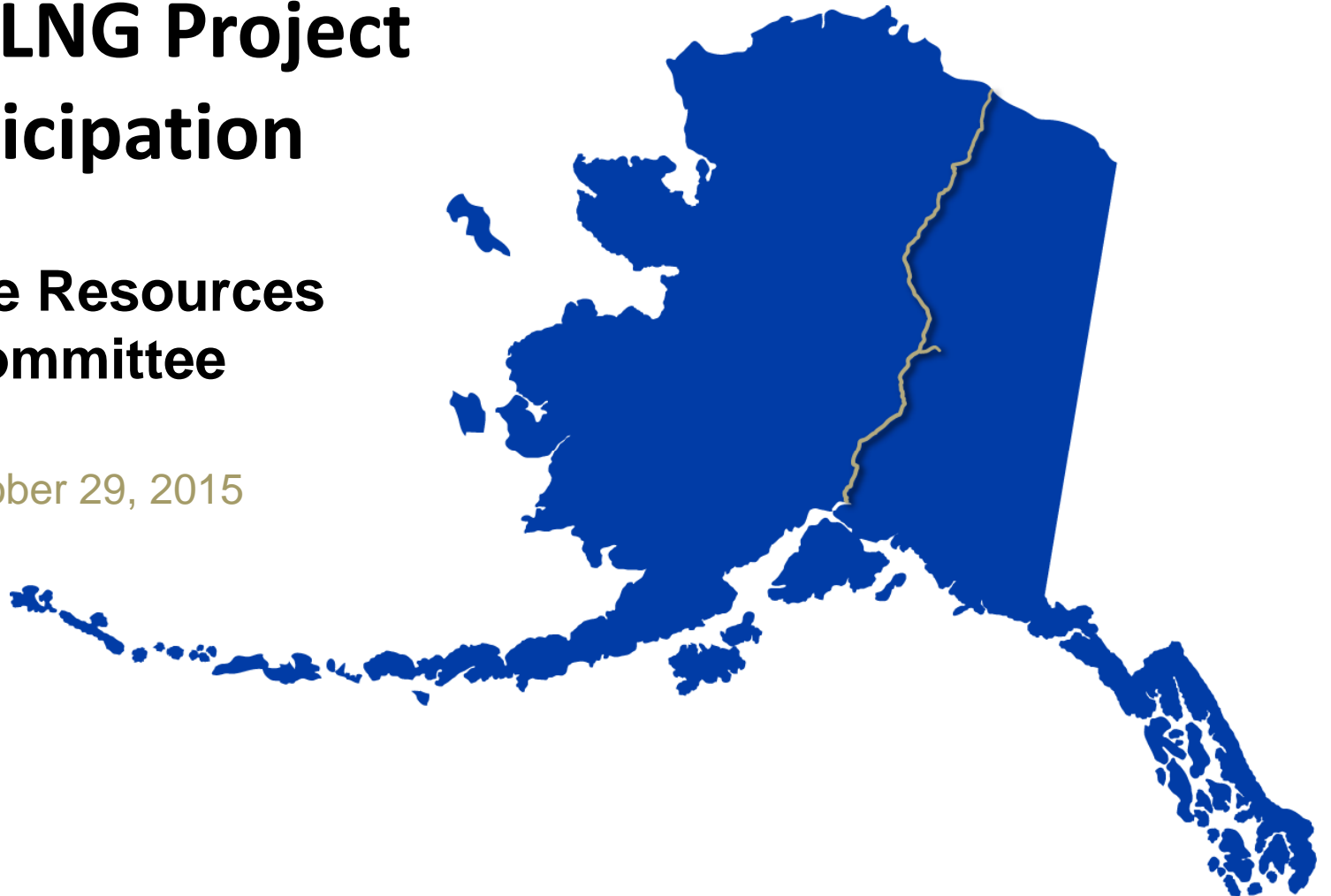




Alaska LNG Project Participation

**Senate Resources
Committee**

October 29, 2015



State's Objectives

- Secure a stable, affordable, long-term energy supply for Alaskans
- Commercialize Alaska's enormous North Slope gas resource
- Maximize the value of state's royalty and tax gas
- Generate revenue, jobs and economic growth
- Facilitate further oil and gas development



AGDC Origins

- Initially, AGDC created as a public response to concerns over declining Cook Inlet gas supplies
- Brown out drills; Long-term contracts with utilities uncertain
- High energy costs persist in the Interior
- Fairbanks air quality crisis due to wood and coal combustion – health and environmental concern
- Collectively, this created new sense of urgency to get North Slope natural gas to Alaskans

Estimated North Slope Gas Resource – 33+ Trillion Cubic Feet

Alaska LNG Project Development

2011: Governor calls for a **Joint Effort** by North Slope producers to explore LNG export as alternative to previous concepts for commercializing Alaska's gas



2013: Concept Selection completed, Nikiski announced as lead site for siting the **Liquefaction Plant** siting, **Heads of Agreement** negotiated



2014: State participation in **Alaska LNG** project authorized (*SB 138*), **Joint Venture Agreement** executed and Pre-Front End Engineering and Design (**Pre-FEED**) begins



2015: North Slope producers, AGDC and TransCanada begin advancing the Alaska LNG project

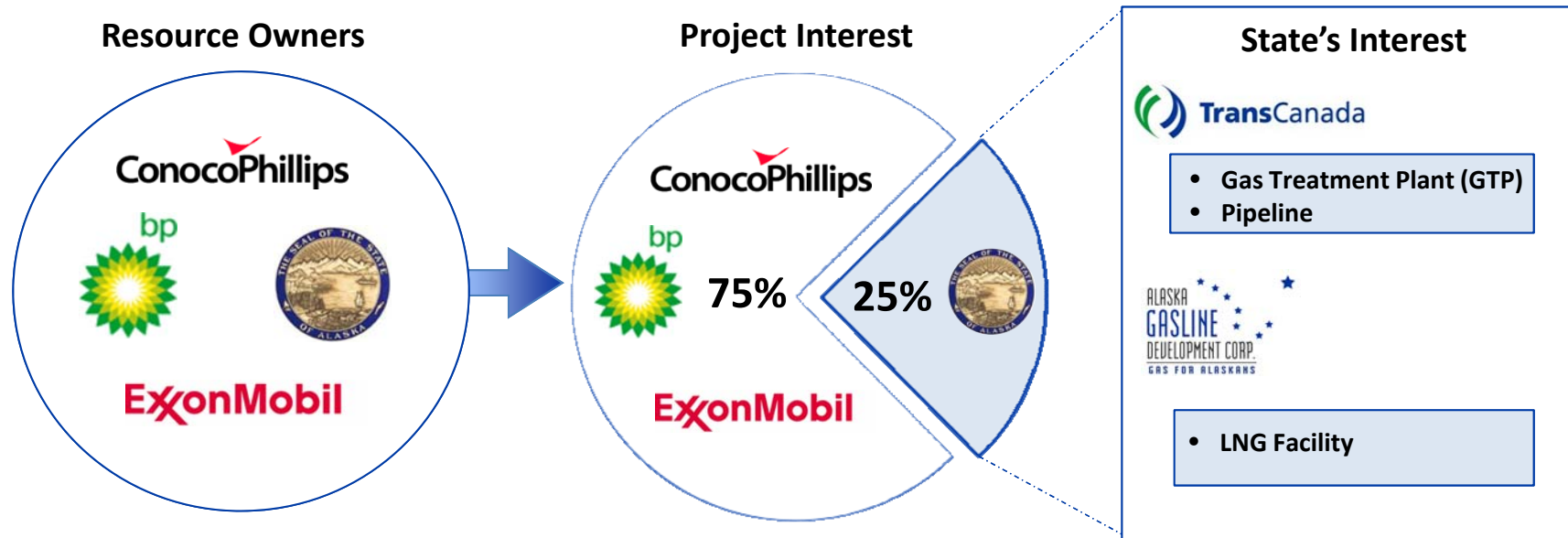
Authority Granted in SB 138

- AGDC has primary responsibility for developing an Alaska LNG project on the state's behalf [AS 31.25.005 (1)]
- AGDC may acquire a direct ownership interest in any component of an Alaska LNG project [AS 31.25.080 (a)(23)]
- AGDC may enter into contracts related to treating, transporting, liquefying or marketing gas - *in consultation with DNR & DOR* [AS 31.25.080 (a)(24)]
- AGDC shall assist DNR & DOR to [AS 31.24.005 (2) & (3)]:
 - Maximize the value of the state's gas resources
 - Provide economic benefits in the state
 - Provide revenue to the state

AGDC's Role in Alaska LNG

- Signatory to the Joint Venture Agreement governing the Alaska LNG project
- Hold the state's 25% equity interest in the LNG facility (downstream component) of the integrated project
- Member of the Sponsor Group, Management Committee (ManCom) and the Project Steering Committee (PSC)
- Participate in integrated project decisions
- Participate in commercial negotiations related to marketing, expansion, third-party access and domestic gas supply
- Plan and develop off-takes for in-state gas deliveries

Alaska LNG Project Participation



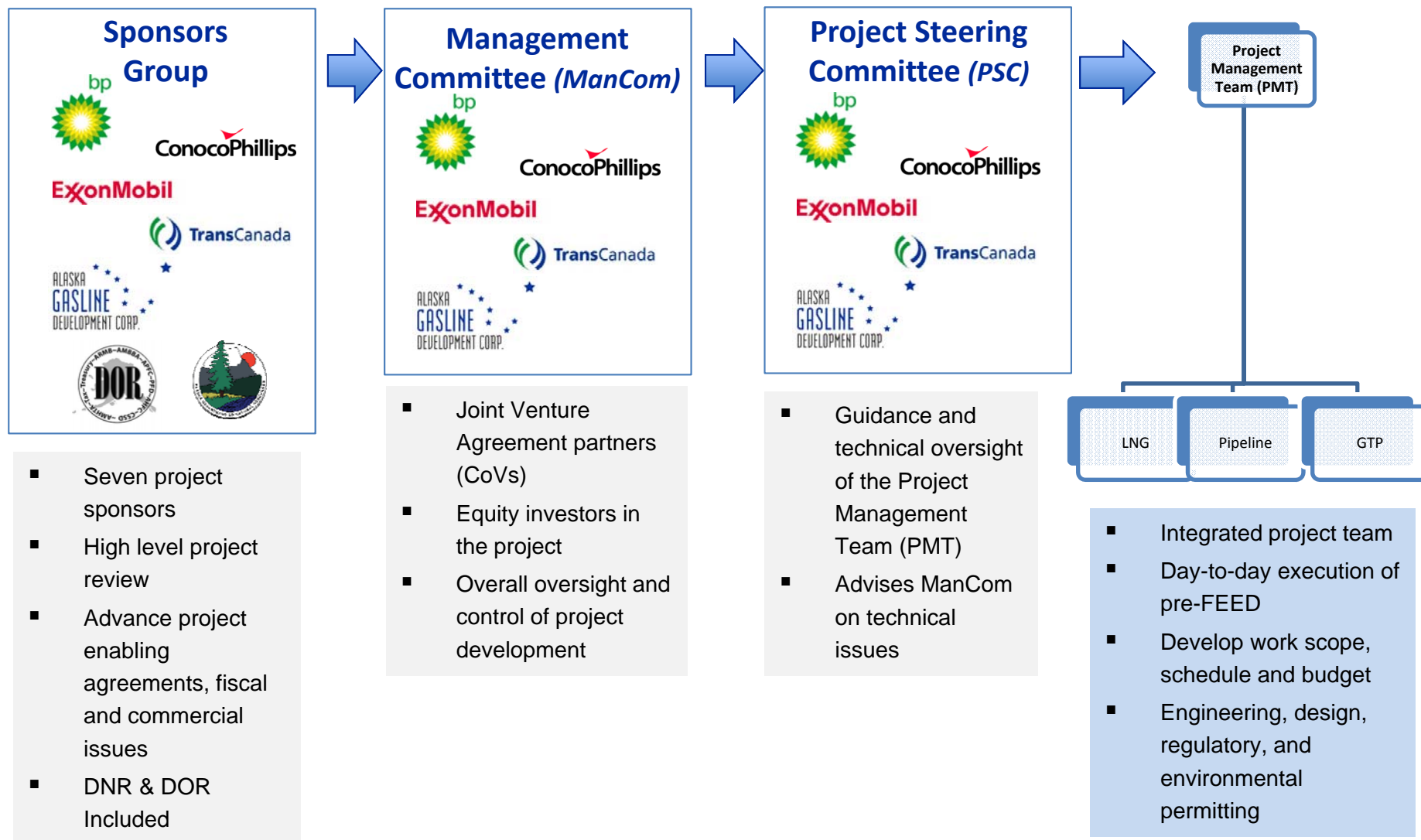
- AGDC holds State's interest in downstream: LNG Facility
- TransCanada holds State's interest in mid-stream: Pipeline & GTP

Governance Related Issues

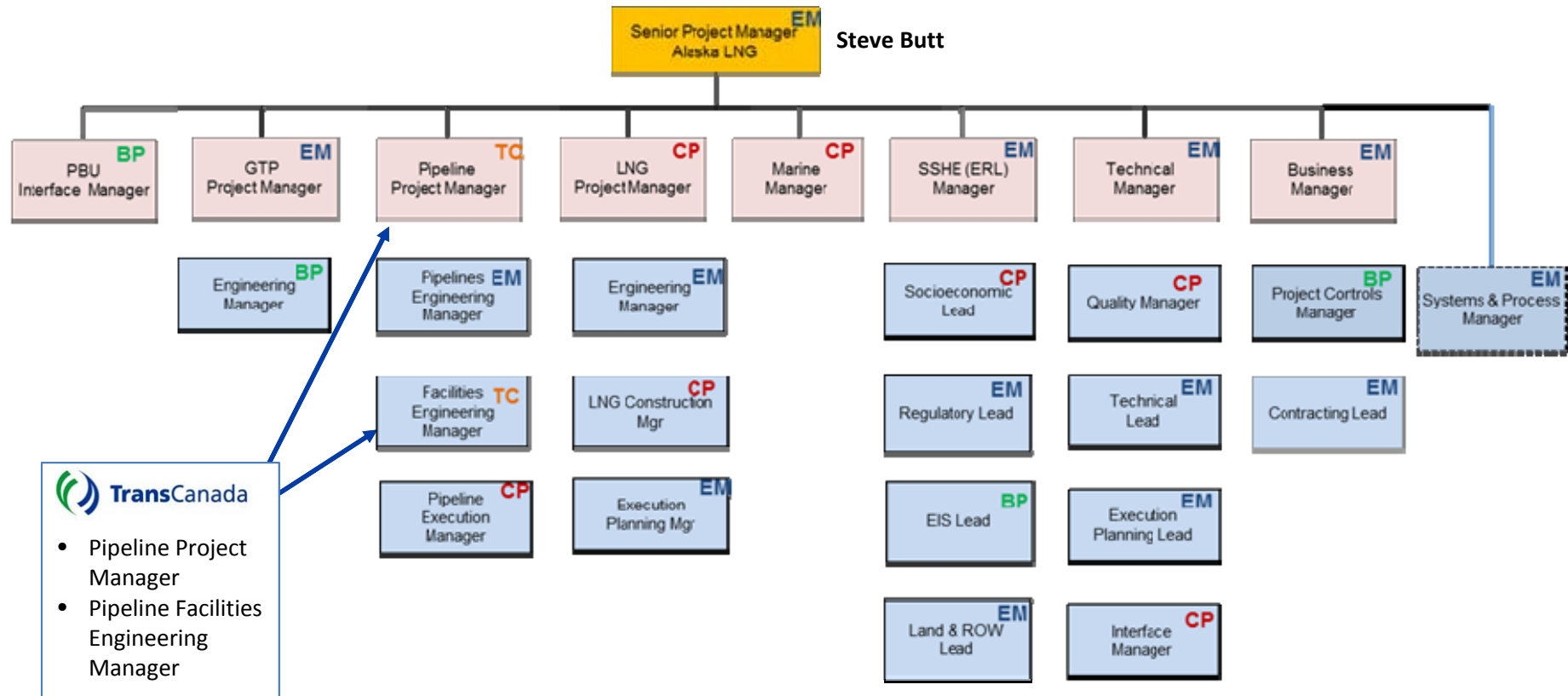
- **Equity Alignment:** State's share of gas in the project (25%) is not equal to its current equity in the integrated project:
 - State, through AGDC, holds 25% in the downstream (LNG plant)
 - TC holds 25% in the midstream (pipeline & GTP)
 - State's resulting equity in the integrated project is ~ 12.5%

- **Voting Rights:** State doesn't have full voting participation in all project decisions:
 - State, through AGDC, votes on downstream issues
 - TC votes on mid-stream issues
 - If TC exits, AGDC would have full voting rights on each project component and in all integrated project decisions

Project Governance



Project Management Team (PMT)



TransCanada currently has two individuals in the leadership structure of the PMT

Project Management Team (PMT)

- Project Management Team (PMT) created by Alaska LNG co-venture partners (CoVs) to lead day-to-day project development
- PMT is led by ExxonMobil's Steve Butt and staffed with other CoV employees who have been seconded to the project
- CoVs nominate employees based on skills and experience
 - PMT evaluates nominees and Management Committee approves
 - Positions are filled using a “best player plays” approach
 - Seconded's salary and expenses covered by project
- AGDC is active at all governance levels – Sponsors, ManCom and PSC
- AGDC does not currently have employees seconded to PMT
- PMT hires engineering and specialist contractors to advance design efforts
 - Vast majority of project work is done by contractors under the supervision of the PMT

Project Management Team (PMT)

Staffing Principles

- Leverage existing company strengths - ensure “right person, right job” or “best player plays”
- Joint Venture Agreement (JVA) parties can nominate employees for any position
- Ensure all parties are represented at leadership levels
- Locate teams for maximum effectiveness; co-located with major contractors where appropriate
- Appointments to leadership roles require unanimous approval of the parties

Project Secondees	EM	CP	TC	BP	Total
Leadership Team <i>Senior Project Manager and direct reports</i>	5	2	1	1	9
Key Positions	10	4	1	3	18
Other Positions	73	20	10	5	108
Total	88	26	12	9	135

TransCanada's Role Alaska LNG

- Hold the state's 25% interest in the project's mid-stream: pipeline and gas treatment plant (GTP)
- Fund pre-FEED cash calls associated with the state's mid-stream interest
- 12 secondees, primarily pipeline Subject Matter Experts (SME), in the Project Management Team
 - Leadership team, Pipeline Project Manager (1 of 9)
 - Key role, Pipeline Facilities Engineering Manager (1 of 18)
 - Environmental, Regulatory, & Land (ERL) (1 of 32)
 - Gas Treatment Plant sub-project (1 of 17)
 - Pipeline sub-project (8 of 36)

TransCanada's Role Alaska LNG

- TransCanada (TC) is not expected to build the pipeline, that will be managed by the PMT
- If TC exits the project, the PMT will seek nominations for the vacated positions
- TC has offered to allow its PMT employees to remain during a transition period
- All CoVs, including AGDC, can nominate employees to fill those positions
- AGDC has individuals qualified to nominate for Pipeline and GTP openings

AGDC Technical Team - Skills

AGDC's technical staff:

- Senior credentialed professionals with industry and mega-project backgrounds
- Arctic pipeline and facilities design, construction, and operations experience
- Alaska-specific design and construction experience
- Major capital project management expertise
- Working knowledge of technical and regulatory assets owned by AGDC

AGDC Technical Team - Results

AGDC completed development of the Alaska Stand Alone Pipeline (ASAP) Project:

- Completed Pre-FEED and FEED for North Slope gas treatment facility, 733-mile mainline, and 30-mile Fairbanks lateral pipeline
- Completed Class 3 cost estimate and project execution plan
- Delivered on time and under budget
- Core technical team still engaged on an interim basis pending state policy decisions

AGDC Ability to Assume TC's Role

- Currently holds state's interest in LNG facility – a complex and expensive component in the integrated project
- Already assumed TC's role in coordinating the FERC NEPA process
- Engaging on mid-stream technical issues currently
- Technical staff available to fill PMT positions as necessary:
 - Subject Matter Experts (SME) based in Alaska
 - Key roles in prior Alaska pipeline projects, including TAPS
 - Dedicated professionals committed to SOA interests

Alaska LNG Fund Status

AKLNG Fund Capitalization (SB 138)	\$ (000)
Original Fiscal Note Allocations	
AGDC: AKLNG Project Participation FY14 & FY15	\$67,265
Dept. of Revenue: Project Financing Options Report	\$2,500
Dept. of Transportation: Infrastructure Studies	\$70
Total Fund Cap	\$69,835
Spending by Category Thru FY16	
RSA to Department of Revenue	(\$2,500)
RSA to Department of Transportation	(\$70)
AKLNG Project Cash Calls	(\$51,382)
AGDC Corporate Operating Component	(\$4,396)
AGDC External Contractual Support (SMEs)	(\$5,235)
Additional Contractual Work for TC Pickup	(\$5,900)
Reimbursement Due AGDC for AKLNG Project Work	\$2,750
Estimated Outflow Thru FY16	(\$66,733)
Estimated Available Start of FY17 Budget Year	\$3,101 **

** Available to apply towards AGDC's FY17 Alaska LNG operating budget component

AGDC Special Session Appropriations

Capital Appropriation (\$144,045.0)

- \$68,445.0 – Reimburse TransCanada and “buy-out” their mid-stream interest
- \$75,600.0 – Fund state’s full 25% share of remaining pre-FEED

Receipt Authority (\$5,000.0): Statutory Designated Program Receipts (SDPR)

- Allow AGDC to be reimbursed for Alaska LNG related field work conducted on behalf of the project

AGDC Special Session Appropriations

TC Buyout

\$46.9 - Cash Calls thru 2015

\$21.5 – Development & Carrying Costs

\$68.4 – Total Reimbursement & Buyout

**Expectation
Before 2016
WP&B**

**W/New Pre-
FEED Scope &
Budget
Change**

Cash Calls 2016 to Pre-FEED Conclusion

\$31 – Go Forward Midstream
(Pipe/GTP)

\$15 - Go Forward
Downstream (LNG)

TC Buyout	\$	68.4	\$	68.4
Pick-Up Remaining Cash Calls	\$	29.6	\$	29.6
Allowance for Mid-Stream Scope Changes	\$	8.8	\$	31.0
	\$	38.4	\$	60.6
	\$	106.8	\$	129.0
Allowance for DownStream Scope Changes	\$	-	\$	15.0
	\$	106.8	\$	144.0

30% contingency on \$29.6 pick-up

Pre-FEED Scope & Budget Changes

Pre-FEED scope and schedule will increase by \$182 million to \$694 million:

- State's total share is \$173 million -- \$66 million liquefaction plant, \$107 million mid-stream (GTP and pipe)
- Advancing work into pre-FEED is important to have the best information available to complete internal review and make FEED decision
- Project is maturing through the stage-gate development process
- Moving some activities from FEED to Pre-FEED to facilitate better design and decision making

Pre-FEED Scope & Budget Changes

Scope changes are designed to improve project economics, permitting outcomes and the quality of information available for FEED evaluation:

- Component level optimization to lower capital costs and improve project economics (\$57 million)
- Increase scope of geotechnical and geohazard work at GTP and LNG sites (\$29 million)
- Increase regulatory and pre-bid work on FEED contracting; complete weather delayed off-shore field work (\$66 million)
- Bring 48" pipe deliverables up to 42" level of development (\$30 million)

Meeting In-State Gas Demand

AGDC's is responsible for developing pipelines and other mechanisms for delivering natural gas in-state

In advancing this goal, AGDC has:

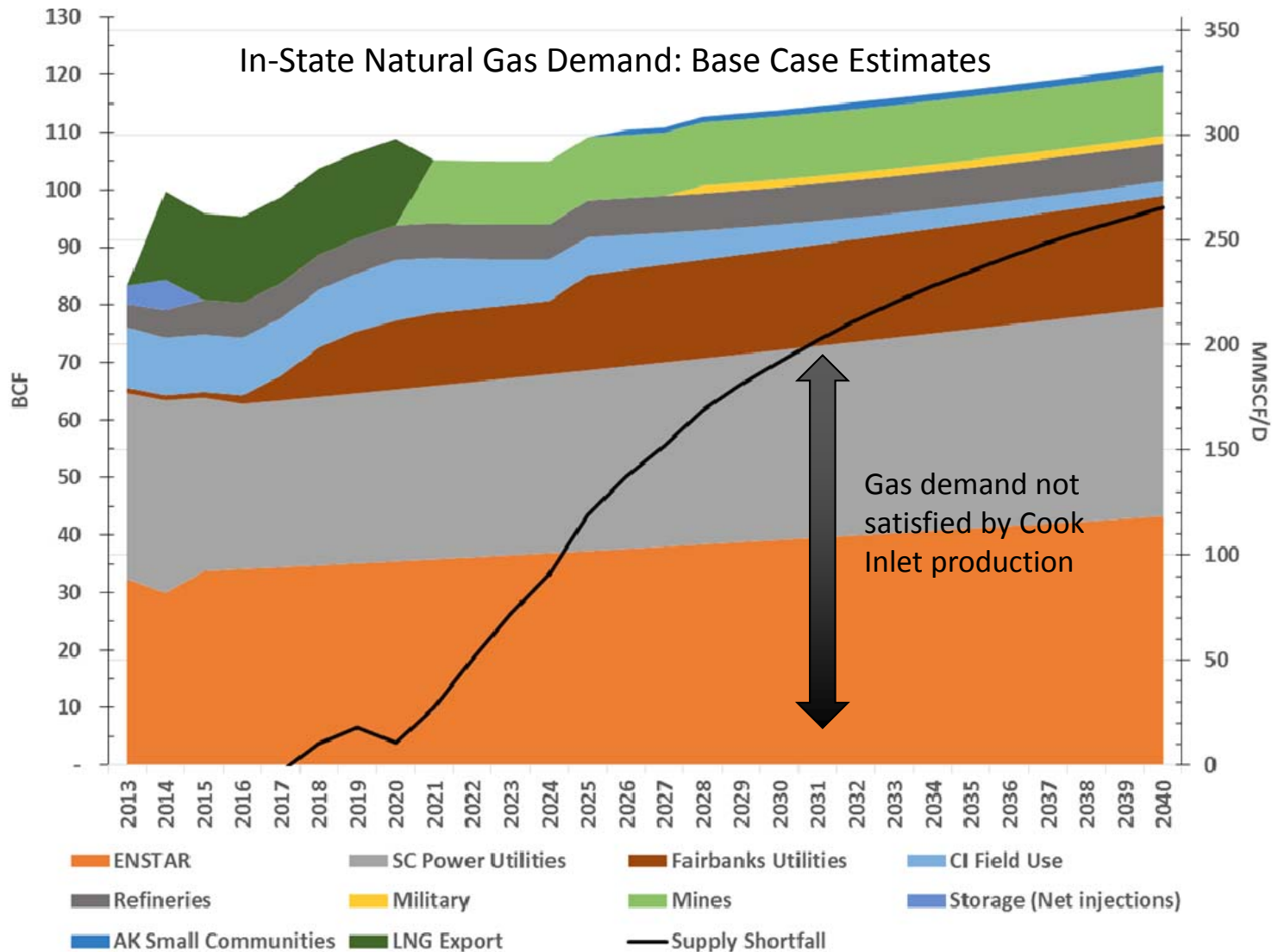
- Completed a forecast of in-state natural gas demand
- Completed preliminary cost estimates for gas off-take facilities
- Developed a framework to assist policy makers in evaluating in-state off-take infrastructure
- AGDC Board has authorized the formation of a subsidiary capable of aggregating in-state gas demand. Potential activity:
 - *Pool small quantities of in-state demand*
 - *Serve as an intermediary between resource owners (including DNR) and small in-state buyers*
 - *Assist small communities in developing local distribution entities*

In-State Gas Demand Forecasting

AGDC has completed a demand forecast for natural gas use in Alaska:

- Analyzed historical natural gas production and consumption data
- Identified existing and potential demand segments
- Developed range of demand assumptions
- Identified most likely forecast scenarios through 2040

In-State Gas Demand Forecasting



In-State Gas Demand Forecasting

- Project volumes more than adequate to meet in-state demand growth
 - Base Case 2040 demand – 333 MMscfd (122 Bcf per year)
 - High Case 2040 demand – 422 MMscfd (154 Bcf per year)
- Demand will be partially supplied from Cook Inlet during the forecast period

Demand by Segment	2014 Actual	2030	2040
Existing Demand			
Enstar, railbelt electrical utilities, and industrial users (<i>excluding export</i>)	214	227	243
Potential Demand			
Interior heating and power utilities	2.5	51	56
Industrial operations (primarily mining)	0	31	31
Small communities – within 50 miles of alignment	0	3.2	3.4
Total Base Case Demand:	217	312	333

In-State Natural Gas Demand: Base Case Estimates (*MMscfd*)

In-State Gas Off-Take

Alaska LNG project can provide Alaska with a reliable, long-term supply of natural gas:

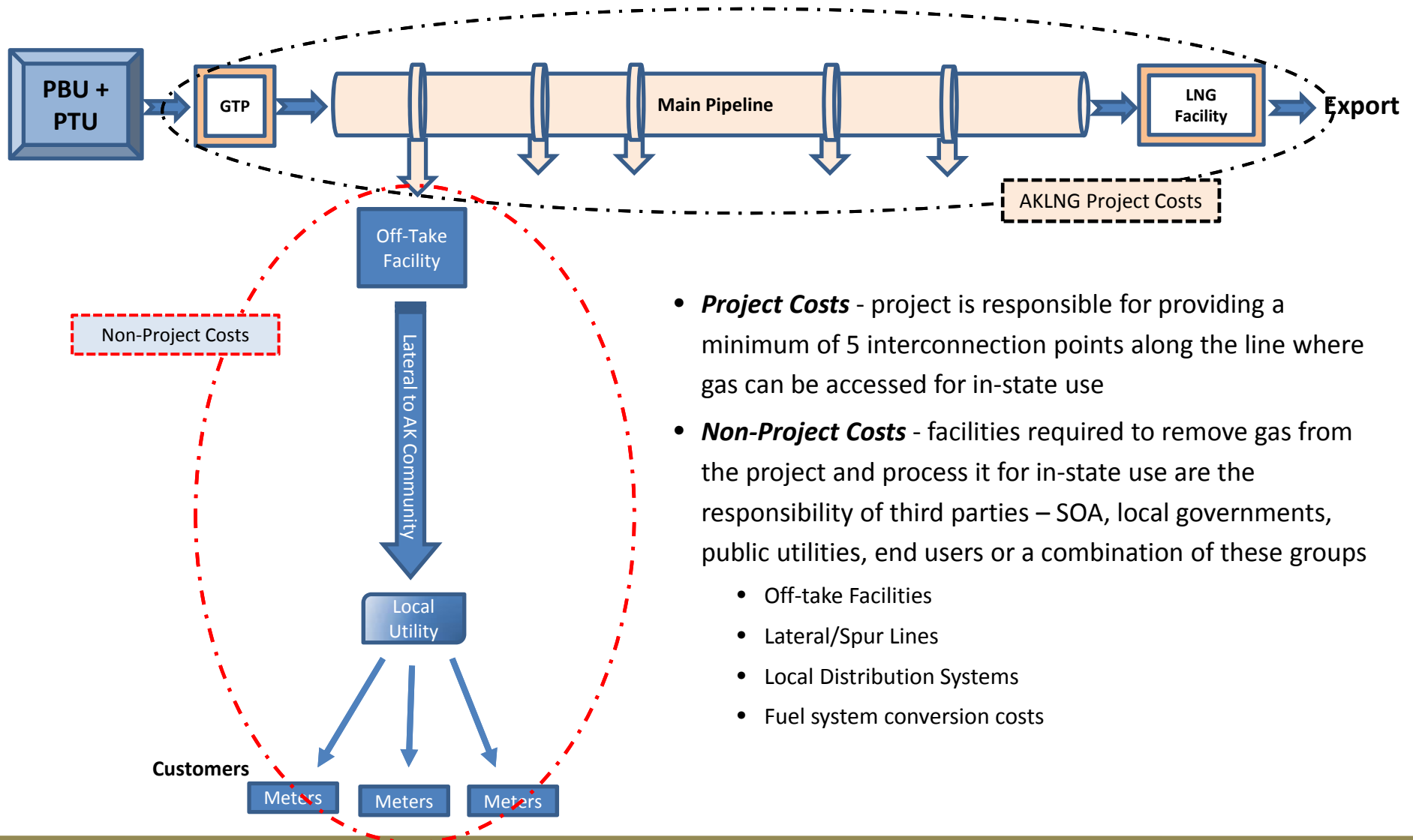
- State of Alaska's financial commitment to the project should also consider off-take facilities, transmission lines and other in-state distribution systems
- Off-take plans will involve a number of engineering, commercial, financial and policy considerations
- AGDC & DNR are developing a framework assist policy makers in evaluating options

In-State Gas Off-Take

Evaluation framework built on work done for the Alaska Stand Alone Pipeline (ASAP) Project

- Identified facilities required to meet existing in-state demand, to include Fairbanks
 - Anchorage/Mat-Su
 - Fairbanks
 - Kenai/Nikiski
- Accessing the technical and economic feasibility of communities within close proximity to access gas
- Evaluating with AEA alternative means of delivery for communities unlikely to have direct access

In-State Gas Off-Take



In-State Gas Off-Take

Off-Take Facility Cost Estimates

Size	Volume (MMscfd)	Off-Take Facility Capital Expense (\$Mill)*	Characteristic Community
Macro	80.00 – 330.00	\$38	North/South Cook Inlet
Mini	20.00 – 75.00	\$28	Fairbanks Size
Micro	0.40 – 2.00	\$15	Medium Density
Nano	0.04 – 0.25	\$14	Very Small

*Cost of laterals, spurs, local distribution and appliance conversions not included in figures above

In-State Gas Off-Take

Progress to date:

- Approximately 20 potential interconnection points identified along pipeline corridor
- Some communities would be best served from a common access point, off-take facility and lateral
- AGDC has developed conceptual cost estimates for off-take facilities, excluding local distribution and appliance conversion costs
- Preliminary analysis highlights significant economic challenges with bringing small communities online

In-State Gas Off-Take

Summary

- No final decisions have been made
- No public money has been appropriated for the construction of any in-state off-take facilities or distribution systems
- State's plans will evolve as the project matures and policy makers weight in
- User fees and tax assessments alone will not be sufficient to finance new gas distribution systems
- May involve phased approach – some facilities built during construction, others conditioned on demand growth



Alaska Stand Alone Pipeline (ASAP) Project Status



ASAP Project Status

Alaska Stand Alone Pipeline (ASAP)

- State's back-up plan in the event Alaska LNG doesn't progress
- AGDC concluded FEED in Dec 2014; Construction ready – Class 3 estimate of \$10 billion (+/- 20%)
- Commercial activities – tariff filing and open season - on hold pending outcome of AKLNG project
- Progressing U.S. Army Corps Supplemental EIS process to secure federal permits and right-of-way

In-State Pipeline Fund Status

In-State Natural Gas Pipeline Fund Capitalization (HB 4)		\$ (000)
Original Appropriation		\$355.0
Spending by Major Category To Date		
AGDC: Corporate Operating & ASAP Project Development		(\$135.0)
Legislative Reappropriation to Public Education Fund (2015 Session)		(\$157.0)
DNR: North Slope Gas Commercialization Component FY16		(\$9.0)
Estimated Outflow as of Oct 2015		(\$301.0)
Current Balance		\$54.0
Maintain ASAP Project Viability & Readiness		(\$12.0)
AGDC: Contractual & FY16 Operating Component		(\$10.0)
Estimated Available Start of FY17 Budget Cycle		\$32.0

Questions?

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