

# Alaska LNG™

Fueling Alaska's Future



30 October 2015

## Project Update

# Alaska LNG – Project Overview

*An integrated liquefied natural gas export project providing access to gas for Alaskans*

### Gas Treatment Plant (GTP)

- 3.3 BCFD peak winter rate
- Three trains with compression, dehydration and chilling for gas conditioning (remove impurities)
- CO<sub>2</sub> removed and compressed for injection at PBU



Gas Treatment Plant

### LNG Storage & Marine Terminal

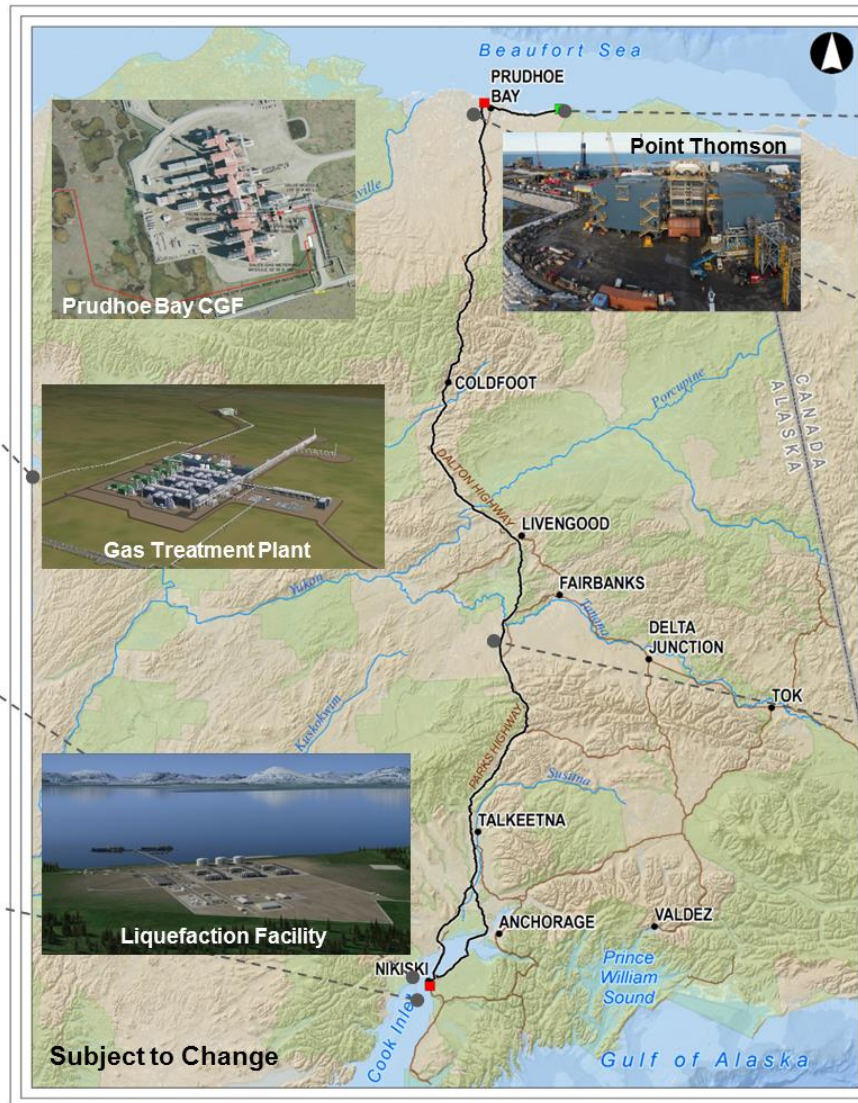
- LNG storage tanks
- Two jetties to accommodate 15-20 LNG carriers per month



Liquefaction Facility

### Liquefaction Facility

- Natural gas is cooled to -260 degrees to condense the volume 600 times
- 3 trains dehydrate, chill and liquefy gas to produce up to 20 million tons of LNG each year



Subject to Change

### Point Thomson Gas Expansion\*

- New wells
- New gas processing facilities

### Prudhoe Bay Tie-In\*

- Gas delivery to new gas treatment plant (GTP)
- Integration with existing CGF
- Injection of CO<sub>2</sub> from GTP

### Gas Pipeline

- 800+ mile 42" diameter gas pipeline from gas treatment plant to liquefaction facility
- 3.3 BCFD capacity
- 8 compressor stations
- ~ 5 in-state off-take points

\* Prudhoe Bay and Point Thomson Modifications/New Facilities are managed by Prudhoe Bay Unit and Point Thomson Unit Operators, respectively, and are closely coordinated with the Alaska LNG Project.

Artists renditions of LNG and GTP



# Alaska LNG – Project Overview

## Safety, Health and Environment Report:

- ✦ Building culture of caring – 1 minor vehicle incident, 3 first aid, 2 near miss

## Executive Summary:

\$303M Through Sep 15

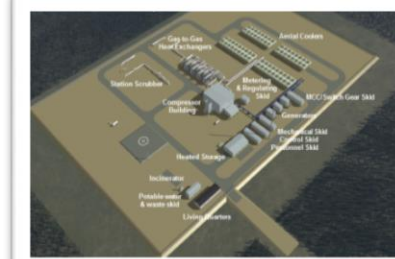
- ✦ Spend: ~~\$243M~~ on pre-FEED through ~~Aug 15~~ **83% Through Aug 15**
- ✦ Initial design scope ~~~75%~~ complete, 2015 field work ~~~50%~~ complete
- ✦ Finalizing project design/execution basis (cost and schedule estimate) **100% Through Sep 15**
- ✦ Ongoing collaboration with regulators at local, State and Federal levels
- ✦ Community open-house sessions continuing with FERC participation
- ✦ Progressing with **Submitted** SoA request for a 48" pipeline system
- ✦ Developing ~~2016~~ Work Program and Budget

## Key Messages:

- ✦ Alaska LNG is an integrated LNG project – **plants plus pipeline**
  - Regulated under FERC Section 3; allows design integration
  - Integrated design includes ~ 5 off-take points for in-state supply
- ✦ Focus on **lowest cost of supply** to compete in a global market
- ✦ **Alignment, risk and cost reduction (ARC)** remain key to success



Gas Treatment Plant (GTP)



Pipeline Compressor Station



LNG Plant



- Fully integrated project team
  - All companies represented at all levels – “best player plays”
  - Leadership team in place (27 roles, over 800 years experience)
  - Leverage skills to meet common goal of delivering Alaska LNG
- Teams “co-located” to ‘take work to the people’
  - Integrate teams into contractors’ offices for key work scopes
  - All offices include representatives from each company
- Building project organizations
  - Over 100 full time employee positions filled
  - 3 offices: Anchorage, Calgary and Houston
  - Expect several hundred contractors for each project
  - Working to award contracts, start contractors in 4Q 14
  - Strong focus on Alaskan content and engaging Alaskan resources

28

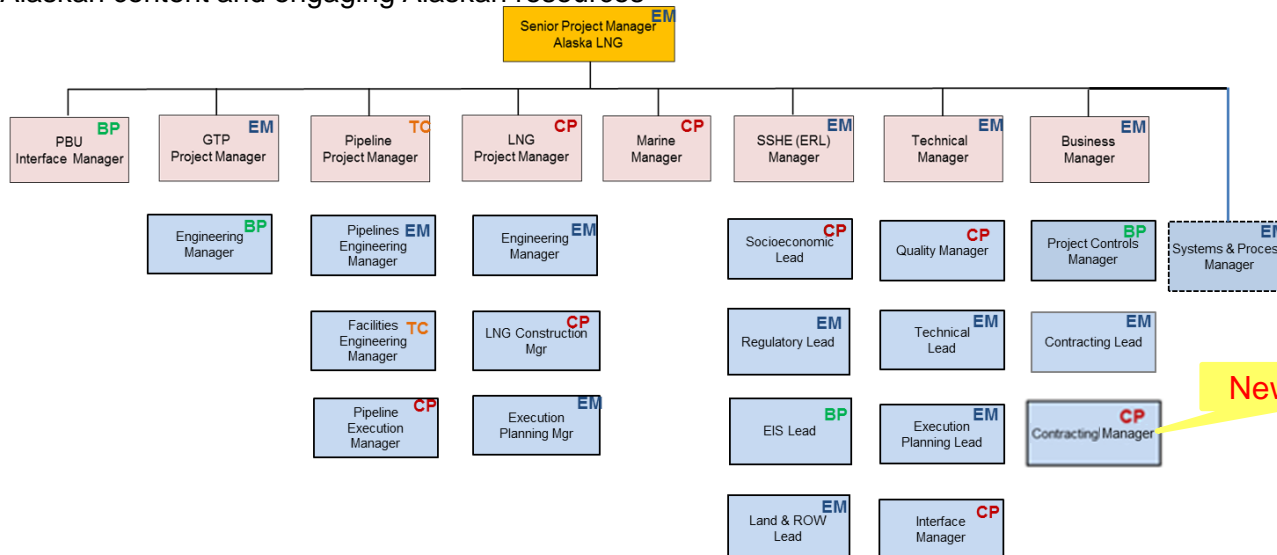
135

4 with Denver

Awarded



Alaska LNG Project Leadership Team



New Role

## AKLNG Project Team ---- Pre-FEED Project Scope (under JVA)

JVA Project  
Team Scope

- Integrated Project Design Basis
- Train sizes and configuration
- Finalize Plot Plans
- Driver-compressor selection
- Air emissions and modeling
- Finalize Process Design
- Generate data for Resource Reports
- Finalize Pipeline Size and Route
- Cost & Schedule Deliverables
- FEED Execution Plan
- Regulatory/Permitting Plan
- ITT and FEED Contracting Plan

## Other Activities being executed by Co-Venturers & State of Alaska

Commercial  
Work by CoVs

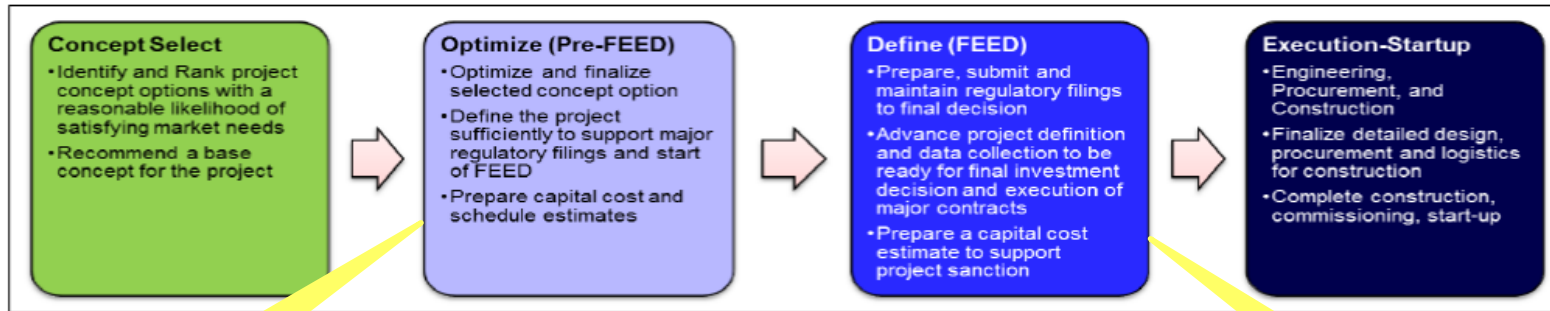
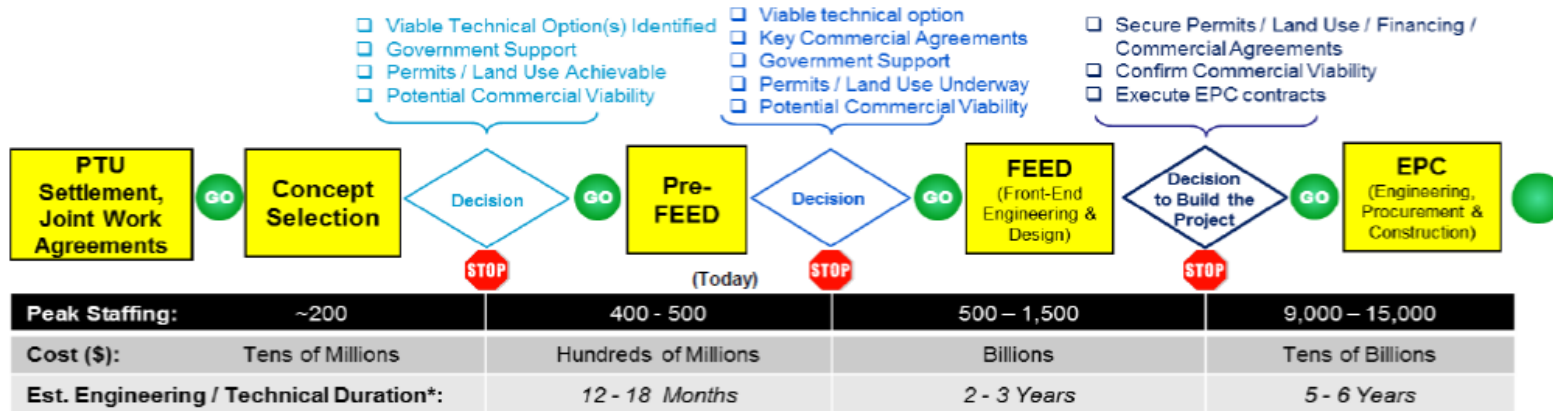
- SoA - Gas Fiscals, PILT, RIK
- Governance for FEED and beyond
- Long Term Organization, including roles and responsibilities
- FERC Filings
- Commercial / Fiscal / Regulatory Agreements
- Gas supply / balancing
- Upstream Agreements
- Others.....

## Keys to Success (ARC)

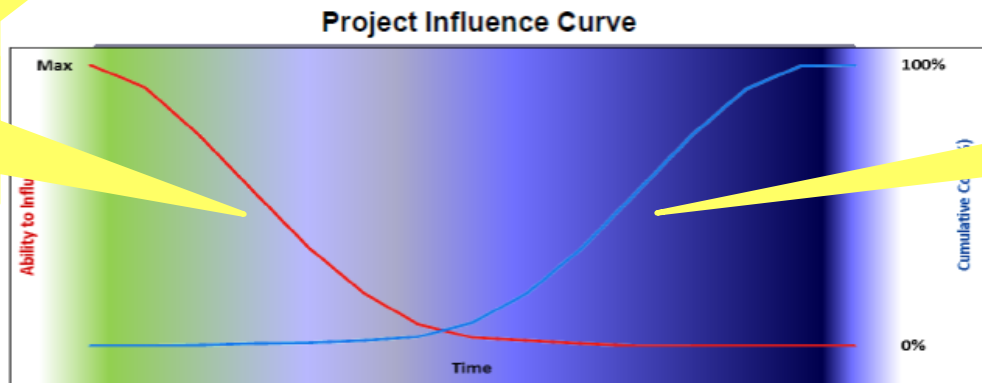
- Alignment
- Risk reduction - reducing the range of uncertainty (perceived risks)
- Cost reduction and predictability

# Project Development Phases

## Alaska LNG – Phased/Gated Project Management Process (Oct 12)



On Schedule to complete Pre-FEED by MY16, FEED decision by MY17, consistent with HOA



Key is to prepare for project success in FEED / EPC to minimize Cost of Supply



# Alaska LNG by-the-numbers

## Technical and Financial **\$303M Through Sep 15**

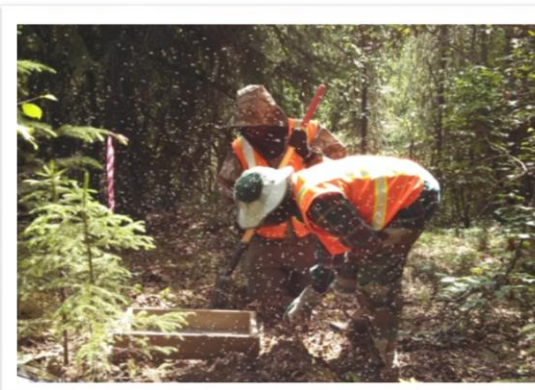
- \* ~~\$243M~~ + on pre-FEED through August 15
- \* 570+ acres purchased in Nizkiyik, Alaska **135**
- \* ~~130+~~ full-time personnel on Alaska LNG Project
- \* 200+ people in the field (80 scientists)
- \* 950+ acres of topographic survey
- \* 15,500+ acres of cultural surveys
- \* 148,000+ feet of 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
- \* 100s 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



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**Questions**