

# ALASKA

## INTERIOR ENERGY PLAN



# *Investing in Alaskans*

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## PREAMBLE

*The Alaska Industrial Development and Export Authority (AIDEA) and Alaska Energy Authority (AEA) provide this initial report on the effort to bring affordable energy to Alaska's Interior under Governor Parnell's Interior Energy Plan. AIDEA and AEA seek to collaborate with the private sector, utilities, local governments, and economic development entities to implement the Governor's plan. In December 2012, AIDEA requested letters from private sector companies interested in partnering with the Authority on a project to liquefy natural gas, deliver it to market via trucking, and distribute it to consumers through an expanded piped distribution system with a target of first gas by the autumn of 2015. This report sets out progress to date, based on the responses AIDEA received.*

## 1.0 Executive Summary

AIDEA is pleased to have received 16 responses to its Request for Letters of Interest for the development of an LNG facility to implement the Governor's Interior Energy Plan. We are encouraged by the depth and extent of these private sector responses. We find there is significant interest combined with the needed technical and financial capability to timely implement this plan and bring affordable natural gas to Interior Alaska and other parts of the state. The initial focus will be to provide natural gas for heating to the high and medium density areas of the Fairbanks North Star Borough.

Based on a careful, initial review of the responses, AIDEA believes that Governor Parnell's Interior Energy Plan could bring natural gas to consumers at rates that will significantly lower energy costs in the Interior. A reasonable target is to achieve a 40-50 percent reduction in the cost of energy, compared to \$3.90/gallon heating fuel, and first gas by the end of 2015. Both AIDEA and AEA see the propane by-product that will be separated during the

natural gas liquefaction process as an additional valuable energy commodity for the Interior. This propane could be used to lower energy costs for residents who cannot be economically served by a piped natural gas distribution network.

Most of the proposals that accompanied the expressions of interest make use of the financing package proposed by Governor Parnell in SB 23 and HB 74. Under this package, AIDEA would invest \$50 million and make a \$125 million loan for the LNG plant under the new SETS<sup>1</sup> fund. The bills also authorize AIDEA to issue up to \$150 million in SETS bonds for the project. These bonds could be used to assist in the financing of the initial expansion of the gas distribution system that would bring natural gas to homes and businesses in the Interior. The financing package in both bills is dependent on, and designed to work with, private sector investment in, and operation of, the project. It is envisioned that a private company, in which AIDEA is a partner, will own the LNG plant, and that one or more utilities may be involved with the storage and distribution of natural gas in the Fairbanks area and beyond.

Two of the proposals are essentially turnkey offers:

- Pentex Alaska Natural Gas Co., which is the parent company of Fairbanks Natural Gas (FNG), LLC, provided a response for developing the infrastructure to deliver affordable natural gas. Pentex has stated that it has land for an LNG plant and necessary permits.

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<sup>1</sup> SETS stands for the Sustainable Energy Transmission & Supply Development Fund that was established last year under SB 25. This new fund within AIDEA authorizes the agency to provide loans for energy development, including the "liquefaction, regasification, distribution, storage, or use of natural gas except a natural gas pipeline project for transporting natural gas from the North Slope or Cook Inlet to market." AS 44.88.900(13)(B).

- Golden Valley Electric Association (GVEA) provided a detailed proposal to build and own an LNG facility, and to build LNG storage at its North Pole Facility. This proposal has several strengths, including engineering plans, and a statement that GVEA has a signed gas supply agreement. GVEA also indicated they have identified a proposed site for the LNG plant. GVEA indicated it is seeking permits and a source of financing.

Both turnkey proposals, however, lack critical elements of a financeable business package. Essentially, since no one proposal of the 16 received can be used as presented, AIDEA will work with respondents to develop a viable private sector business and finance plan that makes use of the SB 23 and HB 74 financing tools, so the project can quickly move ahead. This suggests that a likely partnership with AIDEA will not be with just one of the 16 responding entities, but rather a compendium of several of them working in conjunction with the financing package in the Interior Energy Plan.

Another critical step needed will be to determine the aggregate demand from various potential gas users, including residential, utility, and industrial customers both in the Interior and in other areas that might be served by LNG gas. This is necessary to underpin the financing for the LNG plant.

## 2.0 Introduction

The Governor's Interior Energy Plan seeks to provide a reliable natural gas energy supply to Interior Alaska, which is presently suffering under extremely high energy prices. AIDEA issued a Request for Letters of Interest to develop an LNG plant. AIDEA

sought expressions of interest from single full-service entities or an organized team of entities to participate in the development of this project. AIDEA received 16 responses from private sector entities.

Governor Parnell has introduced two bills to the Legislature to provide financial support for this development. SB 23 and HB 74 are identical bills which authorize AIDEA to provide financing in conjunction with the private sector for a project to transport gas to Interior Alaska to lower energy costs. The bills provide for partial financing of the LNG plant by AIDEA, and the use of bonds to assist in financing the expansion of the existing gas distribution system to bring gas to homes and businesses in the high and medium density areas of the Fairbanks North Star Borough.

### The premise of the project:

- Designed to bring relief to Interior Alaska, which sees heating fuel costs and electric prices at record high levels.
- Natural gas is abundant, readily available, and at reasonable cost.
- The project is targeted to bring a natural gas supply into Interior Alaska in three years.
- The gas would be for use in home heating, power generation and possible industrial use.
- Energy from the project could also benefit residents in other parts of the state.

## **The project entails:**

- Developing a gas conditioning and liquefaction plant.
- Establishing truck-based hauling contracts to move LNG to the Interior.
- Constructing LNG storage and re-gassing facilities in the Fairbanks North Star Borough (FNSB).
- Assisting in financing the expansion of the piped natural gas distribution system into the high and medium density areas of the Fairbanks North Star Borough, and making affordable energy supplies available for rural areas.
- Providing necessary connecting piping into GVEA base load power generation facilities at North Pole.

## **The \$355 million project financing in the Governor's bills includes:**

- \$150 million AIDEA bonds, 3% interest rate (projected rate based on current market rates).
- \$125 million SETS capitalization, 3% interest rate, with flexibility to support optimal commercial structure. Waiver of the statutory one-third project participation limitation in SETS for this project.
- \$50 million general fund appropriation for an AIDEA equity position to directly reduce the cost of LNG.
- \$30 million natural gas storage credits.

- AIDEA will use this loan and bond finance package to attract private investment.

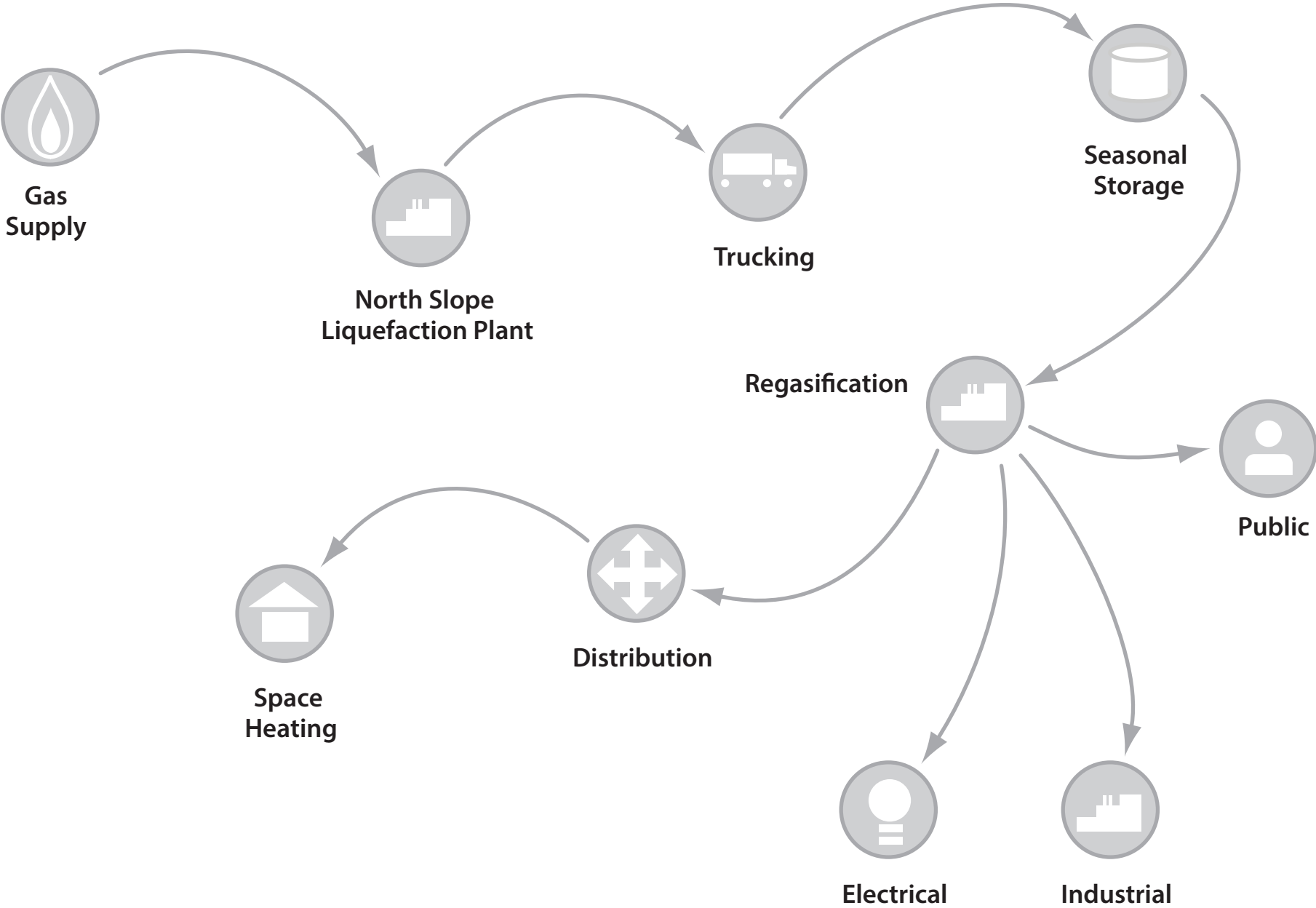
## **3.0 Description of Responses**

### **3.1 Overview Discussion**

AIDEA categorized the 16 responses received as follows:

1. Turnkey Entity—A private sector team that can develop and operate all aspects of the supply chain of the project, from purchase of gas (from producers) to distribution of vaporized utility grade natural gas to heating customers and to electrical power generators. Figure 1 shows this supply chain for the project.
2. Engineer-Procure-Construction (EPC)—A private sector entity or team of companies that can design the plant, procure the equipment, construct the plant, and commission it.
3. Financing Entities—A private sector entity that can provide, procure, or participate in the financing of the project, making use of AIDEA financing.
4. Other—The entity did not indicate interest in being a turnkey or component part of the development.

Figure 1: LNG Trucking Value Chain



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*Turnkey proposals—Two were provided:*

- Pentex Alaska Natural Gas, LLC—Parent company to Polar LNG, LLC and Fairbanks Natural Gas, LLC
- Golden Valley Electric Association (GVEA)—Cooperative electric public utility with a service area extending throughout and beyond the FNSB

*Engineering, Procurement, and Construction (EPC) responses—A total of six responses were received:*

- Chicago Bridge & Iron (CB&I) Services, Inc.—Experienced in LNG development
- CH2MHILL—Full service LNG development contractor with significant Alaska operations
- HDR—Extensive permitting and national LNG development experience
- PND Engineers, Inc.—Specializes in Arctic civil design, environmental permitting, and construction administration
- Black & Veatch—Full service EPC and consulting company with extensive LNG project development experience and a proprietary PRICO natural gas liquefaction process
- Arctic Slope Regional Corporation (ASRC) Energy Services—Alaskan-owned oil and gas services provider with significant experience

*Financing—Three responses received:*

- Northrim Bank—Alaska bank interested in providing financing under the SETS fund
- Guggenheim Partners, LLC—Firm interested in developing financial solutions
- KeyBanc Capital Markets—Full-service corporate and investment bank with resources devoted to the energy sector

*Other Responses—Five responses that did not indicate interest in being a turnkey or component part of the development were received:*

- Alaska Gas Line Port Authority (AGPA)—Provided an email asking AIDEA to broaden its evaluation beyond LNG trucking.
- Interior Alaska Natural Gas Utility (IGU)—Provided a letter offering their capabilities to AIDEA in a supporting role, emphasizing the need for a rapid build-out of natural gas distribution infrastructure.
- Alaska Power and Telephone (AP&T)—Indicated by letter an interest in making use of the LNG commodity made accessible in the Interior, in rural areas of Alaska.
- Arctic Slope Regional Corporation (ASRC)—Indicated by letter that it welcomes continued discussions as the idea develops.

- Spectrum LNG, LLC—Provided a response requesting to be registered as an interested party for the development of an LNG plant in Prudhoe Bay.

Each EPC firm has its own unique and slightly different strengths. All have relevant experience and expertise. Some indicated interest in operating the facility. The primary EPC contractors with extensive LNG experience are Black & Veatch, CB&I, and CH2MHILL. In addition, both PND Engineers, Inc. and ASRC Energy Services offer experience in providing services and would be able to assist in EPC activities, but not to undertake the entire task on their own.

Consistent with a recent trend in infrastructure contracting, several of the EPC companies expressed their capability and interest to design, build, operate, and maintain the LNG plant. None of these EPC proposals includes specific offers to finance the project.

Finally, three of the offers come from financial entities interested in providing a source of private funding for the project. All of these are premised on making use of the financing offered from AIDEA (SB 23 and HB 74), but would supplement these funds with sources of private capital.

#### **4.0 Analysis**

The Governor's Interior Energy Plan aims to provide natural gas to Fairbanks and the Interior at a price significantly lower than the predominant energy source, fuel oil. AEA modeling shows that a 40-50 percent reduction in heating cost should be achievable. The Plan's other goal is to deliver natural gas in 30-36 months because the Interior needs lower-cost energy in the near

term, and to improve air quality in the region. Finally, the project must be consistent with and complementary to other gas delivery proposals that offer a long-term energy solution for the Interior, such as the ASAP pipeline or the large diameter export pipeline that would terminate at tidewater.

We have evaluated all of the material submitted with the expressions of interest, and in particular the GVEA and Pentex turnkey responses, with the following considerations:

- Availability of natural gas feed stock
- Ability to finance
- Ability to accomplish EPC and commission
- Timing and availability of permits
- Arrangements for trucking
- Ability for natural gas distribution build-out
- Speed of completion—delivery of first gas by third quarter 2015

Both GVEA and Pentex have made good-faith efforts to respond as turnkey project developers. GVEA has indicated its preference for a \$200 million grant to construct and own the plant, although it has indicated that it is prepared to work with the AIDEA finance package proposed in SB 23 and HB 74 with conditions. GVEA also offered to construct, own, and operate LNG storage on a site adjacent to its North Pole generation facility. GVEA did not indicate whether this storage would satisfy the needs of area wide retail gas consumers. As a result, additional LNG storage may be necessary to satisfy heating customer demand during the winter.

GVEA indicates it will make use of the LNG project's natural gas product in its power plants. While it is likely GVEA will burn this gas in its combined cycle gas turbine generating unit at North Pole, it has also commenced operation of the Eva Creek Wind



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Farm (24.6MW installed capacity), and is planning on re-start of the Healy Clean Coal Project (55 MW) as well. GVEA also recently signed a power supply agreement with Chugach Electric Association to bring up to 75 MW of power north through the Alaska Intertie into GVEA's system. The actual availability of power from these other sources will affect how much natural gas GVEA will consume for power generation. GVEA currently estimates it will need up to 2.5 Bcf/yr. in 2015.

Other than the GVEA and the Pentex proposals, responses are generally not specific proposals to provide services, or proposals to participate in the building of the project. Rather, they are largely statements of qualifications that will be helpful in project team building, should that be necessary. In particular, the EPC and financial respondents present a variety of capabilities that could benefit the project. AIDEA believes there is significant industry-based expertise and capacity to support the project.

Both GVEA and Pentex provide for the separation of a 2% propane stream within the LNG plant. This commodity stream can be easily hauled in separate tankers to the Interior. As a by-product, AIDEA sees the possibility of an Alaska-sourced propane supply in the Interior, which could be a part of the project development plan. This could be used either in the Fairbanks North Star Borough, or in other Interior rural communities. The propane made available by an initial 9bcf/yr. plant would provide heating for approximately 2,200 average residences on a yearly basis.

Based on its review of responses, AIDEA sees three main alternatives to move this project ahead (AIDEA recognizes there may be other arrangements or approaches as well):

**Option 1**—Proceed with GVEA as the plant developer and operator. Encourage GVEA to use AIDEA SB 23 and HB 74 financing. Approach Pentex/FNG to enter into gas purchase contracts with GVEA, and provide AIDEA financing to Pentex/FNG for a distribution system build-out. Extend the offer of distribution financing to the newly formed municipal utility (Interior Alaska Natural Gas Utility – IGU).

**Option 2** —Proceed with the Pentex proposal and encourage GVEA to enter into contracts for natural gas supplied by Pentex or its subsidiary Fairbanks Natural Gas. Since GVEA as a utility is sensitive regarding security of its fuel supply, we may need to suggest a CINGSA<sup>2</sup>-type company that would operate gas storage in the Fairbanks area, with a governance structure and technical competence that is satisfactory to GVEA. Provide AIDEA financing to Pentex/FNG for a distribution system build-out. Extend the offer of distribution financing to the newly formed municipal utility (Interior Alaska Natural Gas Utility – IGU).

**Option 3**—Develop a new composite turnkey team from the list of responders to develop the LNG plant and storage and re-gas facility in the Fairbanks area. (AIDEA sees this as a necessary option to have available but seeks to work with Pentex/GVEA as a financier to quickly focus the development and begin construction.) Provide AIDEA financing to Pentex/FNG for a distribution system build-out. Extend the offer of distribution financing to the newly formed municipal utility (Interior Alaska Natural Gas Utility – IGU).

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<sup>2</sup> CINGSA stands for Cook Inlet Natural Gas Storage Alaska, and it operates a gas storage facility on the Kenai Peninsula that is available for use by several utilities, such as Enstar and Chugach Electric Association.

AIDEA will thus initially work with Pentex and GVEA, and thoroughly explore options to develop a fully financed project that can move into construction. If a financed project cannot be assembled with either or both Pentex and GVEA, AIDEA will then move forward with Option 3.

### **Regulatory Considerations**

The natural gas supply chain from the gas supply to the retail customer's burner tip could involve, in part, private for-profit utility entities. Thus, ensuring there is economic and quality-of-service protection for Interior consumers is critical. As a result of this real concern, AIDEA, as a financier for the project, will work cooperatively with the Regulatory Commission of Alaska (RCA) to ensure that benefits from this finance package will flow to Alaska residents appropriately. AIDEA will coordinate its investment, lending and bonding with the actions of the RCA.

### **5.0 Recommendations for Moving Forward**

After consideration of the responses received, AIDEA believes there are significant capabilities in the private sector to work with to finance and develop the LNG plant, as well as storage and distribution infrastructure needed to bring natural gas to Alaskans, as envisioned in the Governor's Interior Energy Plan. AIDEA sees promise in the turnkey proposals provided by GVEA and Pentex.

Further, with the Governor's SB 23 and HB 74 legislative initiative, AIDEA can effectively function as a financing entity for this development with the private sector and can be effective as an equity partner in the formation of the consolidated finance plan. This equity position would provide the Authority with significant input regarding certain aspects of the project in order to achieve the goals of the Interior Energy Plan.

Specific actions AIDEA is taking:

1. **Prior to the passage of SB 23 and HB 74, AIDEA will:**
  - a. As an AIDEA project, undertake a comprehensive LNG and natural gas demand analysis for all potential demand in the Fairbanks North Star Borough and in surrounding Interior areas. This effort will build upon and add to existing demand analyses and include discussions with entities such as IGU, Flint Hills, GVEA, Pentex, and other potential natural gas and LNG customers. This will include the possibility of LNG being provided to other Railbelt communities for use in future, piped delivery systems.

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- b. Begin a cooperative process with GVEA and Pentex to perform cooperative design reviews of both projects (AIDEA has retained an experienced engineering firm to assist in this process.) This is to include the plans and assumptions for LNG and propane trucking, storage and distribution.
  - c. Working jointly with AEA, expand on the possibility of using propane in the Interior, and means of developing it as a second commodity stream that the LNG plant produces.
  - d. Working with GVEA and Pentex, make site visits as soon as possible to view and assess the adequacy of the proposed liquefaction projects.
  - e. Work with respondents to form the legal and financial structure of a finance package for the project, with the goal of having AIDEA retain appropriate influence over the project in a public-private-partnership. Reach out to financial responders to identify and firm up possible sources of capital for the project.
  - f. Develop in the Fairbanks area a potential business and regulatory structure for a regulated gas storage company (similar to CINGSA) that could supply natural gas to several utilities.
- 2. **With the passage of SB 23 and HB 74, AIDEA should take the following steps:**
    - a. Review applicable AIDEA regulations to determine if changes are needed to accommodate the new injection of funds.
    - b. Confirm the business and legal structure for the plant and storage/re-gas company, and begin the underwriting process for a SETS loan.
    - c. Begin the process of bonding for the initial expansion of the Fairbanks gas distribution system.

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