Project Update
American Society of Drilling Engineers – September 16, 2015

An integrated liquefied natural gas export project that would provide access to gas for Alaskans

Gas Treatment Plant
- 1.3 BOFJD peak export rate
- Three trains
- CO₂ removed for injection at PBU

LNG Storage & Marine Terminal
- LNG storage tank
- Two jetties for LNG carriers

Liquefaction Facility
- Natural gas is cooled to -260 degrees
- Three trains dehydrate, chill and liquefy gas to produce up to 20 million tons of LNG each year

Gas Pipeline
- 800+ mile 42” diameter below ground gas pipeline
- 6-10 compressor stations
- ~5 in-state off-take points

Point Thomson Transmission Line (PTTL)
- ~60 miles, 32” diameter above ground

Prudhoe Bay Transmission Line (PBTL)
- ~1 mile, 60” diameter above ground

Gas Pipeline
- 800+ mile 42” diameter below ground gas pipeline
- 6-10 compressor stations
- ~5 in-state off-take points

Artist’s rendition of LNG and LSTP
**Potential Benefits**

- Would be the single largest investment in Alaska’s history: $45B - $65B
- Estimated that it could create 9,000-15,000 jobs for design and construction
- Could provide ~1,000 jobs for operations
- Could generate billions of dollars of new tax revenue for Alaska
- Would provide access to natural gas for Alaskans

**Challenges**

- Megaproject would require:
  - labor, resources and equipment that can handle Alaska’s extreme, remote environment
- Complex commercial arrangements with foreign markets require long-term commitments
- Reducing environmental and socioeconomic impacts and risks
- Uncertainty related to permit timing/scope
- Working complex commercial and fiscal issues among Project participants, including the State of Alaska
Alaska LNG Project – 2015 Highlights

- Pre-FEED project spend - $243 M through July 2015
- Finalizing project design (cost and schedule estimates)
- First draft Resource Reports to FERC
  - FERC feedback received
- Received DoE export authorization for Free Trade Agreement (FTA) and non-FTA nations
- Community open-house sessions
- Successful 2015 field program

Alaska LNG Project – Liquefaction Plant Update

LNG Plant Overview
- Preferred site near Nikiski, adjacent to Cook Inlet
- Plant would cool gas to -260°F to condense volume by 600 times
- Would require three modularized LNG trains to dehydrate & chill gas

Storage & Loading would require:
- LNG storage tanks
- Two jetties to accommodate 15-20 LNG carriers/month
- Specially designed LNG vessels transport chilled liquefied natural gas

Recent Progress / Focus
- Acquired approximately 550 acres to date
- Progressing geotechnical and geophysical site suitability analysis (onshore/offshore)
Alaska LNG Project - Pipeline Update

Overview of project requirements
• 800-mile pipeline
• Will require ~1.2 million tons of steel
• Compressor stations will maintain pressure and temperature
• At least 5 off-take points to serve Alaska (determined by State)

Current status
• Continued collaboration with AGDC – aligned route
• Western route preferred Cook Inlet crossing
• Evaluate appropriate pipeline materials for each section
• Progressing work to evaluate SoA request for a 48” system

Forward plans
• Gathering/evaluating geotechnical and environmental baseline data
• Working with FERC and other agencies on permitting process
• Finalize design cost/schedule estimates

Alaska LNG Project - Gas Treatment Plant Update

Overview of Plant Requirements
• 3.3 BCFD peak winter rate
• 3 process trains to remove impurities
• Modularized to reduce execution risk
• Facility will require ~250,000 tons of steel
• Facility will span ~200 acres
• CO₂ removed, captured and compressed for reinjection
• Located at Prudhoe Bay

Recent Progress / Focus
• Confirming large pressure vessel fabrication and shipping capabilities
• Support regulatory process/submittals
Alaska LNG Project – Regulatory Overview (NEPA)

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.

External Engagement

Community
- 90+ community sessions in last 12 months
- Community meetings continuing to support summer field program
- FERC scoping meetings planned for fall 2015
- Legislative & media tours: 4
- Communications tools: newsletter, ak-lng.com, toll-free line

Alaska Businesses
- Using Alaska vendors, equipment, residents provides access to valuable local expertise, can reduce cost
- Business information sessions in Barrow, Fairbanks, Kenai and Anchorage in April with ~ 700 participants
- Over 500 businesses registered at ak-lng.com
- Labor & logistics studies

Alaska Native Groups
- Village and tribal outreach ongoing
- Engagement with Alaska Native Regional Corporations
- Involvement in 2015 AFN Conference
Alaska LNG by-the-numbers

Technical and field progress
- $243M+ on pre-FEED through August 15
- 570+ acres purchased in Nikiski, Alaska
- 130+ full-time personnel on Alaska LNG Project
- 200+ people in the field (80 scientists)
- 950+ acres of topographic survey
- 15,500+ acres of cultural surveys
- 148,000+ feet of shallow seismic completed
- 250 boreholes drilled
- 100+ environmental site assessments completed
- 2,000+ helicopter flying hours, 87,000+ miles driven
- 1,100+ field check points set/confirmed

Regulatory
- 2 DoE conditional export licenses (FTA / non-FTA)
- 10,000+ pages of regulatory filings

Engagement
- 90+ community outreach events
- 1000s of Alaska entities involved in logistics and labor studies
- ~700 Alaska businesses – information sessions
- 40+ meetings with Alaska Native regional and village corporations and tribal entities

Questions