Interior Energy Project

AIDEA BOARD
INTERIOR ENERGY PROJECT
COMMERCIAL PARTICIPANT REPORT

JANUARY 14, 2014

AIDEA

ALASKA ENERGY AUTHORITY

1. SUMMARY & RECOMMENDATION 3
2. BACKGROUND / CONTEXT 5
3. FINANCIAL ANALYSIS SUMMARY – AIDEA IEP MODEL 8
4. TECHNICAL ANALYSIS SUMMARY – NORTH SLOPE LNG PLANT 12
5. COMMERCIAL PARTICIPANT SELECTION CRITERIA 16
6. ANALYSIS OF SPONSOR PROPOSALS VS. THE SELECTION CRITERIA 18
7. NEXT STEPS AND PROPOSED TIMELINES 27
8. APPENDIX A – AIDEA IEP MODEL – 9 BCF PLANT 29
9. APPENDIX B – AIDEA IEP MODEL – 6 BCF PLANT 37
10. APPENDIX C – TERM SHEET COMPARISON MATRIX 46

1. SUMMARY & RECOMMENDATION

This report, and the conclusions and recommendations contained within it, are the culmination of work that commenced with the signing of SB 23 into law in May of 2013. Once AIDEA had its funding source for the Interior Energy Project (IEP) in place, that authority began focusing on financing the development of an LNG plant on the North Slope together with the needed distribution system to deliver gas to the Interior. With respect to the LNG Plant, AIDEA sent out request for letters of interest in the potential development of the NS LNG Plant and was involved in numerous meetings and exchanges of information and documents with Potential Participants that expressed an interest in developing the plant. These exchanges of information with third parties were augmented by the efforts of a team of at AIDEA/AEA including technical, natural gas market, financial, business and legal experts.

Section 2 provides background on the IEP and context for the analysis, conclusions and recommendations.

The AIDEA / AEA Interior Energy Project ("IEP") team has reviewed and analyzed Proposals (as defined below) from Spectrum Alaska, LLC ("Spectrum"), Pentex Alaska Natural Gas Company, LLC ("Pentex") and MWH Americas, Inc. ("MWH"), which are the three proposed private participants (each, a "Potential Participant" or "Sponsor") in the North Slope Liquefied Natural Gas liquefaction plant (the "NS LNG Plant" or "North Slope LNG Plant"), as well as information from other parties interested in the NS LNG Plant and/or the IEP. The criteria used to evaluate the proposals (the "Selection Criteria") are summarized in Section 5 below.

As used in this report, with reference to each Potential Participant, "Proposal" means, collectively: (1) the final term sheet submitted by such Potential Participant on or about November 14, 2013 (each, a "Term Sheet") in connection with the AIDEA Board's November 19, 2013 meeting, (2) all written information and oral information provided by such Potential Participant to the AIDEA Board at the November 19, 2013 Board meeting, and (3) all written information provided by such Potential Participant to AIDEA in writing between November 19, 2013 and January 7, 2014 in connection with such Potential Participant's proposal to develop the NS LNG Plant. A matrix comparing the key terms of the three Term Sheets is included as Appendix C and evaluation of the Proposals compared to the Selection Criteria is in Section 6.

Based on this review, gathering and exchanges of information, and effort, it is the AIDEA staff recommendation to the Board that MWH and its investor group (hereinafter cited as "MWH") be selected as the Preferred Participant with which AIDEA will negotiate financial terms for the receipt of financing made available by SB 23 to be used in conjunction with the development of the LNG plant component of the IEP by a private entity that will also invest into the project in the form of both debt and equity.

Staff further recommends that Pentex be designated the Second Preferred Participant, if and in the event the Executive Director is not able to reach terms with the MWH team that the

Executive Director be directed to commence discussions regarding SB 23 financing with Pentex. The staff further recommends that Spectrum be designated the Third Preferred Participant and, if and in the event the Executive Director is unable to reach terms with either MWH or Pentex, that the Executive Director be directed to commence discussions with Spectrum regarding SB 23 financing with respect to the development of the LNG North Slope plant.

Financial Analysis Conclusions

AIDEA's updated IEP Financial Model (the "AIDEA IEP Model") analysis indicates that:

1. Each Proposal would result in substantial savings to Fairbanks North Star Borough ("FNSB") space heating customers, exceeding the policy objective for annual savings as set forth in Senate Bill 23 ("SB 23"). The savings (vs. heating oil) per average FNSB household are estimated to range between 54% and 55% (between $2,800 and $2,900 per year).

2. The difference in estimated costs (and savings) is small among the Proposals – with a price difference of about 3.8% between the low and high estimates using a 9Bcf plant size and 3.0% using the 6Bcf plant size.

A summary of the AIDEA IEP Model analysis is included in Section 3, and more detailed analysis is contained in Appendix A and Appendix B.

Basis for Preferred Participant Recommendations

AIDEA's evaluation of the Proposals is discussed in Section 5 and in Section 6 that compares each Proposal to the Selection Criteria

2. BACKGROUND / CONTEXT

This report provides the AIDEA board with analysis and staff recommendations regarding the selection of a commercial participant for the NS LNG Plant as part of the IEP. SB 23, which provides the statutory basis for the IEP, envisions one or more private participants in the NS LNG Plant including a meaningful level of private financing for the plant. The other key influences on the project relate to the development of the core markets for the LNG produced by the NS LNG Plant and the potential introduction of alternative gas supplies to those markets during the operating period of the NS LNG Plant.

SB 23 Objectives

SB 23, and the policy basis developed in the legislation, provides specific guidance for AIDEA and AEA in financing the NS LNG Plant and the overall financial plan for the IEP. Essential SB 23 policy mandates include:

- Delivering natural gas for FNSB space-heating customers at "burner-tip" (or "at the meter") prices that are 40-50% below fuel oil, with first deliveries by the 2015-16 heating season
- Long-term assured LNG supply for preferred customers
- LNG for Interior Alaska electric utilities
- LNG for Interior Alaska industrial uses
- Propane for rural areas not served by LNG

Another goal of the IEP is to reduce pollution in the Fairbanks North Star Borough that is largely the result of high ambient air particulate matter concentrations. Recently, the North Slope Borough Planning and Community Services Department issued a conditional development permit for a liquefied natural gas facility on the slope and provided an accompanying a letter dated January 8, 2014 that provides an independent third party description of the background of the IEP project and its objectives, a section of which is excerpted below:

> "Interior Alaska is largely dependent on heating oil for its primary source of commercial and residential building heat. According to home heating survey conducted for the Alaska Department of Environmental Conservation (ADEC) in 2010, roughly 68 percent of the home heating needs in the City of Fairbanks were met with fuel oil. This reliance on heating oil creates a financial burden for Fairbanks North Star Borough (FNSB) residents as fuel prices have increased dramatically over the past decade. As these costs have risen, more residences have converted to burning wood for primary heating purposes, creating local air quality issues. In Fairbanks and outlying areas, temperature inversions regularly exist in the winter and are exacerbated during particulate cold snaps, trapping pollutants released from burning

wood and fuel oil, leading to high ambient air particulate matter (PM) concentrations. At high concentrations, fine particulate matter can be easily inhaled and then lead to serious respiratory health effects. Recognizing this, the U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for several pollutants, including PM2.5, which is PM with mean diameter of 2.5 microns or smaller. Over the past few years, measured ambient air PM2.5 concentrations have exceeded the NAAQS several times during each winter. A consistent supply of natural gas, a lower-cost, cleaner-burning fuel, to the Fairbanks area is expected to cause the decline of the use of both heating oil and wood, resulting in cleaner air and a healthier population.

On April 12, 2013, the Alaska Legislature passed the Interior Energy Project (IEP) (SB 23 and HB 74), providing a financing package to begin developing a natural gas conditioning and liquefaction plant located on Alaska's North Slope as part of a larger initiative to quickly bring affordable natural gas to Interior Alaska. Governor Parnell signed the IEP legislation in Fairbanks on May 24, 2013. The overall project includes two primary aspects:

1. Construction of a NS LNG facility to facilitate the delivery of natural gas to Interior Alaska.

2. Assistance in the financing of LNG storage, re-gasification, and natural gas distribution systems to deliver the gas to residential and commercial customers within the FNSB.

As a secondary goal, the project may also serve industrial and transportation customers in Interior Alaska- possibly with both LNG and propane.

AIDEA, the state entity administering the project, anticipates that a local natural gas utility will provide the transportation/hauling of the LNG along the Dalton Highway from the production facility on the North Slope to a re-gasification facility in the FNSB.

The transportation of LNG via truck is a well-established practice with a strong safety and reliability record both in Alaska and Canada. A small utility currently provides a limited amount of LNG to Fairbanks from South-central Alaska via truck and has successfully delivered this fuel without any known accidents for more than ten years. For the Dalton Highway, typically over 100 trucks per day carry diesel and other products between Deadhorse and Fairbanks during winter months. The construction and use of large storage tanks in Fairbanks would guarantee continued gas delivery even during inclement weather or through other factors that may affect the highway/trucks."

SB 23 Funding Structure

To accomplish SB 23 Objectives, the Legislature provided a total of $332.5 million of financing resources, and set the basic terms for the financing structures. The State financing, all of which is managed by AIDEA, includes:

- $57.5 million capital appropriation
- $125 million SETS Loan made with the following terms:
  - 3.00% interest or less
  - 30 year term
  - Ability to defer principal & interest for reasonable period of time
- $150 million AIDEA Bonds structured with:
  - State credit support
  - Market rate terms and conditions

LNG Market Factors

In order for the NS LNG Plant to be financially viable, the core market for the product – FNSB space-heating demand – must be developed. This depends critically on both the extension of natural gas distribution systems to the FNSB high and medium density areas and on conversion to natural gas of the residential and commercial buildings in those areas now using alternative fuels for heating. The market viability of the NS LNG Plant is markedly improved by securing other utility and industrial customers before construction.

The other major market factors affecting the potential viability of the NS LNG Plant relate to supply of natural gas. In addition to the North Slope trucking-based project anticipated by the IEP, there are potential supplies of natural gas to the FNSB market through LNG by truck (or rail) from Southcentral Alaska as well as longer-term plans for a pipeline from the North Slope.

Key market factors to consider in evaluating the Proposals for developing the NS LNG Plant include:

- Ability of the Potential Participant to secure long-term LNG take-or-pay sales agreements to Fairbanks Natural Gas ("FNG") and the Interior Gas Utility ("IGU")
- Ability to secure Golden Valley Electric Association, Inc. ("GVEA") as a long-term, take-or-pay LNG customer
- Potential to secure additional, potentially interruptible LNG demand from industrial and institutional customers
- Sufficient overall financing capacity (including SB 23, private and local funding) to ensure timely, complete build-out of the distribution system
- Potential short-term LNG supplied from Southcentral Alaska
- Long-term potential replacement of the NS LNG Plant and other supporting infrastructure included in the IEP by a natural gas pipeline from the North Slope.

3. FINANCIAL ANALYSIS SUMMARY – AIDEA IEP MODEL

The AIDEA IEP Model has been used to analyze the projected financial outcomes of multiple potential IEP scenarios and alternative private participants.

Based on additional information provided after the November 19, 2013 AIDEA Board meeting by the Sponsors, as clarification of their respective Term Sheets, the AIDEA IEP Model was re-run to reflect the most current understanding of the financial and economic terms of the Proposals.

A complete summary of the AIDEA IEP Model results is included in this report as Appendix A for a 9 Bcf plant and Appendix B for a 6 Bcf plant. Key assumptions and results of the Model (focused on the 9 Bcf plant scenario) are summarized in this section below.

Key Model Assumptions for Proposals

In order to ensure comparability, the AIDEA IEP Model "normalizes" key model assumptions for all three Proposals. These common assumptions include:

1. SETS loan payments include principal and no interest for the first five years.
2. Prices are levelized (averaged) for the first five years and may change in later years.
3. While all Term Sheets provide for an NS LNG Plant that can expand capacity, this analysis assumes no expansions.
4. To lower project cost and risk, the AIDEA IEP Model funds the first $35 million of AIDEA investment using the capital appropriation of $57.5 million in SB 23, even if not set forth in a potential participant's Term Sheet.
5. All SETS funds not used for the NS LNG Plant would be available for use in various aspects of the distribution system, reducing the distribution cost by displacing more expensive capital.
6. LNG will be transported by trucks using diesel fuel (higher cost) until LNG tractors are available.

In addition to the common assumptions, each Term Sheet provides unique factors as inputs to the AIDEA IEP Model:

Pentex Term Sheet key assumptions and analysis

1. $20 million equity provided by Pentex
    a. Nominal rate of return of 12.5% (during the first five years)
    b. Post-tax rate of 12.5%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. $10 million private debt financed at 8% interest
3. 10.7% weighted rate of return on private investment (debt and equity)

Pentex Term Sheet key assumptions and analysis *continued…*

4. Debt and equity principal paid back over 12 years
5. $6.5 million annual non-fuel O&M cost
6. LNG liquefaction process requires 10.5% fuel gas

Spectrum Term Sheet key assumptions and analysis

1. $20 million equity provided by Spectrum
    a. Nominal rate of return of 25%
    b. Post-tax rate of return of 15%
    c. Tax paid on maximum pre-individual tax burden regardless of actual tax burden
2. No private debt financing
3. 25.0% weighted rate of return on private investment (all equity)
4. Equity principal payback not in rates
5. $6.5 million annual non-fuel O&M costs
6. LNG liquefaction process requires 6.0% fuel gas

MWH Term Sheet key assumptions and analysis

1. $28.9 million equity provided by investor
    a. Nominal rate of return of 12% (during the first five years)
    b. Post-tax rate of 12%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. $53.6 million private debt financed at 8% interest
3. 9.4% weighted rate of return on private investment (debt and equity)
4. Debt and equity principal paid back over 30 years
5. $6.5 million annual non-fuel O&M cost
6. LNG liquefaction process requires 10.5% fuel gas

The effects of the above assumptions on the uses of capital financing for the NS LNG Plant are shown in Table 1. Table 2 summarizes the AIDEA funds available to fund FNSB distribution capital requirements under each Proposal.

Table 1: Capital Stack $MM

	Pentex	Spectrum	MWH
AIDEA Contribution	$35.0	$35.0	$35.0
AIDEA SETS	$110.0	$84.9	$68.0
Debt	$10.0	$0.0	$53.6
Equity	$20.0	$20.0	$28.9
Total	**$175.0**	**$139.9**	**$185.5**

Table 2: AIDEA Funds Left for Distribution $MM

	Pentex	Spectrum	MWH
SETS	$15.0	$40.1	$57.0
Equity	$22.5	$22.5	$22.5
Total	**$37.5**	**$62.6**	**$79.5**

Another set of common assumptions on the demand side is used to normalize the three Proposals in the AIDEA IEP Model. It should be noted that the capacity of the NS LNG Plant is sized to meet the peak seasonal demand, so although the plant capacity is 9 Bcf its expected average output is 6.7 Bcf per year

The effect of the natural gas assumptions on potential demand for the NS LNG Plant a summarized in Table 3.

Table 3: 9.0 Bcf Plant Demand (Bcf per year)

	2016	2017	2018	2019	2020
Industrial (includes GVEA)	3.0	3.0	3.0	3.0	3.0
Natural Gas Utilities	1.6	3.5	3.5	3.5	3.5
Operating Gas	0.1	0.1	0.1	0.1	0.1
Total	**4.7**	**6.6**	**6.7**	**6.7**	**6.7**

Based on the submissions in the Term Sheets, annual costs are estimated for the full IEP system. With the capital, operating and natural gas assumptions for each Proposal, the AIDEA IEP Model produces the following results as summarized in Table 4.

Table 4: AIDEA IEP Model Summary Results - 9 Bcf Plant

	Pentex	Spectrum	MWH	Fuel Oil
Fuel Price to Customers ($/Mcf)	$15.28	$14.93	$15.49	$30.00
Household Annual Fuel Costs	$2,369	$2,314	$2,402	$5,197
Household Annual Fuel Savings $	$2,829	$2,883	$2,795	N/A
Household Annual Fuel Savings %	54%	55%	54%	N/A

The updated AIDEA IEP Model analysis indicates the following key conclusions:

1. All three Proposals result in substantial savings to FNSB space heating customers, exceeding the SB 23 policy objective for annual savings
2. The difference in estimated costs (and savings) is small among the Proposals – with Spectrum lowest and MWH highest, but a price difference of about 3.8% between the low and high estimates.

Since a "phased" approach may be considered by AIDEA and the selected private participant, the AIDEA IEP Model was also run using assumptions reflecting the initial development of a 6 Bcf capacity NS LNG Plant. The summary tables below show the results of that model run and a more complete summary is in Appendix B. The conclusions for 6 Bcf are consistent with the 9 Bcf conclusions, and the summary results are shown in Table 5 below.

Table 5: AIDEA IEP Model Summary Results - 6 Bcf Plant

	Pentex	Spectrum	MWH	Fuel Oil
Fuel Price to Customers ($/Mcf)	$ 15.69	$ 15.22	$ 15.67	$ 30.00
Household Annual Fuel Costs	$ 2,432	$ 2,359	$ 2,428	$ 5,197
Household Annual Fuel Savings $	$ 2,765	$ 2,838	$ 2,769	N/A
Household Annual Fuel Savings %	53%	55%	52%	N/A

4. TECHNICAL ANALYSIS SUMMARY – NORTH SLOPE LNG PLANT

AIDEA's technical team, led by the AIDEA Project Development Division, with the consulting team of HDR Alaska and MEI, has defined a North Slope plant peak production capacity of 9 BCF per year (300,000 gals/day) to match the FNSB space-heating demand and other utility requirements. This Design Basis was developed through evaluations of proposals received from interested parties, particularly the basis of design developed by Pentex and later adopted by GVEA and MWH.

The Design Basis consists of three process trains that can operate independently or all together to produce LNG at a rate of 50,000 gpd to 300,000 gpd to match the FNSB heating demand and other utility requirements. At the core of the plant is an electric motor driven compressor that will compress treated fuel gas through a refrigeration cycle to produce LNG. The multiple train and electric drive design will provide the maximum flexibility to meet both the swing in seasonal demand as well as potential outages caused by periodic weather events that would delay deliveries from the plant. This approach is somewhat less efficient that other options - but it is a necessity caused by the demand variability.

AIDEA's approach also uses the Nitrogen refrigeration cycle rather than a mixed refrigerant (composed of a variety of process gasses including propane), which is often used in these facilities. The Nitrogen cycle process can be used across a wide variety of operating conditions without the need to adjust the refrigerant mix as feed gas quality changes. Nitrogen is non-combustible and is both proposed to be produced onsite and available locally on the North Slope.

The concepts above are the core of the Design Basis sent both the Potential Participants as well as AIDEA's Request for Proposals ("RFP") for the Liquefaction Unit. The AIDEA technical team also created a design estimate for this plant that was used to determine the cost of producing LNG and subsequently the cost of delivering product to FNSB. This estimate was $203 million for the 9 Bcf plant and $160 million for the 6 Bcf plant.

The table on the next page summarizes AIDEA's cost estimates for the two plant sizes.

It is important to note that the AIDEA technical evaluations are being made on limited information from an engineering perspective - very little front-end engineering has been done and all parties are working from conceptual designs and budgetary cost estimates. As a result, the final plant might be different from the currently envisioned concepts, but it will undoubtedly meet the design parameters and will not be materially different in overall configuration or cost.

IEP LNG FACILITY COST ESTIMATE

Version 01/09/2014

Item	Description	Units	Unit Price	6 BCF Plant		9 BCF Plant	
				Quantity	Extended Price	Quantity	Extended Price
1	FEED Engineering	LS	$1,650,033	0.75	$1,237,525	1	$1,650,033
2	Detailed Engineering	LS	$11,592,190	0.75	$8,694,143	1	$11,592,190
3	Pipeline/Tie-in Engineering	LS	$500,000	1	$500,000	1	$500,000
4	Road/Pad	LS	$6,000,000	1	$6,000,000	1	$6,000,000
5	Buildings	LS	$6,000,000	1	$6,000,000	1	$6,000,000
6	Pipeline, Meter and Regulation	LS	$2,620,000	1	$2,620,000	1	$2,620,000
8	Power Plant	EA	$6,433,333	2	$12,866,666	3	$19,299,999
9	Amine/Pre-Treatment Process	LS	$7,114,180	0.9	$6,402,762	1	$7,114,180
10	Liquefaction Process	EA	$8,072,600	2	$16,145,200	3	$24,217,800
11	Flare Module	LS	$510,342	1	$510,342	1	$510,342
12	Propane Process	LS	$1,885,000	1	$1,885,000	1	$1,885,000
13	LNG Storage Tanks and Piping	EA	$1,759,086	2	$3,518,172	2	$3,518,172
14	Propane Storage Tanks and Piping	EA	$1,759,086	1	$1,759,086	1	$1,759,086
15	Tractor Filling Station	LS	$745,884	0	$0	0	$0
16	Boil Off Gas System	LS	$2,421,931	1	$2,421,931	1	$2,421,931
17	Fire Suppression System	LS	$874,281	0.9	$786,853	1	$874,281
18	Tank Fill Station/Dispensing (LNG)	LS	$1,523,827	1	$1,523,827	1	$1,523,827
19	Tank Fill Station/Dispensing (LP)	LS	$405,600	1	$405,600	1	$405,600
20	Nitrogen Generation System	LS	$65,765	2	$131,530	3	$197,295
21	WEG Cooling and Hot Oil Systems	LS	$3,380,000	0.9	$3,042,000	1	$3,380,000
22	Monitoring and Control System	LS	$3,091,970	1	$3,091,970	1	$3,091,970
23	Off-Site Fabrication	LS	$26,937,437	0.75	$20,203,078	1	$26,937,437
24	Installation/Commissioning	LS	$24,653,079	0.75	$18,489,809	1	$24,653,079
25	Permitting	LS	$2,000,000	0	$0	0	$0
26	Construction Admin./Mgmt.	LS	$21,200,000	0.75	$15,900,000	1	$21,200,000
27	Spare Parts	LS	$1,000,000	1	$1,000,000	1	$1,000,000
28	Thermal Oxidizer	LS	$2,000,000	1	$2,000,000	1	$2,000,000
				Subtotal	**$137,135,493**	**Subtotal**	**$174,352,222**
				Contingency (10%)	$13,713,549		$17,435,222
				Inflation to end 2014	$9,200,283		$11,697,116
				TOTAL	**$160,049,326**	**TOTAL**	**$203,484,560**

Working from AIDEA's Design Basis and Plant of Development, the technical proposals from the three Potential Participants were examined based on information provided and face-to-face meetings with the three teams.

Pentex

The Pentex team has reviewed the Design Basis and has indicated that they: 1) understand the design, including installation on a pad owned by AIDEA; 2) the need for multiple trains and the use of Nitrogen refrigerant and, 3) Pentex would work with the successful bidder in the procurement process initiated by AIDEA to ensure that the project meets its time lines and achieves a bid price for equipment. However, Pentex has stated a preference to work with a supplier (Cosmodyne) who was involved in their original design.

Pentex has accepted the design basis, and to execute the project accordingly. The Pentex $175 million capital cost estimate was consistent with the design estimate and the level of accuracy

Pentex *continued…*

inherent in preliminary designs. Pentex has indicated that their facility would be designed and constructed by a team consisting of Anvil, CHI Engineering, Cosmodyne, Haskell Corporation, Peak Oil Field Services, and Philadelphia Electrical Equipment Company (PEECO). This team has the capacity to execute this project with qualified experienced process consultants and an Alaskan engineering contractor that has experience fabricated process facilities in Alaska.

Spectrum

The Spectrum team has reviewed the Design Basis and has indicated that they: 1) understand the design; 2) propose an alternative Design Basis consisting of two 4.5 BCF trains driven by a paired turbine/compressor set and utilizing a mixed refrigerant process, 3) do not propose to work with the successful bidder to AIDEA's process equipment RFP, and 4) propose to execute this project on a separate smaller pad for which they have a permit.

This Design Basis is likely the most efficient from a process point of view – if and only if – it runs in a steady state manner and the refrigerant mixture is continually adjusted to be the variable feed gas qualities. Spectrum's approach to deal with variable demand is to depend on the efficiency of the compressor increasing in cold temperatures (air is dense capacity increases) and decreasing when it is warmer. In this approach the plan is to simply cycle the plant - turn it on and off - while depending on storage in FNSB to balance production with demand. This kind of operation is much more manpower intensive, harder on the equipment and increases facility safety risks. The AIDEA technical team has concluded that this operational approach is not suitable for the requirements and ultimately would be less reliable.

Spectrum's capital cost estimate of $139 million is significantly lower, and while there is limited information to back up the cost estimate, it is reasonable to expect that the two trains costs would be lowest cost. Spectrum has proposed Quanta and its local arm, Conam, to execute the project, but has not confirmed selection of a process design team. Conam has extensive experience on the North Slope in general civil construction.

MWH / NANA WorleyParsons (MWH)

The MWH team has reviewed the Design Basis and has indicated that they: 1) understand the design; 2) the need for multiple trains and the use of Nitrogen refrigerant and, 3) will work with the successful bidder to AIDEA's process equipment RFP. WorleyParsons is a global design/engineering firm and has installed a variety of LNG plants globally. Of all the process teams in the Proposals, they are the most experienced and would be most qualified to complete the balance of plant design. They have worked with a variety of liquefaction providers on their projects and in reviewing the list of companies bidding on the liquefaction process and have no problem working from that proposed Design Basis. WorleyParsons has generated an estimate of NS LNG Plant capital costs, and their Alaskan subsidiary NANA WorleyParsons has

(MWH) *continued…*

reviewed and is in agreement that the plant can be constructed for $175 million. NANA WorleyParsons (formerly Nana-Colt Engineering) has years of experience in designing, fabricating and installing process plants on the North Slope. They were the in house contractor for Arco Alaska as well as North Slope Shared Services Engineering. MWH is also a worldwide constructor bringing significant construction and project management experience to the project. It is the AIDEA technical team's opinion that the MWH team is the most capable and experienced and has the highest probability of bringing the project to completion on time and on budget.

5. COMMERCIAL PARTICIPANT SELECTION CRITERIA

The AIDEA / AEA team has developed a set of criteria by which Proposals from, and qualifications of, the Potential Participants can be evaluated to determine an optimal match for the IEP requirements. These criteria are grounded in the SB 23 and Interior Energy Project policy objectives and funding structures and the LNG market factors, as well as key technical, business, financial, legal, and structure elements of each Sponsor's project team and their proposed Term Sheets. These criteria were incorporated in AIDEA's letter requests and RFPs to the Sponsors.

These key selection criteria (the "Selection Criteria") are summarized below:

- **Sponsor Term Sheet / business proposal**
  - Effectively leverage State / AIDEA financing with use of private capital, including capacity to fund future expansion without SB 23 funds
  - $20 million minimum project equity contribution by Sponsor
  - Estimated capital and operating cost of NS LNG Plant
  - Projected FOB cost of LNG
  - Overall blended cost of capital (private and SB 23)
    - Nominal return on and of private equity
    - Cost of private debt capital
  - Term-matched commitments
  - Balanced risk allocation
    - Pre-commitment costs including design, and long lead time equipment purchases
    - Capital costs
    - Development cash flow
    - Ongoing operations cash flow
    - Risk events
    - Alternative Gas Supply
- **Plant meets technical requirements:**
  - Plant design compatible with North Slope access and industrial conditions (i.e. pad location, and use of Dalton Highway)
  - Development process and plan adheres to AIDEA's Plan of Development
  - Safety
  - Operating efficiency
  - Operational stability of the plant design and construction to ensure reliable sales to utilities
  - Capacity (including seasonal requirements)
  - Expandable design
  - Design that allows for the efficient production of propane for Interior Alaska customers
  - Full regulatory compliance with federal, state, and local laws

- **Sponsor commitment to IEP priorities and overall system completion**
  - Ability to coordinate development of the NS LNG Plant with the build-out of distribution systems for both FNG and IGU
  - Ability to work with utility and industrial customers intended to be served by the IEP
  - Commitment to long-term LNG production capacity if required
  - Promotion of – participation in – storage and regasification in FNSB for use by utility companies
  - Ability and willingness to offer financing to FNG and IGU for construction of gas pipeline and LNG storage infrastructure needed for the IEP
- **Sponsor acceptance of pricing and loan covenant conditions**
  - Committed to capital, operating, financial transparency
  - Support of State / SB23 customer priorities and goals
  - Acceptance of pricing and return limits on LNG sales
  - Ability to make effective use of the financial tools set forth in SB 23 while permitting AIDEA to retain portions of SB 23 financing needed to support the development of gas distribution infrastructure in the FNSB
- **Sponsor team capabilities**
  - Access to capital sufficient for: (1) initial investment; (2) operations; and (3) potential plant expansion as needed
  - Timely access to capital as well as the amount of capital that could be committed to meet contingencies or future expansion of the NS LNG Plant
  - Ongoing financial and management capacity sufficient to ensure project completion and operation of the NS LNG Plant within time frames set by the IEP
  - Acceptance of completion and operational risk of the NS LNG Plant
  - Governance structure appropriate for public-private participation
  - Engineering, construction management and operational management capabilities and experience that, when combined, are sufficient for development and operation of project
  - Development team experience with Arctic conditions and operations
  - Experience with North Slope operations and NS LNG Plant

6. ANALYSIS OF SPONSOR PROPOSALS VS. THE SELECTION CRITERIA

Since early in 2013, AIDEA and AEA have employed a team of technical, legal and business consultants to provide expert assistance in analyzing and structuring the IEP, and working with the financing made available with the passage of SB 23 that was signed into law in May of 2013. This team was used to evaluate proposals. Through this effort, AIDEA and AEA have developed IEP technical criteria and financial plans directed at meeting the SB 23 and IEP objectives.

First, AIDEA began the process of soliciting interest from the private sector and making a determination as to the feasibility of the LNG trucking plan. To that end, AIDEA on December 8, 2012, sent out Requests for Interest in the IEP and received 16 responses. The authority also retained the services of Western Financial Group to serve as a financial adviser for the project while issuing an RFP for engineering and technical services, and the firms of HDR and MEI were selected.

Secondly, Governor Parnell introduced legislation in SB 23 that set out a financial structure for the IEP: (1) a SETS loan of up to $125 million at 3% interest; (2) a Legislative appropriation to the project in the amount of $57.5 million; and (3) authorization for AIDEA to issue $150 million dollars in SETS bonds backed by the moral obligation of the State. The financing sought in SB 23 was substantial, but was intentionally less than would be needed to complete the IEP because the design of the financial structure from the outset was to leverage state funds with investment from the private sector and local utilities.

As SB 23 was moving through the legislative process, AIDEA's staff and consultants made a determination that the IEP was both a technically and economically feasible project. With that information, AIDEA in June (after the signing of SB 23 into law) sent out a second request for proposals from participants that were willing to develop and construct an LNG plant on the North Slope using the financial structure available in SB 23.

With those plans in hand, AIDEA sought the refined Proposals that were submitted by each potential participant in the form of term sheets. Then, AIDEA had each potential proponent make its presentation to the AIDEA Board on November 19, 2013. Each proponent provided a PowerPoint presentation and answered questions from the Board. Subsequently, AIDEA received clarification from one proponent and then offered the same opportunity to the other two proponents to offer clarifications.

This process was augmented by meetings that GVEA set up with each of the three potential participants. At these meetings, GVEA sought information on the terms under which GVEA might purchase LNG from each company. AIDEA provided technical support at these meetings, but did not participate in the negotiations.

Based on all of the information gathered since the beginning of the IEP process, and with the final Proposals as defined in Section 1, AIDEA has evaluated each Sponsor team and its business proposal relative to the Selection Criteria using the 9Bcf proposals. Where all Proposals meet the particular Selection Criterion or there is no meaningful difference among the Proposals, no notes are included.

CRITERIA	NOTES
Sponsor Term Sheet / business proposal	
○ Effectively leverage State / AIDEA financing with use of private capital, including capacity to fund future expansion without SB 23 funds	▪ MWH proposes to use a higher level of both private equity and debt, leaving more of the State / AIDEA financing for other IEP needs. ▪ Spectrum's lower projected capital cost also reduces the need for IEP funding. ▪ Pentex, although using the highest level of IEP funding directly for the NS LNG Plant, also is investing private capital in FNSB storage, re-gasification and distribution. ▪ MWH commits to future expansion financing using private funds.
○ $20 million minimum project equity contribution by Sponsor	
○ Estimated capital and operating cost of NS LNG Plant	▪ Spectrum's LNG Plant capital cost is lowest of the Sponsors. ▪ Projected annual operating costs are $7.8 million for Spectrum and $8.9 million for MWH and Pentex.
○ Projected FOB cost of LNG	▪ All three meet price target – 40-50% reduction
○ Overall blended cost of capital (private and SB 23)	▪ MWH proposes an after-tax return on equity of 12.0% and "market rates" on any private debt. MWH proposes a mix of private equity and debt financing that, for the first five years, resulting in a projected nominal rate of 9.4% (assuming 8% debt). ▪ Pentex proposes an after-tax return on equity of 12.5% and "market rates" on any private debt. Pentex proposes a mix of private equity and debt financing that, for the first five years, resulting in a projected nominal rate of 10.7% (assuming 8% debt). ▪ Spectrum proposes an after-tax return of 15% on private equity. Spectrum proposes all equity with a full tax burden, resulting in a project nominal rate of 25% (assuming 40% tax rate).
▪ Nominal return on and of private equity	
▪ Cost of private debt capital	

○ Term-matched commitments ○ Balanced risk allocation	▪ Both MWH and Pentex propose long-term agreements related to the NS LNG Plant financing, with the proviso, offered by AIDEA, that Alternative Gas Supply risk would be managed by AIDEA. ▪ Spectrum proposes an "off-ramp" between years 5 and 10, during which period Spectrum could "put" one LNG train to AIDEA for $72 million if demand does not meet projections. ▪ Spectrum also proposes a number of business terms that could result in higher costs or higher risk to AIDEA, including: ○ A break-up fee (if Spectrum is chosen, but a deal is not ultimately reached) of $2.25 million. ○ A requirement, along with the break-up fee, that Spectrum have access to 20,000 gallons per day of LNG capacity at preferred pricing ○ A management fee for costs prior to closing ○ An agreement that AIDEA will purchase the Spectrum site and pad for $2.85 million plus a 15% margin ○ A "use-it-or-lose-it" requirement that would allow Spectrum to buy back its site at a pre-determined price. ▪ MWH commits capital at closing sufficient to acquire long lead time equipment without disproportionate draws on SB 23 funding. ▪ AIDEA's technical team has independently developed detailed capital cost estimates for both 9 Bcf and 6 Bcf plants. These cost estimates are consistent with the estimates provided in the three Proposals.
▪ Pre-commitment costs including design, and long lead time equipment purchases ▪ Capital costs	
▪ Development cash flow	
▪ Ongoing operations cash flow	
▪ Risk events	
▪ Alternative Gas Supply	
Plant meets technical requirements:	
○ Plant design compatible with North Slope access and industrial conditions (i.e. pad location, and use of Dalton Highway)	
○ Development process and plan adheres to AIDEA's Plan of Development	▪ Spectrum's plant uses a different technology that the AIDEA Plan of Development and Spectrum proposes to retain sole control over the NS LNG Plant development process.
○ Safety	
○ Operating efficiency	▪ The IEP Model and Spectrum's Proposal project that the

	Spectrum mixed-refrigerant process has a somewhat better operating efficiency (cost per gallon processed) than the nitrogen refrigerant plant processes of MWH and Pentex. The 6% fuel gas estimate (vs. 10.5% for nitrogen process) may not accurately reflect the loss of efficiency from Spectrum's proposed approach to meeting swing demands and short-term interruptions.
○ Operational stability of the plant design and construction to ensure reliable sales to utilities	▪ AIDEA's technical team has concluded that the nitrogen refrigerant plants (Pentex and MWH) better meet the IEP objectives than the Spectrum mixed-refrigerant plant.
○ Capacity (including seasonal requirements)	
○ Expandable design ○ Design that allows for the efficient production of propane for Interior customers	▪ Spectrum agrees to make propane only if certain milestones related to LNG production, feed gas composition and market pricing are met.
Sponsor commitment to IEP priorities and full system completion	
○ Ability to coordinate development of the NS LNG Plant with the build-out of distribution systems for both FNG and IGU	▪ MWH is well-suited to working will all utilities. ▪ Pentex and MWH propose to expand NS LNG production capacity as needed to meet IEP objectives. ▪ Spectrum's commitment to IEP priorities is limited to 7.5 Bcf. ▪ Pentex, through its subsidiary FNG, is actively involved in expanding the FNSB distribution system as well as investing in storage and regasification. ▪ MWH has proposed to evaluate providing financing for FNSB storage, regasification and distribution and, through a higher level of private financing for the NS LNG Plant, leaves the greatest amount of SB 23 funding for FNSB requirements. • Spectrum has suggested that it would consider providing "virtual storage" or to participate in funding FNSB storage, but no funding or other information has been provided on this concept. ▪ MWH has been engaged by IGU to assist in planning and development of the distribution system in IGU's RCA-granted service area.
○ Ability to work with the management of utility and industrial customers intended to be served by the IEP	
○ Commitment to long term LNG production capacity if required ○ Promotion of – participation in – storage and regasification in FNSB for use by utility companies	
○ Ability and willingness to offer financing to FNG and IGU for construction of needed infrastructure for the IEP	

Sponsor acceptance of pricing and loan covenant conditions	
○ Committed to capital, operating, financial transparency	▪ All three Sponsors agree to a "regulated utility" model for their operations relevant to the IEP preferred customer portion of the NS LNG Plant operations. ▪ MWH and Pentex agree to that transparency for any related subsidiaries as well. ▪ Spectrum is not willing to provide full transparency regarding financing sources and terms or related and subsidiary company financials.
○ Support of State / SB23 customer priorities and goals	▪ Spectrum proposes to grant priority to IEP preferred customers only up to 7.5 Bcf.
○ Acceptance of pricing and return limits on LNG sales	▪ While all three Sponsors agree to pricing and return limits, Spectrum proposes to provide liquefaction services only and makes no commitments regarding all-in FOB pricing.
○ Ability to make effective use of the financial tools set forth in SB 23 while permitting AIDEA to retain portions of SB 23 financing needed to support the development of gas distribution infrastructure in the FNSB.	▪ MWH's proposal for a higher level of private financing frees up additional SETS Loan funding for the FNSB distribution system. MWH has also proposed to explore providing financing for elements of the IEP beyond the NS LNG Plant, including trucking, storage, regasification and distribution. ▪ Spectrum's lower projected capital cost frees up additional SETS Loan funding for the FNSB distribution system. ▪ Pentex is already participating in expansion of the FNSB distribution system through its FNG subsidiary, with both an AIDEA loan participation and SETS Loan application in process.
Sponsor team capabilities	
○ Access to capital sufficient for: (1) initial investment;(2) operations; and (3) potential plant expansion as needed	▪ MWH has greater access to capital at higher levels than the other two Sponsors, and is willing to commit funding (in the form of a letter-of-credit) for a plant expansion at closing. ▪ Pentex also has institutional investor backing, but is less certain as to timing and does not propose as high a level of private funding as MWH. ▪ Spectrum proposes contractor-provided construction financing, but does not disclose sources of, or capacity

	for, long-term private financing.
○ Timing of access to capital as well as the amount of capital that could be committed to meet contingencies or future expansion of the NS LNG Plant	▪ MWH has indicated that the institutional investor which will invest in the NS LNG Plant will invest full capital, including secured expansion financing (if necessary) at closing. ▪ Pentex proposes to provide equity capital as soon after closing as possible, but no later than 12/31/14. ▪ Spectrum proposes to secure third party construction financing at closing and may use the SETS financing for term financing at commercial operation.
○ Ongoing financial and management capacity sufficient to ensure project completion & operation of the NS LNG Plant within time frames set by the IEP	▪ MWH is a large, multi-national company and is partnered with an institutional investor and with WorleyParsons Limited, a major global provider of project delivery and consulting services to the resources & energy sectors and complex process industries. ▪ Pentex is controlled by EB&F, an institutional investor, and has access to capital markets through Marathon Capital. Pentex's principal Alaska subsidiary, FNG, already operates the Port Mackenzie LNG plant, as well as the distribution utility in Fairbanks and a trucking operation to transport LNG from Port Mackenzie to Fairbanks. ▪ Spectrum is the developer and majority owner of one merchant LNG plant in Arizona, and for the IEP is partnered with Quanta, a major global contractor. Spectrum's sources of ongoing capital have not been disclosed.
○ Acceptance of completion and operational risk of the NS LNG Plant	▪ All three parties accept some level of completion risk, with somewhat different treatment of capital reserves and AIDEA's proposed $10 million completion reserve. ▪ MWH and Pentex have access to additional capital through their related institutional investors, but have not at this point committed additional capital to cost overruns for the NS LNG Plant. ▪ Spectrum relies on the form of completion agreement with Quanta to ensure completion.

○ Governance structure appropriate for public-private participation	▪ MWH proposes a special-purpose LLC to be owned by the institutional investor, with MWH as an owners' representative. MWH will not have an equity share in the special-purpose LLC. ▪ Pentex has created Polar LLC for purposes of developing the NS LNG Plant. ▪ Both Pentex and MWH have agreed to AIDEA's proposed development approach. ▪ Spectrum proposes to retain sole control over the NS LNG Plant development process.
○ Engineering, construction management and operational management capabilities and experience that, when combined, are sufficient for development and operation of project	▪ Each of the Sponsors has assembled a team with relevant experience and capabilities necessary for development and construction of the project. ▪ Pentex and Spectrum each have direct experience with LNG plant construction and operations. ▪ Spectrum has direct experience with North Slope operations. ▪ Pentex and MWH propose to contract with or hire experienced North Slope construction contractors and operators.
○ Development team experience with Arctic conditions and operations	
○ Experience with North Slope operations and LNG plant	

Balancing IEP objectives, SB 23 funding resources, LNG market factors, technical requirements, business terms, Sponsor team capabilities, projected financial results and commercial and legal risk allocations, AIDEA's IEP team concludes that the MWH Proposal most efficiently meets the IEP objectives and AIDEA's business and financial requirements.

Key differentiating factors supporting this conclusion are detailed below in the framework of the major Selection Criteria.

Sponsor Term Sheet / business proposal

The MWH Proposal provides the highest level of initial private financing for the NS LNG Plant, as well as a commitment to funding future capacity expansions (in the event of a phased implementation) without additional SB 23 funding.

MWH proposes the lowest blended rate of return on the private capital and commits the capital (after closing) pro-rata with the AIDEA financing.

MWH also proposes a risk allocation (after closing) best aligned with AIDEA's proposed treatment of long-term risks associated with the project.

Plant meets technical requirements

While offering considerable expertise going forward, MWH fully supports the use of AIDEA's proposed site, agrees with the AIDEA technical team's recommended plant technology, and accepts AIDEA's Plan of Development as well as use of AIDEA's ongoing procurement process involving long lead time equipment to be used in the Plant.

Sponsor commitment to IEP priorities and overall system completion

MWH fully endorses the SB 23 and IEP priorities. MWH has no other business objectives for the NS LNG Plant, and supports the customer priorities detailed in the IEP policies designed to concentrate the benefits of State financing to serve space heating and other utility customers.

By offering the highest level of private capital for the NS LNG Plant and proposing to consider FNSB utility financing, the MWH Proposal preserves more low cost SB 23 capital for down-stream requirements and increases the likelihood of success for the overall program.

MWH also has built relationships with utilities in the FNSB. MWH has recently been engaged by IGU to assist in planning and development of the new utility's storage, regasification and distribution facilities.

Sponsor acceptance of pricing and loan covenant conditions

MWH supports and has agreed to the IEP's strong provisions requiring transparency related to sources of capital, operating financials and subsidiary transactions. MWH also has fully accepted the IEP limitations on private capital returns and on LNG pricing. MWH's high proposed capital investment supports overall IEP program completion.

Sponsor team capabilities

MWH's Proposal provides the IEP with a substantial combination of private capital and project development and management resources, along with a governance structure most aligned with AIDEA's business and financing practices.

MWH has proposed greatest access to, and flexibility with, private capital – and timely access to that capital. That capital is allied with two large, multi-national enterprises – MWH and WorleyParsons – with complementary and relevant expertise in project financing, project development and operations, oil and gas facilities.

MWH's proposed organizational structure and approach to project development align well with AIDEA's "modified project financing" framework for the NS LNG Plant. Finally, the MWH team's building of relationships in the FNSB supports the potential for more rapid and beneficial development of the business (supply and customer) relationships necessary for overall IEP program success.

Based on the due diligence to this point, the AIDEA financial, technical, and legal team has concluded that the likelihood of concluding the complex, comprehensive business transaction for the NS LNG Plant is highest with MWH. Given the multiple parties involved and the requirement that the NS LNG Plant program coordinates with the rest of the IEP, this ability to complete the transaction is an important risk mitigation for AIDEA and the IEP.

7. NEXT STEPS AND PROPOSED TIMELINES

The negotiation and documentation of the NS LNG Plant transaction will be accomplished in three principal phases, as set forth below:

1. **Letter of Intent:** AIDEA and MWH will negotiate a Letter of Intent that will establish the basic parameters of the NS LNG Plant financing made available by AIDEA as set forth in a final Term Sheet attached to the Letter of Intent. This Letter of Intent will not be a loan commitment letter or a final offer of financing, but rather will establish terms that can be used for the financing structure. The AIDEA team expects that it will be able to finalize and execute the Letter of Intent with MWH on or before January 31, 2014.

2. **Project Development Agreement:** Following execution of the Letter of Intent, AIDEA and MWH will negotiate and finalize a detailed Project Development Agreement, which will, among other things: (1) establish in detail the rights and obligations of AIDEA and MWH in connection with the development of the NS LNG Plant; (2) set forth the detailed conditions precedent to financial closing for the SETS loan to MWH; and (3) include either forms of the various transaction agreements or detailed term sheets for such agreements. Assuming the Letter of Intent is signed by January 31, 2014, the AIDEA team expects that it will be able to finalize and execute the Project Development Agreement with MWH on or about March 15, 2014.

   Key activities in this phase (in addition to documentation noted above) include:
   - Work with MWH to determine optimal NS LNG Plant capacity phasing based on current information regarding utility demand, FNSB distribution system build-out pacing of FNG and the IGU, and conversion projections.
   - Work with MWH to finalize the plan and process for the balance of engineering, construction plans, site improvements, equipment procurement, and contractor selection.
   - Work with MWH to (1) collaborate with all parties (FNG, IBU, GVEA and FNSB) to advance the project and (2) optimize and minimize risks of the Project with MWH to allow for alternative sources of supply if in the Project's interest.
   - Complete final due diligence, including loan security, loan underwriting, timing of capital commitment, escrow of funds and related matters.
   - Negotiate essential business structure
     - Identification of borrowing entity
     - Loan covenants
     - SETS Loan structure
     - AIDEA licenses to borrowing entity
     - AIDEA permitting transfers
     - Pre-loan closing project progress

- Negotiate essential business structure *continued…*
  - Equipment Procurement-purchase, sale, leaseback
  - Final operations plans
  - Final capital structure and financing plan

- Work with MWH to:
  - Secure long-lead time equipment
  - Select contractors
  - Select and approve an operator
  - Plan pad development and construction
  - Secure LNG purchase agreements with potential customers
- Continue to assist both FNSB gas distribution utilities with financing and development of storage, regasification and distribution facilities.

3. **Satisfaction of Conditions Precedent and Financial Closing:** Following execution of the Project Development Agreement, AIDEA and MWH will take all necessary actions to satisfy the conditions precedent to financial closing. The AIDEA team expects that the parties will be able to satisfy all conditions precedent to closing, and finalize and execute the SETS loan documents and other financial closing documents on or before May 31, 2014.

8. APPENDIX A – AIDEA IEP MODEL – 9 BCF PLANT

INTERIOR ENERGY PROJECT FINANCIAL MODEL – 9 BCF PLANT

The AIDEA IEP Model, which was developed by the SETS Program Manager, has been used to analyze the projected financial outcomes of multiple potential IEP scenarios and alternative private participants.

Based on additional information provided after the December 2013 AIDEA Board meeting by the Sponsors, as clarification of their respective Term Sheets, the AIDEA IEP Model was re-run to reflect the most current understanding of the financial and economic terms of the Proposals.

Key Model Assumptions for Proposals

In order to ensure comparability the AIDEA model "normalizes" key AIDEA IEP Model assumptions for all three Proposals. These common assumptions include:

1. SETS loan payments include principal and no interest for the first five years.
2. Prices are levelized (averaged) for the first five years and may change in later years.
3. While all Term Sheets provide for an NS LNG Plant that can add capacity expansions, this analysis assumes no expansions.
4. To lower project cost and risk, the AIDEA IEP Model funds the first $35 million of AIDEA investment with the capital appropriation even if not sought in the Term Sheet.
5. All SETS funds not used for the NS LNG Plant would be available for use in various aspects of the distribution system, reducing the distribution cost by displacing more expensive capital.
6. LNG will be trucked by trucks using diesel fuel (higher cost) until LNG tractors are available.

In addition to the common assumptions, each Term Sheet provides unique factors as inputs to the AIDEA IEP Model:

Pentex Term Sheet key assumptions and analysis

1. $20 million equity provided by Pentex
    a. Nominal rate of return of 12.5% (during first five years)
    b. Post-tax rate of 12.5%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. $10 million private debt financed at 8% interest
3. 10.7% weighted rate of return on private investment (debt and equity)
4. Debt principal paid back over 12 years
5. Equity principal paid back over 20 years
6. $6.5 million annual non-fuel O&M cost
7. LNG liquefaction process requires 10.5% fuel gas

Spectrum Term Sheet key assumptions and analysis

1. $20 million equity provided by Spectrum
    a. Nominal rate of return of 25%
    b. Post-tax rate of return of 15%
    c. Tax paid on maximum pre-individual tax burden regardless of actual tax burden
2. No private debt financing
3. 25.0% weighted rate of return on private investment (all equity)
4. Equity principal payback not in rates
5. $6.5 million annual non-fuel O&M costs
6. LNG liquefaction process requires 6.0% fuel gas

MWH Term Sheet key assumptions and analysis

1. $28.9 million equity provided by investor
    a. Nominal rate of return of 12% (during first five years)
    b. Post-tax rate of 12%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. $53.6 million private debt financed at 8% interest
3. 9.4% weighted rate of return on private investment (debt and equity)
4. Debt and equity principal paid back over 30 years
5. $6.5 million annual non-fuel O&M cost
6. LNG liquefaction process requires 10.5% fuel gas

The effects of the above assumptions on the uses of capital financing for the NS LNG Plant are shown in Table 1. Table 2 summarizes the AIDEA funds available to fund FNSB distribution capital requirements under each Proposal.

Table 1: Capital Stack $MM

	Pentex	Spectrum	MWH
AIDEA Contribution	$35.0	$35.0	$35.0
AIDEA SETS	$110.0	$84.9	$68.0
Debt	$10.0	$0.0	$53.6
Equity	$20.0	$20.0	$28.9
Total	**$175.0**	**$139.9**	**$185.5**

Table 2: AIDEA Funds Left for Distribution $MM

	Pentex	Spectrum	MWH
SETS	$15.0	$40.1	$57.0
Equity	$22.5	$22.5	$22.5
Total	**$37.5**	**$62.6**	**$79.5**

Another set of common assumptions on the demand side is used to normalize the three Proposals in the AIDEA IEP Model:

Natural gas demand key assumptions

1. Industrial customers, including GVEA, demand 3 Bcf per
2. Natural gas utilities' demand based on revised AIDEA estimate and will grow over time
3. Operating gas for regasification is 2% of total LNG demand
4. Operating gas does not include 4% consumed by LNG powered trucks in first five years
5. AIDEA expects the NS LNG Plant to expand to meet demand but in this analysis it is not expanded and demand is capped
6. The capacity of the NS LNG Plant is sized to meet the peak seasonal demand, so although the plant capacity is 9 Bcf its expected output is only 6.7 Bcf per year

The effect of the natural gas assumptions on potential demand for the NS LNG Plant is summarized in Table 3.

Table 3: 9.0 Bcf Plant Demand (Bcf per year)

	2016	2017	2018	2019	2020
Industrial (includes GVEA)	3.0	3.0	3.0	3.0	3.0
Natural Gas Utilities	1.6	3.5	3.5	3.5	3.5
Operating Gas	0.1	0.1	0.1	0.1	0.1
Total	**4.7**	**6.6**	**6.7**	**6.7**	**6.7**

Based on the submissions in the Term Sheets, annual costs are estimated for the full IEP system. Key assumptions regarding costs include:

IEP operating costs key assumptions

1. Other NS LNG Plant operating costs are based on individual Term Sheets.
2. Per-unit trucking costs are common.
3. Annual costs are a five-year average.
4. Distribution costs are estimated separately from the Term Sheet analysis and should be expected to change.
5. Prices apply to all preferred customers (as that term was used in the term sheets), including associated operating gas.

Table 4 summarizes the annual costs in millions of dollars for each of the three Proposals.

Table 5 translates those costs to $ per million cubic feet ("$/Mcf") of natural gas by cost components.

Table 6 includes all of the costs to express the $/Mcf "at the meter" of the customer in FNSB.

Table 7 translates the price at the meter to $ per gallon of LNG.

Table 4: Annual Cost $MM

	Pentex	Spectrum	MWH
Raw Gas	$20.7	$20.7	$20.7
Fuel Gas	$2.4	$1.3	$2.4
Operating Costs	$6.5	$6.5	$6.5
AIDEA SETS Loan	$3.7	$2.8	$2.3
Private Debt	$1.5	$0.0	$4.8
Equity Return	$3.3	$5.0	$3.6
Total	**$38.0**	**$36.3**	**$40.2**

Table 5: Cost Components $/Mcf

	Pentex	Spectrum	MWH
Raw Gas	$3.30	$3.30	$3.30
Fuel Gas	$0.39	$0.21	$0.39
Operating Costs	$1.04	$1.04	$1.04
AIDEA SETS Loan	$0.59	$0.45	$0.36
Private Debt	$0.24	$0.00	$0.76
Equity Return	$0.52	$0.80	$0.57
Trucking	$5.01	$5.01	$5.01
Distribution	$4.20	$4.12	$4.06

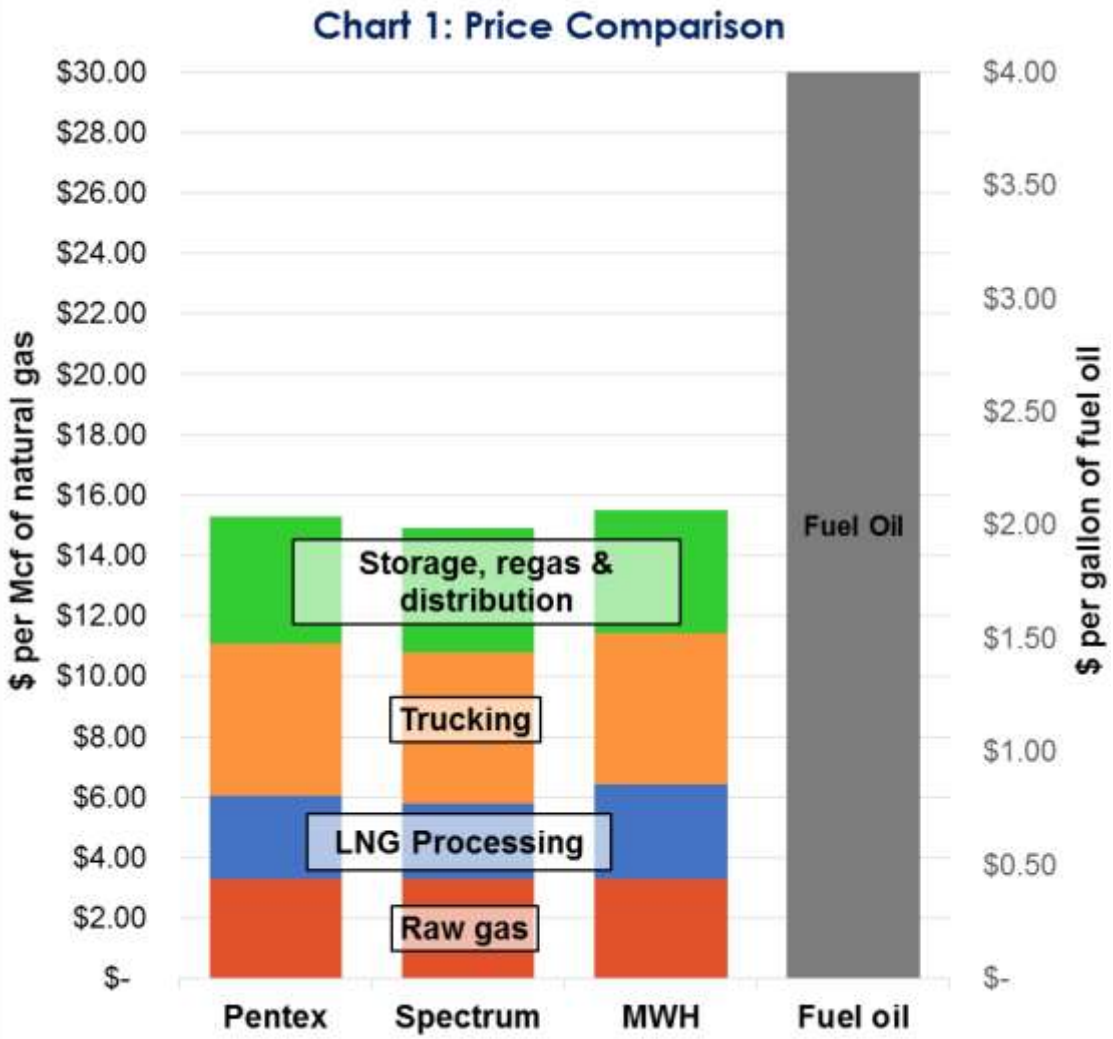
Table 6: Gas Price $/Mcf

	Pentex	Spectrum	MWH
Processing Fee	$2.77	$2.50	$3.12
FOB NS Plant	$6.07	$5.80	$6.42
Delivered to FBX	$11.08	$10.81	$11.43
At the Meter	$15.28	$14.93	$15.49

Table 7: Gas Price $/gal

	Pentex	Spectrum	MWH
Processing Fee	$0.23	$0.21	$0.26
FOB NS Plant	$0.50	$0.48	$0.53
Delivered to FBX	$0.92	$0.89	$0.94
At the Meter	$1.26	$1.23	$1.28

Based on the costs for each Proposal as determined by the AIDEA IEP Model, Chart 1 provides a graphical comparison of the cost of space heating for each of the three Proposals versus fuel oil.



The AIDEA IEP Model then compares annual fuel costs by month and estimates the monthly savings under each of the Proposals versus heating oil.

IEP Estimated Household Savings Based on Term Sheets Submitted to AIDEA

Table 8: Household Annual Fuel Costs by Month

	Pentex	Spectrum	MWH	Fuel Oil
Jan	$369	$361	$375	$811
Feb	$310	$303	$315	$681
Mar	$277	$271	$281	$608
Apr	$171	$167	$173	$374
May	$95	$93	$96	$208
Jun	$50	$49	$50	$109
Jul	$43	$42	$43	$94
Aug	$66	$65	$67	$146
Sep	$114	$111	$115	$249
Oct	$213	$208	$216	$468
Nov	$306	$298	$310	$670
Dec	$355	$347	$360	$780
Total	**$2,369**	**$2,314**	**$2,402**	**$5,197**

Table 9: Household Annual Savings by Month

	Pentex	Spectrum	MWH
Jan	$441	$450	$436
Feb	$371	$378	$366
Mar	$331	$337	$327
Apr	$204	$208	$201
May	$113	$115	$112
Jun	$59	$61	$59
Jul	$51	$52	$50
Aug	$79	$81	$78
Sep	$136	$138	$134
Oct	$255	$259	$252
Nov	$365	$372	$361
Dec	$424	$432	$419
Total	**$2,829**	**$2,883**	**$2,795**
Savings %	**54%**	**55%**	**54%**

Household fuel cost and savings notes:

1. *Households estimated to use 155 Mcf of gas annually*
2. *Fuel oil cost is based on $4.00 per gallon ($30.00 per Mcf equivalent)*

3. *Household costs and savings incorporate improved efficiency of natural gas heaters over fuel oil (95% vs. 85% efficient)*
4. *Includes all costs to deliver gas to the meter*

The updated AIDEA IEP Model analysis indicates the following key conclusions:

1. All three Proposals result in substantial savings to FNSB space heating customers, exceeding the SB 23 policy objective for annual savings
2. The difference in estimated costs (and savings) is quite small among the Proposals – with Spectrum lowest and MWH highest, but a difference of about 3.8% between the low and high estimates.

9. APPENDIX B – AIDEA IEP MODEL – 6 BCF PLANT

INTERIOR ENERGY PROJECT FINANCIAL MODEL – 6 BCF PLANT

The AIDEA IEP Model, which was developed by the SETS Program Manager, has been used to analyze the projected financial outcomes of multiple potential IEP scenarios and alternative private participants.

Based on additional information provided after AIDEA's December 27, 2013 request for information on the cost of a 6 Bcf plant, the AIDEA IEP Model was re-run to reflect the most current understanding of the financial and economic terms of the Proposals.

Key Model Assumptions for Term Sheets

In order to ensure comparability the AIDEA model "normalizes" key AIDEA IEP Model assumptions for all three Proposals. These common assumptions include:

1. SETS loan payments include principal and no interest for the first five years.
2. Prices are levelized (averaged) for the first five years and may change in later years.
3. While all Term Sheets require an expandable plant, this analysis assumes no expansions.
4. To lower project cost and risk, the AIDEA IEP Model funds the first $35 million of AIDEA investment with the capital appropriation even if not sought in the Term Sheet.
5. All SETS funds not used for the NS LNG Plant would be available for use in various aspects of the distribution system.
6. LNG will be trucked by trucks using diesel fuel (higher cost) until LNG tractors are available.

In addition to the common assumptions, each Term Sheet provides unique factors as inputs to the AIDEA IEP Model:

Pentex Term Sheet key assumptions and analysis

1. $20 million equity provided by Pentex
    a. Nominal rate of return of 12.5% (during first five years)
    b. Post-tax rate of 12.5%
    c. Tax based on realized tax burden with no taxes assumed in first five years

Pentex Term Sheet key assumptions and analysis *continued…*

2. No private debt financing
3. 12.0% weighted rate of return on private investment (all equity)
4. Debt paid back over 12 years
5. Equity paid back over 20 years
6. $6.5 million annual non-fuel O&M cost
7. LNG liquefaction process requires 10.5% fuel gas
8. LNG plant modeled at 6 Bcf, with capital cost of $135.3 million

Spectrum Term Sheet key assumptions and analysis

1. $20 million equity provided by Pentex
    a. Nominal rate of return of 12.5% (during first five years)
    b. Post-tax rate of 12.5%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. No private debt financing
3. 25.0% weighted rate of return on private investment (all equity)
4. Equity principle payback not in rates
5. $5.3 million annual non-fuel O&M costs
6. LNG liquefaction process requires 6.0% fuel gas
7. LNG plant modeled at 6 Bcf with a capital cost of $97 million (includes pre-cooling)

MWH Term Sheet key assumptions and analysis

1. $20 million equity provided by investor
    a. Nominal rate of return of 12% (during first five years)
    b. Post-tax rate of 12%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. No private debt financing
3. 12.0% weighted rate of return on private investment (debt and equity)
4. Debt and equity principal paid back over 30 years
5. $6.5 million annual non-fuel O&M cost
6. LNG liquefaction process requires 10.5% fuel gas
7. LNG plant modeled at 6 Bcf, with capital cost of $140 million

MWH Low SETS Scenario key assumptions and analysis

1. $20 million equity provided by investor
    a. Nominal rate of return of 12% (during first five years)
    b. Post-tax rate of 12%
    c. Tax based on realized tax burden with no taxes assumed in first five years
2. Tax based on realized tax burden with no taxes assumed in first five years
3. $37 million private debt financed at 8% interest
4. 9.4% weighted rate of return on private investment (debt and equity)
5. Debt and equity principal paid back over 30 years
6. $6.5 million annual non-fuel O&M cost
7. LNG liquefaction process requires 10.5% fuel gas
8. LNG plant modeled at 6 Bcf, with capital cost of $140 million

The effects of the above assumptions on the uses of capital financing for the NS LNG Plant are shown in Table 1. Table 2 summarizes the AIDEA funds available to fund FNSB distribution capital requirements under each Proposal.

Table 2: AIDEA Funds Left for Distribution $MM

	Pentex	Spectrum	MWH	MWH Low SETS
SETS	$44.7	$83.0	$31.6	$68.6
Equity	$22.5	$22.5	$22.5	$22.5
Total	**$67.2**	**$105.5**	**$54.1**	**$91.1**

Another set of common assumptions on the demand side is used to normalize the three Proposals in the AIDEA IEP Model:

Natural gas demand key assumptions

1. Industrial customers, including GVEA, demand 2 Bcf per year
2. Natural gas utilities' demand based on estimates by AIDEA and expected to grow over time
3. Operating gas for regasification is 2% of total LNG demand
4. Operating gas does not include 4% for LNG powered trucks in first five years
5. AIDEA expects the NS LNG Plant to expand to meet demand but in this analysis it is not expanded and demand is capped
6. The capacity of the NS LNG Plant is sized to meet the peak seasonal demand, so although the plant capacity is 6 Bcf its expected output is only 4.4 Bcf per year

The effect of the natural gas assumptions on potential demand for the NS LNG Plant is summarized in Table 3.

Table 3: 6.0 Bcf Plant Demand (Bcf per year)

	2016	2017	2018	2019	2020
Industrial (includes GVEA)	2.0	2.0	2.0	2.0	2.0
Natural Gas Utilities	1.6	2.4	2.4	2.4	2.4
Operating Gas	0.1	0.1	0.1	0.1	0.1
Total	**3.7**	**4.4**	**4.4**	**4.4**	**4.4**

Based on the submissions in the Term Sheets, annual costs are estimated for the full IEP system. Key assumptions regarding costs include:

IEP operating costs key assumptions

1. Other NS LNG Plant operating costs are based on individual Term Sheets
2. Per-unit trucking costs are common
3. Annual costs are a five year average
4. Distribution costs are estimated separately from the Term Sheet analysis and should be expected to change
5. Prices apply to all preferred customers, including associated operating gas

Table 4 summarizes the annual costs in millions of dollars for each of the three Proposals.

Table 5 translates those costs to $ per million cubic feet ("$/Mcf") of natural gas by cost components.

Table 6 includes all of the costs to express the $/Mcf "at the meter" of the customer in FNSB.

Table 7 translates the price at the meter to $ per gallon of LNG.

Table 4: Annual Cost $MM

	Pentex	Spectrum	MWH	MWH Low SETS
Raw Gas	$14.1	$14.1	$14.1	$14.1
Fuel Gas	$1.7	$0.9	$1.7	$1.7
Operating Costs	$6.5	$5.3	$6.5	$6.5
AIDEA SETS Loan	$2.7	$1.4	$3.1	$1.9
Private Debt	$0.0	$0.0	$0.0	$3.3
Equity Return	$3.3	$5.0	$2.5	$2.5
Total	**$28.2**	**$26.7**	**$27.9**	**$30.0**

Table 5: Cost Components $/Mcf

	Pentex	Spectrum	MWH	MWH Low SETS
Raw Gas	$3.30	$3.30	$3.30	$3.30
Fuel Gas	$0.39	$0.21	$0.39	$0.39
Operating Costs	$1.51	$1.23	$1.52	$1.52
AIDEA SETS Loan	$0.62	$0.33	$0.73	$0.44
Private Debt	$0.00	$0.00	$0.00	$0.77
Equity Return	$0.76	$1.17	$0.58	$0.58
Trucking	$5.01	$5.01	$5.01	$5.01
Distribution	$4.10	$3.98	$4.15	$4.03

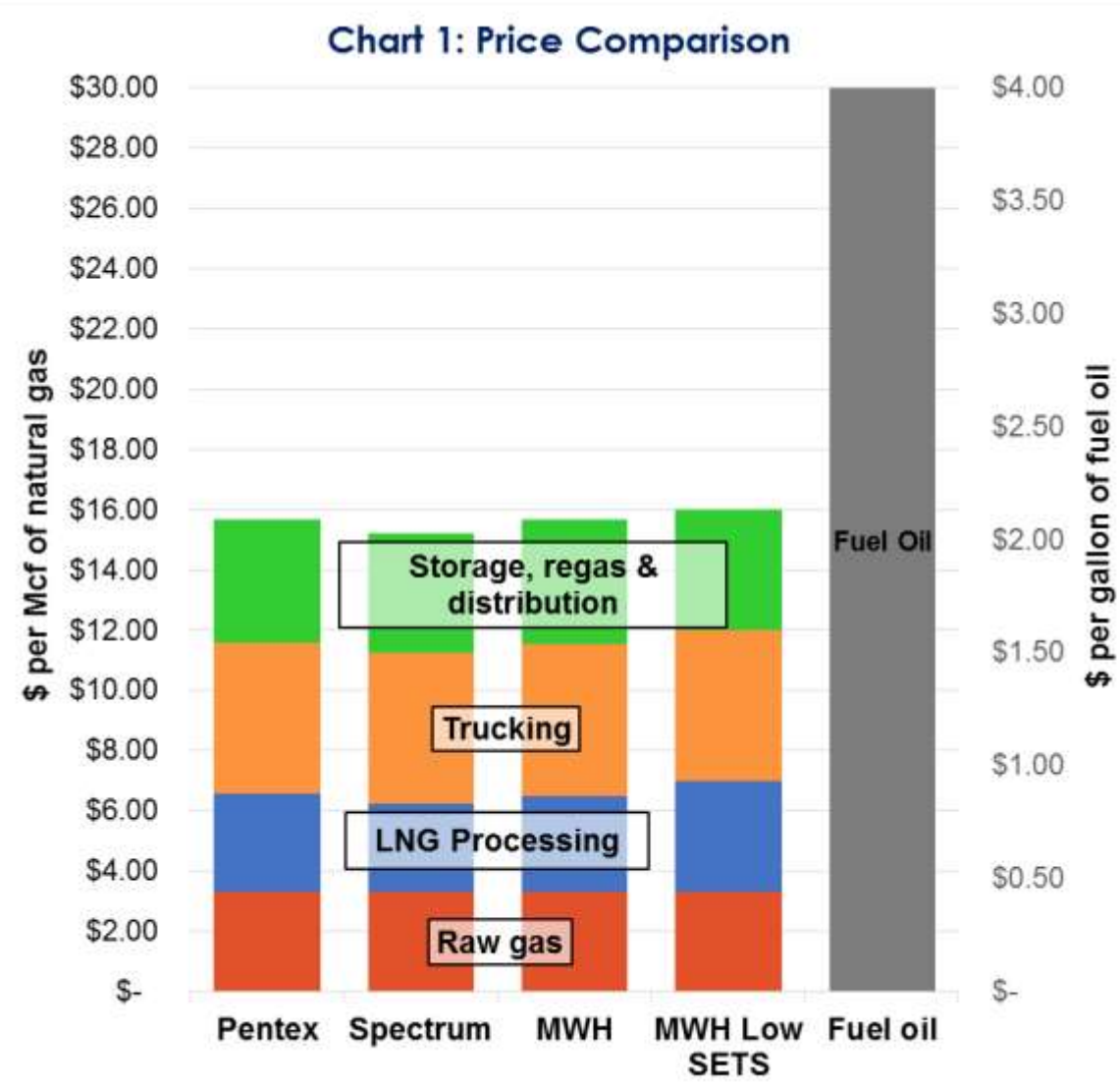
Table 6: Gas Price $/Mcf

	Pentex	Spectrum	MWH	MWH Low SETS
Processing Fee	$3.28	$2.93	$3.21	$3.69
FOB NS Plant	$6.58	$6.23	$6.51	$6.99
Delivered to FBX	$11.59	$11.24	$11.52	$12.00
At the Meter	$15.69	$15.22	$15.67	$16.02

Table 7: Gas Price $/gal

	Pentex	Spectrum	MWH	MWH Low SETS
Processing Fee	$0.27	$0.24	$0.27	$0.30
FOB NS Plant	$0.54	$0.51	$0.54	$0.58
Delivered to FBX	$0.96	$0.93	$0.95	$0.99
At the Meter	$1.30	$1.26	$1.29	$1.32

Based on the costs for each Proposal as determined by the AIDEA IEP Model, Chart 1 provides a graphical comparison of the cost of space heating for each of the three Proposals versus fuel oil.



The AIDEA IEP Model then compares annual fuel costs by month and estimates the monthly savings under each of the Proposals vs. heating oil.

IEP Estimated Household Savings Based on Term Sheets Submitted to AIDEA

Table 8: Household Annual Fuel Costs by Month

	Pentex	Spectrum	MWH	MWH Low SETS	Fuel Oil
Jan	$379	$368	$379	$387	$811
Feb	$319	$309	$318	$325	$681
Mar	$285	$276	$284	$291	$608
Apr	$175	$170	$175	$179	$374
May	$97	$94	$97	$99	$208
Jun	$51	$50	$51	$52	$109
Jul	$44	$42	$44	$45	$94
Aug	$68	$66	$68	$70	$146
Sep	$117	$113	$117	$119	$249
Oct	$219	$212	$219	$224	$468
Nov	$314	$304	$313	$320	$670
Dec	$365	$354	$364	$373	$780
Total	**$2,432**	**$2,359**	**$2,428**	**$2,484**	**$5,197**

Table 9: Household Annual Savings by Month

	Pentex	Spectrum	MWH	MWH Low SETS
Jan	$431	$443	$432	$423
Feb	$362	$372	$363	$355
Mar	$324	$332	$324	$317
Apr	$199	$204	$199	$195
May	$111	$114	$111	$109
Jun	$58	$60	$58	$57
Jul	$50	$51	$50	$49
Aug	$77	$79	$78	$76
Sep	$133	$136	$133	$130
Oct	$249	$255	$249	$244
Nov	$357	$366	$357	$350
Dec	$415	$426	$415	$407
Total	**$2,765**	**$2,838**	**$2,769**	**$2,713**
Savings %	**53%**	**55%**	**53%**	**52%**

Household fuel cost and savings notes:

1. *Households estimated to use 155 Mcf of gas annually*
2. *Fuel oil cost is based on $4.00 per gallon ($30.00 per Mcf equivalent)*
3. *Household costs and savings incorporate improved efficiency of natural gas heaters over fuel oil (95% vs. 85% efficient)*
4. *Includes all costs to deliver gas to the meter*

The updated AIDEA IEP Model analysis indicates the following key conclusions:

1. All three Proposals result in substantial savings to FNSB space heating customers, exceeding the SB 23 policy objective for annual savings
2. The difference in estimated costs (and savings) is quite small among the Proposals – with Spectrum lowest and MWH highest, but a difference of about 3.0% between the low and high estimates.

10. APPENDIX C – TERM SHEET COMPARISON MATRIX

Item	Terms – MWH	Terms – PENTEX	Terms – SPECTRUM
Sponsor Parties	**Institutional Investor LLC ("INVESTOR") MWH Americas, Inc. ("MWH")**	**Polar LNG, LLC ("POLAR"), Pentex Alaska Natural Gas Company, LLC ("PENTEX"), Fairbanks Natural Gas, LLC ("FNG"), PENTEX affiliate companies ("PENTEX Affiliates") with interests or obligations related to the NGSP**	**Spectrum Alaska, LLC ("SPECTRUM")**
Project Description	• 9 Bcf plant • 3 X 3Bcf trains • Electric-drive, nitrogen-refrigerant • INVESTOR may propose to phase plant development	• 9 Bcf plant • 3 X 3Bcf trains • Electric-drive, nitrogen-refrigerant	• 9 Bcf plant • 2 X 4.5Bcf trains • Direct-drive, mixed-refrigerant

Exclusivity & Reimbursement	• No exclusivity
	• Parties responsible for own expenses, with some reimbursement from project at closing
		• No exclusivity
		• Parties responsible for own expenses, with some reimbursement from project at closing
			• AIDEA and SPECTRUM work exclusively (after SPECTRUM selection and term sheet agreement)
			• If parties fail to meet March 7, 2014 closing, AIDEA would pay SPECTRUM a "break-up" fee:
			  ○ $2.25 million
			  ○ Out of pocket expenses (subsequent to 11/19/13)
			  ○ 15% margin
			  ○ SPECTRUM has the right to purchase 20,000 gpd of capacity from AIDEA-developed plant at the lowest price sold to any customer

Item	Terms – MWH	Terms – PENTEX	Terms – SPECTRUM
Pad Site Development & Sale Agreement	• None	• None	• If parties fail to meet March 7, 2014 closing, AIDEA has an option to purchase the SPECTRUM site for $2.855 million + expenses incurred subsequent to 11/19/13 + 15% margin
AIDEA Financing	• SETS Loan up to $125.0 million • SETS SB 23 appropriation $35 million for North Slope project • SETS SB 23 appropriation $10 million for GVEA storage and re-gasification facility • SETS Loan subordinate to third-party debt and INVESTOR equity in INVESTOR cash flows • AIDEA security interest in all NGS project assets, subordinate to any non-affiliated lender with inter-creditor agreement	• SETS Loan up to $125.0 million • SETS SB 23 appropriation $35 million • SETS Loan subordinate in POLAR cash flows • AIDEA security interest to third-party debt and PENTEX equity in all POLAR project assets, subordinate to any non-affiliated lender with inter-creditor agreement	• SETS Loan up to $90.0 million (after SPECTRUM contractor construction financing) • SETS SB 23 appropriation $35 million • SETS Loan subordinate to third-party debt and SPECTRUM equity in SPECTRUM cash flows • AIDEA security interest in all SPECTRUM project assets, subordinate to any non-affiliated lender with inter-creditor agreement and to SPECTRUM's equity contribution
Early Partial Debt Retirement	• None	• None	• SPECTRUM would have the option, between the 5th and 10th anniversary of plant start-up to assign the 2nd LNG "train" to AIDEA in exchange for a $72 million credit against the then-outstanding SETS Loan balance.
Site	• AIDEA-selected site	• AIDEA-selected site	• SPECTRUM site

Item	Terms – MWH	Terms – PENTEX	Terms – SPECTRUM

Sponsor Investment	• Up to $85 million
	• $20 million minimum "equity"
	• 12-15% nominal return on equity
	• Return estimate based on:
	  ○ No demand risk
	  ○ No commodity risk
	  ○ Take-or-pay agreements for substantially all plant capacity
	  ○ All commercial agreements are co-terminus
	  ○ Appropriate parent company guarantees from commercial counterparties
	  ○ Complete subordination of SETS loan
	• Third-party debt for costs above completion reserve on market terms
		• Up to $50 million
		• $20 million minimum "equity", with $15 million new cash + $5 million already incurred
		• $10 million projected third-party debt
		• Proposed 12.5% after-tax return on equity
		• Third-party debt for costs above completion reserve
		• PENTEX requests 12/31/14 funding deadline for its equity investment
			• $20 million minimum "equity" (inclusive of funds from sale of pad & permits)
			• 15% after tax return, ~25.0% nominal return on equity

Project Funding / Disbursement of Funds	• AIDEA may expend certain funds on site and certain long-lead-time equipment • After any early AIDEA funds, AIDEA and INVESTOR funding will be drawn pro-rata.	• AIDEA may expend certain funds on site and certain long-lead-time equipment • After any early AIDEA funds, AIDEA and INVESTOR funding will be drawn pro-rata, except that PENTEX will have until 12/31/14 to fund.	• At SPECTRUM's request, AIDEA will advance-fund the purchase of certain equipment • Other than any advanced-funded equipment, SPECTRUM will fund construction through plant commissioning

Item	Terms – MWH	Terms – PENTEX	Terms – SPECTRUM
Development Process	• NGS LLC will be wholly-owned by the INVESTOR, with MWH serving as Owner's Representative will develop the NGSP • MWH development fee of 6% of aggregate enterprise value of NGS, to be paid by as a part of overall capital costs	• PENTEX will develop the NGSP	• SPECTRUM will develop the Plant
Project Completion Guarantee	• Maximum $10 million AIDEA completion reserve • INVESTOR $85 million total investment must be determined to be sufficient to complete	• Maximum $10 million AIDEA completion reserve • PENTEX $50 million total investment ($20 million above planned investment) must be determined to be sufficient to complete	• AIDEA will require financial commitments that ensure that the project funds will be sufficient to complete the project. • In order to assure Spectrum's commitment to project completion, AIDEA will require at the Second Closing project fund commitments totaling the estimated total project cost plus a completion reserve of at least $10 million. • Following completion, the unused portion of the completion reserve will be retained for up to five years after the Third Closing to fund any shortfall in covering the first four listed priorities in item #6 above. Upon reaching the fifth anniversary of the Third Closing, any remaining completion reserve will be applied as a pre-payment to the balance on the SETS Loan.
Project Operations	• The plant will be operated by NGS	• The plant will be operated by POLAR	• The plant will be operated by SPECTRUM