked respondents. A "Request for Clarifications" was provided to the two top ranked respondents, with a deadline of January 10, 2016 to submit the required information. The Request for Clarification information was presented to the AIDEA Board and the public at the Board's December 3, 2015 meeting. A copy of the RFP status memo detailing this process was provided to the AIDEA Board on December 3, 2015, and is included as Attachment D of this report.

In mid-December 2015, the GVEA Board authorized entry into a long term oil supply contract for their turbine in North Pole, AK. This contract limits GVEA's IEP participation to summer-only supply as indicated in the demand profile section of Attachment A. The decision to maintain dual fuel capacity and participate as a summer purchaser of LNG rather than a year-round baseload customer was conveyed to the IEP team in mid-October. The agreement to purchase summer gas assists the project by providing a summer load customer for LNG. It does not; however, benefit the project to the degree a year-round baseload purchase would in helping meet the economic challenges of early year demand. Space heating costs may be higher and early year project risk may be greater for homes and businesses under a summer purchase scenario.

As of December 31, 2015, work between the top ranked respondents, AIDEA staff and contractors, and the Interior utilities (Interior Gas Utility [IGU]/FNG) was progressing toward the January 10, 2016 target date outlined above.

Transportation

Significant events have occurred in the past three months with regard to LNG transportation options including rail and trucking.

Rail option update

The Alaska Railroad Corporation (ARRC) received notice of modifications of conditions for transportation of LNG by rail from the Federal Railroad Administration on November 2, 2015. This letter increased the volumes of LNG capable of being transported during the approval period and extended the time period during which LNG can be transported to more closely match the needs of the IEP. This provides an opportunity for a Cook Inlet based supply to move LNG by rail and potentially lower the transportation costs for LNG. Salix, Inc., the top rated respondent proposing a Cook Inlet LNG option, is working closely with the Alaska Railroad on this possibility. A copy of the ARRC approval letter from the Federal Rail Administration is included as Attachment E of this report.

Trucking option update

AIDEA participated in a pilot test of a large capacity LNG trailer with FNG and trailer dealer, Western Cascade, in December 2015. LNG trailers currently in use have a capacity of approximately 10,500 gallons of LNG. The large capacity trailers have a capacity of up to 13,000 gallons of LNG. The pilot project will test the use, weight limits, maximum capacity, and overall performance of the large capacity trailer. Tests will be conducted on the Parks Highway and the Dalton Highway. If the performance of the trailer matches design expectations, the use of a large capacity trailer presents the opportunity to reduce transportation costs for LNG transported by truck. Copies of press coverage of the large capacity trailer and the pilot test are included as Attachment F of this report.

Distribution

The build-out of the distribution system in the Interior continued throughout the summer of 2015. FNG installed 29.46 miles of pipe in the core of Fairbanks during the 2015 summer construction season. This covered the Aurora Road main line, Trinidad North, Dartmouth main line, Wembly, Island Homes, Aurora Residential, and University West. When possible, FNG was able to take advantage of summer road construction projects. Installations completed in 2015 bring FNG's build-out to more than 60 miles of new distribution pipe in the core of Fairbanks. IGU installed 73 miles of pipe in the North Pole area during the same construction season. This covered the entirety of the City of North Pole and neighborhoods immediately adjacent to the city. This information was provided in Attachment G of the October 2015 quarterly report and has not changed.

On June 11, 2015, the AIDEA Board authorized acquisition of FNG's parent company, Pentex Alaska Natural Gas Company, LLC. The Pentex acquisition advances the goals of the IEP in three ways: (1) immediately lowers rates to existing FNG customers by utilizing lower cost capital and a public ownership rate structure, (2) reduces the costs of building and operating FNG and IGU by integrating the two utilities, and (3) simplifies the commercial discussions to develop a new supply of affordable energy to the Interior. The Pentex purchase includes the FNG distribution system, the Titan liquefaction plant, and the Arctic Energy Transportation, LLC (AET) assets, and closed on September 30, 2015.

On December 3, 2015 the AIDEA Board, serving as the managing Board for Pentex, was presented proposed 2016 budgets for FNG, Titan, and AET. Recommendations for interim rates to be effective January 1, 2016 accompanied the proposed 2016 budgets. AIDEA's Board took action on these budgets and proposed rates at the December 17, 2015 Board meeting. The budget and rate information provided to the AIDEA Board at their public meetings on December 3 and 17 are included as Attachment G of this report.

During this reporting period, AIDEA undertook a process to determine interest among potential Local Control Entities for the natural gas distribution system in the Fairbanks North Star Borough (FNSB) and, based on the results of that process, has begun discussions with IGU regarding IGU's potential purchase of FNG (and possibly Titan and AET). AIDEA and IGU have set a target to complete negotiations of the terms and conditions of a transfer of FNG and the overall system financing by March 31, 2016 with a targeted closing of the transactions by June 30, 2016.

AIDEA and Alaska Energy Authority (AEA) personnel, along with Interior utility representatives, met at the ENSTAR offices in Anchorage on December 4, 2015 for a design charrette. Discussions included early gas options, long and short term storage strategies and hydraulic distribution system modeling to determine build-out scenarios that resulted in minimal loss of pressure at the far ends of the distribution system under fully loaded conditions. As a result of this meeting, various pipe expansion possibilities were developed to integrate the two disparate gas utilities into one local control entity. Follow-on meetings are scheduled to complete phased build-out models and capital cost estimates for these phases. Final models and further refined storage results are expected by end of Q2 2016.

Conversions

Discussions within the FNSB on how best to assist potential customer conversion to natural gas have taken place under the auspices of a Local Conversion Working Group. This group is comprised of representatives from the two gas utilities along with local lenders, mechanical contractors, heating system technicians, staff from the Alaska Housing Finance Corporation (AHFC) and local elected officials. AIDEA IEP Team Leader Gene Therriault participates as a member of this group to provide input and assistance on behalf of AIDEA and AEA. The multiple facets of the work undertaken by the Conversion Working Group are outlined below.

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 this price, many homeowners indicated a desire to forgo financing conversion and instead expressed a willingness to fund this action from personal savings. For individuals not having 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 of time and using transferable financing are both attributes of two energy efficiency financing mechanism described below that have achieved widespread use across the Lower 48.

The recent decline in the price of home heating fuel oil is adding emphasis to the value 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 have been 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 has declined rapidly over the last two years, the future price is also uncertain.

Property Assessed Clean Energy Financing

Property Assessed Clean Energy (PACE) is a means of financing improvements that increase the energy efficiency of a building. 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 for a business than is possible with a conventional business improvement loan. In addition, the strength of the PACE collection mechanism results in low default/low risk loans which justify a lower interest rate.

Pending PACE legislation (SB56 and HB118) would empower all Alaska municipalities that levy property taxes to offer this mechanism for energy efficiency actions. Interior municipalities have expressed support for the legislation in the anticipation that it could be a tool with particular value to the IEP. The legislation advanced in both the Alaska House and Senate to their respective Finance Committees where consideration can be taken up when the Legislature reconvenes in January 2016.

SB56 and HB118 are patterned after successful legislation that recently restructured PACE in Texas. The language authorizes, but does not require, local governments to allow PACE financing to businesses within their municipal boundaries.

The Local Conversion Working Group supports the passage of PACE legislation in Alaska and is encouraging the FNSB to begin considering contractual agreements that will be required for local lenders and property owners to use this method of financing.

On-bill Financing

On-bill financing allows utility customers to borrow funds that are repaid by 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 the purchase of FNG by AIDEA allow local utilities the flexibility to offer an on-bill financing mechanism capable of assisting customers with the expense of converting to natural gas. Although previous conversion surveys and focus groups indicated the mere availability of a transferable financing mechanism would prompt a higher rate of conversion to natural gas, coupling this tool with a lower cost source of capital would also be helpful.

Identified funding sources for conversion assistance

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

I. Commercial lenders
   a. Commercial Loans as part of a community-wide conversion program
II. Local Government
   a. PACE legislation enabled conversion loans
   b. Back-stop funding for commercial debt
III. State Sources
   a. AHFC existing programs
   b. Air Quality programs
IV. Federal Sources
   a. Energy Efficiency and Conservation Loan Program
   b. Clean Water Fund
   c. Environmental Protection Agency Targeted Airshed Grants

The Local Conversion Working Group has undertaken significant work. AIDEA continues to provide a support role to ensure progress in the development of a robust and effective conversion program.

UPDATE ON THE STATUS OF LOCAL DISTRIBUTION INFRASTRUCTURE BUILD-OUT

No changes have been made to the distribution system since the October 2015 quarterly report. The distribution system build-out continued during the summer of 2015. FNG installed 29.46 miles of pipe within the core of Fairbanks. IGU installed 73 miles of pipe in and around the city of North Pole. Detailed maps depicting this build-out were provided as attachments to the October 2015 quarterly report.

TO-DATE AND ANTICIPATED CONVERSIONS

To-Date Conversions

No conversions are currently occurring prior to any increase of the gas supply. Until the supply of gas is increased through the efforts of the IEP utilizing the tools authorized by HB105, there is not sufficient gas in the winter to add additional customers. Recently installed lines are being pressurized and are available to supply gas to additional homes and businesses upon receipt of additional natural gas.

Anticipated Conversions

Additional work was undertaken during the current reporting period on anticipated conversions to natural gas. The number of anticipated conversions provided in the October 2015 quarterly report was based on the analysis undertaken by Cardno Entrix, detailed above. The work on that analysis and the underlying detail is substantial. 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 http://www.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 1/3 from the original analysis. A copy of that revised analysis is included as Attachment H of this report.

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 1 depicts the anticipated number of conversions, by year, based upon the revised Cardno analysis. Additional customers are not expected to convert until new volumes of natural gas become available with the construction of new LNG supply or storage capacity.

Table 1: 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

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

Table 2 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 2: 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 25 SLA 2012 $125 mill SETS	SB 25 SLA 2012 $150 mill Bonds	Total
Development Costs	**IEP Phase 1 (Pre HB 105)**				
	LNG Plant	7,665,405	-	-	7,665,405
	North Slope Pad	6,003,418	-	-	6,003,418
	Distribution	500,005	-	-	500,005
	Total	**14,168,828**	**-**	**-**	**14,168,828**
	IEP Phase 2 (Post HB 105)				
	Commodity	14,981	-	-	14,981
	LNG Plant	41,629	-	-	41,629
	Trucking	6,382	-	-	6,382
	Storage	912	-	-	912
	Distribution	4,213	-	-	4,213
	Project Management	121,831	-	-	121,831
	Total	**189,948**	**-**	**-**	**189,948**
	Total	**14,358,776**	**-**	**-**	**14,358,776**
Loans & Investments	**LNG Plant**	-	-	-	-
	Trucking	-	-	-	-
	Storage	-	-	-	
	Distribution				-
	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**	**14,358,776**	**52,780,000**	**-**	**67,138,776**
	Remaining Funds	**43,141,224**	**72,220,000**	**150,000,000**	**265,361,224**

Notes

Financial data per unaudited accounting system records as of 12/29/2015

**Expenditures include Actuals, Encumbrances, and Commitments as of 12/29/2015*

Legislative Appropriation & Authorization(s) only include those identified above and do not include AIDEA operating, Economic Development Fund, or other sources

SUMMARY

This status report represents the second quarterly report specified in HB105 on the status and progress of the IEP. Actions since the first quarterly report have resulted in the identification of two top rated respondents offering to provide LNG to the Interior Energy Project. The process to identify and select the top ranked respondents, collect information to clarify proposals, and to recommend a single project approach to be considered by the AIDEA Board is consistent with the presentations made during the 2015 Legislative session, and with the intent language included in HB105 guiding use of an open and competitive selection process.

AIDEA will continue to work with Interior utilities, RFP respondents, and Interior community leaders to bring a project recommendation to the AIDEA Board in early 2016. The plan brought to the Board will be consistent with HB 105 requirements.

The next quarterly report is due in April 2016.

Attachment A

Instructions to Finalists for Best and Final Offers

ADDENDUM FOUR

Request for Proposal 15-142

INTERIOR ENERGY PROJECT (IEP)

October 16, 2015

The following is intended for informational purposes. Offerors are not required to acknowledge this addendum with their Best and Final Offer.

RFP 15142 Interior Energy Project (IEP) established the first step of a two-step public process. Step one culminated with the selection of five vendors to submit Best and Final Offers (BAFO).

RFP 15124 reads "Step Two will culminate with a call for final project offers [Best and Final Offers] from each proposer and evaluated by committee as most likely to succeed. Selection criteria used in step one will not be used. The Evaluation Committee will review final project offers, evaluating and ranking as a group with the intent of coming to a consensus of their selection. The Evaluation Committee may, at its option, vote on the final ranking. The Evaluation Committee shall provide a narrative justification for their selection."

This addendum further defines the RFP's Step-Two process for the final selection of a "preferred respondent" to act as an IEP partner.

Finalists shall submit one **signed** original, eight copies, and one electronic copy of their BAFO by 2:00 PM, October 30, 2015 local Alaska Time addressed to:

Tom Erickson
Chief Procurement Officer
Alaska Industrial Development and Export Authority
813 West Northern Lights Blvd
Anchorage, AK 99503

BAFOs must be submitted in a sealed envelope and clearly marked with the "Best and Final Offer RFP 15142 Interior Energy Project (IEP)." Failure to submit your BAFO by the date and time stated above may cause your BAFO to be considered non-responsive. Questions on the content of this addendum in preparation of BAFO's shall be directed in writing to the same address or to terickson@aidea.org

BAFOs must be signed and include the following certification:

> I certify that I am a duly authorized representative of the Contractor; that this Submittal accurately represents capabilities of the Contractor and Subcontractors identified herein for providing the services indicated; and, that the requirements of the Certifications in RFP 15142, Interior Energy Project (IEP) will be complied with in full.

akenergyauthority.org
813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

BAFOs may be open for public inspection after a Notice of Intent is issued. Any propriety and confidential information shall be submitted under a separate cover and so marked if such information should not be disclosed to the public.

The Offer shall include to the extent available and applicable:

- Technical Project description
  - Current status of project design, including engineering, cost estimates, and contractor/vendor quotes and estimates
  - Detailed description of strategies to prevent current costs estimates from increasing between submission of final project offer and project sanction (capital and operating)
- Detailed Project Costs
  - All capitalized costs, including any capitalized financing or management fees
  - All fixed operating costs, including any taxes and management fees
  - All variable operating costs
- Commercial Terms
  - Structure and term of proposed pricing
  - Utility commitment expectation (all requirements, take or pay volumes, capacity reservation fee, or other)
  - Other commercial terms
- Project Financing
  - Sources and uses table for capital costs
  - Financing assumptions (term, rate, repayment priority) for all sources of capital financing
  - Method for financing development costs
- Risk Identification and Allocation (please include a brief narrative on each)
  - Allocation of construction risk between contractors, developer, utilities, and AIDEA
  - Allocation of operating risk between operator, developer, utilities, and AIDEA
  - Allocation of demand risk between developer, utilities, and AIDEA
- Detail on Ability to meet IEP project Goals
  - $15 per Mcf delivered to meter (assume $4-5 per Mcf for storage and distribution)
  - Detail any cost components within proposal (gas supply, transportation, etc)
- An electronic version of financial model, available for use by IEP team

Information on the proposing firms' experience, qualifications, and project team is not required for this submittal unless there have been changes to the project team from the original proposal submission.

Guidance for proposers to use in preparing Best and Final Offers is attached in "1 Supplemental Information." Information includes Demand Profile, AIDEA Financing Assumptions and Gas Price Assumptions

akenergyauthority.org
813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

Finalists are expected to participate in a public forum on November 4, 2015 in Fairbanks, Alaska. Providing information to the public on their Best and Final Offer. Attached is an "invitation and agenda for the public forum." Proposers should expect direct public interaction/feedback at this event.

Evaluation process:

1. Each member of the Evaluation Committee (EC) will independently score the BAFO's based on the attached document "Most Likely to Succeed"
2. Committee members will rank 3 of the 5 proposals with a score of 5, 3, and 1. Their top proposal will receive a score of 5 and no duplicate numbers will be used. Proposals not in the top 3 will receive a score of zero.
3. The EC will meet to discuss their rankings and committee members will have an opportunity to change their ranking based on committee discussions.
4. EC will select the top BAFOs based on ranking as those most likely to succeed as the preferred respondent. The EC will select a minimum of 2 respondents; however, may increase the number of respondents based on the scoring.
5. Final selection will be through discussion by the EC. The EC will list the pros and cons of the remaining respondents evaluating and ranking as a group coming to a consensus on their selection.
6. After step 5, the evaluation committee may, at the option of the Chief Procurement Officer, vote to confirm the final selection.
7. The evaluation committee shall provide a narrative justification for their final selection.

All other terms and conditions of RFP 15142 Interior Energy Project (IEP) remain the same.

END OF ADDENDUM

Sincerely,

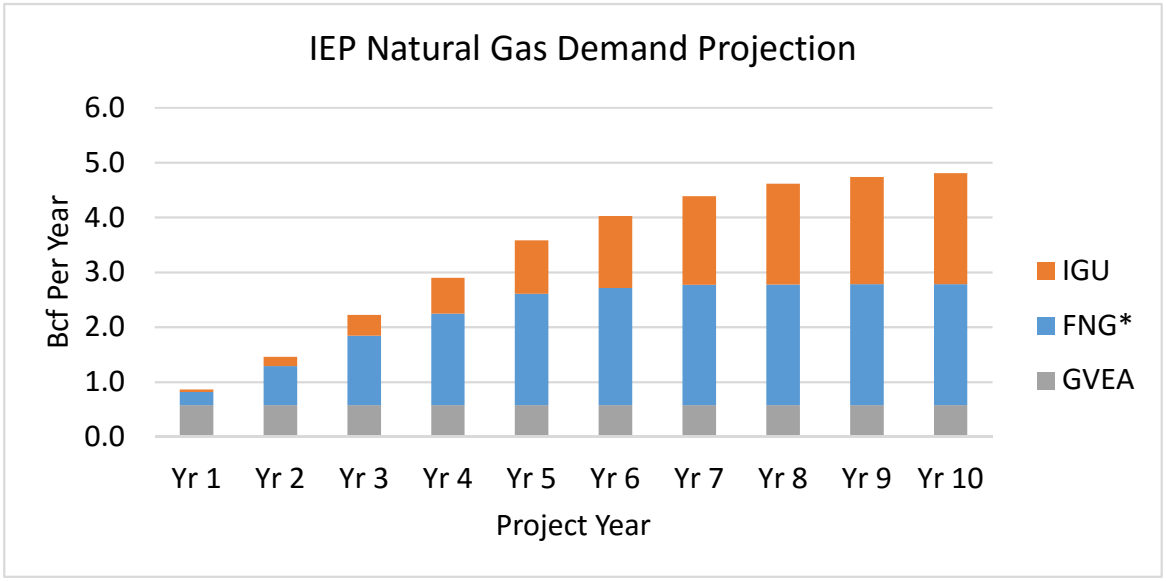
Tom Erickson
Chief Procurement Officer
terickson@aidea.org, 907-771-3951

Attachments:
1 Supplemental Information
2 Most Likely to Succeed
3 Demand Profile
4 SETS Schedule
5 Invitation and agenda for the public forum

akenergyauthority.org
813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

Natural Gas Demand by Year (Bcf)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
FNG*	0.24	0.71	1.27	1.67	2.03	2.14	2.19	2.20	2.20	2.20
IGU	0.05	0.17	0.38	0.65	0.98	1.31	1.62	1.84	1.96	2.03
GVEA	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Total	**0.87**	**1.46**	**2.22**	**2.90**	**3.58**	**4.02**	**4.39**	**4.61**	**4.74**	**4.81**



**FNG demand does not include existing 0.95 Bcf provided under existing agreements*

Month	Days	HDD	Percent of LDC Demand
Jan	31	2,181	15%
Feb	28	1,830	12%
Mar	31	1,616	11%
Apr	30	958	7%
May	31	475	5%
Jun	30	196	3%
Jul	31	149	3%
Aug	31	301	4%
Sep	30	605	5%
Oct	31	1,220	9%
Nov	30	1,804	12%
Dec	31	2,089	14%
Total	**365**	**13,423**	**100%**

GVEA Demand Profile

	Average	Total Mcf	Total Bcf
12 Month	166,435	1,997,225	2.00
4 Month	144,314	577,254	0.58
5 Month	149,828	749,142	0.75
6 Month	150,724	904,343	0.90

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	5,878	6,437	-	5,864	4,978	4,052	8,017	-	4,021	5,851	-	6,205
2	6,527	6,583	-	5,786	4,097	4,127	7,989	-	4,332	5,795	-	7,198
3	6,324	6,127	-	5,784	3,791	4,335	7,993	3,597	4,258	5,696	5,762	6,289
4	7,372	8,704	-	5,718	4,258	4,551	7,415	3,868	4,760	5,744	8,934	5,947
5	6,817	6,722	-	5,785	5,677	4,576	7,979	4,336	3,863	5,900	8,771	5,863
6	7,620	5,677	-	5,677	5,677	4,317	7,634	4,496	3,551	6,173	8,549	5,813
7	7,627	5,705	-	5,685	5,782	4,258	7,535	4,028	3,617	5,923	8,574	6,012
8	7,572	6,133	5,684	5,681	5,756	3,787	7,849	716	5,469	5,746	8,520	5,692
9	7,273	6,450	5,807	5,732	5,713	4,357	6,978	-	8,339	5,918	7,133	7,088
10	7,998	7,481	5,683	5,737	5,016	4,355	5,743	3,644	8,156	5,910	5,729	5,914
11	8,320	5,765	5,677	3,591	5,744	4,021	5,880	3,584	8,210	5,911	6,486	5,677
12	8,739	5,850	6,045	3,939	4,758	4,100	6,145	2,365	7,559	5,787	6,767	6,341
13	7,559	5,832	7,428	4,750	4,498	4,120	8,164	3,808	8,072	4,731	7,124	6,607
14	5,785	5,677	8,337	5,049	4,738	4,021	7,830	4,021	7,639	4,510	5,747	6,527
15	7,572	5,845	6,397	5,932	5,217	4,534	7,543	4,100	4,494	4,497	6,395	6,872
16	7,264	5,677	6,490	6,200	4,791	4,055	6,813	3,429	4,258	5,813	5,708	7,169
17	8,216	5,883	6,129	6,240	4,285	3,863	7,547	4,083	4,731	4,283	5,715	6,022
18	8,103	6,014	6,787	7,352	4,285	3,785	7,074	3,785	4,508	5,698	5,837	6,936
19	8,509	5,994	6,119	5,931	4,518	4,027	8,040	4,321	4,021	5,677	5,681	7,061
20	7,482	5,484	5,677	5,765	4,863	237	6,494	4,258	4,053	5,677	5,773	5,842
21	9,742	5,717	5,677	5,784	4,825	1,197	6,143	3,812	4,757	6,085	6,632	5,765
22	6,607	5,818	5,691	5,918	4,637	4,579	7,733	2,602	4,494	6,138	5,677	6,273
23	6,380	5,690	5,717	5,917	3,853	4,629	7,936	2,839	4,258	5,677	6,128	6,140
24	5,783	5,902	5,677	5,927	3,548	4,389	7,810	3,788	4,259	6,226	5,940	7,281
25	6,632	5,677	5,709	6,309	3,597	3,918	6,623	3,884	4,816	6,191	5,959	5,978
26	5,916	5,945	5,783	6,410	3,786	3,860	7,219	3,818	4,021	5,983	6,120	6,501
27	5,677	6,247	5,784	6,004	3,785	3,312	7,940	4,135	4,028	5,869	5,677	6,478
28	6,669	5,700	5,677	5,682	4,021	2,841	7,799	4,258	4,632	4,782	6,352	6,356
29	5,787	-	5,754	5,990	4,494	-	7,921	3,611	6,264	5,150	5,773	6,982
30	6,693	-	4,264	5,749	3,564	-	7,692	3,358	5,761	5,677	5,677	7,335
31	7,062	-	5,719	-	3,593	-	2,853	4,034	-	5,677	-	6,927
12 Month	221,503	170,738	143,711	171,888	142,146	108,201	224,331	102,576	155,201	174,695	183,141	199,093
4 Month					142,146	108,201	224,331	102,576				
5 Month				171,888	142,146	108,201	224,331	102,576				
6 Month				171,888	142,146	108,201	224,331	102,576	155,201			

MOST LIKELY TO SUCCEED:

This information, along with the information provided with the original proposal on qualifications and experience, will be used by the evaluation committee in determining "most likely to succeed." The committee will weigh:

- **Technical Approach**
  Proposals with a more advanced project approach and more certainty on project development and timeline will be preferred over projects less advanced and with more uncertainty on timeline. This includes project approach for operations and utility integration.
- **Detailed Costs**
  Proposals judged to have more certainty and documentation of accuracy relative to cost detail will be preferred over projects with less certainty or less documentation. Proposals with credible lower fixed annual revenue requirements will be preferred over projects with higher fixed annual revenue requirements. Proposals with credible lower capital requirements will be preferred over projects with equally credible but higher capital requirements. Proposals that demonstrate full understanding and inclusion of all operating costs and verifiable and supported capital costs will be preferred over projects with less complete or less well documented costs.
- **Commercial terms**
  Proposals that provide more certainty in pricing (price being equal) will be preferred over projects with more uncertainty in pricing. Pricing structures that minimize long-term financial commitments by the utilities will be preferred over projects requiring increased long-term financial commitments by the utilities.
- **Project Financing**
  Proposals that specify project financing details in a manner that clearly identify source and uses of funds, the impact of financing structures on rates and that share project development costs between the parties will be preferred over proposals that lack clarity or allocate early project costs away from the proposer.
- **Risk Allocation**
  Proposals that clearly delineate risk allocations between plant owners and purchasers will be preferred over proposals with unclear risk allocations. Proposals that provide a rational basis for sharing risk between the parties to reduce overall project costs will be preferred to proposals that simply allocate significant risk away from the owners. Pricing structures that shift risk (construction cost, operating costs, demand, etc.) on the plant owner will be preferred over proposals that shift cost overrun risks to the purchaser.
- **Ability to Meet IEP Goals**
  Proposals that demonstrate the opportunity to meet IEP goals will be preferred over proposals that do not demonstrate that ability. Project risk will be considered to identify proposals that offer a higher probability of meeting the IEP goals over proposals that require significant contingencies to meet the goals.
- **Experience and Qualifications**
  Proposers who demonstrate the economic and technical capacity, have prior experience in LNG and/or similar plant construction will be preferred over proposers who demonstrate less capacity or experience.

Supplemental Information

This information is being provided to assist in work that is being undertaken in preparation for the call for BAFO's.

Gas Price
North Slope: Assume the use of the GVEA contract with a price of $2.10 per MMBtu. Any North Slope proposal is expected to have access to the GVEA/BP agreement. Actual contract price is based on the price of oil.

Cook Inlet: Assume $6.00 per MMBtu. This price was originally assumed in the RFP.

AIDEA Financing
Capital Appropriation: Do not exceed $30 million of AIDEA capital appropriation. This investment will not be recovered by AIDEA during the initial term of any agreement and will have no impact on price. AIDEA will retain a proportional equity position in the project throughout the term of the project.

SETS: Do not exceed $50 million of AIDEA SETS. Assume 1% interest, 30 year term with a 5 year deferment of payment with no interest capitalization. A spreadsheet with SETS payment schedules is attached.

AIDEA SETS bonds: Assume SETS bonds are available as commercially marketed revenue bonds and will be underwritten by sales from the project. Assume they are issued as taxable bonds with an interest rate of 5% and have the same term as the project agreement. AIDEA does not expect these bonds will take non-commercial project risk.

Private Financing: Assume a minimum of $5 million of private financing. The expected terms of private financing are left to the proposer.

Demand
A spreadsheet is attached with updated demand for IGU, FNG, and GVEA. For the LDCs (IGU and FNG), monthly demand is presented as a percent of total annual demand. Assume four months of GVEA demand in the summer.

Rate	1%
Term	30
Deferment	5

10,000,000

Year	Principle	Interest Pmt	Principle Pmt	Total Pmt
1	$10,000,000			$0
2	$10,000,000			$0
3	$10,000,000			$0
4	$10,000,000			$0
5	$10,000,000			$0
6	$10,000,000	$100,000	$354,068	$454,068
7	$9,645,932	$96,459	$357,608	$454,068
8	$9,288,324	$92,883	$361,184	$454,068
9	$8,927,140	$89,271	$364,796	$454,068
10	$8,562,344	$85,623	$368,444	$454,068
11	$8,193,900	$81,939	$372,129	$454,068
12	$7,821,771	$78,218	$375,850	$454,068
13	$7,445,921	$74,459	$379,608	$454,068
14	$7,066,313	$70,663	$383,404	$454,068
15	$6,682,909	$66,829	$387,238	$454,068
16	$6,295,670	$62,957	$391,111	$454,068
17	$5,904,559	$59,046	$395,022	$454,068
18	$5,509,537	$55,095	$398,972	$454,068
19	$5,110,565	$51,106	$402,962	$454,068
20	$4,707,603	$47,076	$406,992	$454,068
21	$4,300,612	$43,006	$411,061	$454,068
22	$3,889,550	$38,896	$415,172	$454,068
23	$3,474,378	$34,744	$419,324	$454,068
24	$3,055,055	$30,551	$423,517	$454,068
25	$2,631,538	$26,315	$427,752	$454,068
26	$2,203,786	$22,038	$432,030	$454,068
27	$1,771,756	$17,718	$436,350	$454,068
28	$1,335,406	$13,354	$440,713	$454,068
29	$894,692	$8,947	$445,121	$454,068
30	$449,572	$4,496	$449,572	$454,068

Rate	1%
Term	30
Deferment	5

20,000,000

Year	Principle	Interest Pmt	Principle Pmt	Total Pmt
1	$20,000,000			$0
2	$20,000,000			$0
3	$20,000,000			$0
4	$20,000,000			$0
5	$20,000,000			$0
6	$20,000,000	$200,000	$708,135	$908,135
7	$19,291,865	$192,919	$715,216	$908,135
8	$18,576,649	$185,766	$722,369	$908,135
9	$17,854,280	$178,543	$729,592	$908,135
10	$17,124,688	$171,247	$736,888	$908,135
11	$16,387,799	$163,878	$744,257	$908,135
12	$15,643,542	$156,435	$751,700	$908,135
13	$14,891,843	$148,918	$759,217	$908,135
14	$14,132,626	$141,326	$766,809	$908,135
15	$13,365,817	$133,658	$774,477	$908,135
16	$12,591,340	$125,913	$782,222	$908,135
17	$11,809,119	$118,091	$790,044	$908,135
18	$11,019,075	$110,191	$797,944	$908,135
19	$10,221,131	$102,211	$805,924	$908,135
20	$9,415,207	$94,152	$813,983	$908,135
21	$8,601,224	$86,012	$822,123	$908,135
22	$7,779,101	$77,791	$830,344	$908,135
23	$6,948,757	$69,488	$838,647	$908,135
24	$6,110,109	$61,101	$847,034	$908,135
25	$5,263,075	$52,631	$855,504	$908,135
26	$4,407,571	$44,076	$864,059	$908,135
27	$3,543,512	$35,435	$872,700	$908,135
28	$2,670,812	$26,708	$881,427	$908,135
29	$1,789,385	$17,894	$890,241	$908,135
30	$899,144	$8,991	$899,144	$908,135

Rate	1%
Term	30
Deferment	5

30,000,000

Year	Principle	Interest Pmt	Principle Pmt	Total Pmt
1	$30,000,000			$0
2	$30,000,000			$0
3	$30,000,000			$0
4	$30,000,000			$0
5	$30,000,000			$0
6	$30,000,000	$300,000	$1,062,203	$1,362,203
7	$28,937,797	$289,378	$1,072,825	$1,362,203
8	$27,864,973	$278,650	$1,083,553	$1,362,203
9	$26,781,420	$267,814	$1,094,388	$1,362,203
10	$25,687,031	$256,870	$1,105,332	$1,362,203
11	$24,581,699	$245,817	$1,116,386	$1,362,203
12	$23,465,314	$234,653	$1,127,549	$1,362,203
13	$22,337,764	$223,378	$1,138,825	$1,362,203
14	$21,198,939	$211,989	$1,150,213	$1,362,203
15	$20,048,726	$200,487	$1,161,715	$1,362,203
16	$18,887,011	$188,870	$1,173,332	$1,362,203
17	$17,713,678	$177,137	$1,185,066	$1,362,203
18	$16,528,612	$165,286	$1,196,916	$1,362,203
19	$15,331,696	$153,317	$1,208,886	$1,362,203
20	$14,122,810	$141,228	$1,220,975	$1,362,203
21	$12,901,836	$129,018	$1,233,184	$1,362,203
22	$11,668,651	$116,687	$1,245,516	$1,362,203
23	$10,423,135	$104,231	$1,257,971	$1,362,203
24	$9,165,164	$91,652	$1,270,551	$1,362,203
25	$7,894,613	$78,946	$1,283,256	$1,362,203
26	$6,611,357	$66,114	$1,296,089	$1,362,203
27	$5,315,268	$53,153	$1,309,050	$1,362,203
28	$4,006,218	$40,062	$1,322,140	$1,362,203
29	$2,684,077	$26,841	$1,335,362	$1,362,203
30	$1,348,715	$13,487	$1,348,715	$1,362,203

Rate	1%
Term	30
Deferment	5

40,000,000

Year	Principle	Interest Pmt	Principle Pmt	Total Pmt
1	$40,000,000			$0
2	$40,000,000			$0
3	$40,000,000			$0
4	$40,000,000			$0
5	$40,000,000			$0
6	$40,000,000	$400,000	$1,416,270	$1,816,270
7	$38,583,730	$385,837	$1,430,433	$1,816,270
8	$37,153,297	$371,533	$1,444,737	$1,816,270
9	$35,708,560	$357,086	$1,459,185	$1,816,270
10	$34,249,375	$342,494	$1,473,776	$1,816,270
11	$32,775,599	$327,756	$1,488,514	$1,816,270
12	$31,287,085	$312,871	$1,503,399	$1,816,270
13	$29,783,686	$297,837	$1,518,433	$1,816,270
14	$28,265,252	$282,653	$1,533,618	$1,816,270
15	$26,731,635	$267,316	$1,548,954	$1,816,270
16	$25,182,681	$251,827	$1,564,443	$1,816,270
17	$23,618,237	$236,182	$1,580,088	$1,816,270
18	$22,038,150	$220,381	$1,595,889	$1,816,270
19	$20,442,261	$204,423	$1,611,848	$1,816,270
20	$18,830,414	$188,304	$1,627,966	$1,816,270
21	$17,202,448	$172,024	$1,644,246	$1,816,270
22	$15,558,202	$155,582	$1,660,688	$1,816,270
23	$13,897,514	$138,975	$1,677,295	$1,816,270
24	$12,220,219	$122,202	$1,694,068	$1,816,270
25	$10,526,151	$105,262	$1,711,009	$1,816,270
26	$8,815,142	$88,151	$1,728,119	$1,816,270
27	$7,087,024	$70,870	$1,745,400	$1,816,270
28	$5,341,624	$53,416	$1,762,854	$1,816,270
29	$3,578,770	$35,788	$1,780,482	$1,816,270
30	$1,798,287	$17,983	$1,798,287	$1,816,270

Rate	1%
Term	30
Deferment	5

50,000,000

Year	Principle	Interest Pmt	Principle Pmt	Total Pmt
1	$50,000,000			$0
2	$50,000,000			$0
3	$50,000,000			$0
4	$50,000,000			$0
5	$50,000,000			$0
6	$50,000,000	$500,000	$1,770,338	$2,270,338
7	$48,229,662	$482,297	$1,788,041	$2,270,338
8	$46,441,621	$464,416	$1,805,921	$2,270,338
9	$44,635,700	$446,357	$1,823,981	$2,270,338
10	$42,811,719	$428,117	$1,842,220	$2,270,338
11	$40,969,499	$409,695	$1,860,643	$2,270,338
12	$39,108,856	$391,089	$1,879,249	$2,270,338
13	$37,229,607	$372,296	$1,898,042	$2,270,338
14	$35,331,565	$353,316	$1,917,022	$2,270,338
15	$33,414,543	$334,145	$1,936,192	$2,270,338
16	$31,478,351	$314,784	$1,955,554	$2,270,338
17	$29,522,797	$295,228	$1,975,110	$2,270,338
18	$27,547,687	$275,477	$1,994,861	$2,270,338
19	$25,552,826	$255,528	$2,014,809	$2,270,338
20	$23,538,017	$235,380	$2,034,958	$2,270,338
21	$21,503,059	$215,031	$2,055,307	$2,270,338
22	$19,447,752	$194,478	$2,075,860	$2,270,338
23	$17,371,892	$173,719	$2,096,619	$2,270,338
24	$15,275,273	$152,753	$2,117,585	$2,270,338
25	$13,157,689	$131,577	$2,138,761	$2,270,338
26	$11,018,928	$110,189	$2,160,148	$2,270,338
27	$8,858,779	$88,588	$2,181,750	$2,270,338
28	$6,677,030	$66,770	$2,203,567	$2,270,338
29	$4,473,462	$44,735	$2,225,603	$2,270,338
30	$2,247,859	$22,479	$2,247,859	$2,270,338

Town Hall Meeting

November 4, 2015
5:30 pm to 8:30 pm
Pioneer Park Civic Center

This Town Hall Meeting is hosted by Fairbanks North Star Borough, City of Fairbanks, City of North Pole, the Fairbanks Chamber of Commerce and Fairbanks Economic Development at the request of Alaska Industrial Development and Export Authority (AIDEA) in their continuing effort to keep Fairbanks' residents informed on the status and progress of the Interior Energy Project (IEP).

In June of 2015 AIDEA issued an RFP for project partners. The RFP solicited for a wide range of IEP options including Cook Inlet, North Slope, pipeline and propane. Responses to the RFP were received by AIDEA on August 3, an evaluation committee reviewed the proposals, and finalists were announced on August 27. The following proposers are the selected finalists:

- Harvest Alaska, LLC (Hilcorp Alaska, LLC)
- Phoenix Clean Fuels, LLC
- Salix, Inc. (Avista Corporation)
- Spectrum LNG, LLC
- WesPac Midstream, LLC

AIDEA has requested these five finalists come to Fairbanks on November 4th and present public summaries of their best and final proposal to the Fairbanks Community. Each finalist will have an opportunity to interact with community members between 5:30 pm and 6:10 during an Open House. Starting at 6:30 each finalist will have 20 minutes to present their proposal to the audience.

5:30 to 6:10	Open House
6:10 to 6:30	Project Overview and Updates AIDEA
6:30 to 6:50	Harvest Alaska, LLC (Hilcorp Alaska, LLC)
6:50 to 7:10	Phoenix Clean Fuels, LLC
7:10 to 7:30	Salix, Inc. (Avista Corporation)
7:30 to 7:50	Spectrum LNG, LLC
7:50 to 8:10	WesPac Midstream, LLC
8:10 to 8:30	Open House and questions
8:30	Adjourn

Public comment will be solicited during the Open House and again at the conclusion of the presentations.

Attachment B

November 4, 2015

Town Hall Finalist Presentations

PHOENIX
CLEAN FUELS, LLC.

SCIMATION
Value Creation through Innovative Technology Solutions

TDX power
a tanadgusix company

SLR
global environmental solutions

Phoenix Clean Fuels

- Scimation
  - Project Development/Management
  - Engineering
- TDX
  - Project Management
  - Operations and Maintenance
- SLR
  - Environmental Engineering
  - Compliance
- GE Oil & Gas
  - Liquefaction Technology
  - Engineering, Procurement, and Construction
- Alaska Industrial
  - LNG Transportation and Logistics

PHOENIX
CLEAN FUELS, LLC.

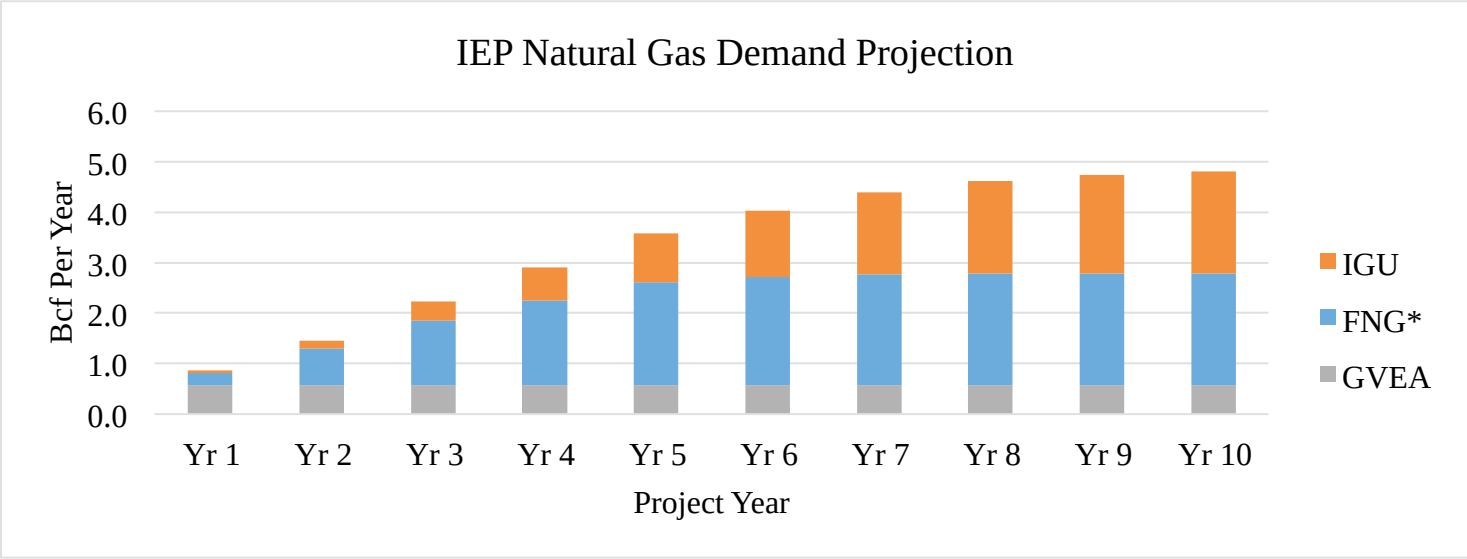
Our Strategy

- Locate the liquefaction plant at source of lowest cost feed gas
- Utilize proven, scalable technology backed by the industry leader in cryogenic processing
- Team with Alaskan entities that have proven track records operating on the North Slope
- Control transportation costs by capitalizing the trailers
- Apply the optimum combination of State financing and outside financing
- Adopt a business model that provides the lowest cost LNG to Fairbanks

PHOENIX
CLEAN FUELS, LLC.

Natural Gas Demand

- Two phase project approach
  - Phase one – 3.0 Bcf/year capacity (100,000 gallons per day)
  - Phase two – 6.0 Bcf/year capacity (200,000 gallons per day)



PHOENIX
CLEAN FUELS, LLC.

Liquefaction Technology

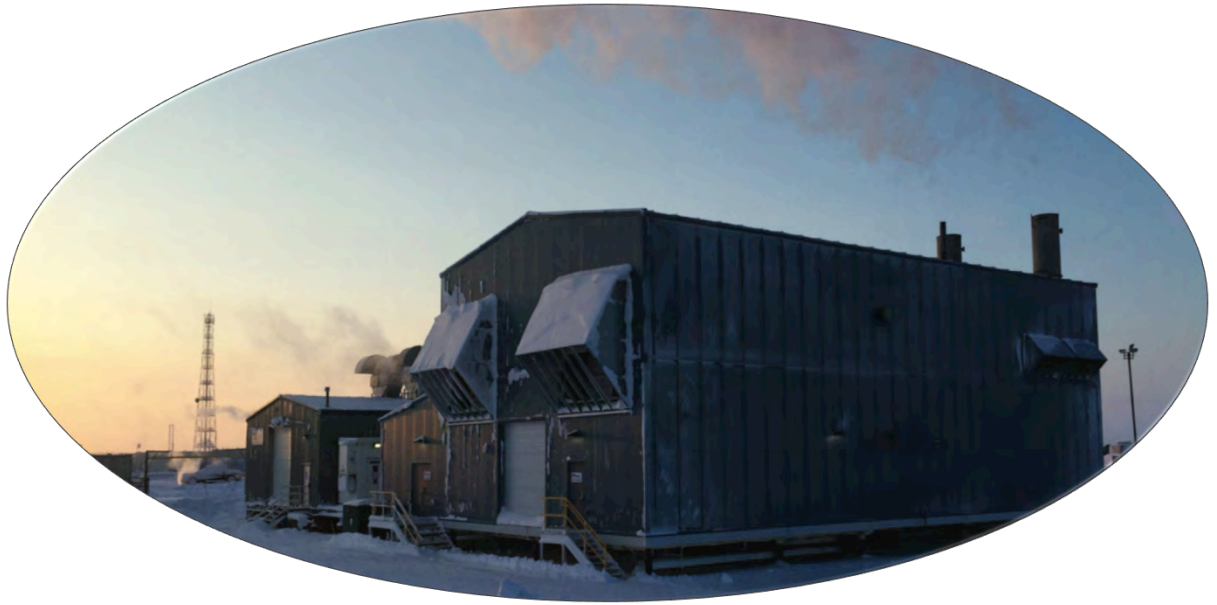
- Modular design
  - Ease of installation
  - Transportability
  - Reduced “sunk” costs
- Performance Guarantees
  - Delivery
  - Throughput
  - Efficiency
- Industry leader

North Slope Experience

- Over $50 MM of installed projects in Deadhorse, AK in 2014
  - 1,000 barrel/day advanced oil recovery/processing plant
  - 15 megawatt expansion of power generation facility
- Over 13 years operating on the North Slope
  - Actual operating costs used

    for estimating proposed project costs
- Team of accomplished entrepreneurs,

  engineers, management and financial experts



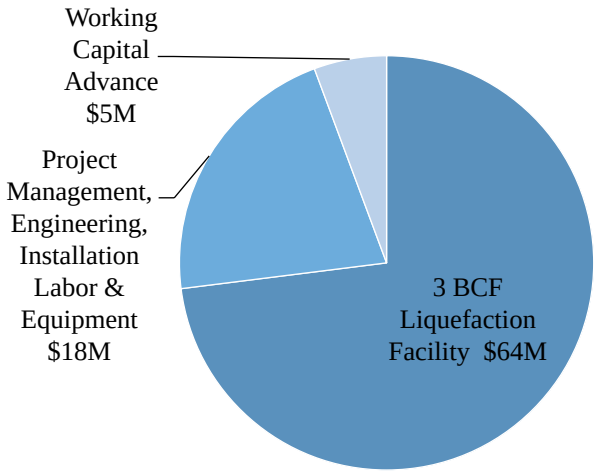
LNG Transportation

- Phoenix owned LNG trailers
- Experienced North Pole logistics company
  - Efficient integrated operations
  - Ability to scale up or down
  - Ability to provide trailer maintenance
- Long term agreement offers pricing certainty

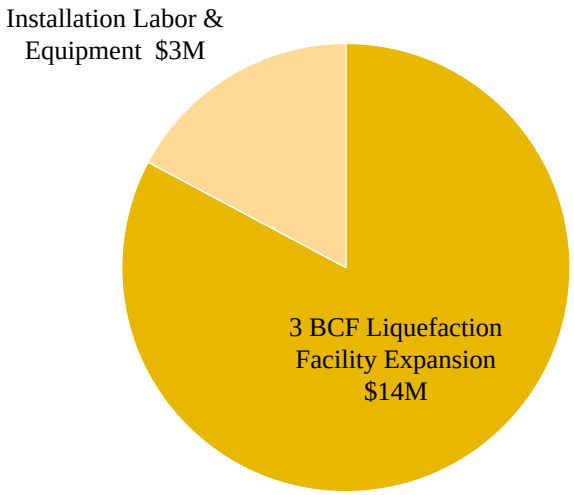
PHOENIX
CLEAN FUELS, LLC.

Phoenix Project Capital Costs

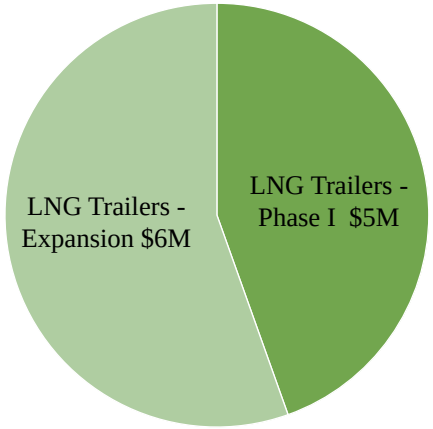
Phase One Capital Costs



Expansion Capital Costs

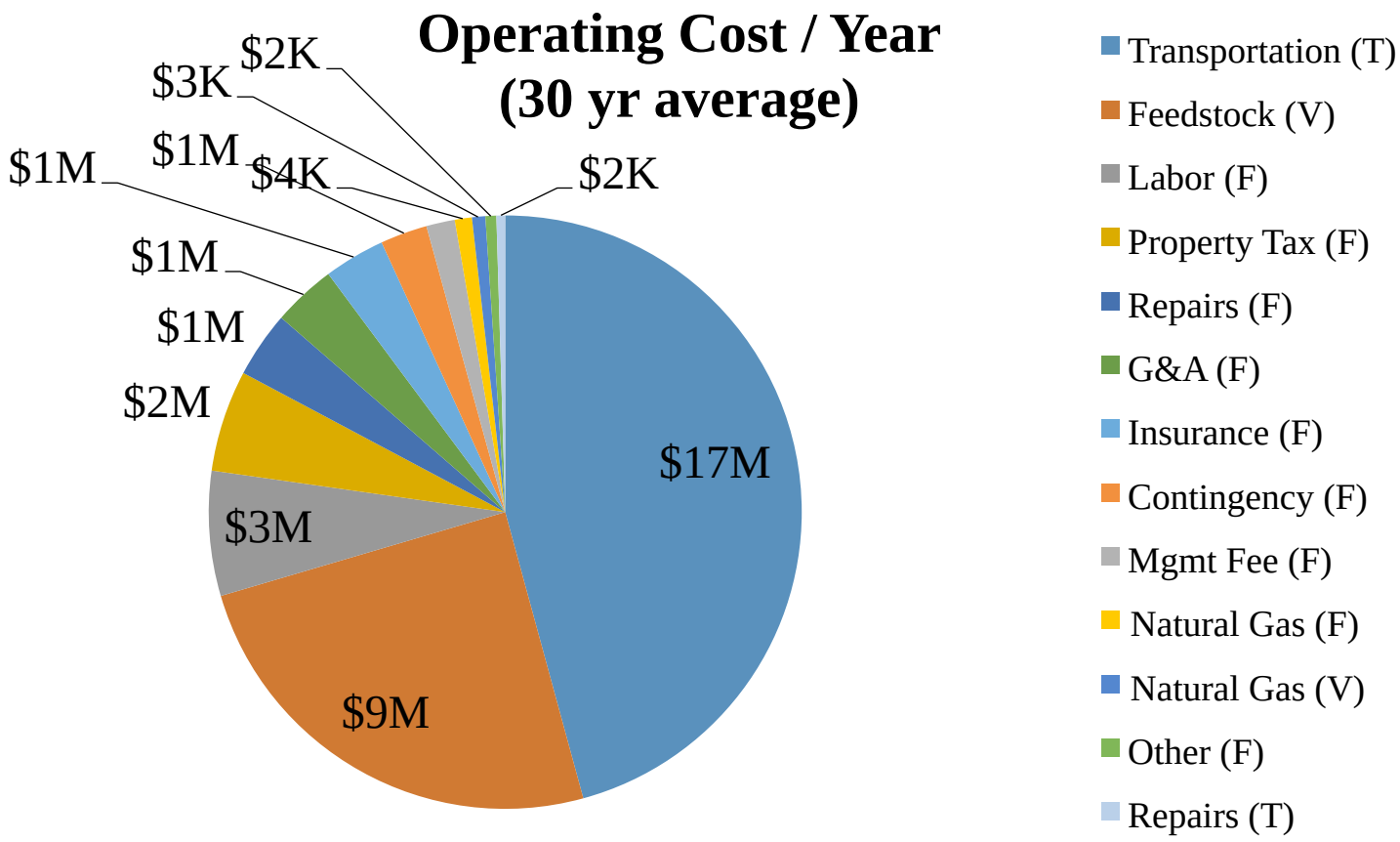


LNG Trailer Capital Costs – Phase One and Expansion



PHOENIX
CLEAN FUELS, LLC.

Phoenix Operating Costs



PHOENIX
CLEAN FUELS, LLC.

Project Financing

Phase One

$30M
- Capital Appropriation from AIDEA

$44M
- SB 23 SETS
- 1% interest rate
- 30 year term, 5 year deferral P&I

$18M
- Outside Financing
- 4% interest rate
- 18 year term, 3 year deferral Principle only

Phase Two

$6M
- SB 23 SETS
- 1% interest rate
- 27 year term, 5 year deferral P&I

$17M
- AIDEA Bonds/Outside Financing
- 5% interest rate
- 27 year term, 5 year deferral P&I

PHOENIX
CLEAN FUELS, LLC.

Project Schedule

Milestone		Start	End
Commercial			
	LNG Off Take Agreement(s)	1/16	4/16
	Natural Gas Feedstock Agreement	1/16	4/16
	Operating Agreements (MSAs)	3/16	6/16
Design and Engineering			
	Front End Engineering and Design	2/16	7/16
	Design and Engineering	1/16	12/16
	Environmental Engineering/Permitting	4/16	9/17
Procurement			
	Site Improvement Contracting	7/16	10/16
	Site Installation Contracting	8/16	11/16
Fabrication			
	Modular Liquefaction Plant	4/16	2/17
	LNG Trailers	3/16	7/17
Installation and Commissioning			
	Site Improvement - Feed gas Pipeline Installation	1/17	4/17
	Site Improvement - Pad and Piling Installation	11/16	1/17
	Installation - Plant Foundations	2/17	3/17
	Installation - Plant Installation Labor and Equipment	4/17	6/17
	Installation - Plant Enclosures	5/17	6/17
	Liquefaction Plant Commissioning	6/17	9/17
Operations Planning			
	Operator Certification and Training	2/17	6/17
Commence Normal Operations			
	Start of Normal Operations	9/17	9/17

PHOENIX
CLEAN FUELS, LLC.

The Results

Natural Gas Feedstock Supply

Cost: $ 2.10/MMBTU

Liquefaction Facility

Cost: $ 3.49/MMBTU

Transportation to Fairbanks

Cost: $ 4.06/MMBTU

Distribution to Customer

Cost: $ 4.00-5.00/MMBTU

PHOENIX
CLEAN FUELS, LLC.

Closing

- Phoenix has engineered a solution to meet the needs of the Interior Energy Project
- Experienced project team that is assembled and ready to partner with AIDEA to execute the project
- The Phoenix project solves an environmental issue for the Interior and will also be something the State of Alaska will be proud of for many years

SALIX™
CUSTOM LNG SOLUTIONS

Interior Energy Project
Salix Liquefaction Proposal

Interior Energy Project Town Hall For RFP Finalists - November 4, 2015

an Avista Corp. company

Salix/Avista – Mission & Goals

It's About the Customers and the Community

- Providing safe, affordable, reliable, and dependable energy solutions
- Diversification: Making more energy options available to serve the community, now and into the future
- Energy solutions leading to a cleaner environment

Working on Energy Solutions for You

- Quality team of professionals
- Bringing together industry experience

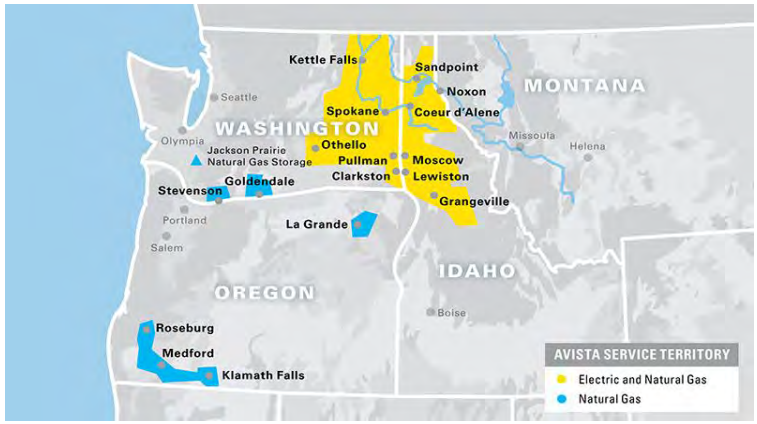
About Avista Corp. and Salix, Inc.

- Incorporated in the state of Washington in 1889
- Headquartered in Spokane, Washington
- Utility operations in five states (WA, OR, ID, MT, AK)
- Over 1,500 utility employees
- Core business is the regulated utility
  - Electric power since 1889
  - Natural gas since 1958
- Salix, Inc. unregulated LNG project development subsidiary

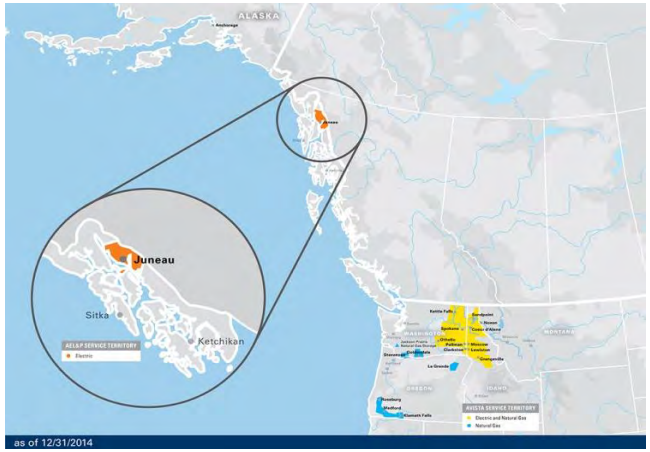
SALIX™
CUSTOM LNG SOLUTIONS

Avista and AEL&P Service Areas

- Serves electric and natural gas customers in eastern Washington and northern Idaho, and natural gas customers in southern and eastern Oregon (30,000 square miles)
- Population of service area 1.6 million
  - 370,000 electric customers, 330,000 natural gas customers
- Has one of the smallest carbon footprints among America's 100 largest power producers



- Serves electric customers in Juneau, Alaska
- Population of service area 32,000+
  - 16,400+ electric customers
- Investigating the opportunity to bring natural gas to the Southeast Alaska area



SALIX™ CUSTOM LNG SOLUTIONS

Avista - Financial Background

2014

Total Assets	$4.7B
Total Revenue	$1.5B
Net Income	$192M

NYSE AVA

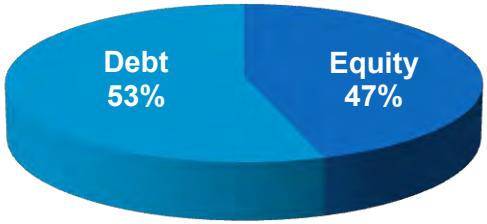
Market Capitalization*	$2.1B
Dividend Yield*	3.87%

**Based on closing price of $33.58 on 11/3/15*

Investment-grade financial profile

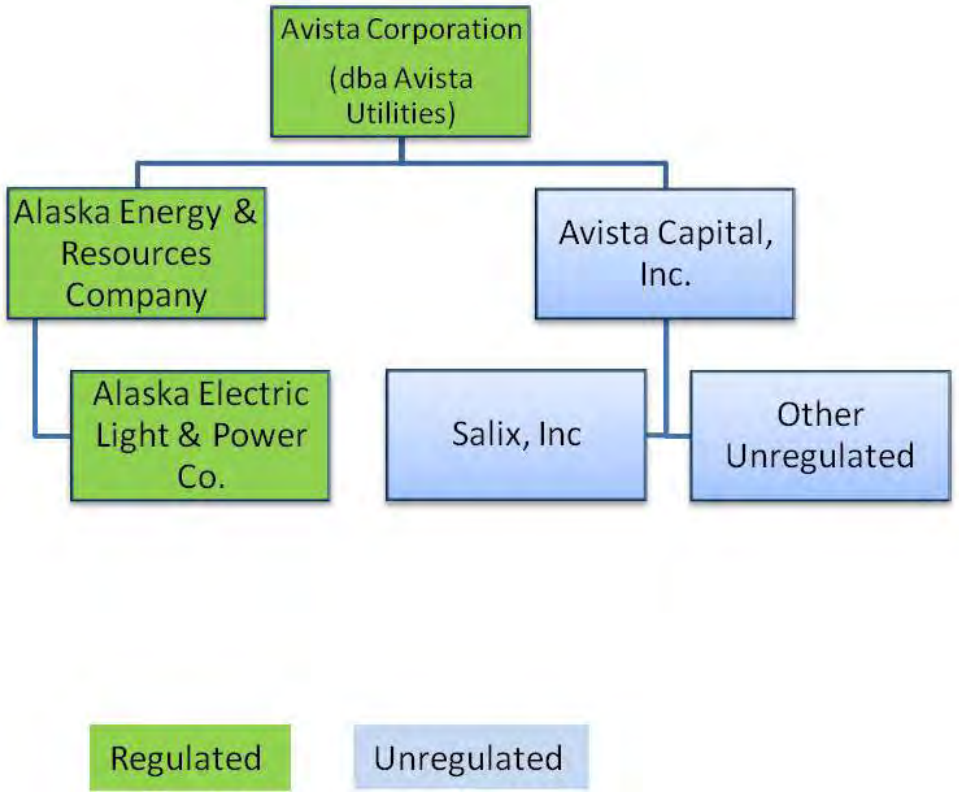
	S&P	Moody's
Corporate Credit/Issuer Rating	BBB	Baa1
Outlook	Stable	Stable

Capital Structure



Salix – Objectives

- **Unregulated Subsidiary**
- **Advisor for Natural Gas Purchasing Strategies**
- **Exploring LNG Project Opportunities**
  - Remote generation and LDC
  - Marine
  - Rail
  - Other
  - Western North America focus



SALIX™ CUSTOM LNG SOLUTIONS

Experienced LNG Team

SALIX™
CUSTOM LNG SOLUTIONS

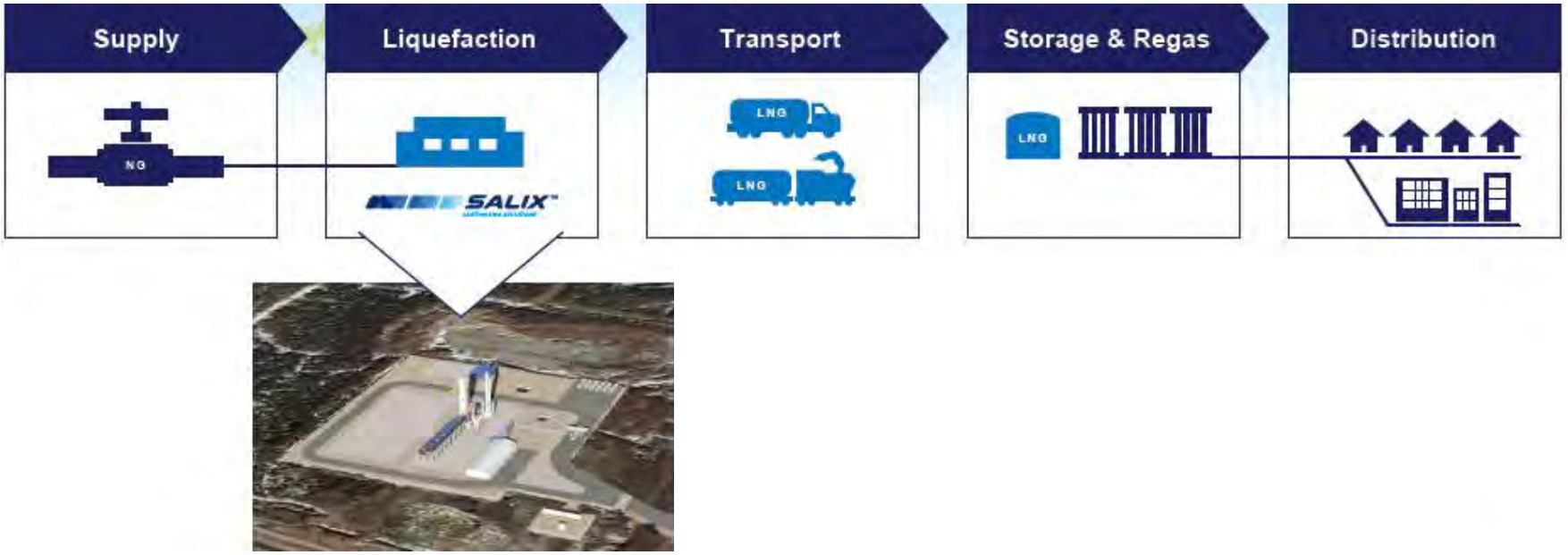
CHART®
Innovation. Experience. Performance.

HASKELL

HDR

BRAEMAR

Supply Chain



SALIX™
CUSTOM LNG SOLUTIONS

RFP Proposal

100,000 Gallon/Day Cook Inlet Liquefaction Plant

- Expandable to 200,000 gallons/day
- “Cost of service” basis for liquefaction tolling
- Truck delivery with possible future rail delivery option
- Project Financing - $68 million
  - $30 million AIDEA capital appropriation
  - $28 million AIDEA SB23 SETS funds
  - $10 million Salix investment

RFP Proposal

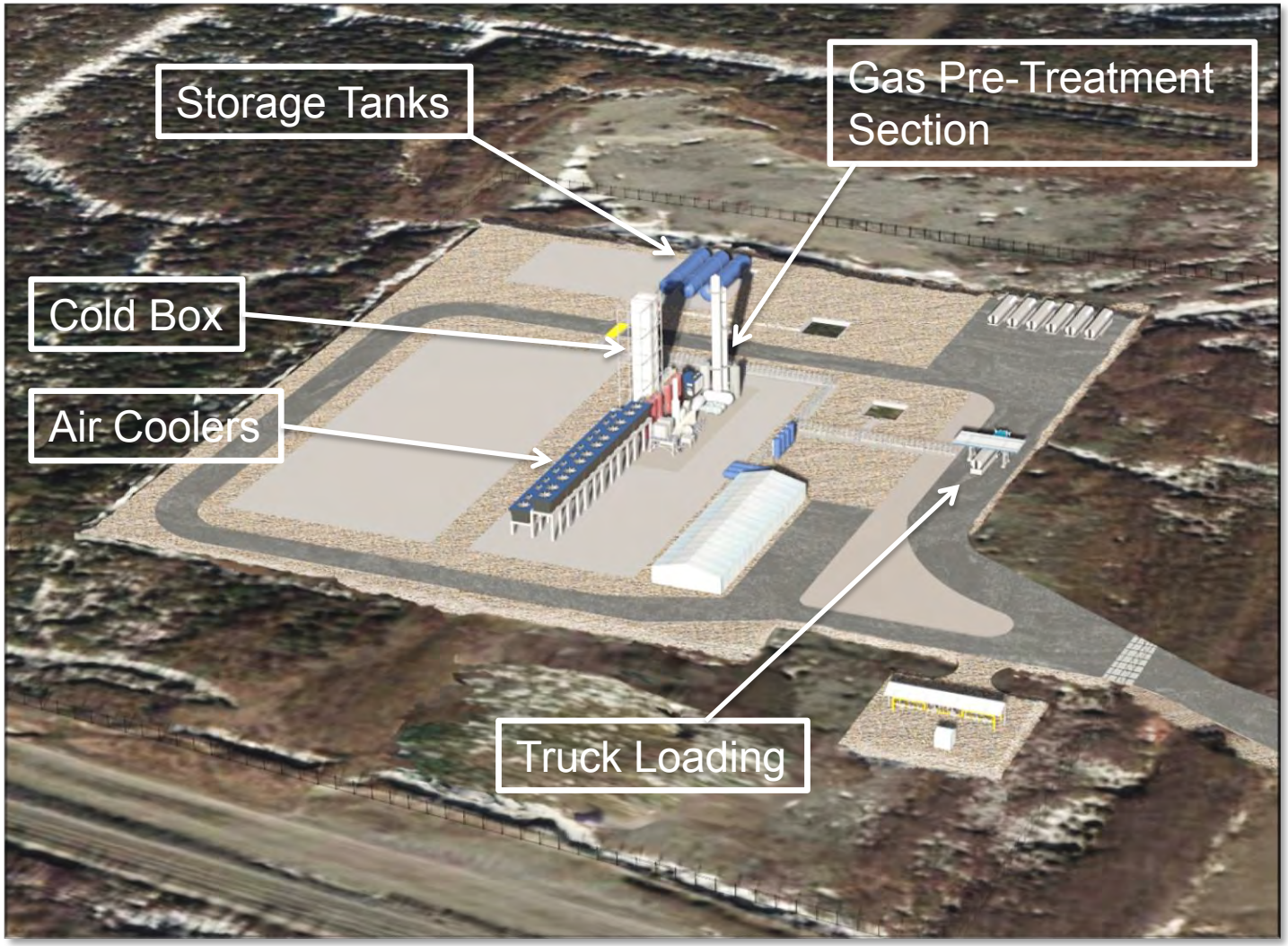


CHART C100N Plant

Design and Benefits

- Simple to operate, compact and highly modularized
- Low capital cost
- Nitrogen refrigeration system
- High reliability
- Flexibility to turn down to meet changing demand

CHART C100N Plant

George West, Texas

CHART C100N Plant

CHART C100N Plant

CHART C100N Plant

Proposal Summary

Salix

- *Brings together a project team with energy industry experience and expertise*

- *Provides a low capital cost, standardized, reliable project design meeting your natural gas needs into the future*

- *Is an Avista Corporation company, with the financial capability and a long-standing tradition of energy service*

Thank You

Robert Lafferty – President, Salix

Greg Rahn – Vice President Strategy & Business Development, Salix

Contact:

Jessie Wuerst - Senior Communications Manager, Avista
Phone: (509) 495-8578
Email: Jessie.Wuerst@avistacorp.com

SPECTRUM LNG

Fairbanks
Town Hall Meeting
Interior Energy Project

November 4th, 2015

Agenda Items

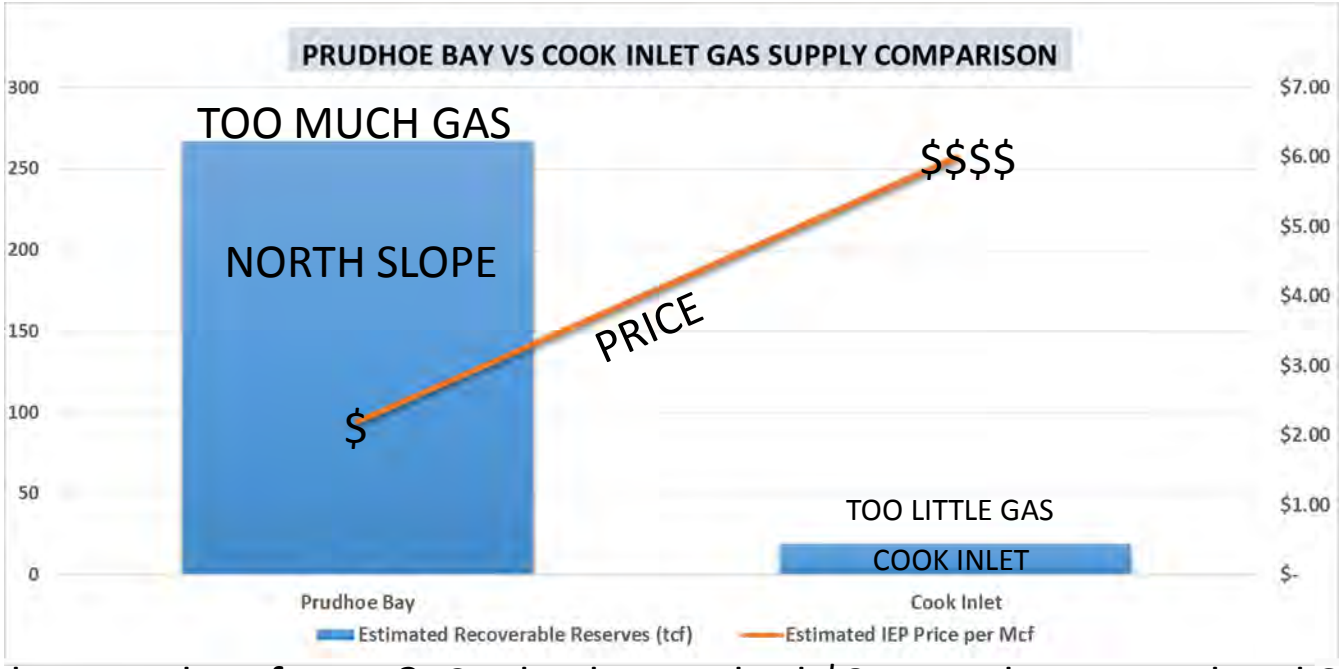
- Three E's: Experience, Expertise & Economics
- Where to build the plant?
- What's the plant look like?
- Will it make enough LNG?
- Who will pay for it; Capital Stack?-CAPEX
- Revenue Requirement Definition-OPEX
- Delivered Price
- Experience

Three Es

- Experience
  - Same five people
  - We are the only finalist doing this now
  - We are the only finalist that has ever done this
  - We are the only finalist with over 100 years of North Slope Experience
- Expertise
  - Plant design benefits from cold ambient temps - production increases during winter when it is needed
  - Spectrum Plant is 30% larger than required
  - Reduces need for storage
  - Eliminates the need for a third train later in the project
- Economics
  - Meets the Governors goal of $10/MMBtu gas delivered to Fairbanks
  - Cheaper than Cook Inlet supplied LNG
  - Lower prices with increased volumes

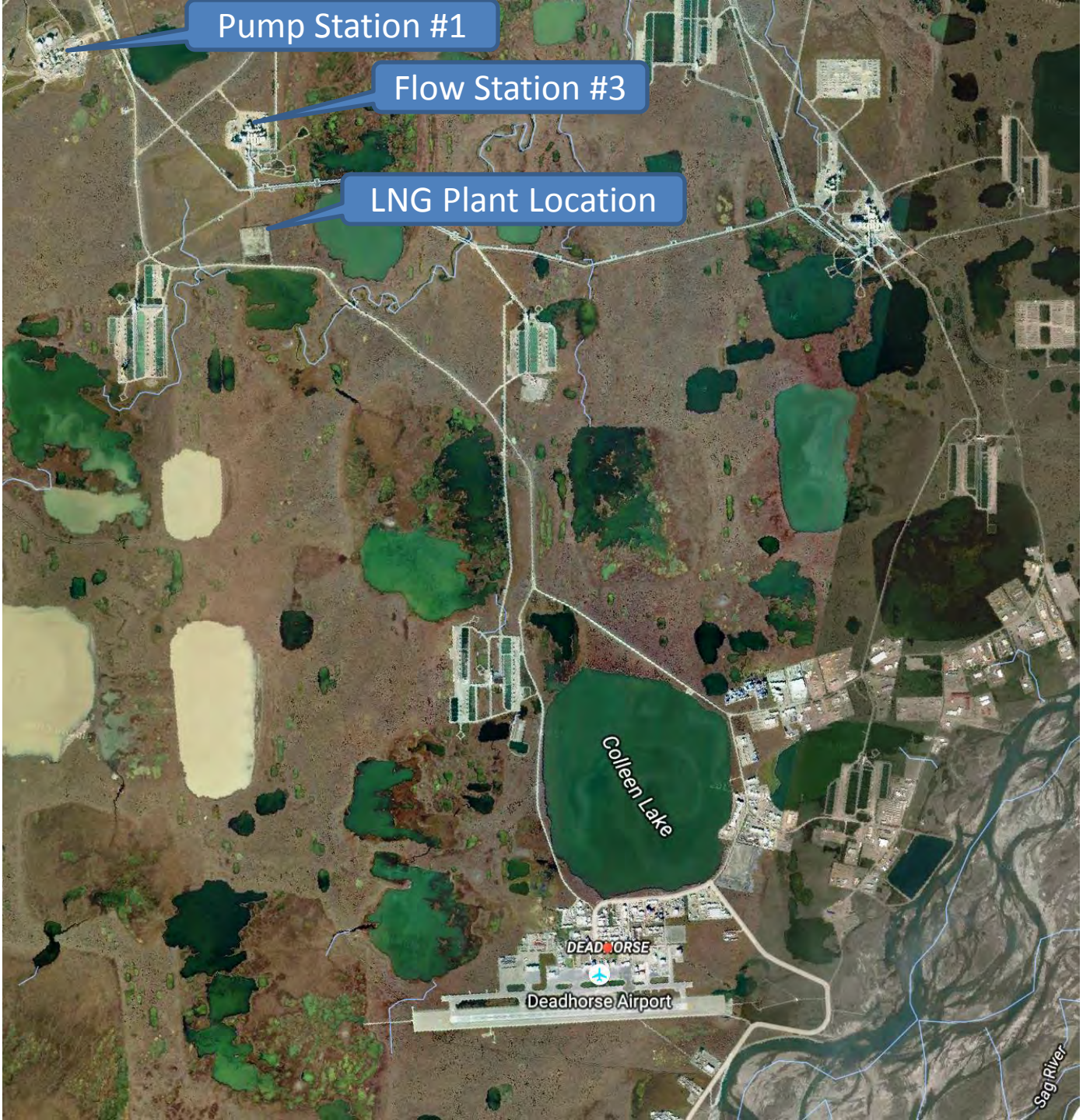
Location, Location, Location

- Cook Inlet or Prudhoe Bay?
- A Basic Comparison



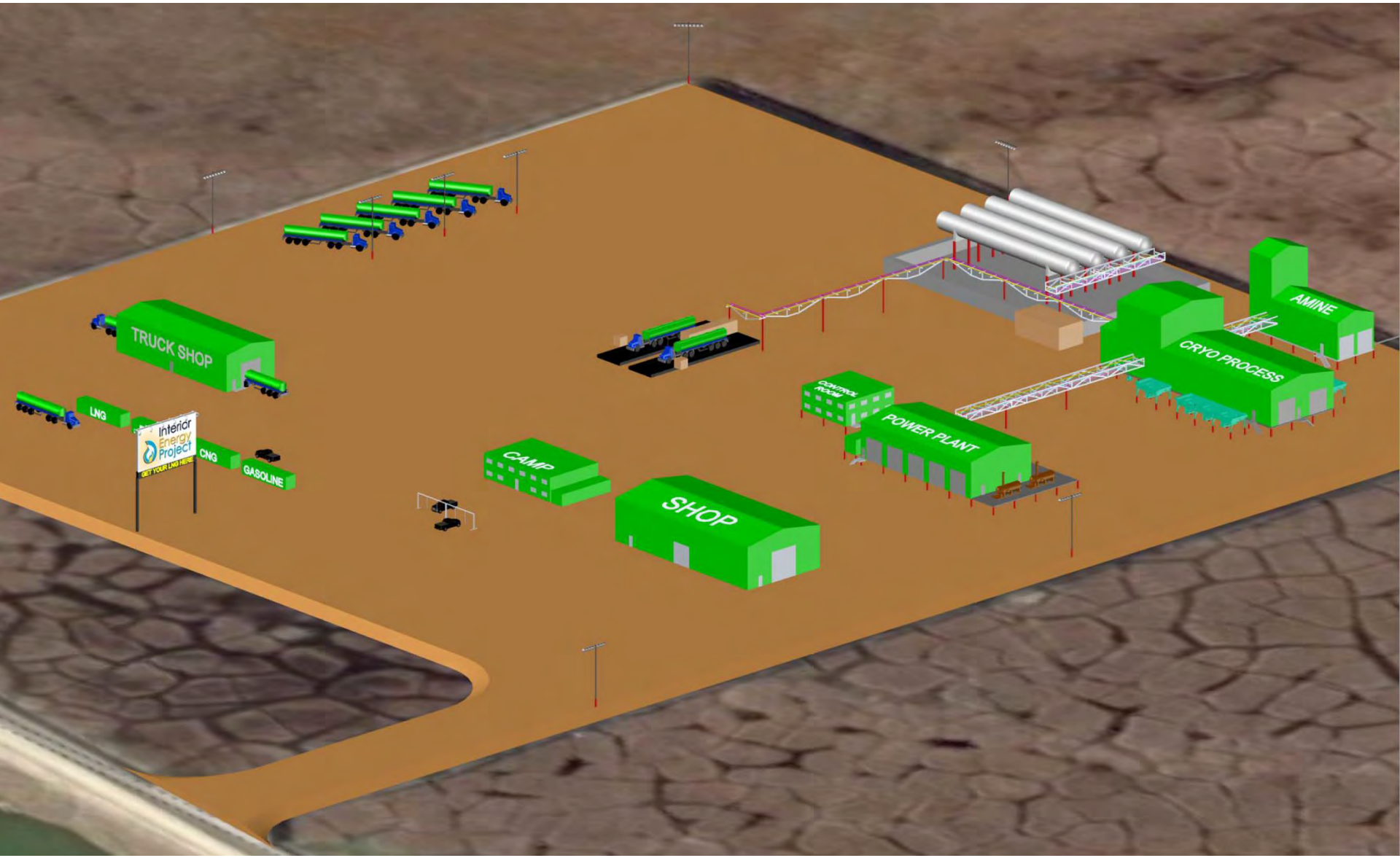
Where to shop for gas? Cook Inlet reached $8 recently, Demand and Supply are very tightly balanced. Two Cook Inlet producers are pursuing the IEP market in order to sell more gas at this high price. They need a new market or else the price will fall in their current market.

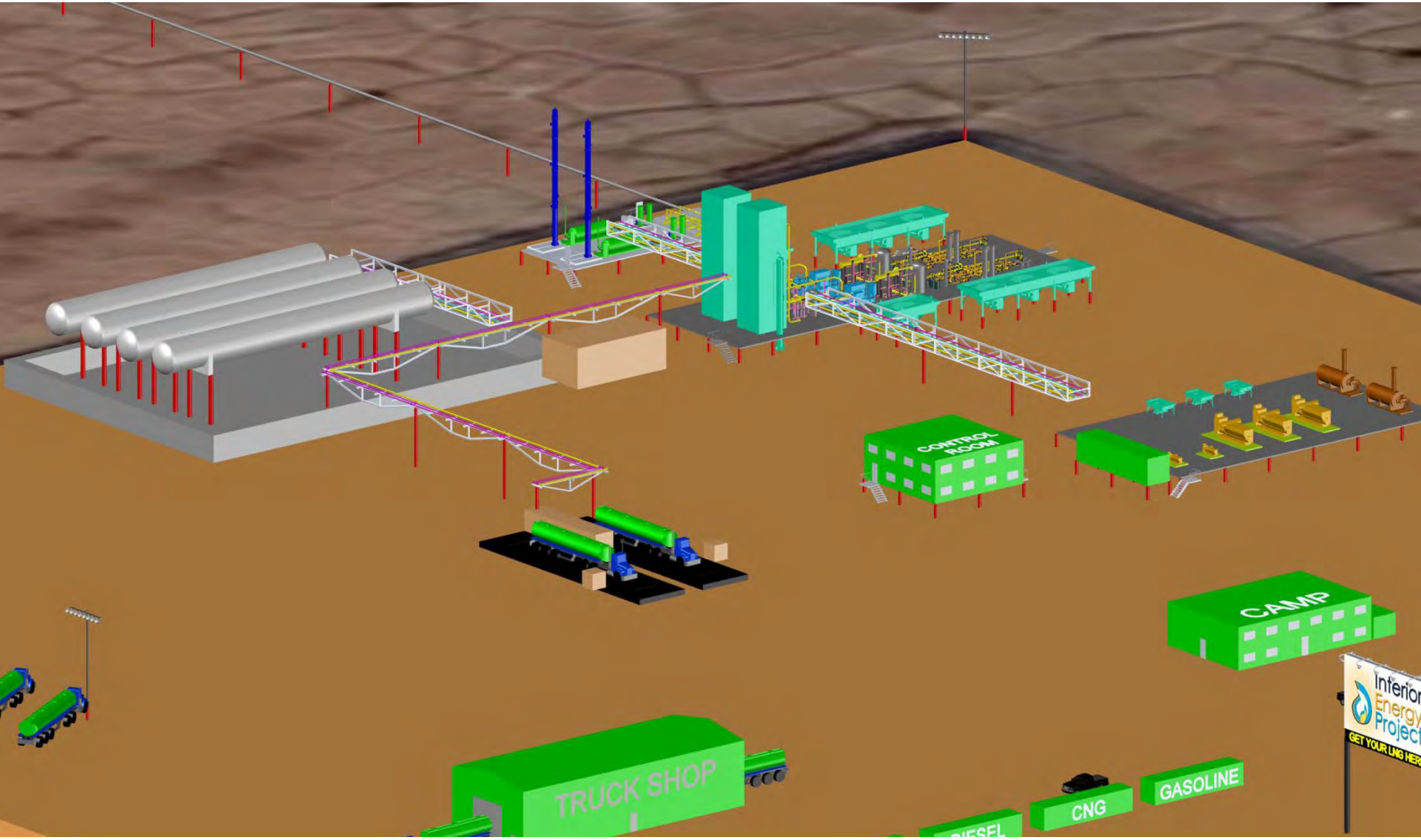
SPECTRUM LNG



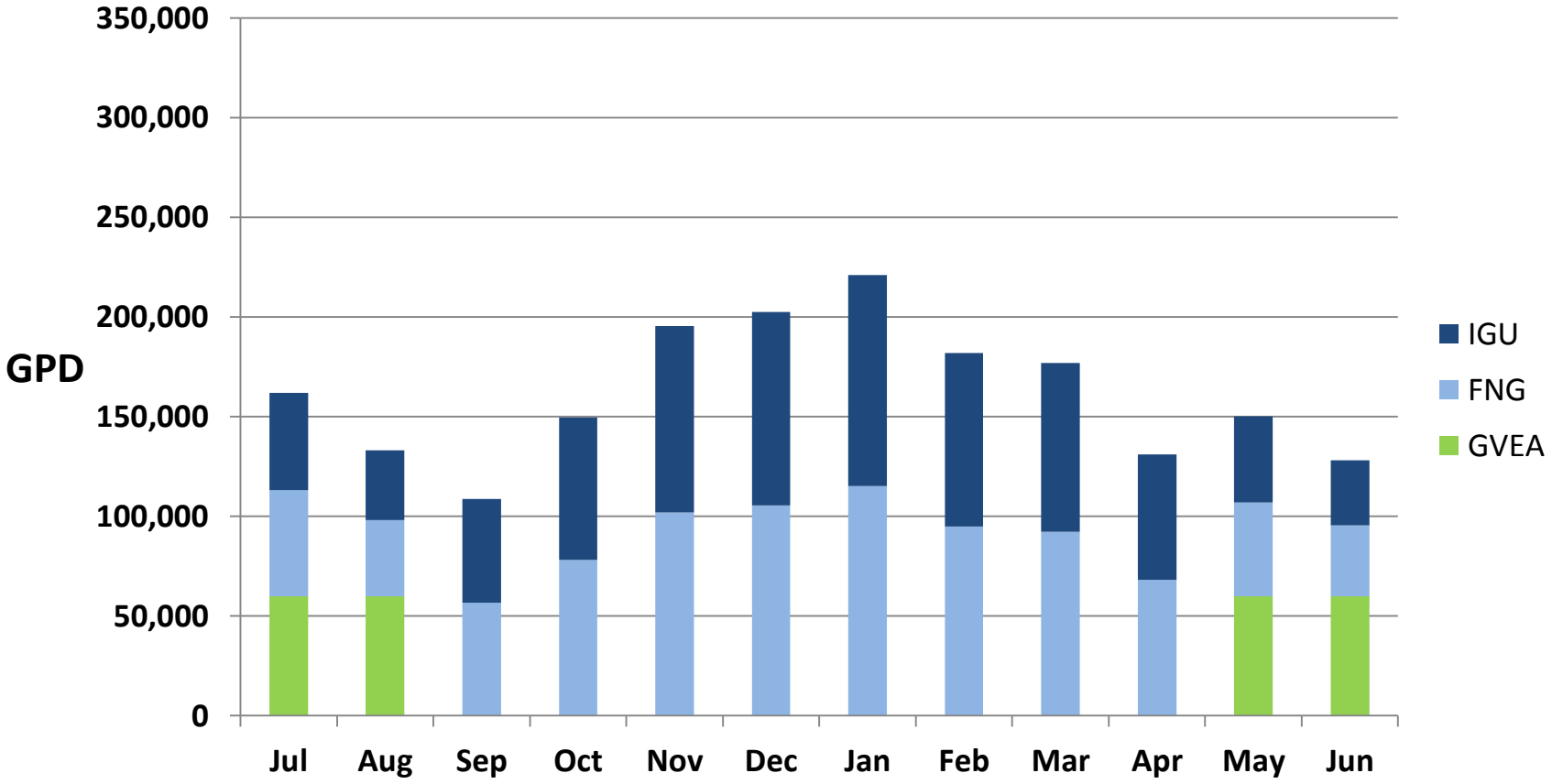
SPECTRUM LNG

Pad installed in 2014

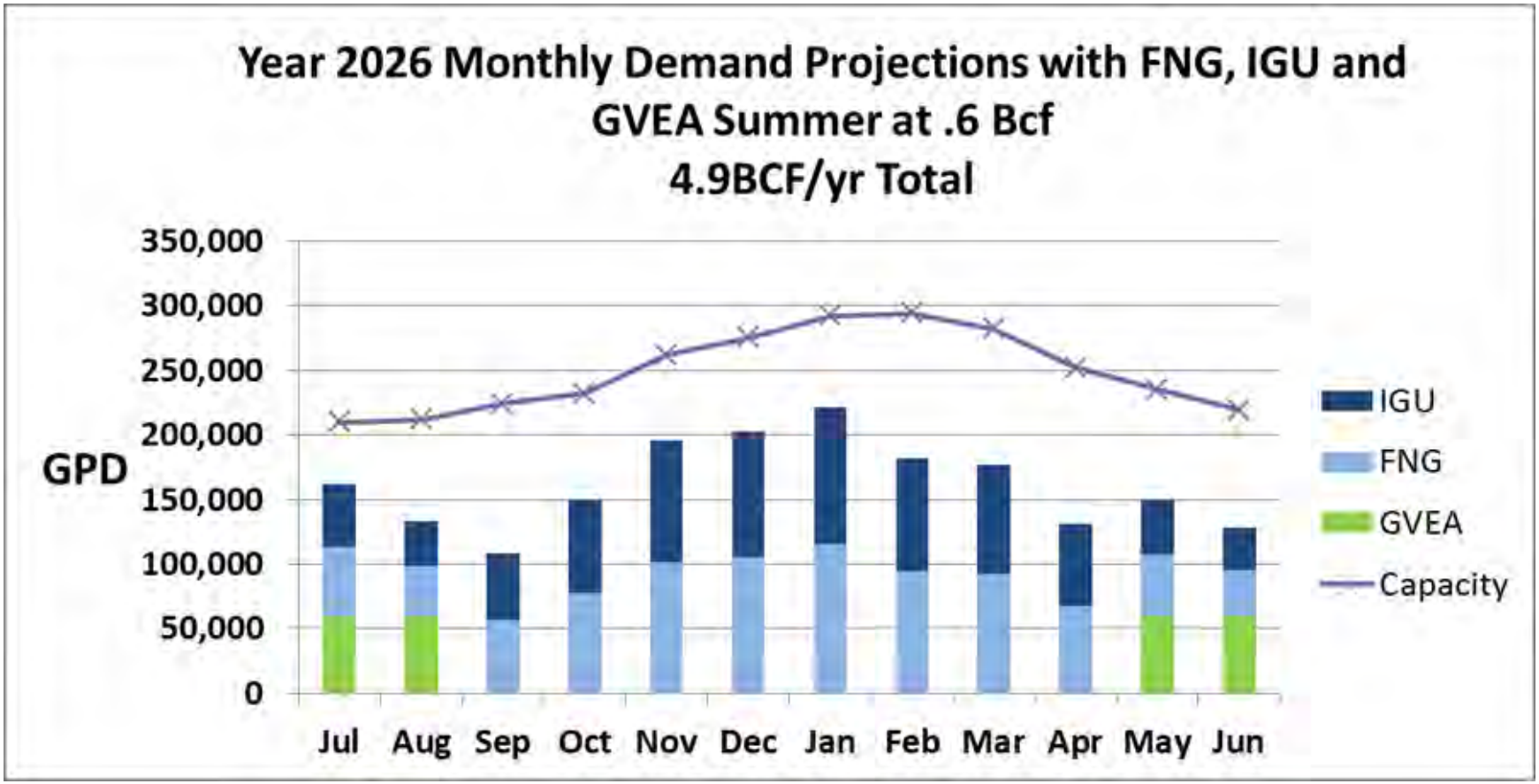

TRUCK SHOP
LNG
Interior Energy Project
GET YOUR LNG HERE
CNG
GASOLINE
CAMP
SHOP
Control Room
POWER PLANT
CRYO PROCESS
AMINE


CONTROL ROOM
CAMP
TRUCK SHOP
CNG
GASOLINE

Year 2026 Monthly Demand Projections with FNG, IGU and GVEA Summer at .6 Bcf 4.9BCF/yr. Total

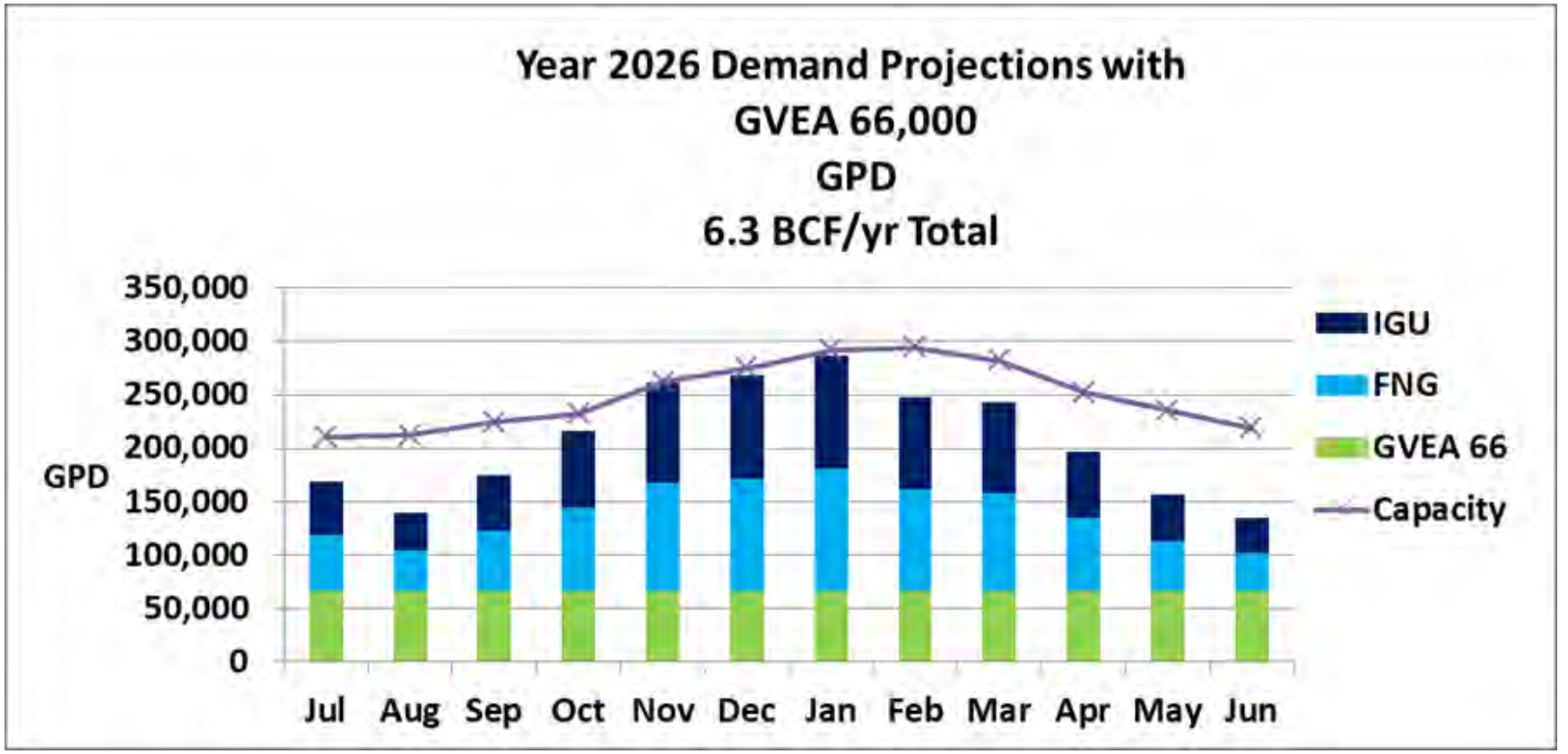


LNG Demand versus Production Capacity



The 30% Bonus Capacity from Spectrum assures there is adequate capacity through 2026

The GVEA Contingency
Just In case…. = Lower Price



Two of Spectrum's trains are sufficient, the third train is never needed.

Who Pays? Capital Stack?

- Spectrum LNG invests $5MM in equity
  - Has to earn a return
- AIDEA invests $30MM in equity from SB23
  - No return required (**Thanks to the State of Alaska**)
- AIDEA lends $50MM in SETS loan funds from SB23
  - No payments for first 5 years, then 25 year amortization at 1% (again, **thank the Legislature**)

Revenue Requirement Model

- Sum of:
  - Contracted OPEX with customary index escalators
    - O&M expenses, labor, ownership risks, management fee
  - Cost of debt service
    - To be determined by AIDEA and is a pass through
    - Doesn't start until year 6
  - Cost of fuel gas
    - To be determined by the cost of gas and plant efficiency

Price Delivered to Fairbanks Current Estimate

- **Cost of Gas $2.10/MMBtu**
  - Two producers are currently offering gas for this project at this price
  - There are two others yet to weigh in
- **Liquefaction Fee** = Revenue Requirement divided by volume sold **$2.73/MMBtu**
- **Fuel Gas $.23/MMBtu**
  - Gas cost and plant efficiency
- **Trucking Trailers $.69 + Towing $4.25/MMBtu**
  - Trailers should be owned, trucks should be hired
- **Total Price of LNG Delivered $10.00/MMBtu**

Go to the Experts

- SME/Sancus/SST are vendors to GE and Shell
- GE looks a lot like MWH, large and expensive
- Improved MR technology
- Higher Thermodynamic Efficiency
- Process warranty
- Salof Genesis
- Other benefits to SST
  - Complete prior assembly at fab shop
  - Reduces field work
  - Latest technology

66,000 GPD LNG PLANT MIXED REFRIGERANT CYCLE

SST PROCESS SOLUTIONS

Our Success

The plant was installed and placed in commercial operation in approximately 13 months from project kick-off.

Performance test was successfully passed during the initial 24 hours of operation with production of over 75,000 GPD of LNG and power consumption of less than .75 KW/gal.

CORPORATE HEADQUARTERS

11767 Katy Freeway, Suite 700
Houston, TX 77079, USA
Office: +1 (832) 460-1000
Fax: +1 (281) 271-3710

FABRICATION FACILITY

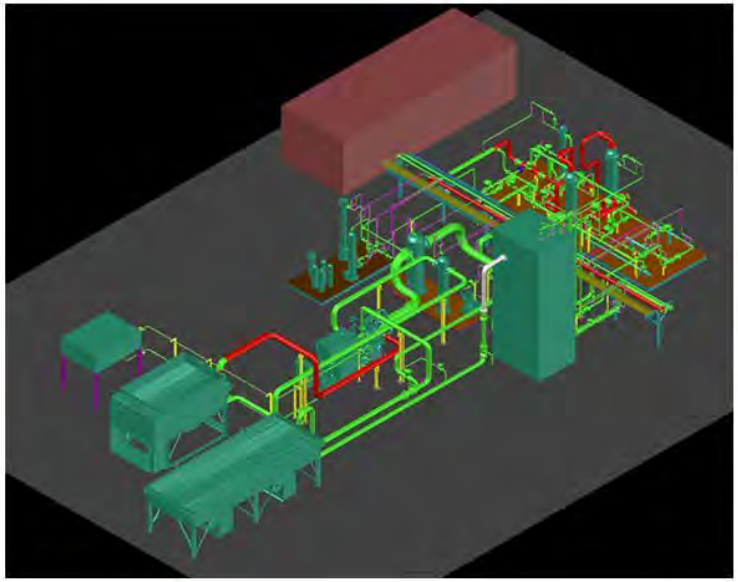
5141 IH 35 South.
New Braunfels, TX 78132, USA
Office: +1 (830) 584-0865

SST Process Solutions, LLC

Mixed Refrigerant LNG Cycle

The MCR cycle is designed to minimize compression power, and is optimized by using a specific refrigerant mixture for each standardized plant for customized performance.

SST has developed a proprietary MCR process which is contained in a perlite filled cold box, simplifying installation and optimizing thermal performance.



Design Flexibility

The SST designs is very flexible allowing easy integration of heavy component removal or recovery as a saleable product; while also easily meeting any desired LNG specification. We can also integrate Nitrogen rejection and product fractionation if desired.

An Ortloff process performance guarantee can be offered if desired

"From Concept to Reality" in 13 months!

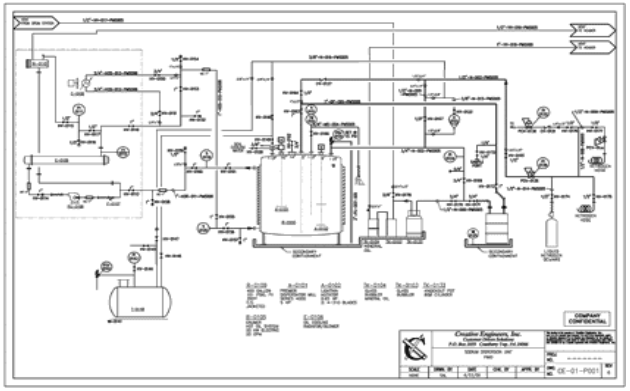
SPECTRUM LNG

SPECTRUM LNG

SPECTRUM LNG

SPECTRUM LNG

SME/SST Process Design and Optimization



Desert Gas Field Support, Plant Operations Support

Spectrum LNG

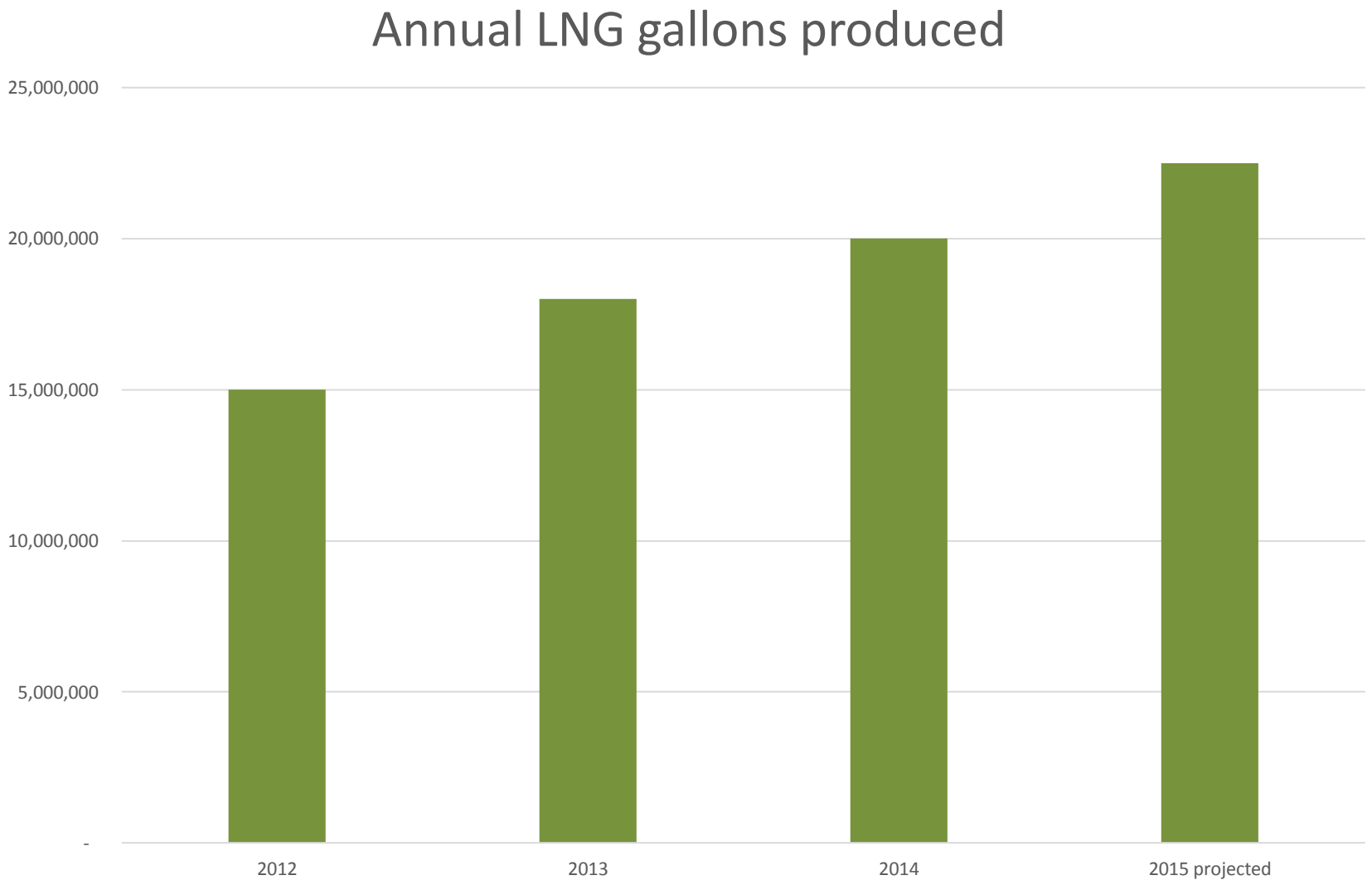
Developer/Owner/Operator

Conam – Project Management, Field Construction Crews, Logistics

SANCUS/SST - Turnkey Plant Construction and Onsite Assembly and Start up

Ehrenberg Plant
Spectrum Self Constructed

Spectrum History – Ehrenberg Plant LNG Production



Off Pipeline Distribution Project

The CIRI Talkeetna Lodge is a 212 room Lodge operating during the tourist season. Pt. McKenzie LNG Plant provides fuel year round for heating, hot water and cooking. There are 10,000 gallons of LNG storage on-site for uninterrupted supply of natural gas. The lodge receives a delivery of LNG approximately every two weeks.

No Substitute for Experience

- Spectrum understands and has experience in all aspects of the IEP, not just the LNG production.
- We produce more LNG than all other proposers combined.
- According to the published information, we have the lowest CAPEX.
- Spectrum has chosen to focus its business on the production of LNG but can provide valuable assistance in other areas of the IEP.
- Most Experienced Management Team. Our management team has over 100 years of North Slope experience and has developed successful companies that continue today to deliver Billions of BTUs of energy daily.
- Five of our senior management team have CDLs and three have Dalton Highway experience.
- We understand and have overcome the challenges.

SPECTRUM LNG

Questions?


WESPAC
MIDSTREAM
AIDEA Public Forum
Fairbanks, Alaska
November 4, 2015

Who is WesPac Midstream?

WesPac founded in 1998 to develop, own, and operate energy infrastructure projects

Historically focused on tank farms, pipelines, marine terminals , rail off-loading, and airport fuel facilities

In the last 5 years, WesPac expanded its focus to include upstream production, LNG, power plants and marine infrastructure

WesPac's majority owner is **Oaktree Capital and Highstar Capital**, with diverse portfolio of assets under management and extensive experience in the energy industry

- Investments include Kinder Morgan GP, EXCO Energy, Ports America, Dynegy, First BanCorp, McDermott, Wells Fargo, Caiman Energy, Wildcat Midstream, Star West Generation and Southern Star Pipeline

Highstar is the infrastructure arm of the fund with deep expertise in energy development, operations, facilities, marine vessel ownership and public private partnership experience

WesPac's minority owner is Clean Marine Energy (CME) which manages and finances the conversion of large ships to LNG and innovative bunkering solutions

Recent Developments

- WesPac Jacksonville (JAX) plant chooses Cosmodyne
- First train will produce 125,000 GPD
- Second train will add additional 125,000 GPD

- Canadian Government grants WesPac 25-year export license
- WesPac to supply LNG to TOTE's "ORCA-class vessels"
- Bunker vessel under construction at Conrad Orange Shipyard

- TOTE commissions two (2) LNG-fueled designs
- WesPac to supply LNG at Tacoma & Jacksonville
- Vessels undergoing sea trials

WESPAC MIDSTREAM

WesPac's Jacksonville LNG Project

- **The projects' 1st train is essentially identical to our response for the AIDEA IEP RFP**
- 1st bunker barge project in North America
- Up to 300,000 gallons per day LNG facility
- 2MM gallons of storage

WESPAC MIDSTREAM

WesPac Proposes Two LNG options for Cook Inlet

Port MacKenzie

OR

Pentex/Titan/FNG site

- New 125,000 Gallon per day facilities
- Sites are roughly 12 miles apart
- Both have rail and truck access
- Port Mac better marine & market access
- Pentax/Titan/FNG has lower capital costs

Option One - Port MacKenzie Liquefaction

Initial Build

- In service, 24 months after award
- 125,000 GPD
- 500,000 Gals Storage
- 5.7 Mw on site generation
- Proposed rate $3.66/mcf

Future Expansion (if required)

- In service 2022
- 100,000 GPD expansion

WESPAC MIDSTREAM

Option Two – Pentex/Titan/FNG Liquefaction

Initial Build

- In service, 24 months after award
- ”Expansion” 125,000 GPD
- 500,000 Gals Storage
- 5.7 Mw on site generation
- Proposed rate $3.27/mcf

Future Expansion (if required)

- In service 2022
- 100,000 GPD expansion

WESPAC MIDSTREAM

Cook Inlet Advantages

An ideal site for LNG production

- Existing port (Port MacKenzie)
- Abundant land
- Proven gas reserves
- No major permitting
- Minimal environmental impact
- Adjacent gas pipeline (Beluga Pipeline)
- Adjacent power transmission (MEA)
- Port MacKenzie Rail access
- Marine access (Port MacKenzie)
- Expansion opportunities
- Federal Railroad Administration recently approved LNG rail transport in Alaska

The WesPac Advantage

WesPac Advantages

Experience: constructing an essentially identical plant in Jacksonville, Florida

Strength: WesPac is owned by financial powerhouse Oaktree Capital

Financing: use of AIDEA's low-cost financing package lowers overall cost to consumers

Development: Mat-Su Borough strongly supports the development

Infrastructure: new customers for Alaska Railroad and recently approved for LNG transport

Proven Gas Reserves: potential Cook Inlet reserves with BlueCrest

Full-logistics chain: If req'd, full value chain logistics expertise and partners

Access to alternative markets: mining, seafood processors, marine

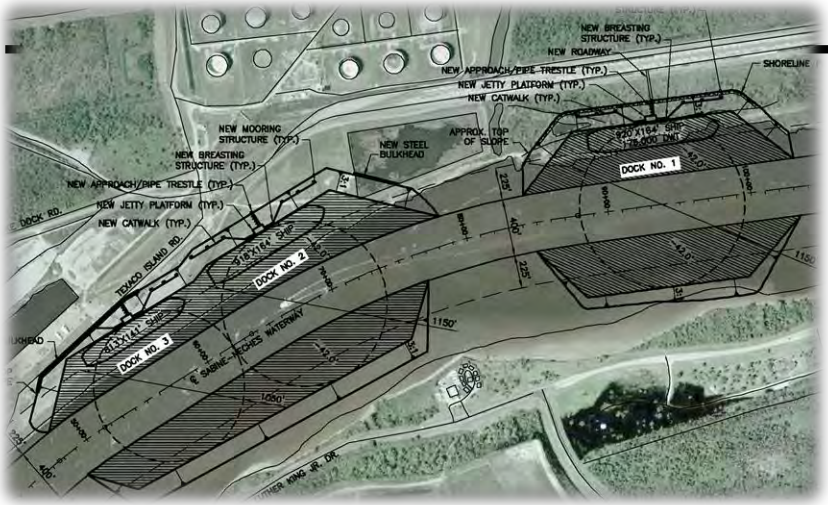
Ancillary infrastructure: as appropriate and necessary

- Ports, rail, shipyards, mining, vessels, reserves, pipeline, storage, power plants

Jobs and economic growth: state wide (infrastructure, O & G, transportation)

WESPAC MIDSTREAM

Thank You



OAKTREE

HIGHSTAR CAPITAL

WESPAC MIDSTREAM

CleanMarineEnergy®
Solutions for emissions compliance

MIDOCEAN MARINE, LLC

Attachment C

Summary of Town Hall Proceedings

Interior Energy Project Town Hall Meeting
November 4, 2015, 5:30 pm
Pioneer Park Civic Center
Presentations by IEP Finalists

Moderator: Lisa Herbert, Fairbanks Chamber of Commerce

AIDEA BOARD
Gary Wilken

AIDEA
Bob Shefchik
Karsten Rodvik
Nick Szymoniak

AEA
Gene Therriault

FEDCO
Jim Dodson
Jomo Stewart

Interior Gas Utility
Steve Haagenson
David Prusak
Mindy O'Neall

Local Government Officials
Borough Mayor Karl Kassel
North Pole Mayor Bryce Ward
Former Borough Mayor Luke Hopkins

Legislature
Chad Hutchison – Office of Senator John Coghill

FNSB Assembly
Diane Hutchison
Van Lawrence
Guy Sattley

Fairbanks City Council
Joy Huntington

HDR Public Outreach
Pat Thayer
Sue Signor
Terry Griffin

The meeting was held at the Pioneer Park Civic Center and was well attended. We had approximately 120 people sign in, not including presenters and facilitators. The meeting agenda included a project overview and update by Bob Shefchik, remarks by Gary Wilken, and an update by Gene Therriault on conversions. The meeting was set up to give each of the 5 finalists 20 minutes to present their proposals to the audience. After the presentations, the audience was encouraged to ask questions or make comments directly to a specific team or to submit them in writing. Comment sheets were provided at the public comment table, and five comments were collected at the meeting. There was also the option to email questions directly to iep@aidea.org and several people were going to take advantage of that option.

Lisa Herbert introduced Gary Wilken, AIDEA Board member. Mr. Wilken thanked the hosts and presenters. He also reviewed AIDEA's mission and recognized Former Mayor Hopkins for his resolve in making this project a priority for the community.

Bob Shefchik gave an overview of the Interior Energy Project, reiterating the 3 IEP Goals to supply natural gas to Interior Alaska:

- At the lowest cost possible
- To as many Alaska customers as possible
- As soon as possible

Mr. Shefchik reviewed the financing tools available for the IEP and the price targets. Project milestones include a recommendation to the AIDEA Board on December 3rd and (tentative) Board approval by December 17th.

Gene Therriault discussed the conversion component. Options that polled highly in the community for conversion assistance were:

- Access to low cost capital
- A mechanism to spread payments over a long period of time
- Transferability - the ability to transfer the cost to a new owner

Interior Energy Project Town Hall Meeting
November 4, 2015, 5:30 pm
Pioneer Park Civic Center
Presentations by IEP Finalists

Until gas is available, there is no commitment from local lenders regarding low-interest loans, but home owners are encouraged to look into and take advantage of the AHFC home energy rebate. This program has funding through next June. AEA continues to look into federal sources of funds as well as the PACE program (Property Assessed Clean Energy Financing).

PRESENTATIONS:

Ken DeBerry of Phoenix Clean Fuels, LLC (See presentation)

Phoenix Clean Fuels plans to utilize an experienced project team:

- Scimation LLC – project development/management
- TDX Power– project management, operations and maintenance
- SLR – environmental engineering and compliance
- GE Oil & Gas – liquefaction technology, engineering, procurement and construction
- Alaska Industrial LLC– LNG transportation and logistics

Their strategy involves locating the liquefaction plant at the source of the lowest cost of feed gas, utilizing proven technology and teaming with experienced Alaskan entities. Total price of LNG delivered would be below $15/MMBTU to the burner tip. Their 2 step approach utilizes a combination of State funding and outside financing.

- Phase 1: 3.0 Bcf/year capacity - 100,000 gallons/day
- Phase 2: 6.0 Bcf/year capacity - 200,000 gallons/day

Bob Lafferty of Salix Custom LNG Solutions (See presentation)

Salix plans to utilize an experienced project team:

- Chart Industries – C100N Plant
- Haskell Corporation – general contractor with experience in Alaska
- HDR – engineering experience in Alaska
- Braemar – engineering experience in LNG

Mr. Lafferty noted that Salix is an Avista Corporation company with extensive electric and natural gas experience in Washington, Idaho, and Oregon. Salix proposes a 100,000 gallons/day Cook Inlet Liquefaction plant that would be expandable to 200,000 gallons/day using a “cost of service” basis for liquefaction tolling. Delivery would be by truck at the offset, with a future rail delivery option. Salix would use a combination of State funding and Salix investment.

Ray Latchem of Spectrum LNG, LLC (See presentation)

Mr. Latchem emphasized the experience, expertise and economics of his company and his proposal. He discussed the abundance of natural gas on the North Slope vs. the competition for the supply of Cook Inlet gas. Spectrum plans to utilize an existing gravel pad on the North Slope to build the plant with two trains and three generators for redundancy. In addition, there would be a camp and shop. Trailers would be owned and trucks would be hired. Total price of LNG delivered would be $10/MMBTU to the city gate. Spectrum would use a combination of State funding and Spectrum investment.

Project Team:

- SME Associates, LLC / Sancus Energy and Power / SST Process Solutions, LLC – process design and optimization
- Desert Gas Services, LLC – plant operations support

Interior Energy Project Town Hall Meeting
November 4, 2015, 5:30 pm
Pioneer Park Civic Center
Presentations by IEP Finalists

- Conam Construction Company – project management, field construction crews, logistics
- SANCUS Energy and Power / SST Process Solutions, LLC – turnkey plant construction and onsite assembly and startup

Jonathan Katchen of WesPac Midstream, LLC (See presentation)

WesPac proposes two LNG options for Cook Inlet: Port MacKenzie or Pentex/Titan/FNG site. Each would be a 125,000 gallon/day facility. Both have rail and truck access. Port MacKenzie would have better marine and market access, while the Pentax/Titan/FNG would have lower capital costs. Either option would be in service 24 months after award with on site generation. Future expansion of 100,000 gallons/day would be available if required. WesPac would utilize State funding.

Harvest Alaska / Hilcorp Alaska LLC

Harvest was unable to attend the town hall meeting and did not make a presentation.

Attachment D

Request for Proposals
Status Memo

Interior Energy Project

December 3, 2015

To: John Springsteen,
AIDEA Executive Director

From: Bob Shefchik,
IEP Team Lead

Subject: Interior Energy Project – RFP Update

Background
This memo is provided as an update to the current RFP process for selection of a recommended LNG partner to the AIDEA Board.

On June 5, 2015 AIDEA issued RFP 15-142, soliciting proposals for gas liquefaction or other energy alternatives designed to bring low cost energy to the Interior. The effort was designed to find a private partner with the interest and capacity to meet the goals of the Interior Energy Project in an open and competitive process consistent with the requirements of recently passed legislation. Copies of the RFP document and addendums can be found at http://www.aideaaeaprocurement.org/Home/Past.

Summary
June 5, 2015 – October 22, 2015
16 offers were submitted by 13 prospective vendors by the submittal date, August 3, 2015. Copies of those proposal were provided to an evaluation committee comprised of AIDEA and State of Alaska staff, contractor personnel, and utility representatives. A summary of the responses received was provided to the public and the AIDEA Board. A copy of the public announcement containing that summary information is attached.

The evaluation committee met on August 21, 2015. Using the criteria outlined in the RFP document, the proposals were scored and ranked. Five finalists were identified as the top ranked respondents and advanced to Step Two of the evaluation process. Each of these finalists was requested to provide a five-page public summary of their offer to AIDEA. The five finalists and their public five-page reports were made available to the AIDEA Board and the public. A copy of the public announcement of the finalists is attached.

AIDEA and local utility representatives met with each of the five finalists in three rounds of meetings. The first round entailed AIDEA reviewing the contents of the proposals with each finalist, describing areas of question identified by individual committee members in the review of their proposal. The second round consisted of a detailed review of the financial models used by each finalist in the preparation of their rate estimates. The final round of meetings was held in Fairbanks between the finalists and the three local utilities. AIDEA facilitated this set of meetings, allowing the finalists and the three utilities to exchange questions and impressions of how each proposal could meet the IEP goals and the risks and costs related to

each proposal. The three rounds of meetings were designed to provide a more complete understanding of each finalist's proposal and to ensure each finalist was prepared to develop the most complete and successful final offer possible.

Following the three rounds of meetings, AIDEA issued a call for "Best and Final Offers" on October 16, 2015. Responses to that call were due to be submitted to AIDEA by October 30, 2015.

A report on the RFP process containing this information was provided orally to the AIDEA Board at the October 22, 2015 Board meeting.

Update
October 23, 2015 – December 3, 2015
All five finalists submitted Best and Final Offers (BAFO) by the October 30, 2015 deadline. Copies of those responses were immediately provided to the evaluation committee members and a meeting of the committee was scheduled for November 12, 2015.

The five finalists were also invited to attend a town hall meeting in Fairbanks on November 4, 2015. AIDEA and four of the five finalists presented to an audience of approximately 120 and were available at tables before and after the presentations to respond to questions and take public input. Summary notes from the town hall meeting are attached.

The evaluation committee met on November 12, 2015 with the intent of reviewing the Best and Final Offers and agreeing on a top ranked proposal to be recommended to the AIDEA Board at its December 3, 2015 meeting. The process detailed to the finalists was that each member of the evaluation committee would rank the top three proposers based on their review of the BAFO's. The committee would then use the collective rankings to identify the top rated respondents; evaluating the pros and cons of the top rated proposers and coming to a consensus recommendation. The process also included the ability of the committee to vote, if necessary, to select a partner to recommend to the AIDEA Board.

The rankings submitted by the committee members elevated two BAFO's above the rest. Discussion of pros and cons of each of the offers occurred, along with discussion of all offers to ensure agreement on the top two. However, rather than making a final selection by forcing a consensus or vote on a single top selected candidate, the committee discussion identified additional information needed to select between the two top rated respondents.

After considerable review and debate, a unanimous recommendation was reached to request further information and clarifications from the two top ranked respondents. Committee work was suspended to allow respondents the opportunity to provide additional information, to allow a review of the capital and operating costs and risks of each top ranked respondent, and to allow a more complete understanding of the commercial terms suggested in each offer.

A Notice to Request Clarifications and the identification of the two top ranked respondents was provided to the five finalists on November 16, 2015. Spectrum LNG, offering a LNG plant on the North Slope, and Salix Inc, offering a LNG plant in Cook Inlet, were the top two ranked respondents. A copy of that notice is attached.

Initial meetings were scheduled with Spectrum LNG and Salix Inc immediately following the issuance of the November 16, 2015 notice. Those meetings identified areas of clarification, the staff assigned from both AIDEA and the top ranked respondents to accomplish this work, and a timeline to accomplish the work. Follow-up communications to those initial meetings have occurred. This represents the status of RFP 15-142 as of December 3, 2015.

Updated Timeline

Given the determination to proceed with the top two respondents as detailed above, the expected date for AIDEA Board action will be moved beyond December 17, 2015.

AIDEA, the utilities, and the top two respondents have targeted January 10, 2015 as the date by which information, clarifications, and other details are completed. That will result in a reconvening of the evaluation committee in mid-January. The expectation is that the mid-January committee meeting will result in the recommendation of a single project to be presented to the AIDEA Board for action.

In order to ensure adequate time for preparation of a detailed recommendation, public input, and review and questioning by the AIDEA Board, it is expected that a special AIDEA Board meeting will be scheduled to act on the recommendation in early February. A final scheduling of Board action will occur once it is clear that all requisite information has been collected and the information is sufficient for the evaluation committee to act.

I will be available to present this information and respond to questions from the AIDEA Board under the agenda item "IEP Update" at its regular meeting on December 3, 2015.

Attachments:

Announcement of RFP responses, August 6, 2015
Announcement of Five finalists, September 9, 2015
Town Hall Meeting Summary, November 4, 2015
Notice to Request Clarifications, November 16, 2015

PRESS RELEASE

Karsten Rodvik
External Affairs Officer
907.771.3024

FOR IMMEDIATE RELEASE: August 6, 2015

AIDEA to Evaluate Interior Energy Project Proposals

Authority Receives Broad Spectrum of Responses to RFP

(Anchorage) – The Alaska Industrial Development and Export Authority (AIDEA) is pleased to announce that its Request For Proposals (RFP) for Interior Energy Project Energy Supply generated significant interest and produced a broad spectrum of responses. AIDEA issued the RFP in early June, and received proposals from 13 respondents by the August 3 deadline. Some responders submitted proposals for more than one approach. Here is a brief summary of the type of proposals AIDEA received:

- Cook Inlet LNG: 9
  - LNG plant only: 5
  - LNG plant and gas supply: 1
  - LNG plant, transport and gas supply: 3

- North Slope LNG: 3
  - LNG plant only: 1
  - LNG plant and transport: 2

- Cook Inlet Pipeline: 1
- Cook Inlet Other: 1
- Imported Propane: 1
- Imported LNG: 1

Senate Bill 23 and House Bill 105 passed the Alaska Legislature in 2013 and 2015, respectively, and authorize AIDEA to provide the financing package to partner with the private sector to bring affordable natural gas to Interior Alaska. AIDEA will now commence its comprehensive and confidential evaluation process for all proposals received in response to this RFP.

The Alaska Industrial Development and Export Authority is a public corporation of the state. AIDEA's purpose is to promote, develop and advance the general prosperity and economic welfare of the people of Alaska.

###

813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

PRESS RELEASE

Karsten Rodvik
External Affairs Officer
907.771.3024

FOR IMMEDIATE RELEASE: September 9, 2015

AIDEA Announces Interior Energy Project Finalists

Five RFP Responders Selected to Advance to Next Phase

(Anchorage) – The Alaska Industrial Development and Export Authority (AIDEA) is pleased to announce the completion of Phase One evaluations of all proposals received in response to its June 2015 Request For Proposals (RFP) for Interior Energy Project Energy Supply. This RFP generated significant interest and produced a broad spectrum of responses. AIDEA conducted thorough evaluations in accordance with criteria set forth in the RFP, and selected five finalists to advance to Phase Two of the Interior Energy Project partner selection process.

The finalists (in alphabetical order) are: Harvest Alaska, LLC (Hilcorp Alaska, LLC); Phoenix Clean Fuels, LLC; Salix, Inc. (Avista Corporation); Spectrum LNG, LLC; and WesPac Midstream, LLC.

Each finalist has provided a publicly available five-page summary of their proposal. These summaries can be viewed at interiorenergyproject.com. AIDEA and the Interior utilities will immediately begin discussions with each finalist, leading towards a call for best and final project offers in October. AIDEA expects to recommend a project partner to its Board in December.

Senate Bill 23 and House Bill 105 passed the Alaska Legislature in 2013 and 2015, respectively, and authorize AIDEA to provide the financing package to partner with the private sector to bring affordable natural gas to Interior Alaska. The five selected companies represent a range of options, including North Slope and Cook Inlet. AIDEA remains committed to the goal of supplying affordable energy to Interior Alaska to as many people as possible, at the lowest cost possible, as soon as possible.

The Alaska Industrial Development and Export Authority is a public corporation of the state. AIDEA's purpose is to promote, develop and advance the general prosperity and economic welfare of the people of Alaska.

###

813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

Interior Energy Project Town Hall Meeting
November 4, 2015, 5:30 pm
Pioneer Park Civic Center
Presentations by IEP Finalists

Moderator: Lisa Herbert, Fairbanks Chamber of Commerce

AIDEA BOARD
Gary Wilken

AIDEA
Bob Shefchik
Karsten Rodvik
Nick Szymoniak

AEA
Gene Therriault

FEDCO
Jim Dodson
Jomo Stewart

Interior Gas Utility
Steve Haagenson
David Prusak
Mindy O'Neall

Local Government Officials
Borough Mayor Karl Kassel
North Pole Mayor Bryce Ward
Former Borough Mayor Luke Hopkins

Legislature
Chad Hutchison – Office of Senator John Coghill

FNSB Assembly
Diane Hutchison
Van Lawrence
Guy Sattley

Fairbanks City Council
Joy Huntington

HDR Public Outreach
Pat Thayer
Sue Signor
Terry Griffin

The meeting was held at the Pioneer Park Civic Center and was well attended. We had approximately 120 people sign in, not including presenters and facilitators. The meeting agenda included a project overview and update by Bob Shefchik, remarks by Gary Wilken, and an update by Gene Therriault on conversions. The meeting was set up to give each of the 5 finalists 20 minutes to present their proposals to the audience. After the presentations, the audience was encouraged to ask questions or make comments directly to a specific team or to submit them in writing. Comment sheets were provided at the public comment table, and five comments were collected at the meeting. There was also the option to email questions directly to iep@aidea.org and several people were going to take advantage of that option.

Lisa Herbert introduced Gary Wilken, AIDEA Board member. Mr. Wilken thanked the hosts and presenters. He also reviewed AIDEA's mission and recognized Former Mayor Hopkins for his resolve in making this project a priority for the community.

Bob Shefchik gave an overview of the Interior Energy Project, reiterating the 3 IEP Goals to supply natural gas to Interior Alaska:

- At the lowest cost possible
- To as many Alaska customers as possible
- As soon as possible

Mr. Shefchik reviewed the financing tools available for the IEP and the price targets. Project milestones include a recommendation to the AIDEA Board on December 3rd and (tentative) Board approval by December 17th.

Gene Therriault discussed the conversion component. Options that polled highly in the community for conversion assistance were:

- Access to low cost capital
- A mechanism to spread payments over a long period of time
- Transferability - the ability to transfer the cost to a new owner

Until gas is available, there is no commitment from local lenders regarding low-interest loans, but home owners are encouraged to look into and take advantage of the AHFC home energy rebate. This program has funding through next June. AEA continues to look into federal sources of funds as well as the PACE program (Property Assessed Clean Energy Financing).

PRESENTATIONS:

Ken DeBerry of Phoenix Clean Fuels, LLC (See presentation)

Phoenix Clean Fuels plans to utilize an experienced project team:

- Scimation LLC – project development/management
- TDX Power– project management, operations and maintenance
- SLR – environmental engineering and compliance
- GE Oil & Gas – liquefaction technology, engineering, procurement and construction
- Alaska Industrial LLC– LNG transportation and logistics

Their strategy involves locating the liquefaction plant at the source of the lowest cost of feed gas, utilizing proven technology and teaming with experienced Alaskan entities. Total price of LNG delivered would be below $15/MMBTU to the burner tip. Their 2 step approach utilizes a combination of State funding and outside financing.

- Phase 1: 3.0 Bcf/year capacity - 100,000 gallons/day
- Phase 2: 6.0 Bcf/year capacity - 200,000 gallons/day

Bob Lafferty of Salix Custom LNG Solutions (See presentation)

Salix plans to utilize an experienced project team:

- Chart Industries – C100N Plant
- Haskell Corporation – general contractor with experience in Alaska
- HDR – engineering experience in Alaska
- Braemar – engineering experience in LNG

Mr. Lafferty noted that Salix is an Avista Corporation company with extensive electric and natural gas experience in Washington, Idaho, and Oregon. Salix proposes a 100,000 gallons/day Cook Inlet Liquefaction plant that would be expandable to 200,000 gallons/day using a “cost of service” basis for liquefaction tolling. Delivery would be by truck at the offset, with a future rail delivery option. Salix would use a combination of State funding and Salix investment.

Ray Latchem of Spectrum LNG, LLC (See presentation)

Mr. Latchem emphasized the experience, expertise and economics of his company and his proposal. He discussed the abundance of natural gas on the North Slope vs. the competition for the supply of Cook Inlet gas. Spectrum plans to utilize an existing gravel pad on the North Slope to build the plant with two trains and three generators for redundancy. In addition, there would be a camp and shop. Trailers would be owned and trucks would be hired. Total price of LNG delivered would be $10/MMBTU to the city gate. Spectrum would use a combination of State funding and Spectrum investment.

Project Team:

- SME Associates, LLC / Sancus Energy and Power / SST Process Solutions, LLC – process design and optimization
- Desert Gas Services, LLC – plant operations support

- Conam Construction Company – project management, field construction crews, logistics
- SANCUS Energy and Power / SST Process Solutions, LLC – turnkey plant construction and onsite assembly and startup

Jonathan Katchen of WesPac Midstream, LLC (See presentation)

WesPac proposes two LNG options for Cook Inlet: Port MacKenzie or Pentex/Titan/FNG site. Each would be a 125,000 gallon/day facility. Both have rail and truck access. Port MacKenzie would have better marine and market access, while the Pentax/Titan/FNG would have lower capital costs. Either option would be in service 24 months after award with on site generation. Future expansion of 100,000 gallons/day would be available if required. WesPac would utilize State funding.

Harvest Alaska / Hilcorp Alaska LLC

Harvest was unable to attend the town hall meeting and did not make a presentation.

November 16, 2015

RE: Notice to Request Clarifications
Interior Energy Project
Request for Proposal (RFP) 15142

Email to: RFP 15142 Best and Final Offer respondents:

This notice is being sent to the top five respondents that advanced to the second step of RFP 15-142 Interior Energy Project (IEP).

Per addendum four of RFP 15-142, the Alaska Industrial Development and Export Authority (AIDEA) has reviewed the Best and Final Offers submitted by the 5 respondents. The Evaluation Committee (EC) has selected the top respondents based on ranking.

AIDEA will be requesting clarifications from the top two ranked respondents selected by the EC based on *"... most likely to succeed as the preferred respondent."* These clarifications will allow the EC to better understand the proposers' offers. The two top ranked respondents are as follows (in alphabetical order):

- Salix, Inc.
- Spectrum LNG

When AIDEA receives clarifications, the EC will continue the evaluation process according to the process stated in addendum four, page 3.

In the event clarifications are unsuccessful with the top ranked respondents, AIDEA reserves the right to request clarifications from the next ranked respondent(s) that advanced to the second step.

Proposals and scoring are not available for public review until after a Notice of Intent is issued.

A public update on the status of the RFP selection progress and identification of the two top ranked respondents will occur on December 3, 2015, at the AIDEA Board of Directors meeting.

We appreciate your participation in the solicitation.

Sincerely,

Tom J. Erickson
Chief Procurement Officer

Attachment E

Alaska Railroad Corporation
Liquefied Natural Gas
Transportation Approval

U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

NOV - 2 2015

Mr. Douglas Engebretson
Chief Operating Officer
Alaska Railroad
107500 West Ship Creek Avenue
Anchorage, AK 99510

Dear Mr. Engebretson:

This letter modifies certain conditions imposed by the Federal Railroad Administration (FRA) in its October 9, 2015, letter to Alaska Railroad (ARR). In that letter, FRA conditionally approved, under Title 49 Code of Federal Regulations (CFR) Section 174.63, *Portable tanks, IM portable tanks, IBCs, Large Packagings, cargo tanks, and multi-unit tank car tanks*, ARR's November 14, 2014, request to transport liquefied natural gas (Methane, Refrigerated Liquid (UN 1972) or LNG) by rail in intermodal (IM) portable tanks in container-on-flatcar (COFC) service.

Based on new information presented to FRA about ARR's operations and further FRA analysis, FRA is revising conditions 2, 5, 9, and 10 of the October 9, 2015, letter. FRA is revising condition 2 to provide flexibility in the timing of the required rail-flaw inspections in light of the long periods of severe winter weather conditions possible in Alaska. FRA is revising condition 5 to initially allow for the movement of up to 3 trains per week transporting LNG in COFC service, with each train transporting up to 12 portable tanks of LNG, and, beginning in 2018, the operation of a unit train of LNG with up to 60 loaded portable tanks of LNG. FRA is revising condition 9 to more closely align with the train placement requirements of 49 CFR § 174.85–*Position in train of placarded cars, transport vehicles, freight containers, and bulk packagings*. FRA clarified condition 10 to include Anchorage and Fairbanks in the municipalities listed for speed restriction. For ease of reference, included below is FRA's grant of approval and each of the applicable conditions including revised conditions 2, 5, 9, and 10, as well as the remainder of the conditions outlined in FRA's October 9, 2015, letter which remain unchanged.

FRA grants ARR approval under 49 CFR § 174.63(a) to transport LNG in T75 portable tanks subject to the following conditions:

1. ARR must perform a minimum of one track geometry car inspection annually (at least every 365 calendar days). ARR must report the results of this inspection to FRA within 30 days of completing the inspection.
2. ARR must perform at least four internal rail flaw inspections annually, to the extent practicable given the possible severe weather conditions, with no more than 95

calendar days between each inspection. ARR must report the results of this inspection to FRA within 30 days of completing each inspection.

3. ARR must provide initial training to all train crews that operate, or may potentially operate, trains transporting LNG about the characteristics and hazards of the commodity. ARR must provide documentation of this training to FRA at least 30 days prior to transporting any LNG under this approval. After initial training is completed, ARR must ensure that before any crew is assigned to operate a train transporting LNG, every member of the assigned crew received training on the characteristics and hazard of LNG within the last calendar year.
4. Before commencing operations under this approval, ARR must provide initial training to members of bona-fide emergency response organizations along the route about the hazards and characteristics of LNG and acceptable emergency response methods to address an incident involving a train transporting LNG. ARR must provide documentation of this training to FRA at least 30 days prior to ARR's commencement of operations under this approval. After completion of this initial emergency responder training, ARR must work with each bona-fide emergency response organization along the route to establish a schedule for recurrent training, which ARR must provide at least annually.
5. During the 2-year period from January 1, 2016, through December 31, 2017, ARR may operate up to three trains round trip per week under this approval. A round trip for one train includes moving the loaded tanks in a northbound direction and moving the unloaded residue tanks in a southbound direction. ARR must not transport more than 12 portable tanks of LNG, either loaded or residue tanks, in any train operating under this approval, and, to the extent possible, the portable tanks must be loaded two to a flatcar, with a maximum of six flat cars in a train. Single tanks loaded on 89-foot flat cars must be loaded in the forward position on the flatcar in the direction of travel. During the period of January 1, 2018 through December 31, 2020, ARR may operate one unit train containing a maximum of 60 loaded tanks every 4 days under this approval. To the extent possible, the portable tanks must be loaded two to a flatcar, with a maximum of 30 flatcars in a train. Single tanks loaded on 89-foot flat cars must be loaded in the forward position on the flatcar in the direction of travel. These unit trains will replace the three trains per week described in Condition 5, and will not be in addition to such trains.
6. ARR must report to FRA, by the 15th of each month, the number of portable tank loads and residues transported the previous month.
7. Within 24 hours of any accident or incident involving a train operating under this approval (regardless of whether a release of LNG occurs), ARR must report that accident or incident to FRA.
8. Double stacking of the portable tanks is prohibited.
9. A railcar carrying a portable tank of LNG (whether loaded or residue) is prohibited from being nearer than the fifth car from any locomotive in a train consist.
10. The maximum speed for any train operating under this approval is 50 mph; except that trains are restricted to 40 mph through the following Census-designated "places" and incorporated places ("cities"): Anchorage, Wasilla, Talkeetna, Healy, Nenana, and Fairbanks.

11. At least 60 days before commencing operations under this approval, ARR must submit to FRA specification sheets for all existing portable tanks ARR intends to use to transport LNG. The use of these existing tanks is subject to FRA's approval. Before construction of new tanks for the transportation of LNG, ARR must conduct an analysis of the optimization of safety and capacity of the tanks and provide the specification sheets for the tanks, as well as the results of ARR's analysis to FRA. ARR's optimization analysis must demonstrate the use of the difference between the maximum allowable rail load and the actual gross rail load of the 89′ flat cars with two loaded 11,000 gallon T75 portable tanks, to increase the protective structures on the portable tanks (e.g., thicker shell or jacket).

Nothing in this approval relieves ARR from its responsibility to comply with all applicable regulations governing the transport of hazardous materials by rail, including both FRA and Pipeline and Hazardous Materials Safety Administration regulations. FRA's approval of ARR's request for rail transportation of these tanks should not be construed by other rail carriers as a requirement that they accept these tanks for transportation.

This approval is effective from the date of this letter through December 31, 2020. If ARR desires to continue operations under this approval after December 31, 2020, it must notify FRA of its intent to continue operations no later than August 31, 2020. If ARR desires to modify its operations from those permitted by this letter, it must obtain FRA's approval before implementing the proposed modification(s). FRA encourages ARR to use all information gathered and reported to FRA under this approval to plan and prepare for any potential future requests to expand operations under this approval.

FRA reserves the right to amend or revoke this approval based upon noncompliance with any condition of this approval or applicable Federal regulation, or based on information pertaining to the safety of the operation. Further, FRA reserves the right to take enforcement action under 49 U.S.C. § 20111 for ARR noncompliance with any condition of this approval or applicable Federal regulation.

If you have any questions, please contact Mr. Karl Alexy, Staff Director, Hazardous Materials Division. Mr. Alexy may be reached at (202) 493-6245 or Karl.Alexy@dot.gov.

Sincerely,

Robert C Lauby

Robert C. Lauby
Associate Administrator of Railroad Safety
Chief Safety Officer

Attachment F

Trailer Testing Press Coverage

Alaska Dispatch News

Published on *Alaska Dispatch News* (http://www.adn.com)

Alex DeMarban [1]
November 26, 2015
Main Image:
LH Fairbanks Aerials 03 - 20150908.jpg-1441935197 [2]

Efforts to get cheaper, cleaner energy to Fairbanks could get a boost from a new super-cold semitrailer that can haul more liquefied natural gas than anything else on the state road system, its developers say.

The five-axle trailer includes a cryogenic tank for keeping liquefied gas at Saturnesque temperatures of 265 degrees below zero. It's designed to carry as much LNG as allowed by Alaska law.

The launch, now set for December, was delayed for weeks after the barge carrying it faced 40-foot seas in the Gulf of Alaska and had to wait out a storm in a cove, said Pat Malara, president of Western Cascade Trucking Equipment in Tukwila, Washington.

The double-walled steel tank is designed to hold up to 13,000 gallons of the world's fastest growing fuel, a big jump from the 11,000 gallons that, in a best-case scenario, are currently hauled from the Titan LNG facility at Point MacKenzie to Fairbanks.

"We built this trailer specifically for the Alaska market and we think it will lower the cost per gallon on the transportation side," said Malara.

Western Cascade helped design the trailer and is marketing it for its owner, Heil Trailer International based in Tennessee.

The Alaska Industrial Development and Export Authority plans to try out the semitrailer for a possible role in the Interior Energy Project, the effort to solve Fairbanks' energy woes using LNG.

AIDEA owns Titan and Fairbanks Natural Gas, which delivers liquefied gas to about 1,100 customers in the Fairbanks area.

Karsten Rodvik, external affairs officer at AIDEA, said the agency will review the trailer's performance on demonstration runs between the Titan plant and Fairbanks, a distance of more than 300 miles.

It will also be tested on runs between the North Slope and Fairbanks, Rodvik said.

"If the testing is successful, a trailer of this size can lower energy costs in Interior Alaska," Rodvik said.

Under the Interior Energy Project, AIDEA is evaluating proposals from private companies seeking to win state financial help to haul LNG from Point MacKenzie or the North Slope, where there is currently no liquefaction plant.

Western Cascade is not involved in any of the proposals, but has met with AIDEA in the past about the possibility of delivering LNG to Fairbanks. The city is mostly dependent on fuel oil and wood for heating, so many residents would have to convert their heating system to accept natural gas.

Getting LNG to Fairbanks could include moving it by railcar. The Alaska Railroad Corp. recently became the nation's first railroad approved for hauling the fuel. But some trucking will be necessary until a 32-mile railroad spur to Point MacKenzie is built, a project being pursued by the Matanuska-Susitna Borough and the railroad using a legislative grant.

Malara said the trailer and railroad can "complement" each other, with each providing a backup, if bad weather or other problems prevent the other from delivering.

Five-axle trailers built by Western Cascade are already in use in Alaska, carrying loads such as jet fuel between Anchorage and Prudhoe Bay, said Malara. He said this one meets the state's requirements for weight distribution and other factors.

Dan Byrd, chief of commercial vehicle enforcement and permitting in the state Department of Transportation, said five-axle trailers are also used to deliver heavy loads such as pipe for oil or gas operations.

"They're not uncommon in Alaska," he said, and no permitting is required as long as they meet legal requirements.

Dan Britton, chief executive of Fairbanks Natural Gas, said the company has two LNG trailers in its semitrailer fleet designed to carry 13,000-gallons of LNG. But issues with the weight distribution over the axles means in reality they carry 11,000 gallons at best.

"If we can indeed put the full capacity into that (new trailer) and meet legal road requirements and avoid any unforeseen technical issues, it will be a benefit," he said.

Eleven thousand gallons of LNG is enough to serve 33 to 50 Fairbanks homes with heat in a winter month, on average.

The transport company Crowley will operate the trailer for the demonstration runs. In an apparently unrelated effort, Crowley recently won [3] U.S. and Canadian approval to import LNG to Alaska from Canada.

Malara said the trailer has been successfully tested on a run in Idaho, with liquefied gas moved from a liquefaction facility to an LNG fueling station used by the Lower 48 trucking industry.

The company has a lease agreement with Titan to allow free use of the trailer for the trial demonstration. Malara said the company hopes AIDEA will find value in the trailer and order more.

"We've proven to ourselves it will carry the capacity we say it will in Alaska," Malara said. "So now it's a matter of (AIDEA) touching it and feeling it."

http://www.newsminer.com/news/local_news/trailer-built-for-lng-comes-to-fairbanks/article_7c292464-a234-11e5-8b04-a76a0454dfed.html

Trailer built for LNG comes to Fairbanks

Dec 14, 2015

By Matt Buxton

mbuxton@newsminer.com

The state is working to shave every last penny off the cost to get natural gas to the Fairbanks area and the latest effort is a brand new shipping trailer.

The Alaska Industrial Development and Export Authority and Fairbanks Natural Gas are currently evaluating a new trailer specially designed for supercooled liquefied natural gas, and it's making a stop in Fairbanks.

The trailer, built by Tennessee-based Heil Trailer International and marketed by Western Cascade, is a massive 75-foot, five-axle trailer with a 13,000 gallon LNG capacity.

"There's no doubt about it," said AIDEA spokesman Karsten Rodvik. "It's a big impressive piece of equipment."

Some of the trailers currently used by Fairbanks Natural Gas are rated for 13,000 gallons, but because of weight restrictions on Alaska roads they've carried around 11,000 gallons.

If approved for use in the Interior Energy Project, Rodvik said it could help drive down costs for delivery.

"If the testing proves successful, a trailer of this size can help reduce energy costs for the Interior," he said.

The test trailer will be available for viewing today and Tuesday before it makes its run up to the North Slope, where it also will be put through its paces as the state tries it out.

The trailer will be in Fairbanks on tonight at the Pipeline Training Center for an invitation-only event hosted by the Greater Fairbanks Chamber of Commerce and the Fairbanks Economic Development Corporation.

It then makes a stop in North Pole on Tuesday. The trailer will be available for public viewing from noon to 6 p.m. Tuesday at Hotel North Pole.

The Alaska Industrial Development and Export Authority is overseeing the Interior Energy Project, a public-private partnership to bring additional natural gas to the Interior.

The state agency recently whittled down a field of five private companies to two potential contractors to source gas for the Interior, one coming from the North Slope and one from the Cook Inlet.

A decision on that end of the project is expected by mid-January.

Contact staff writer Matt Buxton at 459-7544. Follow him on Twitter: @FDNMpolitics.

INSPECTORS DISPLAY LNG TRAILER PROPOSED FOR INTERIOR ENERGY PROJECT

Tue, 12/15/2015 - 17:15 -- mfussell

State evaluators invited the public to take a look at a trailer that could be used to bring affordable liquefied natural gas to the Interior.

The Western Cascade LNG trucking unit was on display outside of Hotel North Pole this afternoon.

Members of the Alaska Industrial Development and Export Authority are in the process of ensuring the equipment meets the economic and safety requirements for the Interior Energy Project.

The trailer will be used if either a North Slope or Cook Inlet solution is chosen by AIDEA.

The 53-foot long unit can carry up to 15,000 gallons and contains a double-wall system to ensure safety in case of an accident.

Inspectors plan on driving all possible project routes with a full load, and said they will conclude their study within the next two to three months.

"Right now, we're looking at how much product we can actually get in the tank and still meet the road law requirements, how it handles for the drivers and making sure there's no issues with loading and unloading the trailer," Dan Britton, President of Fairbanks Natural Gas, said. "The biggest part of the test is really how much product we can put on the trailer on a consistent basis."

MORE FROM NEWSCENTER 11

GVEA works to restore power

DOT works to keep roads safe

http://www.newsminer.com/news/local_news/new-tanker-designed-to-haul-natural-gas-across-alaska-is/article_dbc94fa8-a30a-11e5-9b88-c3211397d097.html

FEATURED

New tanker designed to haul natural gas across Alaska is under evaluation

By Matt Buxton mbuxton@newsminer.com Dec 15, 2015

Eric Engman/News-Miner

A specially designed trailer to transport supercooled liquefied natural gas is on display in front of the Fairbanks Pipeline Tra preparation for an invitation-only event hosted by the Greater Fairbanks Chamber of Commerce and the Fairbanks Econom Corporation Monday afternoon December 14, 2015.

This story has been updated with the correct length of the trailer. The original 75-feet figure is for the trailer and the truck.

FAIRBANKS — During the years the state has worked on bringing natural gas to Fairbanks, it's refined and lowered prices of just about every part of the project except for trucking.

That could change with a new liquefied natural gas trailer specially designed for Alaska that hit the roads for the first time this weekend.

The 53-foot, five-axle, 13,000-gallon capacity liquefied natural gas trailer was on display at the Pipeline Training Center on Monday night as it begins a months-long trial in the Fairbanks Natural Gas utility's fleet of trucks.

The trailer, for now, is a one-of-a-kind creation between Tennessee-based Heil Trailer International and South Africa-based GasCon coordinated by Western Cascade Trucking Equipment. It combines a larger-than-average cryogenic storage container made by GasCon with a special five-axle trailer made by Heil.

“It’s a proven platform,” said Nathan Langford, a Heil engineer who worked on the trailer. “The axle layout and everything is proven. The new technology here is tailoring it just for the Alaskan market.”

The trailer pushes right up to the Alaska law in terms of capacity for the roads, which Heil said are higher than most Lower 48 states where most LNG trailers are designed to operate.

He said the trailer’s higher capacity will lower the overall cost to deliver gas to Fairbanks and should result in a lower cost that ratepayers will see.

“It has a direct impact on that operating cost,” Langford said. “You’re trying to supply energy to the Interior of Alaska, but you’re having to use energy just to transport it. By hauling more per load, hopefully you can eliminate a couple different hauls. And that has even a slight positive impact on air quality because you’re not putting as much emissions into the air.”

Pat Malara, president of Western Cascade Trucking Equipment, said that the long-term goal with the plan is to add on an additional smaller tow-behind trailer to carry an additional 5,000 gallons of LNG to drive down the cost even further. Whether or not the trailer sees widespread adoption as the Interior Energy Project moves forward will be determined by the trailer’s next few months on the road under the oversight of Fairbanks Natural Gas, which currently trucks up gas from Point MacKenzie to the Interior.

Dan Britton, the president and CEO of Fairbanks Natural Gas, said during the next few months the trailer will be tried out to see how it handles on Alaska roads, how it handles at the filling stations and whether or not it will make sense to add to the utility’s fleet.

“We’re going to put it into real life operations,” he said. “We’ll also be running some test trips up to Prudhoe Bay and back just to make sure that we’re getting a good feel of trucking it on the Haul Road.”

Fairbanks Natural Gas' sister company, Titan, operates a liquefaction plant in Point MacKenzie that has supplied the utility's customers, but the state is considering a North Slope plant as well as an additional Cook Inlet plant as it sources additional gas for the Interior.

The trailer will be on display noon to 6 p.m. today at Hotel North Pole, 449 N. Santa Claus Lane, in North Pole.

Contact staff writer Matt Buxton at 459-7544. Follow him on Twitter at twitter.com/FDNMpolitics.

Energy

New highway tanker for carrying natural gas across Alaska goes under review

The Associated Press | December 16, 2015

FAIRBANKS — A new trailer specially designed to haul natural gas across Alaska will be under review to determine whether it will see widespread adoption.

The 53-foot liquefied natural gas trailer will hit the roads for the first time this weekend as part of a months-long trial with the Fairbanks Natural Gas utility's fleet of trucks, The Fairbanks Daily News-Miner reported.

The 13,000-gallon trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International, a company from Tennessee. The unique creation between the two companies was coordinated by Western Cascade Trucking Equipment.

"It's a proven platform," said Nathan Langford, a Heil engineer who worked on the trailer. "The axle layout and everything is proven. The new technology here is tailoring it just for the Alaskan market."

The trailer's higher capacity will drive down the overall cost to deliver gas to Fairbanks, Langford said.

"It has a direct impact on that operating cost," he said. "You're trying to supply energy to the Interior of Alaska, but you're having to use energy just to transport it. By hauling more per load, hopefully you can eliminate a couple different hauls. And that has even a slight positive impact on air quality because you're not putting as much emissions into the air."

Pat Malara, president of Western Cascade Trucking Equipment, said a long-term goal for the trailer is to add a smaller tow-behind trailer to carry an additional 5,000 gallons of liquefied natural gas.

The trailer will spend the next few months on the road under the oversight of Fairbanks Natural Gas, which trucks gas from Point Mackenzie to the Interior.

Dan Britton, the president and CEO of Fairbanks Natural Gas, said the trailer will be tried out to test how it runs on Alaska roads and to determine whether it will be a good fit for the utility's fleet.

DAILY JOURNAL

New tanker designed to carry natural gas across Alaska under review

THE ASSOCIATED PRESS
December 16, 2015 - 11:38 am EST

FAIRBANKS, Alaska — A new trailer specially designed to haul natural gas across Alaska will be under review to determine whether it sees widespread adoption.

The 53-foot liquefied natural gas trailer will hit the roads for the first time this weekend as part of a months-long trial with the Fairbanks Natural Gas utility's fleet of trucks, The Fairbanks Daily News-Miner reported (http://bit.ly/1Yfegp2).

The 13,000-gallon capacity trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International, a company from Tennessee. The unique creation between the two companies was coordinated by Western Cascade Trucking Equipment.

"It's a proven platform," said Nathan Langford, a Heil engineer who worked on the trailer. "The axle layout and everything is proven. The new technology here is tailoring it just for the Alaskan market."

The trailer's higher capacity will drive down the overall cost to deliver gas to Fairbanks, Langford said.

"It has a direct impact on that operating cost," he said. "You're trying to supply energy to the Interior of Alaska, but you're having to use energy just to transport it. By hauling more per load, hopefully you can eliminate a couple different hauls. And that has even a slight positive impact on air quality because you're not putting as much emissions into the air."

Pat Malara, president of Western Cascade Trucking Equipment, said a long-term goal for the trailer is to add a smaller tow-behind trailer to carry an additional 5,000 gallons of liquefied natural gas.

The trailer will spend the next few months on the road under the oversight of Faribanks Natural Gas, which trucks up gas from Point Mackenzie to the Interior.

Dan Britton, the president and CEO of Fairbanks Natural Gas, said the trailer will be tried out to test how it runs on Alaska roads and to determine whether it will be a good fit for the utility's fleet.

Information from: Fairbanks (Alaska) Daily News-Miner, http://www.newsminer.com

Think your friends should see this? Share it with them!

We also have more stories about:
(click the phrases to see a list)

Category:

- Alaska

Subjects:

- Energy industry
- Industrial products and services
- Industries

Daily Reporter
Greenfield, Indiana

New tanker designed to carry natural gas across Alaska under review

THE ASSOCIATED PRESS
First Posted: December 16, 2015 - 11:38 am
Last Updated: December 16, 2015 - 11:38 am

FAIRBANKS, Alaska — A new trailer specially designed to haul natural gas across Alaska will be under review to determine whether it sees widespread adoption.

The 53-foot liquefied natural gas trailer will hit the roads for the first time this weekend as part of a months-long trial with the Fairbanks Natural Gas utility's fleet of trucks, The Fairbanks Daily News-Miner reported (http://bit.ly/1Yfegp2).

The 13,000-gallon capacity trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International, a company from Tennessee. The unique creation between the two companies was coordinated by Western Cascade Trucking Equipment.

"It's a proven platform," said Nathan Langford, a Heil engineer who worked on the trailer. "The axle layout and everything is proven. The new technology here is tailoring it just for the Alaskan market."

The trailer's higher capacity will drive down the overall cost to deliver gas to Fairbanks, Langford said.

"It has a direct impact on that operating cost," he said. "You're trying to supply energy to the Interior of Alaska, but you're having to use energy just to transport it. By hauling more per load, hopefully you can eliminate a couple different hauls. And that has even a slight positive impact on air quality because you're not putting as much emissions into the air."

Pat Malara, president of Western Cascade Trucking Equipment, said a long-term goal for the trailer is to add a smaller tow-behind trailer to carry an additional 5,000 gallons of liquefied natural gas.

The trailer will spend the next few months on the road under the oversight of Faribanks Natural Gas, which trucks up gas from Point Mackenzie to the Interior.

Dan Britton, the president and CEO of Fairbanks Natural Gas, said the trailer will be tried out to test how it runs on Alaska roads and to determine whether it will be a good fit for the utility's fleet.

Information from: Fairbanks (Alaska) Daily News-Miner,

Follow Daily Reporter!

We also have more stories about:
(click the phrases to see a list)

Subjects:

- Utilities (428)
- Energy industry (720)

New tanker to carry natural gas across Alaska under review

New tanker designed to carry natural gas across Alaska under review

POSTED: 07:34 AM AKST Dec 16, 2015 | UPDATED: 07:44 AM AKST Dec 16, 2015

FAIRBANKS, Alaska (AP) — A new trailer specially designed to haul natural gas across Alaska will be under review to determine whether it sees widespread adoption.

The Fairbanks Daily News-Miner reports (http://bit.ly/1Yfegp2) that the 53-foot liquefied natural gas trailer will hit the roads for the first time this weekend as part of a months-long trial with the Fairbanks Natural Gas utility's fleet of trucks.

The 13,000-gallon capacity trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International, a company from Tennessee.

An engineer who worked on the trailer, Nathan Langford, says the trailer's higher capacity will drive down the overall cost to deliver gas to Fairbanks.

___

Information from: Fairbanks (Alaska) Daily News-Miner, http://www.newsminer.com

Contact Us | Meet the News Team
Employment Opportunities | Justice Network
Public File
What's On 2? | Subscribe
Press Releases | Submit Events

SEVERE WE
2 areas are nov
weather warnin
Northeast Princ
William Sound

Weather

CURRENTLY 43°
Fast Forecast

RADAR
Southcentral Radar

New tanker to carry natural gas across Alaska under review

The Associated Press

12/16/2015

The 13-gallon capacity trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International. (Associated Press)

FAIRBANKS, Alaska — A new trailer specially designed to haul natural gas across Alaska will be under review to determine whether it sees widespread adoption.

The 53-foot liquefied natural gas trailer will hit the roads for the first time this weekend as part of a months-long trial with the Fairbanks Natural Gas utility's fleet of trucks, The Fairbanks Daily News-Miner reported (http://bit.ly/1Yfegp2).

The 13-gallon capacity trailer combines a large cryogenic storage container made by South Africa-based GasCon with a five-axle trailer made by Heil Trailer International, a company from Tennessee. The unique creation between the two companies was coordinated by Western Cascade Trucking Equipment.

"It's a proven platform," said Nathan Langford, a Heil engineer who worked on the trailer. "The axle layout and everything is proven. The new technology here is tailoring it just for the Alaskan market."

The trailer's higher capacity will drive down the overall cost to deliver

gas to Fairbanks, Langford said.

"It has a direct impact on that operating cost," he said. "You're trying to supply energy to the Interior of Alaska, but you're having to use energy just to transport it. By hauling more per load, hopefully you can eliminate a couple different hauls. And that has even a slight positive impact on air quality because you're not putting as much emissions into the air."

Pat Malara, president of Western Cascade Trucking Equipment, said a long-term goal for the trailer is to add a smaller tow-behind trailer to carry an additional 5,000 gallons of liquefied natural gas.

The trailer will spend the next few months on the road under the oversight of Faribanks Natural Gas, which trucks up gas from Point Mackenzie to the Interior.

Dan Britton, the president and CEO of Fairbanks Natural Gas, said the trailer will be tried out to test how it runs on Alaska roads and to determine whether it will be a good fit for the utility's fleet.

The Trucker staff can be reached to comment on this article at editor@thetrucker.com.

Find more news and analysis from The Trucker, and share your thoughts, on Facebook.

Attachment G

Recommended 2016
Pentex Budget & Rates

Alaska Industrial Development and Export Authority

MEMORANDUM

TO: Board Members
Alaska Industrial Development and Export Authority

FROM: John Springsteen
Executive Director

DATE: December 17, 2015

SUBJECT: Pentex 2016 Budget, Resolution No. G15-24

Resolution No. G15-24 approves the 2016 Pentex budget, as well as the temporary rates for FNG and Titan. The budget and rates were developed by FNG staff in consultation with AIDEA's Pentex and IEP team members, then were reviewed by the Board's IEP Subcommittee and presented to the Board for discussion at the December 3, 2015 Board meeting.

The budget and rate report prepared by FNG's President is attached for reference. As noted in the report and the resolution, the permanent rate-setting process will be conducted subsequent to January 1, 2016, to be completed during the first six months of the year.

The budget and rates achieve AIDEA's policy and financial objectives for the Pentex acquisition and IEP, and result in significant rate reductions for FNG's customers while maintaining cash position in the companies – despite challenging projected market and environmental conditions.

813 West Northern Lights Boulevard Anchorage, Alaska 99503 T 907.771.3000 Toll Free (Alaska Only) 888.300.8534 F 907.771.3044

ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY

RESOLUTION NO. G15-24

RESOLUTION OF THE ALASKA INDUSTRIAL DEVELOPMENT AND EXPORT AUTHORITY REGARDING THE 2016 BUDGET AND INTERIM RATES FOR PENTEX ALASKA NATURAL GAS COMPANY, LLC

WHEREAS, on September 30, 2015, the Alaska Industrial Development and Export Authority (the "Authority") closed on its acquisition of Pentex Alaska Natural Gas Company, LLC ("Pentex"), a Delaware limited liability company, and the Authority thereby became the managing member of Pentex;

WHEREAS, Pentex owns Fairbanks Natural Gas, LLC ("FNG"), which is a natural gas utility for Fairbanks, Alaska, and Pentex owns Titan Alaska LNG, LLC, which operates a liquefied natural gas ("LNG") plant that supplies LNG to FNG;

WHEREAS, as the managing member of Pentex, the Authority needs to approve a budget for Pentex and its operating subsidiaries for calendar year 2016;

WHEREAS, staff of the Authority, in consultation with professional advisors and the management of the Pentex subsidiaries, has developed a proposed budget for Pentex and its subsidiaries;

WHEREAS, in Resolution No. G15-10, adopted on June 11, 2015, the Board approved a rate setting procedure to be utilized once the Authority completed the Pentex acquisition;

WHEREAS, under Section 3.8 of the rate setting procedure, the Board, acting as the managing member of Pentex, may establish temporary interim rates for FNG and Titan pending completion of the full rate setting process; and

WHEREAS, the Board desires to set interim rates for FNG and Titan for calendar year 2016, or until the full rate setting procedure is completed and other rates are established;

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

Section 1. The Authority, acting as the managing member of Pentex, approves the proposed calendar year 2016 budget for Pentex and its subsidiaries submitted to the Board.

Section 2. The Authority, acting as the managing member of Pentex, approves the interim rates for FNG and Titan as stated on the rate sheet attached to this Resolution, which rates shall remain in effect until the full rate setting procedure is completed and other rates are established. Staff of the Authority is authorized and directed to solicit public comment on the interim rates and to take all other actions necessary to present proposed permanent rates to the Board at a subsequent meeting.

Section 3. The Executive Director is authorized to sign any documents and to take all other actions necessary or expedient in carrying out the purposes of this Resolution.

Dated at Anchorage, Alaska, this 17th day of December 2015.

_____
Chair

ATTEST
[SEAL]

_____
Secretary

December 1, 2015

TO: **The AIDEA Board**

FROM: **Dan Britton**
President, FNG

SUBJECT: **Recommended Pentex 2016 Budget & Rates**

BACKGROUND

Resolution NO. G15-10 established the processes and standards by which the AIDEA Board serves as the budget approval and rate-setting governing body for Pentex Alaska Natural Gas Company, LLC ("Pentex"), during the interim period of AIDEA ownership of Pentex. FNG management has prepared, and the AIDEA Pentex/IEP team has reviewed, this proposed 2016 budget and rates for Pentex's operating units: Fairbanks Natural Gas, LLC ("FNG"), Titan Alaska LNG, LLC ("Titan"), and Arctic Energy Transportation, LLC ("AET"). In order to establish rates effective January 1, 2016, the proposed rates will be established under the interim rate provisions of that resolution.

RECOMMENDATIONS

The proposed Pentex budget and rates reflect projected environmental and economic conditions for 2016 as well as AIDEA IEP policy and investment / financial objectives. FNG's President and AIDEA's IEP/Pentex teams recommend that the Board:

1. Adopt the proposed 2016 Pentex subsidiary budgets
2. Approve the proposed 2016 FNG and Titan rates and the related tariff modifications

SUMMARY AND CONCLUSIONS

The 2016 Pentex budget, based on conservative assumptions and grounded in IEP policy, maintains fiscal prudence and financial capacity despite projecting another year of low oil prices, moderate weather and dampened natural gas demand. However, elimination of corporate related-expenses and regulatory costs support significant rate reductions beginning on January 1, 2016.

Key highlights of the proposed 2016 Pentex budget and rates include:

- Approximately $1.2 million reduction in general and administrative costs
- Roughly $1.5 million earnings before interest, taxes, depreciation and amortization (EBITDA)
- Roughly break-even net income and maintained cash balances overall.
- Residential rate reduction of 13.5%
- Overall FNG rate reductions of approximately 10.4%

- $585,000 of planned capital expenditures in FNG and Titan
- Approximately $900,000 of return on investment to the AIDEA Revolving Fund (the remainder of AIDEA's ROI is planned for inclusion in the recapitalization of the system when FNG is transferred to a local control entity during 2016).

The table below summarizes key projected results of the Pentex 2016 budget:

Summary 2016 Budget Projected Financial Results	**Pentex**	**FNG**	**Titan**	**AET**
Net Income	$3,665	$84,619	$8,576	($89,531)
EBITDA	$1,529,075	$927,168	$558,365	$43,542
Beginning Cash	$2,906,783	$2,178,059	$716,006	$12,719
Net Increase(decrease) in Cash	$65,641	$63,256	$2,113	$271
Ending Cash	$2,972,424	$2,241,315	$718,119	$12,990

NOTE: AET was established as a separate entity in 2014 as an experiment and does not really operate as a separate profit-making entity. If AIDEA were going to maintain an investment in Pentex for a longer period, AET would be re-absorbed into Titan. However, since it is anticipated that the Pentex investment will be very short term, AET has been left in status quo in the projected 2016 budget – with a net loss that is not material to the overall Pentex entity – and with a cash-neutral projection.

The tables below provide the estimated 2016 capital expenditures for FNG and Titan.

Fairbanks Natural Gas, LLC **Capital Budget**	**2016** Cost
Office & Administration & IT	
Computer Replacement	$10,000
Misc	10,000
	$20,000
Storage Sites	
Computer & Software Upgrades	$15,000
LNG Custody Transfer Meters	60,000
Security Cameras SS I & II	25,000
	$100,000
Operations	
GIS Implementation	$150,000
Meter Replacement Program	125,000
	$275,000
Total	**$395,000**

Titan Alaska LNG, LLC **Capital Budget - 2016**	Cost
LNG - Plant Upgrades	
Propane Chiller Upgrade	$60,000
Civil Upgrades	15,000
Insulation (Plant Pipe)	100,000
Trailer Coil Replacement	15,000
Total	**$190,000**

IEP POLICY FOUNDATION

The 2016 budget (and draft projected rates) are based on several key IEP policy objectives:

- Maintain existing competent and efficient operations of the FNG utility and the Titan LNG plant
- Eliminate overhead, tax, regulatory, return and other costs related to corporate ownership
- Reduce rates immediately consistent with financial prudence and AIDEA financial projections
- Support potential for system expansion and customer conversion when market conditions improve

KEY ASSUMPTIONS AND ESTIMATES

Certain key assumptions and estimates are central to the development of the Pentex budget:

- Demand / Revenues
    - Weather conditions consistent with recent experience – "heating degree days" only slightly (5.9%) higher than 2015 – well below long term averages
    - Overall demand (total Bcf of gas sold/consumed) down approximately 13% from 2015 due to reduced demand from large commercial and interruptible customers
- Expenses
    - FNG General and Administrative expenses reduced ~40% due to elimination of corporate overhead and regulatory expenses
    - Conduct targeted capital renewal and maintenance at the Titan plant and in the FNG storage, re-gas and distribution system
    - Suspend expansions of the FNG distribution system until additional LNG supply and storage is implemented.

PROJECTED FNG 2016 RATES

The table below summarizes FNG's projected rates and sales by customer class for 2016.

# of Cust.	Customer Class	2015 Sales (Mcf)	2016 Sales (Mcf)	2015 Rate	2016 Rate	% Change
464	Residential	56,187	55,562	$ 23.35	$ 20.20	-13.5%
615	Small Commercial	381,167	396,208	$ 22.91	$ 20.16	-12.0%
31	Large Commercial	210,967	205,173	$ 22.66	$ 20.10	-11.3%
28	Interruptible - Small	73,367	81,318	$ 20.39	$ 20.03	-1.8%
2	Interruptible - Hospital	25,584	0	$ 19.50	$ -	N/A
1	UAF	0	0	$ 19.50	$ -	N/A
	Total	747,272	738,261	$ 22.47	$ 20.13	-10.4%

The table on pages 4 through 6 serves as a rate-setting checklist – relating the proposed Pentex budget and rates to the provisions of AIDEA Board Resolution NO. G15-10 by which the process for rate-setting was defined. Although this memo recommends setting interim rates, the process and information are sufficient to meet the permanent rate standards of the Resolution except for the time period for public notice and community input. AIDEA expects this process to be completed during Q 1 of 2016. NOTE: This table covers only rates and does not include the additional elements of the FNG tariff, which will be sent under separate cover.

Process Element (from Resolution NO. G15-10)	**Status / Source**
3.1 – FNG President's report and recommendation:	Report
• Initial rates and rate structure for FNG	Pages 3, 21
3.2 – FNG - Report shall identify:	
• FNG known and measureable costs and expenses	Page 9
o Operating expenses	Page 9
o Gas supply costs	Page 9
o Taxes	No taxes projected
o Cash working capital needs	Page 10
o Planned capital expenditures (indicating time period, rate recovery)	Page 2, all recovered in 2016
• Any recommended reserves that need to be or are recommended to be funded	The maintained balance of cash – ~$3.0 million serves as the recommended Pentex operating reserve – approximately 20% of annual expenditures. Pages 10, 13, 16, 19, 20
• Unless otherwise directed proposed rates shall include allowance for reimbursement of AIDEA expenses, including those related to FNG and its operations and expenses of completing the rate-setting procedure	The G&A expense budgets for Pentex provide sufficient capacity to reimburse AIDEA's minimal costs. Page 18
• Unless otherwise directed, proposed rates shall include a recommended return for the outstanding capital investment AIDEA made	ROI of approximately $900k, Pages: 2, 20
• Any return on AIDEA's investment separately and clearly identified as distributions to be made to Pentex	Page 20
3.3 – Titan - Report shall identify:	
• All of Titan's known and measureable costs of operation	Page 12
o Expenses	Page 12

Process Element (from Resolution NO. G15-10)	Status / Source
○ Planned capital expenses	Page 12
○ Recommended reserves	See note above in section 3.2 regarding overall reserves
• Recommended Titan rates and rate structure • Recommended affiliated company purchase price for LNG supplied by Titan to FNG	Titan rates to FNG per Mcf are shown below: Jan $15.58 Feb $15.40 Mar $15.20 Apr $15.31 May $15.41 Jun $15.80 Jul $15.87 Aug $15.95 Sep $15.43 Oct $15.28 Nov $15.19 Dec $15.21
3.4 – AET - Report shall identify:	
• All of AET's known and measureable costs of operation	Page 15
○ Expenses	Page 15
○ Planned capital expenses	Page 15
○ Recommended reserves	See note above in section 3.2 regarding overall reserves
• Recommended AET rates and rate structure • Recommended affiliated company purchase price for Titan's use of AET's LNG fueling facilities	AET's projected pricing for 2016 is: • Diesel: $3.75/gal.* • LNG: $2.23/gal. *Estimated as intra-company cost, not market price
3.5 – Public Disclosure • Report and recommended rates available to: ○ IGU ○ Fairbanks North Star Borough ○ City of Fairbanks ○ City of North Pole ○ Public (through an Internet posting) • Report and recommendations publicly available by any other means • Solicit public comment ○ Writing ○ One or more public meetings	To be distributed during the week of November 30, 2015 for review and comment until the December 17, 2015 AIDEA board meeting
3.6 – AIDEA Decisions • Not sooner than 30 days after public disclosure	AIDEA will have presentation of the

Process Element (from Resolution NO. G15-10)	Status / Source
• Public meeting with advance notice	proposed budget and rates on 12/3/15 and a public hearing and adoption on 12/17/15
3.7 – AIDEA Board alternatives • Adopt rates as recommended in report • Adopt modified rates • Include return or defer return • In no event establish rates so as to cause FNG, Titan or AET to operate at a loss	See section 5.2 below
3.8 – Interim Rates • Interim rates allowed pending completion of full rate-setting procedure • Interim rates may be established without opportunity for public comment or prior public notice • Interim rates may remain in effect for six months. • Interim rates may be refundable or non-refundable. 3.9 – Periodic Revisions • Rates may be revised periodically as determined appropriate by AIDEA • Revisions will use these rate procedures • Revised rate structure may include reasonable charge to recoup any losses incurred	This report recommends interim rates in order to allow adoption as of 1/1/16. The interim rate process meets all of the planned permanent rate processes and standards except for the 30-day prior notice requirement. Permanent rates will be established before 3/31/16
5.1 – Amendments • AIDEA board may amend	
5.2 – Deviations and Waivers	
• AIDEA board may authorize deviations and waivers from these procedures on a case-by-case basis.	One deviation or waiver required for these rates is the projected net loss for AET.

PENTEX 2016 SUMMARY BUDGET PROJECTIONS & RATE SUMMARY

The following pages include summaries of:

- FNG 2016 budget estimates (with 4-year history*) – pages 8 through 10
- Titan 2016 budget estimates (with 3-year history*) – pages 11 through 13
- AET 2016 budget estimates (with 2-year history**) – pages 14 through 16

*NOTE: Prior to August 2013, Titan did not exist as a separate entity. The split of the Titan and FNG entities results in changes to the FNG expenses related to natural gas, trucking, LNG Trailer lease expenses and electricity, which, after the split become a single expense line for FNG.
**NOTE: AET has only existed as a separate entity since 2014.

Also included (on pages 17 through 20) is a consolidated summary of the Pentex entity projected budgets for 2016.

Finally, on page 21, is a detailed summary of the projected 2016 FNG rates.

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
BALANCE SHEET						
ASSETS						
Utility Plant	19,574,554	17,782,763	25,008,646	32,337,163	31,890,789	-1.4%
Cash and cash equivalents	358,425	1,687,777	1,462,440	2,178,059	2,241,315	2.9%
Accounts receivable	2,674,170	3,059,673	2,610,212	2,329,161	2,082,107	-10.6%
Accounts receivable - affiliates	0	503,333	135,739	651	0	-100.0%
Materials & Supplies inventory	493,257	518,000	713,432	806,541	802,080	-0.6%
Deposits & Other Current Assets	106,611	113,753	88,447	83,352	88,873	6.6%
Investment in associated company	6,832,551	4,729,902	3,899,475	3,902,424	3,902,424	0.0%
Marketable securities available for sale	0	0	117,158	167,158	217,158	29.9%
Total Assets	30,039,568	28,395,201	34,035,549	41,804,510	41,224,745	-1.4%
LIABILITIES AND STOCKHOLDERS' EQUITY						
Accounts payable	1,244,000	467,638	196,044	842,314	57,885	-93.1%
Accounts payable - affiliates	0	2,972,720	1,764,902	1,200,000	1,597,958	33.2%
Accrued wages & burden	179,078	169,354	189,416	56,660	4,815	-91.5%
Accumulated Deferred Compensation	0	0	117,158	167,158	217,158	29.9%
Other current & accrued liabilities	122,955	27,911	28,167	9,142	22,219	143.0%
Note Payable	0	0	6,803,810	14,717,223	14,717,223	0.0%
Equipment loans payable	0	43,077	34,256	24,915	15,023	-39.7%
Total Liabilities	1,546,033	3,680,700	9,133,753	17,017,412	16,632,279	-2.3%
MEMBER EQUITY						
Member Equity	28,493,535	24,714,501	24,901,796	24,787,097	24,592,465	-0.8%
Total Members' Equity	28,493,535	24,714,501	24,901,796	24,787,097	24,592,465	-0.8%
Total Liabilities and Members' Equity	30,039,568	28,395,201	34,035,549	41,804,510	41,224,745	-1.4%

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF OPERATIONS						
Mcf:						
Residential	60,833	55,271	53,456	56,187	55,562	-1.1%
Small Commercial	410,379	383,430	376,124	381,167	396,208	3.9%
Large Commercial	228,164	200,168	201,172	210,967	205,173	-2.7%
Interruptible - Small	56,865	80,355	71,195	73,367	81,318	10.8%
Hospital	80,007	128,484	114,104	25,584	0	-100.0%
UAF	63,762	78,868	59,499	0	0	0.0%
TKA Commercial Gas Revenues	9,903	9,551	0	0	0	0.0%
Total Mcf	909,913	936,127	875,550	747,273	738,261	-1.2%
HDD	14,909	13,472	12,244	13,134	13,590	3.5%
REVENUE						
Residential Gas Revenues	1,407,775	1,290,589	1,249,476	1,289,361	1,122,228	-13.0%
Small Commercial Gas Revenues	9,143,213	8,781,952	8,616,696	8,729,811	7,987,879	-8.5%
Large Commercial Gas Revenues	5,170,189	4,535,798	4,558,555	4,780,512	4,123,858	-13.7%
Interruptible - Small	1,159,479	1,638,432	1,451,683	1,495,949	1,629,058	8.9%
Hospital Gas Revenues	1,560,137	2,505,438	2,225,028	498,888	0	-100.0%
UAF Revenues	1,243,359	1,537,926	1,160,231	0	0	0.0%
TKA Commercial Gas Revenues	241,980	139,890	0	0	0	0.0%
Service Charge Revenues	247,552	254,635	267,522	235,911	230,551	-2.3%
Other Revenue	0	32,510	7,786	29,559	30,000	1.5%
Net Revenue	20,173,684	20,717,170	19,536,977	17,059,991	15,123,573	-11.4%
Cost of Goods Sold						
Natural gas purchases						
Cost of gas	6,390,406	9,560,599	13,045,289	11,834,651	11,351,640	-4.1%
Trucking Expenses	2,389,050	1,614,342	0	0	0	0.0%
LNG Trailer Lease Payments	184,200	107,450	0	0	0	0.0%
Electricity	755,098	444,798	0	0	0	0.0%
Gas liquefaction expenses	1,001,455	640,147	0	0	0	0.0%
Fairbanks distribution operations	137,738	165,177	276,143	269,472	200,976	-25.4%
Fairbanks distribution maintenance	93,186	81,055	77,559	88,406	184,990	109.3%
Fairbanks storage & vaporization operations	97,945	70,884	376,123	389,865	395,025	1.3%
Fairbanks storage & vaporization maintenance	53,387	112,185	64,587	111,211	89,586	-19.4%
Engineering	111,129	104,109	86,077	140,509	247,027	75.8%
Talkeetna maintenance	2,850	7,492	0	0	0	0.0%
Customer Services	153,190	54,346	113,752	81,140	110,089	35.7%
Depreciation	1,283,329	1,135,606	776,702	832,338	841,374	1.1%
Capital Allowance	0	0	0	0	0	0.0%
Total Cost of Sales	12,652,963	14,098,190	14,816,232	13,747,592	13,420,708	-2.4%
Gross Margin	7,520,721	6,618,980	4,720,745	3,312,399	1,702,865	-48.6%
Gross Margin %	37.28%	31.95%	24.16%	19.42%	11.26%	-42.0%
Operating Expenses						
G&A - FNG	2,262,387	2,467,478	2,790,235	2,740,719	1,617,071	-41.0%
Total operating expenses	2,262,387	2,467,478	2,790,235	2,740,719	1,617,071	-41.0%
Operating Income	5,258,334	4,151,502	1,930,510	571,680	85,794	-85.0%
OTHER INCOME (EXPENSES)						
Interest income	48	25	1,339	2	0	-100.0%
Other Income (expense)	38,325	6,941	16,032	0	0	0.0%
Interest expense	-294	-13,908	-2,247	-1,726	-1,175	0.0%
Other expense	-194	0	-7,805	0	0	0.0%
Gain (loss) on disposal		20,000	-8,438	0	0	0.0%
Total other income (expense)	37,885	13,058	-1,119	-1,724	-1,175	0.0%
NET INCOME	5,296,219	4,164,560	1,929,391	569,956	84,619	-85.2%
OTHER COMPREHENSIVE INCOME						
Unrealized gains on available for sale securities	0	0	7,904	0	0	0.0%
						0.0%
PROVISION FOR INCOME TAXES	0	0	0	0	0	0.0%
NET INCOME	5,296,219	4,164,560	1,937,295	569,956	84,619	-85.2%
EBITDA	6,541,663	5,287,108	2,707,212	1,404,018	927,168	-34.0%

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF CASH FLOWS						
OPERATING ACTIVITIES						
Net income/(loss) for the period	5,296,219	4,164,560	1,929,391	569,956	84,619	-85.2%
Adjustments to reconcile to cash provided by operations						
Depreciation, capital allowance and amortizatio	1,283,329	1,135,606	776,702	832,338	841,374	1.1%
Changes in operating assets and liabilities						
Accounts receivable	-410,632	-385,503	449,461	416,791	247,055	-40.7%
Accounts receivable - affiliates	0	-503,333	409,583	-651	651	0.0%
Deposits & Other Current Assets	-16,463	-7,142	25,306	5,095	-5,521	-208.4%
Investment in associated company	0		1,000,000	-2,949	0	0.0%
Marketable securities available for sale	50,000	0	0	0	-50,000	0.0%
Accounts payable	-559,610	-776,362	-271,594	81,368	-784,430	-1064.1%
Accounts payable - affiliates	0	2,972,720	-1,207,818	0	397,958	0.0%
Accrued wages & burden	-11,652	-9,724	20,062	-132,757	-51,845	0.0%
Accumulated Deferred Compensation	0		117,158	0	50,000	0.0%
Other current & accrued liabilities	69,939	-95,044	256	-26,929	13,076	0.0%
Cash provided/(used) by operations	5,701,130	6,495,778	3,248,507	1,742,261	742,939	-57.4%
INVESTING ACTIVITIES						
Materials & Supplies inventory	11,171	-103,369	-221,438	-93,110	4,461	0.0%
New Plant (Capital Budget)	-1,310,316	-2,677,463	-8,029,586	-8,067,586	-395,000	0.0%
Other Capital Expenditures	-1,102,933	-869,682	-267,809	-60,019	0	0.0%
Cash used in investing activities	-2,402,078	-3,650,514	-8,518,833	-8,220,715	-390,539	0.0%
FINANCING ACTIVITIES						
(Payment) proceeds of financing	-21,825	484,088	6,794,989	7,904,072	-9,893	-100.1%
AIDEA ROI	0	0	0	0	-279,251	0.0%
Paid in Capital	-3,777,206	-2,000,000	-1,750,000	-710,000	0	0.0%
Cash provided (used) by financing activities	-3,799,031	-1,515,912	5,044,989	7,194,072	-289,144	-104.0%
NET INCREASE (DECREASE) IN CASH	-499,979	1,329,352	-225,337	715,619	63,256	-91.2%
CASH - beginning of period	858,404	358,425	1,687,777	1,462,440	2,178,059	48.9%
CASH - end of period	358,425	1,687,777	1,462,440	2,178,059	2,241,315	2.9%

Titan Alaska LNG, LLC 2016 Budget - Annual Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
BALANCE SHEET						
ASSETS						
Utility Plant	$ -	$ 3,398,104	$ 3,346,569	$ 2,919,902	$ 2,564,499	-12.2%
Cash and cash equivalents	-	6,293	1,158,472	716,006	718,119	0.3%
Accounts receivable	-	14,919	8,243	16,427	13,027	-20.7%
Accounts receivable - affiliates	-	2,950,562	1,893,733	1,720,845	1,608,153	-6.5%
Materials & Supplies inventory	-	47,866	55,629	55,629	55,629	0.0%
Deposits & Other Current Assets	-	7,849	42,772	48,746	48,214	-1.1%
Total Assets	$ -	$ 6,425,593	$ 6,505,418	$ 5,477,556	$ 5,007,642	-8.6%
LIABILITIES AND STOCKHOLDERS' EQUITY						
Accounts payable	$ -	1,463,873	1,354,796	1,111,392	$ 1,329,704	19.6%
Accounts payable - affiliates	-	493,641	142,715	-	-	0.0%
Accrued wages & burden	-	56,598	47,417	4,400	4,451	1.2%
Other current & accrued liabilities	-	45,561	399,485	100,841	99,123	-1.7%
Equipment loans payable	-	417,514	321,338	221,316	117,323	-47.0%
Total Liabilities	$ -	$ 2,477,187	$ 2,265,751	$ 1,437,949	$ 1,550,601	7.8%
MEMBER EQUITY		3,948,406	4,239,667	4,039,607	3,457,041	-14.4%
Total Liabilities and Stockholders' Equity	$ -	$ 6,425,593	$ 6,505,418	$ 5,477,556	$ 5,007,642	-8.6%

Titan Alaska LNG, LLC 2016 Budget - Annual Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF OPERATIONS						
Mcf's	0	401,268	876,288	775,003	776,132	0.1%
REVENUE						
TKA Commercial Gas Revenues	$ -	$ 89,054	$ 193,604	$ 128,126	$ 106,985	-16.5%
AET Commercial Gas Revenues	-	457,994	104,958	110,862	129,454	16.8%
Fairbanks Natural Gas, LLC	-	5,210,742	12,520,584	12,151,325	11,650,845	-4.1%
Other Revenue	-	-	317,032	234,719	-	-100.0%
Net Revenue	$ -	$ 5,757,790	$ 13,136,178	$ 12,625,032	$ 11,887,283	-5.8%
Cost of Goods Sold						
Natural gas purchases						
Cost of gas	$ -	2,661,065	6,625,305	6,432,907	$ 6,094,920	-5.3%
Trucking Expenses	-	1,096,052	2,221,359	2,021,914	1,964,484	-2.8%
LNG Trailer Lease Payments	-	76,750	184,200	144,600	141,000	-2.5%
Electricity	-	320,342	821,475	918,184	902,365	-1.7%
Gas liquefaction expenses	-	592,066	1,201,911	1,069,797	1,640,165	53.3%
Talkeetna operations	-	-	-	-	-	0.0%
Talkeetna maintenance	-	585	20,331	6,305	7,750	22.9%
Depreciation	-	242,769	571,532	609,476	545,403	-10.5%
Capital Allowance	-	-	-	-	-	0.0%
Total Cost of Sales	$ -	$ 4,989,629	$ 11,646,113	$ 11,203,183	$ 11,296,086	0.8%
Gross Margins	$ -	$ 768,161	$ 1,490,065	$ 1,421,850	$ 591,198	-58.4%
Operating Expenses						
G&A - LNG	$ -	189,642	434,202	643,153	$ 578,236	-10.1%
Total operating expenses	$ -	$ 189,642	$ 434,202	$ 643,153	$ 578,236	-10.1%
Operating Income	$ -	$ 578,519	$ 1,055,863	$ 778,696	$ 12,962	-98.3%
OTHER INCOME (EXPENSES)						
Interest income	$ -	$ -	$ -	$ -	$ -	0.0%
Other Income (expense)	-	-167	-	-	2,400	0.0%
Interest expense	-	-4,198	-14,602	-10,757	-6,786	0.0%
Gain (loss) on disposal	-	-	-	32,000	0	-100.0%
Total other income (expense)	$ -	$ (4,365)	$ (14,602)	$ 21,243	$ (4,386)	-120.6%
INCOME BEFORE TAXES	$ -	$ 574,154	$ 1,041,261	$ 799,940	$ 8,576	-98.9%
PROVISION FOR INCOME TAXES	-	-	-	-	-	0.0%
NET INCOME	$ -	$ 574,154	$ 1,041,261	$ 799,940	$ 8,576	-98.9%
EBITDA	$ -	$ 816,923	$ 1,612,793	$ 1,409,416	$ 558,365	-60.4%
	0.00%	14.19%	12.28%	11.16%	4.70%	-57.9%

Titan Alaska LNG, LLC 2016 Budget - Annual Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF CASH FLOWS						
OPERATING ACTIVITIES						
Net income/(loss) for the period	$ -	$ 816,923	$ 1,612,793	$ 799,940	$ 8,576	-98.9%
Adjustments to reconcile to cash provided by operations						
Depreciation, capital allowance and amortization	-	242,769	571,532	609,476	545,403	-10.5%
Changes in operating assets and liabilities						
Accounts receivable	-	(14,919)	6,676	(16,427)	3,400	0.0%
Accounts Receivable - Affiliates	-	(2,950,562)	1,056,829	181,131	112,692	-37.8%
Deposits & Other Current Assets	-	(7,849)	(34,923)	(5,974)	532	0.0%
Accounts payable	-	1,647,479	(109,077)	(386,120)	218,313	0.0%
Accounts payable - affiliates	-	493,641	(392,915)	-	-	0.0%
Accrued wages & burden	-	56,598	(9,181)	(43,017)	51	0.0%
Other current & accrued liabilities	-	45,561	353,924	(298,644)	-1,718	0.0%
Cash provided/(used) by operations	$ -	$ 329,641	$ 3,055,658	$ 840,365	$ 887,249	5.6%
INVESTING ACTIVITIES						
Materials & Supplies inventory	$ -	$ 23,101	$ (7,763)	$ -	$ -	0.0%
New Plant/Construction in Progress	-	(80,183)	(478,008)	(182,809)	-190,000	0.0%
Other Capital Expenditures	-	-	-	-	-	0.0%
Cash used in investing activities	$ -	$ (57,082)	$ (485,771)	$ (182,809)	$ (190,000)	0.0%
FINANCING ACTIVITIES						
Payment (proceeds) of financing	$ -	-23,497	-96,176	-100,022	$ (103,993)	0.0%
AIDEA ROI	-	-	-	-	(591,142)	0.0%
Paid in Capital	-	-	(750,000)	(1,000,000)	-	0.0%
Cash provided (used) by financing activities	$ -	$ (23,497)	$ (846,176)	$ (1,100,022)	$ (695,135)	0.0%
NET INCREASE (DECREASE) IN CASH	$ -	$ 249,062	$ 1,723,711	$ (442,466)	$ 2,113	0.0%
CASH - beginning of period	-	-	249,062	1,972,773	716,006	-63.7%
CASH - end of period	$ -	$ 249,062	$ 1,972,773	$ 1,530,307	$ 718,119	-53.1%

Arctic Energy Transport, LLC 2016 Budget Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
BALANCE SHEET						
ASSETS						
Utility Plant	$ -	$ -	$ 2,487,478	$ 2,362,248	$ 2,229,175	-5.6%
Cash and cash equivalents	-	-	26,384	12,719	12,990	2.1%
Accounts receivable	-	-	-	-	-	0.0%
Accounts receivable - affiliates	-	-	25,503	-	18,108	0.0%
Materials & Supplies inventory	-	-	19,765	7,719	9,978	29.3%
Deposits & Other Current Assets	-	-	12,214	5,307	5,378	1.3%
Total Assets	$ -	$ -	$ 2,571,344	$ 2,387,992	$ 2,275,629	-4.7%
LIABILITIES AND STOCKHOLDERS' EQUITY						
Accounts payable	$ -	$ -	10,672	1,080	$ 4,446	311.6%
Accounts payable - affiliates	-	-	147,358	126	10,194	7987.4%
Accrued wages & burden	-	-	-	-	-	0.0%
Other current & accrued liabilities	-	-	3,602	-	-	0.0%
Total Liabilities	$ -	$ -	$ 161,632	$ 1,206	$ 14,640	1113.6%
MEMBER EQUITY	-	-	2,409,712	2,386,786	2,260,988	-5.3%
Total Liabilities and Stockholders' Equity	$ -	$ -	$ 2,571,344	$ 2,387,992	$ 2,275,629	-4.7%

Arctic Energy Transport, LLC 2016 Budget Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF OPERATIONS						
Mcf's	0	0	6,378	2,197	8,378	281.3%
REVENUE						
Titan Commercial Gas Revenues	$ -	$ -	$ 122,683	$ 30,750	$ 226,350	636.1%
Fairbanks Natural Gas, LLC	-	-	33,557	13,558	-	-100.0%
Other Revenue	-	-	-	-	-	0.0%
Net Revenue	$ -	$ -	$ 156,240	$ 44,308	$ 226,350	410.9%
Cost of Goods Sold						
Natural gas purchases						
Cost of gas	$ -	$ -	110,234	35,776	$ 129,454	261.8%
Fairbanks Operations	-	-	5,631	8,552	8,680	1.5%
Big Lake Operations	-	-	10,574	15,095	7,868	-47.9%
Depreciation	-	-	129,735	131,782	133,073	1.0%
Capital Allowance	-	-	-	-	-	0.0%
Total Cost of Sales	$ -	$ -	$ 256,174	$ 191,206	$ 279,075	46.0%
Gross Margins	$ -	$ -	$ (99,935)	$ (146,898)	$ (52,725)	0.0%
Operating Expenses						
G&A - LNG	$ -	$ -	84,975	52,778	$ 36,806	-30.3%
Total operating expenses	$ -	$ -	$ 84,975	$ 52,778	$ 36,806	-30.3%
Operating Income	$ -	$ -	$ (184,910)	$ (199,676)	$ (89,531)	0.0%
OTHER INCOME (EXPENSES)						
Interest income	$ -	$ -	$ -	$ -	$ -	0.0%
Other Income (expense)	-	-	-	-	-	0.0%
Interest expense	-	-	-	-	-	0.0%
Gain (loss) on disposal	-	-	-	-	-	0.0%
Total other income (expense)	$ -	$ -	$ -	$ -	$ -	0.0%
INCOME BEFORE TAXES	$ -	$ -	$ (184,910)	$ (199,675.92)	$ (89,531)	0.0%
PROVISION FOR INCOME TAXES	-	-	-	-	-	0.0%
NET INCOME	$ -	$ -	$ (184,910)	$ (199,676)	$ (89,531)	0.0%
EBITDA	$ -	$ -	$ (55,174)	$ (67,894)	$ 43,542	0.0%
	0.00%	0.00%	-35.31%	-153.23%	19.24%	0.0%

Arctic Energy Transport, LLC 2016 Budget Summary

	2012 12 Months (Actual)	2013 12 Months (Actual)	2014 12 Months (Actual)	2015 12 Months (Projected)	2016 12 Months (Budgeted)	% Change
STATEMENT OF CASH FLOWS						
OPERATING ACTIVITIES						
Net income/(loss) for the period	$ -	$ -	$ (184,910)	$ (199,676)	$ (89,531)	0.0%
Adjustments to reconcile to cash provided by operations						
Depreciation, capital allowance and amortiza	-	-	129,735	131,782	133,073	1.0%
Changes in operating assets and liabilities						
Accounts receivable	-	-	-	-	-	0.0%
Accounts Receivable - Affiliates	-	-	67,214	25,503	-18,108	-171.0%
Materials & Supplies inventory	-	-	4,891	-	-2,259	0.0%
Deposits & Other Current Assets	-	-	(12,214)	6,907	-71	-101.0%
Accounts payable	-	-	2,465	(9,592)	3,366	0.0%
Accounts payable - affiliates	-	-	67,107	(147,232)	10,194	0.0%
Accrued wages & burden	-	-	3,602	-	-	0.0%
Other current & accrued liabilities	-	-	-	(3,602)	-126	0.0%
Cash provided/(used) by operations	$ -	$ -	$ 77,891	$ (195,909)	$ 36,538	0.0%
INVESTING ACTIVITIES						
New Plant/Construction in Progress	$ -	$ -	$ (54,015)	$ 5,494	$ -	-100.0%
Other Capital Expenditures	-	-	-	-	-	0.0%
Cash used in investing activities	$ -	$ -	$ (54,015)	$ 5,494	$ -	-100.0%
FINANCING ACTIVITIES						
Payment (proceeds) of financing	$ -	$ -	$ -	$ -	$ -	0.0%
AIDEA ROI	-	-	-	-	(36,266)	0.0%
Paid in Capital	-	-	-	176,750	-	-100.0%
Cash provided (used) by financing activities	$ -	$ -	$ -	$ 176,750	$ (36,266)	-120.5%
NET INCREASE (DECREASE) IN CASH	$ -	$ -	$ 23,876	$ (13,665)	$ 271	0.0%
CASH - beginning of period	-	-	2,508	26,384	12,719	-51.8%
CASH - end of period	$ -	$ -	$ 26,384	$ 12,719	$ 12,990	2.1%

Pentex Alaska Natural Gas Company, LLC
Consolidating Financial Statements - Budgeted Basis
Year Ended December 31, 2016
(Unaudited)

	Fairbanks Natural Gas, LLC	Titan Alaska LNG, LLC	Arctic Energy Transportation, LLC	Polar LNG, LLC	Inter-company Eliminations	Pentex Alaska Natural Gas Co., LLC
BALANCE SHEET						
ASSETS						
Property, Plant & Equipment	31,890,789	2,564,499	2,229,175	3,701,571	162,248	40,548,282
Cash and cash equivalents	2,241,315	718,119	12,990	7,462	0	2,979,886
Accounts receivable	2,082,107	13,027	0	0	0	2,095,134
Accounts receivable - affiliates	0	1,608,153	18,108	0	-1,626,261	0
Materials & Supplies inventory	802,080	55,629	9,978	0	-215,447	652,240
Deposits & Other Current Assets	88,873	48,214	5,378	0	0	142,464
Investment in associated company	3,902,424	0	0	0	-3,902,424	0
Marketable securities available for sale	217,158	0	0	0	0	217,158
Total Assets	41,224,745	5,007,642	2,275,629	3,709,033	-5,581,884	46,635,164
LIABILITIES AND STOCKHOLDERS' EQUITY						
Accounts payable	57,885	1,311,596	4,446	0	0	1,373,927
Accounts payable - affiliates	1,597,958	18,108	10,194	0	-1,626,261	0
Accrued wages & burden	4,815	4,451	0	0	0	9,266
Accumulated Deferred Compensation	217,158	0	0	0	0	217,158
Other current & accrued liabilities	22,219	99,123	0	0	0	121,341
Note Payable	14,717,223	0	0	0	0	14,717,223
Equipment loans payable	15,023	117,323	0	0	0	132,346
Total Liabilities	16,632,279	1,550,601	14,640	0	-1,626,261	16,571,260
MEMBER EQUITY						
Member Equity	24,592,465	3,457,041	2,260,988	3,709,033	-3,955,623	30,063,904
Total Members' Equity	24,592,465	3,457,041	2,260,988	3,709,033	-3,955,623	30,063,904
Total Liabilities and Members' Equity	41,224,745	5,007,642	2,275,629	3,709,033	-5,581,884	46,635,164

Pentex Alaska Natural Gas Company, LLC
Consolidating Financial Statements - Budgeted Basis
Year Ended December 31, 2016
(Unaudited)

	Fairbanks Natural Gas, LLC	Titan Alaska LNG, LLC	Arctic Energy Transportation, LLC	Polar LNG, LLC	Inter-company Eliminations	Pentex Alaska Natural Gas Co., LLC
STATEMENT OF OPERATIONS						
Mcf:						
Residential	55,562	0	0	0	0	55,562
Small Commercial	396,208	0	0	0	0	396,208
Large Commercial	205,173	0	0	0	0	205,173
Interruptible - Small	81,318	0	0	0	0	81,318
Hospital	0	0	0	0	0	0
UAF	0	0	0	0	0	0
TKA Commercial Gas Revenues	0	10,030	0	0	0	10,030
Fairbanks Natural Gas, LLC	0	757,724	0	0	-757,724	0
Titan Commercial Gas Revenues	0	0	8,378	0	-8,378	0
AET Commercial Gas Revenues	0	8,378	0	0	-8,378	0
Other Revenue	0	0	0	0	0	0
Total Mcf	738,261	776,132	8,378	0	-774,480	748,291
HDD	13,590					13,590
REVENUE						
Residential Gas Revenues	1,122,228	0	0	0	0	1,122,228
Small Commercial Gas Revenues	7,987,879	0	0	0	0	7,987,879
Large Commercial Gas Revenues	4,123,858	0	0	0	0	4,123,858
Interruptible - Small	1,629,058	0	0	0	0	1,629,058
Hospital Gas Revenues	0	0	0	0	0	0
UAF Revenues	0	0	0	0	0	0
TKA Commercial Gas Revenues	0	106,985	0	0	0	106,985
Fairbanks Natural Gas, LLC	0	11,650,845	0	0	-11,650,845	0
Titan Commercial Gas Revenues	0	0	226,350	0	-226,350	0
AET Commercial Gas Revenues	0	129,454	0	0	-129,454	0
Service Charge Revenues	230,551	0	0	0	0	230,551
Other Revenue	30,000	0	0	0	0	30,000
Net Revenue	15,123,573	11,887,283	226,350	0	-12,006,649	15,230,558

Pentex Alaska Natural Gas Company, LLC
Consolidating Financial Statements - Budgeted Basis
Year Ended December 31, 2016
(Unaudited)

	Fairbanks Natural Gas, LLC	Titan Alaska LNG, LLC	Arctic Energy Transportation, LLC	Polar LNG, LLC	Inter-company Eliminations	Pentex Alaska Natural Gas Co., LLC
Cost of Goods Sold						
Natural gas purchases						
Cost of gas	11,351,640	6,094,920	129,454	0	-11,699,725	5,876,288
Trucking Expenses	0	1,964,484	0	0	-160,560	1,803,924
LNG Trailer Lease Payments	0	141,000	0	0	0	141,000
Electricity	0	902,365	0	0	0	902,365
Gas liquefaction expenses	0	1,640,165	0	0	0	1,640,165
Fairbanks distribution operations	200,976	0	0	0	0	200,976
Fairbanks distribution maintenance	184,990	0	0	0	0	184,990
Fairbanks storage & vaporization operations	395,025	0	0	0	-146,364	248,661
Fairbanks storage & vaporization maintenance	89,586	0	0	0	0	89,586
Engineering	247,027	0	0	0	0	247,027
Talkeetna maintenance	0	7,750	0	0	0	7,750
Customer Services	110,089	0	0	0	0	110,089
Fairbanks Operations	0	0	8,680	0	0	8,680
Big Lake Operations	0	0	7,868	0	0	7,868
Depreciation	841,374	545,403	133,073	0	0	1,519,850
Capital Allowance	0	0	0	0	0	0
Total Cost of Sales	13,420,708	11,296,086	279,075	0	-12,006,649	12,989,220
Gross Margin	1,702,865	591,198	-52,725	0	0	2,241,338
Gross Margin %	11.26%					
Operating Expenses						
G&A	1,617,071	578,236	36,806	192	0	2,232,305
Total operating expenses						
Operating Income	85,794	12,962	-89,531	-192	0	9,033
OTHER INCOME (EXPENSES)						
Interest income	0	0	0	0	0	0
Other Income (expense)	0	2,400	0	0	0	2,400
Interest expense	-1,175	-6,786	0	0	0	-7,960
Other expense	0	0	0	0	0	0
Gain (loss) on disposal	0	0	0	0	0	0
Total other income (expense)	-1,175	-4,386	0	0	0	-5,560
NET INCOME	84,619	8,576	-89,531	-192	0	3,472
OTHER COMPREHENSIVE INCOME						
Unrealized gains on available for sale securitie	0	0	0	0	0	0
PROVISION FOR INCOME TAXES	0	0	0	0	0	0
NET INCOME	84,619	8,576	-89,531	-192	0	3,472
EBITDA	925,994	553,979	43,542	-192	0	1,523,322

Pentex Alaska Natural Gas Company, LLC
Consolidating Financial Statements - Budgeted Basis
Year Ended December 31, 2016
(Unaudited)

	Fairbanks Natural Gas, LLC	Titan Alaska LNG, LLC	Arctic Energy Transportation, LLC	Polar LNG, LLC	Inter-company Eliminations	Pentex Alaska Natural Gas Co., LLC
STATEMENT OF CASH FLOWS						
OPERATING ACTIVITIES						
Net income/(loss) for the period	84,619	8,576	-89,531	-192	0	3,472
Adjustments to reconcile to cash provided by operations						
Depreciation, capital allowance and amortizati	841,374	545,403	133,073	0	0	1,519,850
Changes in operating assets and liabilities						
Accounts receivable	247,055	3,400	0	0	0	250,455
Accounts receivable - affiliates	651	112,692	-18,108	0	-1,626,261	-1,531,025
Materials & Supplies inventory	4,461	0	-2,259	0	0	2,202
Deposits & Other Current Assets	-5,521	532	-71	0	0	-5,059
Investment in associated company	0	0	0	0	0	0
Marketable securities available for sale	-50,000	0	0	0	0	-50,000
Accounts payable	-784,430	218,313	3,366	0	0	-562,751
Accounts payable - affiliates	397,958	0	10,194	0	1,626,261	2,034,413
Accrued wages & burden	-51,845	51	0	0	0	-51,794
Accumulated Deferred Compensation	50,000	0	0	0	0	50,000
Other current & accrued liabilities	13,076	-1,718	-126	0	0	11,232
Cash provided/(used) by operations	747,400	887,249	36,538	-192	0	1,670,994
INVESTING ACTIVITIES						
New Plant (Capital Budget)	-395,000	-190,000	0	0	0	-585,000
Other Capital Expenditures	0	0	0	0	0	0
Cash used in investing activities	-395,000	-190,000	0	0	0	-585,000
FINANCING ACTIVITIES						
(Payment) proceeds of financing	-9,893	-103,993	0	0	0	-113,885
AIDEA ROI	-279,251	-591,142	-36,266	0	0	-906,660
Paid in Capital	0	0	0	0	0	0
Cash provided (used) by financing activities	-289,144	-695,135	-36,266	0	0	-1,020,545
NET INCREASE (DECREASE) IN CASH	63,256	2,113	271	-192	0	65,449
CASH - beginning of period	2,178,059	716,006	12,719	7,654	0	2,914,437
CASH - end of period	2,241,315	718,119	12,990	7,462	0	2,979,886

REVENUE	2014	2015 (Projected)	2016 (Budgeted)	% Change
Residential				
Number of Residential customers		464	464	
HDD (Heating Degree Days)				
Jan	1,757	1,757	2,321	32.1%
Feb	1,923	1,923	1,828	-4.9%
Mar	1,565	1,565	1,722	10.0%
Apr	921	921	951	3.3%
May	416	416	469	12.7%
Jun	172	172	141	-18.0%
Jul	137	137	111	-19.0%
Aug	185	185	268	44.9%
Sep	549	549	571	4.0%
Oct	1,228	1,199	1,199	0.0%
Nov	1,618	1,853	1,853	0.0%
Dec	1,925	2,156	2,156	0.0%
Total	12,396	12,833	13,590	5.90%
Gas price per Mcf	$ 23.35	$ 23.35	$ 20.20	-13.5%
Customer Charge	$ 9.20	$ 9.20	$ 9.20	
Annual Mcf's	53,456	56,187	55,562	-1.1%
Annual Revenue	$ 1,249,476	$ 1,289,361	$ 1,122,228	-13.0%
Small Commercial				
Number of Small Commercial custc	615	615	615	
Gas price per Mcf	$ 22.91	$ 22.91	$ 20.16	-12.0%
Customer Charge	$ 17.25	$ 17.25	$ 17.25	
Annual Mcf's	376,124	381,167	396,208	3.9%
Annual Revenue	$ 8,616,696	$ 8,729,811	$ 7,987,879	-8.5%
Large Commercial				
Number of Large commercial custo	31	31	31	
Gas price per Mcf	$ 22.66	$ 22.66	$ 20.10	-11.3%
Customer Charge	$ 57.50	$ 57.50	$ 57.50	0.0%
Annual Mcf's	201,172	210,967	205,173	-2.7%
Annual Revenue	$ 4,558,555	$ 4,780,512	$ 4,123,858	-13.7%
Interruptible - Small				
Number of customers	22	28	28	
Gas price per Mcf	$ 20.39	$ 20.39	$ 20.03	-1.8%
Customer Charge	$ 57.50	$ 57.50	$ 57.50	0.0%
Annual Mcf's	71,195	73,367	81,318	10.8%
Annual Revenue	$ 1,451,683	$ 1,495,949	$ 1,629,058	8.9%
Interruptible - Hospital				
Number of customers	2	2	2	
Gas price per Mcf	$ 19.50	$ 19.50	$ -	-100.0%
Customer Charge	$ 500.00	$ 500.00	$ 500.00	0.0%
Annual Mcf's	114,104	25,584	0	-100.0%
Annual Revenue	$ 2,225,028	$ 498,888	$ -	-100.0%
UAF				
Number of customers	1	1	1	
Gas price per Mcf	$ 19.50	$ 19.50	$ -	-100.0%
Customer Charge	$ 500.00	$ 500.00	$ 500.00	0.0%
Annual Mcf's	59,499	0	0	0.0%
Annual Revenue	$ 1,160,231	$ -	$ -	0.0%
Total Annual Mcf's	875,550	747,272	738,261	-1.2%
Total Annual Revenue	$ 19,261,669	$ 16,794,521	$ 14,863,023	-11.5%
Average Rate $/Mcf	$ 22.00	$ 22.47	$ 20.13	-10.4%

Attachment H

Heating Oil Price Sensitivity Report

Final IEP Single-Family Residential Willingness to Convert Heating Oil Price Sensitivity Analysis

Cardno®
Shaping the Future

Document Information

Prepared for	Alaska Industrial Export Development Authority and Alaska Energy Authority
Project Name	IEP Conversion Rate Heating Oil Price Sensitivity Analysis
Project Number	E515018001
Project Manager	Lee Elder
Date	October 13, 2015

Prepared for:

813 West Northern Lights Boulevard, Anchorage, AK, 99503

Prepared by:

Cardno
5415 SW Westgate Dr. #100, Portland, OR 97221

This page intentionally left blank.

Table of Contents

Tables

Acronyms

AEA	Alaska Energy Authority
AIDEA	Alaska Industrial Development and Export Authority
FNG	Fairbanks Natural Gas
FNSB	Fairbanks North Star Borough
IEP	Interior Energy Project
IGU	Interior Gas Utility
Mcf	thousand cubic feet

This page intentionally left blank.

1 Introduction

In January 2014, Cardno completed the *Interior Energy Project (IEP) Natural Gas Conversion Analysis*, which estimated the demand for natural gas from the IEP and the associated economic benefits of natural gas conversion.[1] As part of that analysis, Cardno estimated study area residential willingness to convert, which relied upon the cost of converting to natural gas and the estimated savings obtained from converting to natural gas. The saving estimates relied on a natural gas price of $15 per thousand cubic feet (Mcf) and a heating oil price of $4 per gallon, or the equivalent of $29.85 per Mcf.[2]

The Alaska Industrial Development Export Authority (AIDEA) and Alaska Energy Authority (AEA) wish to better understand heating oil price effects upon residential willingness-to-convert estimates. Therefore, the following sensitivity analysis builds upon the previously completed *IEP Natural Gas Conversion Analysis* to estimate single-family residential willingness to convert under various heating oil prices.

1.1 Purpose and Scope

This study estimates single-family residential willingness to convert under a range of heating oil price scenarios. The analysis assumes the same rate of conversion, or the speed in which residences will convert to a natural gas system, as was assumed for the *IEP Natural Gas Conversion Analysis* (**Table 2**). This sensitivity analysis differs from the *IEP Natural Gas Conversion Analysis* in that it does not estimate multi-family, industrial, or commercial users' willingness to convert under various heating oil prices. Finally, this sensitivity analysis does not quantify single-family households' natural gas demand for different heating oil price points.

The study area for this analysis is the proposed natural gas service area surrounding and encompassing Fairbanks and North Pole and includes both the Interior Gas Utility (IGU) and Fairbanks Natural Gas (FNG) service areas. The study area is based on a mock 6-year build-out developed by AEA based on personal communication with the IGU and FNG. Within the study area there are an estimated 20,077 single-family residential households.[3]

1.2 Data Sources

This analysis relied on several key sources of data to estimate the total number of single-family households expected to convert to natural gas. The following key model components and parameters were used in the *IEP Natural Gas Conversion Analysis*, and subsequently in this sensitivity analysis, to estimate study area single-family residential willingness to convert.

- **Willingness-to-convert predictive model** – A survey of 800 Fairbanks North Star Borough (FNSB) residents was conducted as part of the IGU study titled *Natural Gas in the Fairbanks North Star Borough: Results from a Residential Household Survey* (IGU study).[4] The survey elicited respondents' willingness to convert based on different combinations of conversion costs

[1] AIDEA and AEA, January 2014, IEP Natural Gas Conversion Analysis, Website (http://www.interiorenergyproject.com/Resources%20and%20Documents/IEP_Conversion_Analysis_Final.pdf) accessed October 22, 2014.

[2] AIDEA and AEA, July 2013, Interior Energy Project Feasibility Report, Website (http://www.interiorenergyproject.com/Resources%20and%20Documents/Feasibility_Report_72013.pdf) accessed October 20, 2014.

[3] AIDEA and AEA, Personal communication with Lee Elder, Cardno, September 17, 2013.

[4] Interior Gas Utility, November 2013, Natural Gas in the Fairbanks North Star Borough: Results from a Residential Household Survey, Prepared by Northern Economics.

and fuel savings. Responses were statistically analyzed to generate a predictive model for FNSB residents' willingness to convert to natural gas.

- **Primary/secondary heating systems** – The IGU study also solicited survey respondents regarding the number of household heating systems, the types of fuel used for each heating system, and the age of heating systems.
- **Home energy consumption estimates** – To estimate the existing and post-conversion single-family residential unit heating expenditures (and the associated savings) within the study area, this analysis relied on primary and secondary heating system energy consumption estimates provided by the IGU study. These estimates were modified for those households with furnaces to account for hot water energy consumption since it is assumed the conversion to a natural gas boiler or furnace would also include the installation of a natural gas water heater. Energy consumption estimates used in the sensitivity analysis relied on primary/secondary heating system energy consumption as determined by the IGU study. Across all primary/secondary heating systems, the average annual energy consumption for each residential property within the study area was estimated at 161 Mcf.
- **Conversion costs** – Interviews with six regional heating system experts were relied on to develop a range of equipment and installation costs for natural gas conversion. Conversion costs for the study area are defined as the purchase price for a boiler, furnace, space heater, or burner. Conversion costs estimates also include the cost of piping, valves, and labor for full installation of each of these heating systems.
- **Natural gas price** – As provided by the AIDEA and AEA *IEP Natural Gas Conversion Analysis*, the price of natural gas within the study area was assumed to be $15 per Mcf.
- **Case-study analysis and focus groups** – Case studies and focus group input were used to ground-truth willingness-to-convert estimates generated by the IGU study and natural gas predictive model. These case studies assessed willingness to convert in other Alaska communities where natural gas distribution system expansion has recently occurred (e.g., Homer and Kachemak City). Additionally, ENSTAR representatives provided further input on community willingness to convert to natural gas. Finally, a series of four focus groups were conducted in Fairbanks and North Pole to better understand focus group participants' willingness to convert.

2 Methodology

All model parameters, with the exception of heating oil prices, previously used in the *IEP Natural Gas Conversion Analysis* (i.e., primary/secondary heating systems, conversion costs, home energy consumption estimates, heating oil prices, etc.) were held constant for the sensitivity analysis.

The model assumes that heating oil prices for the first year of analysis will equal current heating oil prices for each scenario ($2.75 per gallon).[5] Each of the following scenarios assumed prices in the second and third years would be 10 percent greater or less than current prices (either $2.48 or $3.03 per gallon), while the fourth year would either be current heating oil prices ($2.75 per gallon) or $4.00 per gallon. **Table 1** below illustrates the eight heating oil price scenarios considered within the sensitivity analysis as well as the baseline heating oil price scenario ($4.00 per gallon) evaluated previously in the IEP analysis.

Table 1 FNSB Heating Oil Price Scenarios, dollars per gallon

Scenario	Year 1	Year 2	Year 3	Year 4 and Beyond
#1	$2.75	$2.48	$2.48	$2.75
#2	$2.75	$2.48	$2.48	$4.00
#3	$2.75	$2.48	$3.03	$2.75
#4	$2.75	$2.48	$3.03	$4.00
#5	$2.75	$3.03	$2.48	$2.75
#6	$2.75	$3.03	$2.48	$4.00
#7	$2.75	$3.03	$3.03	$2.75
#8	$2.75	$3.03	$3.03	$4.00
Baseline	$4.00	$4.00	$4.00	$4.00

Research on conversions in Homer indicates that the rate of conversion will be influenced by the construction season, which will affect when natural gas will be available to households and businesses alike. The timing of residential conversions within the study area relies on conversion rate estimates provided by ENSTAR. As illustrated in **Table 2**, ENSTAR expects 60 percent of the total customer base to convert within the first year of a system build-out and approximately 75 percent of the customer base to have converted by the end of the second year. Within 3 years of providing natural gas service to an area, ENSTAR expects approximately 90 percent of the residential housing units to convert, and 95 percent to convert by the seventh year, with no additional conversions thereafter.[6] Stated differently, of those single-family residential properties that are going to convert, all will have done so 7 years following build-out or by year 8.

This analysis assumes that owners of single-family rental properties will be as willing to convert to a natural gas system as owner-occupied single-family properties, but at a slower rate. Therefore, we assume single-family rental owners will take an additional year compared with property owners to fully convert.

[5] Sourdough Fuel, Personal communication with Lee Elder, Cardno, September 9, 2015.

[6] Pierce, Charlie, ENSTAR, Southern Division Manager, Personal communication with Lee Elder, Cardno, September 23, 2013.

Table 2 Estimated Cumulative Residential Rate of Conversion by Year

	Construction (Year 1)[1]	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Single-family residential[2]	15%	60%	75%	90%[3]	93%	95%	98%	100%	100%
Single-family renter-occupied	15%	45%	60%	75%	90%	93%	95%	98%	100%

1 Assumed existing Homer construction year rate of conversion for study area

2 Source (unless noted): Pierce, Charlie, ENSTAR, Southern Division Manager, Personal communication with Lee Elder, Cardno, September 23, 2013.

3 Source: Starring, Coleen, Personal communication with Lee Elder, Cardno, Shanna Zuspan, Agnew::Beck, and Tanya Iden, Agnew::Beck, September 18, 2013.

This analysis assumes that only those households currently using heating oil (92 percent of all study area households) would consider converting to natural gas (i.e., that conversion among those who exclusively use wood or other non-oil sources would be zero percent).[7]

Willingness to convert is a function of conversion costs and estimated annual savings. Willingness-to-convert estimates are generated when applying the heating system conversion cost along with the associated annual savings within the predictive model developed by the IGU study:

$$Pc = 2.43 + (-0.41) \ln Conversion\ Cost + (0.24) \ln Annual\ Savings$$[8]

Pc represents the portion of respondents that would be willing to convert to a natural gas system from their current heating system and "ln" represents the natural logarithm. The price of heating oil is modified within this sensitivity analysis to calculate different annual saving estimates for each of the heating systems, which then feeds into the predictive model function to generate willingness-to-convert estimates.

7 This assumption is supported by recent survey data (Sierra Research, 2013, Wood Tag Survey) indicating that approximately 11 percent of households would continue burning wood, even if natural gas were available at prices less than $1 per gallon equivalent of heating oil, and 26 percent would continue burning wood if natural gas were available at prices below $2 per gallon equivalent of heating oil (projected natural gas prices are approximately $2.15 per gallon equivalent of heating oil).

8 Interior Gas Utility, November 2013, Natural Gas in the Fairbanks North Star Borough: Results from a Residential Household Survey, Prepared by Northern Economics.

3 Results

As illustrated in **Table 3** below, heating oil prices in the FNSB affect residential conversion rates. Scenarios in which heating oil price increases to $4.00 per gallon by the fourth year and remains at that level from that time on (Scenarios 2, 4, 6, and 8) achieve the same residential conversion rates as the baseline scenario. However, up until year 3, heating oil prices of $2.48 and $3.03 per gallon support residential conversion rates of 14 percent and 21 percent, respectively, whereas, a price of $4.00 per gallon supports a residential conversion rate of 25 percent. For those scenarios in which heating oil price remains $2.75 per gallon from year 4 and on (Scenarios 1, 3, 5, and 7) residential conversion rates are expected to be 54 percent by year 13. **Table 4** provides the total cumulative number of residences expected to convert each year for each heating oil price scenario.

Table 3 Cumulative Rates of Residential Conversation (Across All Phases)

Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
#1	2%	8%	14%	25%	33%	40%	46%	49%	52%	52%	53%	53%	54%
#2	2%	8%	14%	36%	46%	56%	65%	70%	72%	74%	75%	75%	75%
#3	2%	8%	21%	25%	33%	40%	46%	49%	52%	52%	53%	53%	54%
#4	2%	8%	21%	36%	46%	56%	65%	70%	72%	74%	75%	75%	75%
#5	2%	12%	14%	25%	33%	40%	46%	49%	52%	52%	53%	53%	54%
#6	2%	12%	14%	36%	46%	56%	65%	70%	72%	74%	75%	75%	75%
#7	2%	12%	21%	25%	33%	40%	46%	49%	52%	52%	53%	53%	54%
#8	2%	12%	21%	36%	46%	56%	65%	70%	72%	74%	75%	75%	75%
Baseline	3%	14%	25%	36%	46%	56%	65%	70%	72%	74%	75%	75%	75%

Table 4 Cumulative Number of Residential Conversation (Across All Phases)

Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
#1	460	1,640	2,840	5,110	6,580	8,050	9,270	9,930	10,340	10,510	10,630	10,710	10,750
#2	460	1,640	2,840	7,180	9,250	11,320	13,040	13,980	14,550	14,790	14,960	15,070	15,120
#3	460	1,640	4,130	5,110	6,580	8,050	9,270	9,930	10,340	10,510	10,630	10,710	10,750
#4	460	1,640	4,130	7,180	9,250	11,320	13,040	13,980	14,550	14,790	14,960	15,070	15,120
#5	460	2,380	2,840	5,110	6,580	8,050	9,270	9,930	10,340	10,510	10,630	10,710	10,750
#6	460	2,380	2,840	7,180	9,250	11,320	13,040	13,980	14,550	14,790	14,960	15,070	15,120
#7	460	2,380	4,130	5,110	6,580	8,050	9,270	9,930	10,340	10,510	10,630	10,710	10,750
#8	460	2,380	4,130	7,180	9,250	11,320	13,040	13,980	14,550	14,790	14,960	15,070	15,120
Baseline	640	2,880	5,010	7,180	9,250	11,320	13,040	13,980	14,550	14,790	14,960	15,070	15,120