Alaska LNG

Legislative Update
January 30, 2015
Safety, Health and Environment Report:
- No safety, health or environmental incidents to report
- Continued progress building “culture of caring”

Executive Summary:
- Pre-FEED project spend - $82M in 2014
- Pre-FEED contracting complete – all teams working well
- Target first draft Resource Reports 1 – 12 to FERC by early 1Q15
- Received DoE export authorization for Free Trade Agreement (FTA) nations, progressing review for non-FTA nations
- Community open-house sessions continuing with FERC participation
- Developing 2015 Summer Field Season plans

Key Messages:
- Alaska LNG is an integrated LNG project – pipeline plus plants
- Continued progress on the “ARC of Success”
  - Alignment - Resource owners working as integrated team
  - Risk reduction - Pre-FEED work to identify/mitigate risk
  - Cost reduction - Project “cost of supply” defines competitiveness
- Alaska LNG expected to complete pre-FEED in early 2016, need to address open commercial / fiscal issues
# Alaska LNG – Pre-FEED Work Schedule

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<th>2014</th>
<th>2015</th>
<th>2016</th>
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- **JVA Executed**
- **3rd Party Engineering Contracts Executed**
- **JVA Work Products**
  - Build Contractor Teams, Mature Design
  - Pre-FEED engineering deliverables
  - Optimization Phase
  - Regulatory Filings
  - Technical / Owner Review
  - Funding Evaluations
- **Submit Prelim Resource Report (RR) 1&10**
- **Submit 1st Draft RR 1-12**
- **Submit 2nd Draft RR 1-12**
- **Submit FERC Application**
- **FEED Evaluation**
- **Submit 1st Draft RR 13**

## Milestones:
- **2014 Summer Field Season**
  - Staffing Ramp Up
  - Engr Contracting
- **2015 Summer Field Season**
  - Contracting Strategy Development
  - FEED Planning and ITT Package Dev
- **2016 Summer Field Season**
  - Decision to Build the Project
  - Engineering, Procurement & Construction
All work managed by Unit Operators

Continuing to integrate Unit work with AKLNG design

Recent PBU achievements:
- Engineering contracts in place, optimizing facilities design
- Align CO2 handling plans/design with GTP
- Progressing gas resource deliverability analysis

Recent PTU achievements:
- Gas expansion technology / operating parameters defined
- Major equipment sizing defined
- Preliminary module layouts, associated logistics plan
Alaska LNG - GTP Update

Gas Treatment Plant (GTP) Overview

- 3.3 BCFD peak winter rate
- 3 process trains to remove impurities
- Modularized to reduce execution risk

Recent Progress / Focus

- Engineering contracts / team in-place
- Finalized inlet CO2 design with PBU
- Developed four sealift strategy to reduce execution risks, manage start-up
- Winter geotechnical assessment proceeding
- Confirming large pressure vessel fabrication and shipping capabilities
- Working with PBU on infrastructure sharing
- Support regulatory process / submittals

Initial GTP Layout

Amine Regeneration & CO2 Compression Modules
Alaska LNG - Pipeline Update

Pipeline route work nearly complete
- Aligned route with AGDC – continued collaboration
- Final Cook Inlet crossing under discussion with FERC

Pipeline design / materials testing work progressing
- Evaluate appropriate pipeline materials for each section
- Ordered $2.5M of pipe for testing (x70 and x80)
- Evaluating multiple mills capacity / capability

Forward plans
- Gathering / evaluating geotechnical data
- Working with FERC, PHMSA on permitting process
- Finalize design cost / schedule estimates
AKLNG / AGDC leveraging past and current work to benefit both projects under the 2014 Cooperation Agreement

• Continuing to collaboratively work common pipeline route

AKLNG and AGDC have shared historically generated data

✦ TAPS – geography, alignment, geotechnical data, infrastructure
✦ Denali – geography, alignment, waterway, trenching trials
✦ APP – geography, alignment, seismic, strain based design data, waterway, infrastructure data
✦ ASAP – geography, alignment, geotechnical data, waterways data, environmental, regulatory, infrastructure studies

AKLNG and AGDC finalizing an agreement to enable future data sharing and collaborative work on future programs including:

✦ Geotechnical field programs
✦ Aerial mapping and LiDAR
✦ Environmental field data
✦ Fault Studies
✦ “On” and “off” Right-of-Way infrastructure data
✦ Design criteria
✦ Materials studies
Alaska LNG - LNG Plant Update

LNG Plant Overview

- ~20MTA peak winter rate
- Three modularized ~6MTA LNG trains
- Three 160,000 cubic meter LNG storage tanks

Recent Progress / Focus

- Engineering Contracts / team in-place
- Integrated process design progressing well
- Continuing land acquisition work
- Progressing geotechnical and geophysical site suitability analysis (onshore/offshore)

Initial LNG Plant Layout

High-level Process Diagram

Proposed LNG Plant Site (FERC Resource Reports)
Alaska LNG - Permitting / Regulatory Progress

- DoE export application posted to Federal Register
  - Strong support from DoE
  - Alaska outside L48 permit process
- Completed 2014 Summer Field Season to acquire regulatory data (250+ people, 80% Alaskans)
- Working with FERC and other regulators to secure required permits – Resource Reports in process
- Initiated community consultation, will continue community meetings with FERC participation
FERC leads NEPA process – umbrella for creation of all other permit applications; Requires collaboration with cooperating and reviewing federal, state, Alaska Native and local entities.
Federal Interagency Working Group formed to help align regulatory agencies - strong regulatory support

Progressing EIS under FERC direction / integration:

- Engaging Alaskans to identify / resolve potential issues
- FERC meetings and open houses - first half of 2015
- Resource reports provide data on baseline conditions and potential project impacts (environmental / socio-economic)
- First draft of resource reports - 1Q15
- Second draft of resource reports - 2016

FERC Questions:

- Does the plan accurately reflect my community?
- What potential impact might the project have?
- Are there alternatives to consider?
- Are there measures to avoid/lessen possible impacts?

Resource Reports:

1. Project Description
2. Water Use & Quality
3. Vegetation & Wildlife
4. Cultural Resources
5. Socioeconomics
6. Geological Resources
7. Soils
8. Land Use, Recreation & Aesthetics
9. Air & Noise Quality
10. Alternatives
11. Reliability & Safety
12. PCB Contamination
13. LNG Plant Information
The Path to FEED

Opportunities to engage

- Alaska is an equity participant – owner engagement
- Businesses asked to register on the website (ak-lng.com)
- Attend community meetings, talk with FERC
- Legislative engagement – need help to align on forward plan to reduce project risk and “cost of supply”

Target 2016 decision point

- Pre-FEED optimizes design, confirms site / route
- Confirm cost, schedule, (competitive “cost of supply”)
- Work with State to identify offtakes (“Gas to Alaskans”)
- Complete key commercial agreements
- Develop durable, predictable fiscal terms (HoA, SB138)
- Continue building alignment between all parties