



CHUGACH ELECTRIC ASSOCIATION, INC.
ANCHORAGE, ALASKA

OPERATIONS COMMITTEE MEETING

AGENDA

Mark Wiggin, Chair
Harold Hollis, Vice Chair

Sisi Cooper, Director
Bettina Chastain, Director
Bernie Smith, Director

March 15, 2023

4:00 p.m.

Chugach Board Room

- I. CALL TO ORDER (4:00 p.m.)
 - A. Roll Call
- II. APPROVAL OF THE AGENDA* (4:05 p.m.)
- III. APPROVAL OF THE MINUTES* (4:10 p.m.)
 - A. February 8, 2023 (Doyle)
- IV. PERSONS TO BE HEARD (4:15 p.m.)
 - A. Member Comments
- V. NEW BUSINESS (scheduled) (4:20 p.m.)
 - A. Department of Energy Grant Application for Transmission Infrastructure (Laughlin/
D. Highers) (4:20 p.m.)
 - B. Gas Supply Update (Black & Veatch/Gerlek/White) (4:40 p.m.)
- VI. EXECUTIVE SESSION* (scheduled) (5:40 p.m.)
 - A. RCA Power Pool Ruling (Thompson) (5:40 p.m.)
 - B. Gas Supply Update (Black & Veatch/Gerlek/White) (6:10 p.m.)
 - C. CEO Evaluation (Miller/Board) (7:10 p.m.)
- VII. NEW BUSINESS (none)
- VIII. DIRECTOR COMMENTS (7:25 p.m.)
- IX. ADJOURNMENT* (7:45 p.m.)

* Denotes Action Items

** Denotes Possible Action Items

3/14/2023 12:30:25 PM

CHUGACH ELECTRIC ASSOCIATION, INC.
Anchorage, Alaska

February 08, 2023
Wednesday
4:00 p.m.

OPERATIONS COMMITTEE MEETING

Recording Secretary: Ashton Doyle

I. CALL TO ORDER

Chair Wiggin called the Operations Committee meeting to order at 4:05 p.m. in the boardroom of Chugach Electric Association, Inc., 5601 Electron Drive, Anchorage, Alaska.

A. Roll Call

Committee Members Present:

Mark Wiggin, Chair
Bettina Chastain, Director
Sisi Cooper, Director

Committee Members Absent:

Harold Hollis, Director

Board Members Present:

Sam Cason, Director
Rachel Morse, Director (*arrived at 4:09 p.m.*)

Guests and Staff Attendance

Present:

Arthur Miller	Marty Freeman	Bart Armfield, Consultant
Andrew Laughlin	Kate Ayers	Steve Gerlek, Consultant
Matthew Clarkson	Julie Hasquet	Philip Zempel
Sean Skaling	Todd McCarty	Josh Travis
Ron Vecera	Andrew White	
Kathleen Tolentino	Jean Kornmuller	

Via Teleconference:

Sandra Cacy	Shaina Kilcoyne,	Donovan Russoniello,
Dustin Highers	Member	Member

II. APPROVAL OF THE AGENDA

Director Cooper moved and Director Chastain seconded the motion to approve the agenda. The motion passed unanimously.

Director Morse was not present at the time of the vote.

III. APPROVAL OF THE MINUTES

Director Cooper moved and Director Chastain seconded the motion to approve the December 7, 2022, Operations Committee Meeting minutes. The motion passed unanimously.

Director Morse was not present at the time of the vote.

IV. PERSONS TO BE HEARD

A. Member Comments

Shaina Kilcoyne, Chugach member, commented on the good work being done with the Beneficial Electrification and Energy Star program and requested information on the new tax benefits available for energy efficiency for homes and businesses through the IRA, be placed on the website.

Director Morse joined the meeting at 4:09 p.m.

V. NEW BUSINESS

A. Beluga River Unit Update (Armfield)

Bart Armfield, Fuel and Corporate Planning Consultant provided an update on Beluga River Unit performance and responded to questions from the Committee.

B. Gas Supply Update (Gerlek / White)

Steve Gerlek, Fuel and Corporate Planning Consultant and Andrew White, Senior Manager Energy Resources provided a gas supply update and responded to questions from the Committee.

C. Grant Funding Update (D. Highers)

Dustin Highers, Vice President of Corporate Programs, provided an update on state and federal grant funding and responded to questions from the Committee.

VI. EXECUTIVE SESSION

A. Cybersecurity (McCarty)

B. Substation Security (Freeman / Travis)

C. Personnel Matters – Board Vacancy (Board)

At 5:36 p.m., Director Chastain moved and Director Cooper seconded the motion that pursuant to Alaska Statute 10.25.175(c)(1), (3) and (4) the Board of Directors go into executive session to: 1) discuss and receive reports regarding matters, the immediate knowledge of which would clearly have an adverse effect on the finances of the cooperative; 2) discuss with its attorneys matters, the immediate knowledge of which could have an adverse effect on the legal position of the cooperative; and 3) personnel matters. The motion passed unanimously.

The meeting reconvened in open session at 7:43 p.m.

VII. NEW BUSINESS

None.

VIII. DIRECTOR COMMENTS

Comments were made at this time.

IX. ADJOURNMENT

At 7:48 p.m., Director Chastain moved and Director Cooper seconded the motion to adjourn. The motion passed unanimously.

Chugach Electric Association, Inc.

GRIP TOPIC 1

Operations Committee Meeting: March 15, 2023

Background

BIL	Appropriates \$62 B to the DOE to build a clean energy equitable economy with pollution free electricity by 2035. “AKA IIJA”
GRIP	Three programs to fund BIL sections: <ul style="list-style-type: none">• Section 40101(c): Grid Resilience Grants TOPIC 1• Section 40107: Smart Grid Grants TOPIC 2• Section 40103(b): Grid Innovation Program TOPIC 3
TOPIC 1	Supports activities that reduce the likelihood and consequence of impacts to the electric grid due to extreme weather, wildfire, and natural disaster. Contains a broad list of “hardening measures” and “increase transfer capacities between regions”.
FOA 2740	Three BIL programs, committing approximately \$10.5 B over FY22 through FY26, to deploy technologies to increase grid reliability and resilience through multiple rounds of funding.

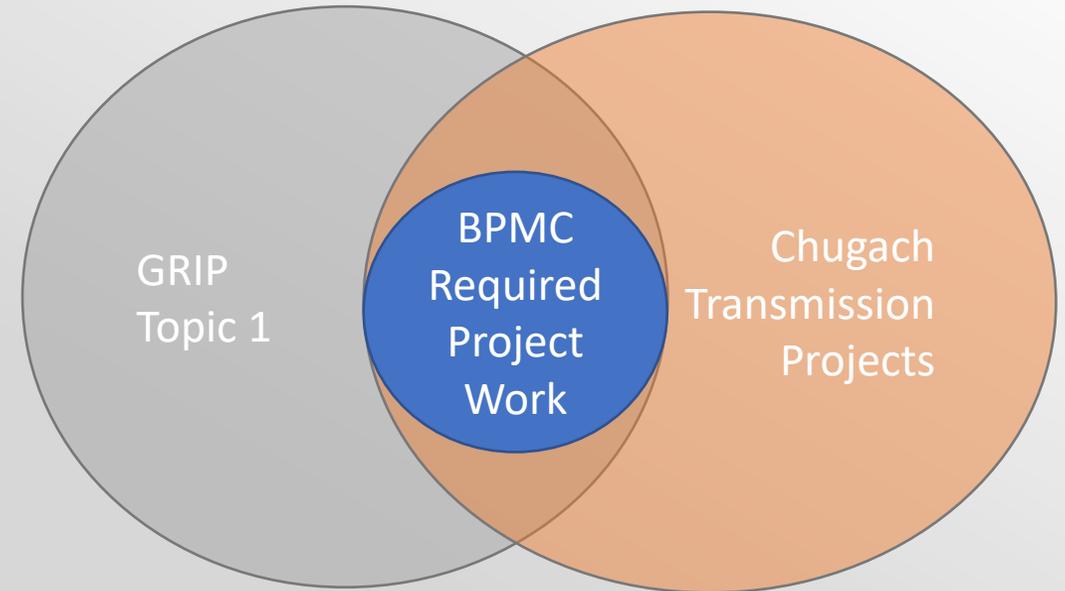
Acronyms

BIL	Bipartisan Infrastructure Law	DOE	Department of Energy
FOA	Funding Opportunity Announcement	GDO	Grid Deployment Office
GRIP	Grid Resilience and Innovation Partnership Program	OCED	Office of Clean Energy Demonstration

TOPIC 1

The proposed projects, which meet the requirements of GRIP **TOPIC 1**, are intended to reconstruct the existing transmission system from Bradley Lake to Delta Junction to harden lines to resist natural disasters, increase transfer capability, and resiliency.

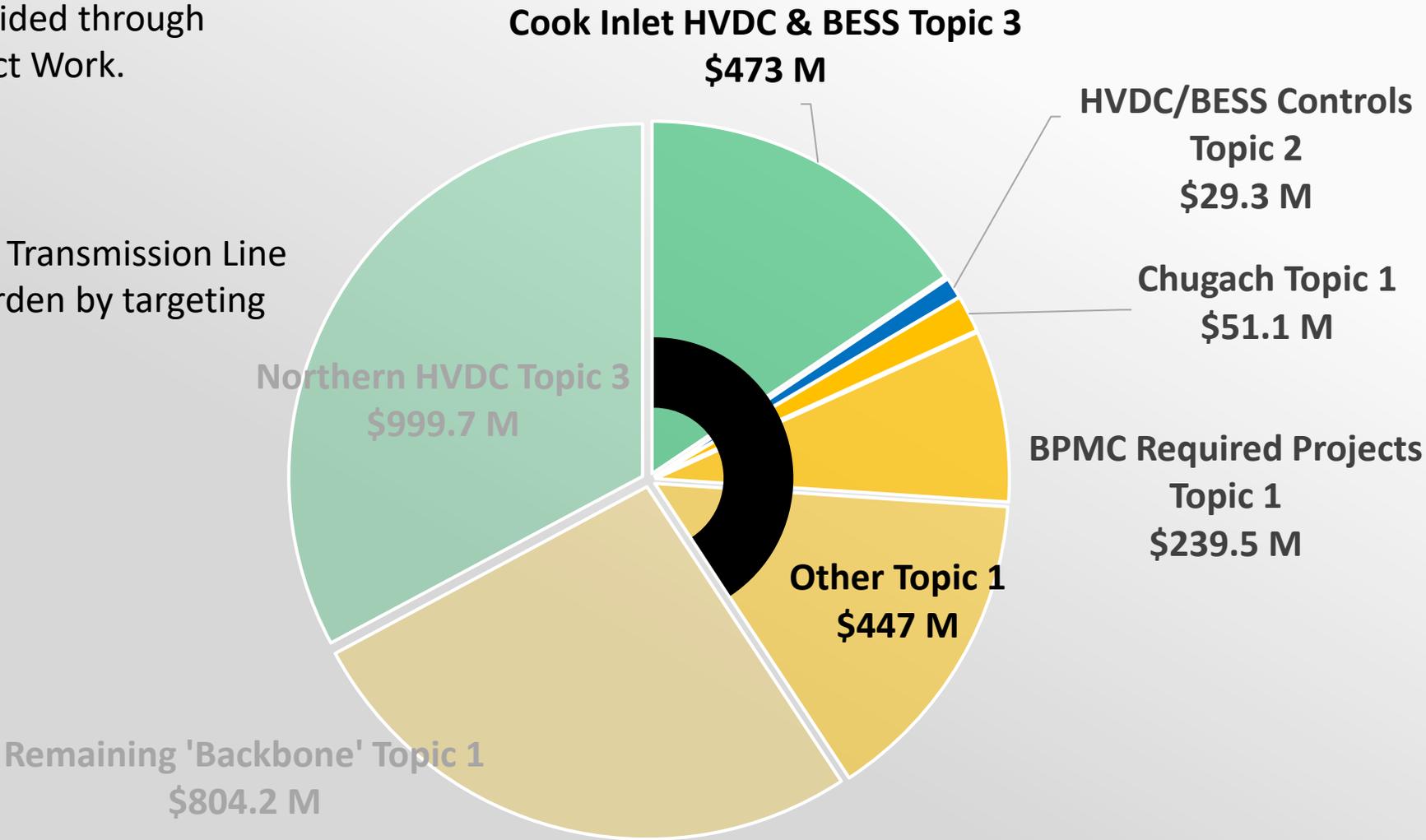
- Maximum award: \$100 M in Round 1
- Chugach is supporting a subset of the projects being submitted by the Railbelt Utilities under GRIP **TOPIC 1** including:
 - Bradley Lake Required Project Work
 - Transmission and substation upgrades to Chugach owned assets on the Quartz Creek Transmission Line



Funding Request



- DOE negotiations required to allocate grant funds against Chugach supported projects.
- Partial match for the grant is provided through funding for BPMC Required Project Work.
- Chugach Transmission Projects:
 - Daves Creek Substation
 - Quartz Creek Substation
 - Daves Creek to Quartz Creek Transmission Line
- Intended to reduce rate payer burden by targeting planned projects.



GRIP Topic 1 Projects

- **TOPIC 1** Railbelt projects include a range of projects from the Kenai to South Central.
- They do not all represent a benefit to Chugach consumers.
- Recently amended to exclude all new transmission lines over 69 kV.

Bradley Lake Required Project Work

- Includes projects associated with exporting Bradley Lake energy off the Kenai Peninsula.
- Approved by the BPMC and the Chugach Board of Directors.
- \$166 M of debt was issued by AEA in November of 2022, which did not exceed the amount of the Excess Payments. 65%, or \$107.9 M, of the \$166 M was allocated to funding the projects.
- **Utility board approval is necessary to spend more than excess payments.**

Chugach Transmission Projects

- Projects under this application support Chugach's ongoing effort to rebuild the Quartz Creek Transmission Line in the Chugach Capital Improvement Plan.
- RBM 10 26 22 V.D. Quartz Creek Rebuild, Girdwood to Indian provided a rebuild schedule.
- Daves Creek to Quartz Creek Transmission Line Rebuild is scheduled for 2029.
- Substations upgrades are necessary to energize the line to 230 kV as planned.

Quartz Creek Transmission Line Rebuild



RBM 10 26 22 V.D. Quartz Creek Rebuild, Girdwood to Indian discussed a proposed rebuild schedule, approved October 26, 2022.

Daves Creek Substation to Quartz Creek Substation is included in the schedule for 2029.



<i>Proposed Rebuild Schedule</i>			
Completed Rebuilds	Approx. Miles	Year	Status
Ingram to Silvertip	15	2012	Complete
Powerline Pass	6	2016	Complete
Silvertip to Hope Sub.	4	2017	Complete
Hope Sub. to Summit Sub.	10	2018	Complete
Placer River	1	2020	Complete
Completed Subtotal	36 miles		
Planned Rebuilds			
Girdwood Sub. to Indian	11	2024	Planned
Summit Lake to Daves Creek Subs.	10	2026	Planned
Daves Creek to Quartz Creek Subs.	7	2029	Planned
Girdwood Sub. to Ingram Creek	15	2031	Planned
Tudor Junction to Powerline Pass	11	2032	Planned
Planned Subtotal	54 miles		
Total	90 miles		

Topic 1: Chugach Supported Projects Map



- Grant Required Letter of Commitment caveated with:
 - Execution of any necessary studies.
 - Execution of a definitive agreement between Chugach and other utilities for cost allocations.
 - Chugach Board of Directors project approval is required.
 - Receipt of any necessary regulatory approvals for cost recovery.
- Application to FOA 2740, Topic 1, Round 1 funding provides a path for additional funding to current project.
- If awarded, the grant will offset of costs to ratepayers .
- Projects will be approved by the Chugach Board of Directors on an individualized basis.

Chugach Electric Fuel Gas Supply Options Update

Board of Directors
Operations Committee

March 15, 2023



Executive Summary

Background

- Hilcorp announcement on future gas contracts, DNR study on remaining gas reserves in Cook Inlet
- CEA as a major owner of remaining Cook Inlet reserves has been aware of the challenge and proactively making plans

Study Phase 1 – Chugach Energy Planning Options

- Chugach current and future natural gas needs were evaluated based on three scenarios
- Scenarios incorporated a range of electric power demand and clean energy uptake
- The shortfall between demand and clean energy supply was filled first with existing Chugach Cook Inlet gas reserves
- Then, the size of the remaining gap was measured and assessed for alternative supplies
- Current work is focused on economics of alternative supplies to meet the remaining gap
- A Chugach stand-alone project is being developed and evaluated to meet its remaining natural gas needs

Study Phase 2 – Railbelt Energy Planning Options

- Natural gas supply, demand, and alternative supplies will be assessed at the Railbelt level
- Alternative supplies will include different project types as well as different financial and governance structures
- The economics and challenges for CEA to join a larger Railbelt project will be assessed
- Data collection for this work is ongoing and the analysis is pending

BV and CEA Team

BV Team:

Hua Feng, Managing Director

Denny Yeung, Principal Consultant

CEA Team:

Andrew White, Sr. Mgr., Energy Resources

Hans Thompson, Power Pool & Sys Studies Analyst

Kevin Skiba, Mgr., fuel Supply & Operations

CEA Consultants:

Steve Gerlek Cross Street Consulting

Bart Armfield, PRA, BRU WIO Representative

Black & Veatch's Team Experience in Alaska & LNG Markets

Black & Veatch Today

- 9,200+ professionals in 120+ offices
- Headquarters in Overland Park, Kansas, USA
- Employee Stock Ownership Plan structure
- Projects in 100+ countries on six continents
- \$4.0+ billion in 2022 revenue
- Sectors
 - Commercial; Governments; Industrial & Manufacturing; Mining; Gas, Fuels, & Chemicals; Power; Telecommunications; Transportation; Water

Mission: *Why we exist*

Building a world of difference through innovation in sustainable infrastructure

Vision: *What future we aspire to achieve*

We work relentlessly to solve humanity's critical infrastructure challenges

Values: *What we believe and how we behave*

Safety | Accountability | Collaboration | Entrepreneurship | Integrity | Ownership | Respect

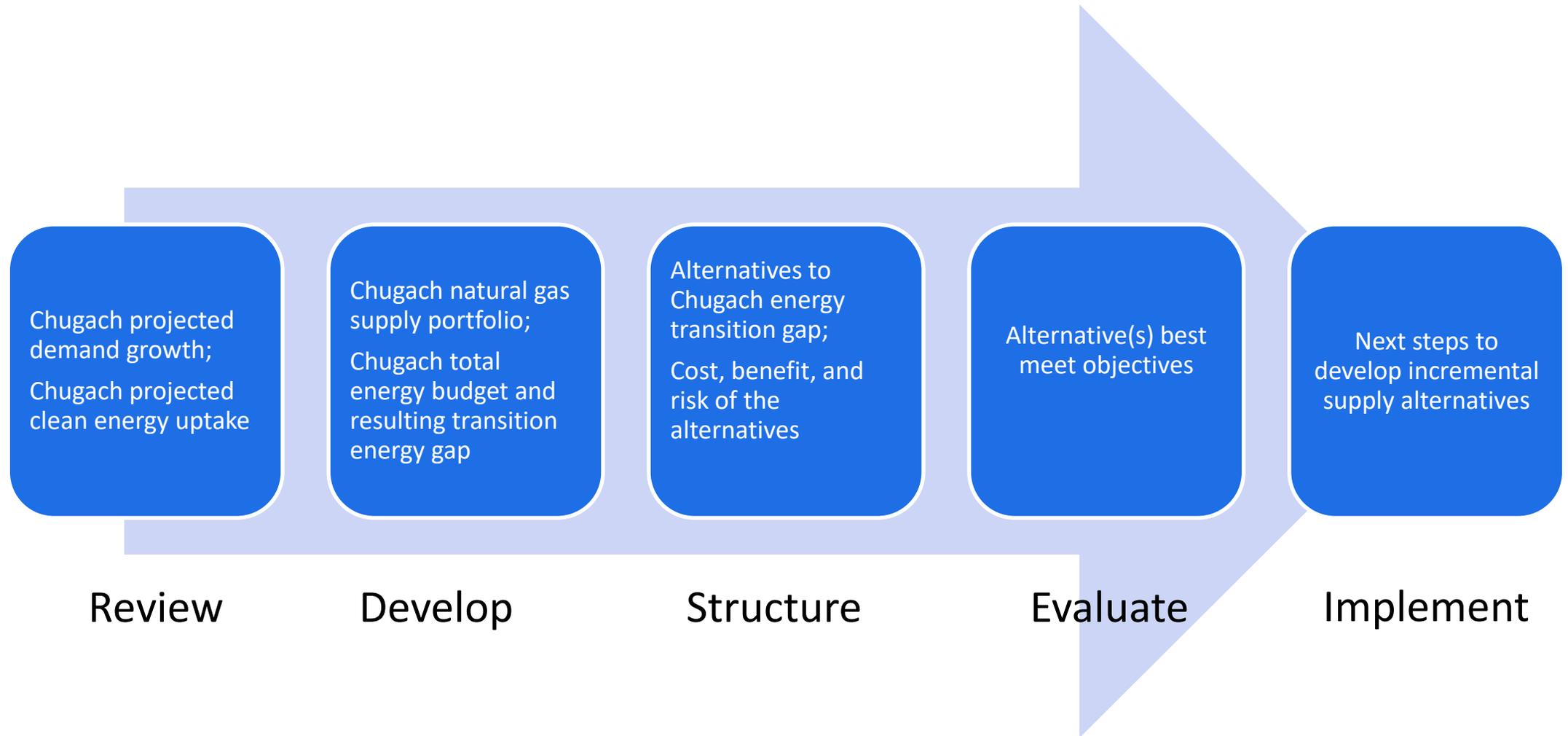
Alaska Experience

- North Slope Gas Monetization Strategy
- Alaska Gasline Inducement Act
- Alaska Gasline Development Corporation – AK LNG
- Alaska Gas Pipeline Project
- Golden Valley Electric (GVEA) IRP

LNG Markets and Commercial Assessments

- Technical and Financial Review of Lower 48 and Canadian LNG Export Terminals
- Global LNG Market Report for Lower 48 LNG Export Terminals
- FERC Market Impact Study for Lower 48/Canadian LNG Export Terminals
- Commercial Advisor to LNG Import/Export capacity holders at Cameron, Freeport, Sabine Pass and Corpus Christi LNG

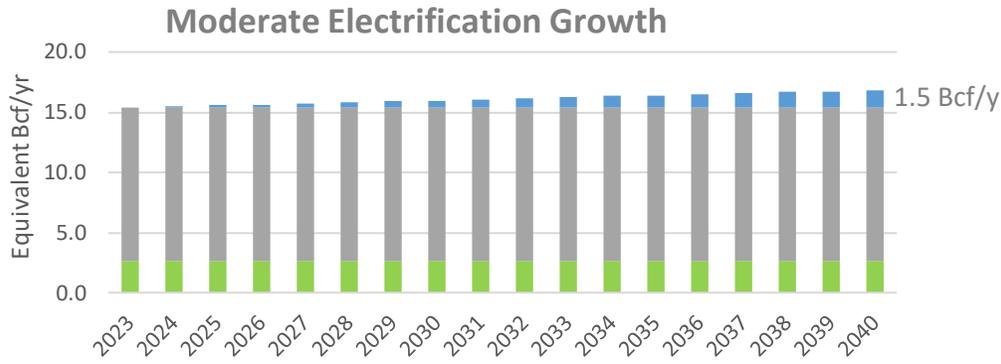
Approach and Methodology



Chugach Energy Demand

- Electrification growth
- Base thermal energy demand
- Current clean energy 15% hydro 2% wind equivalent to 2.5 Bcf/y

Chugach Energy Scenarios



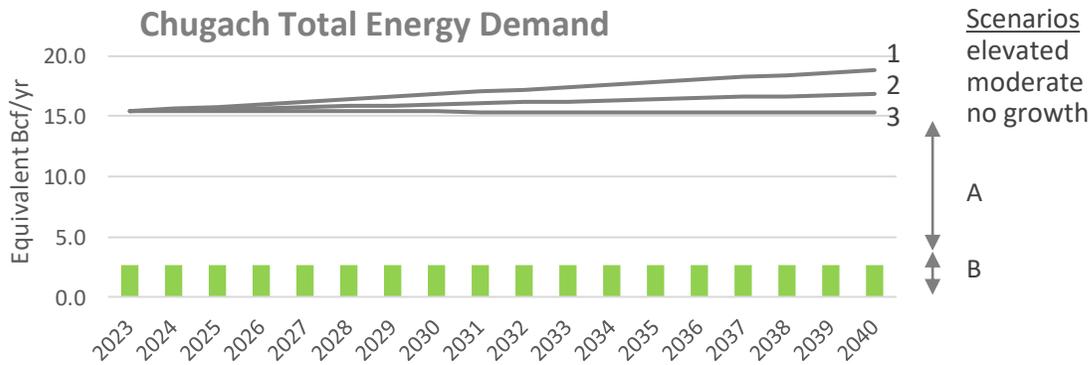
1 Elevated Growth
equivalent to 3.5 Bcf/y

2 Moderate Growth
equivalent to 1.5 Bcf/y

3 No Growth
equivalent to 0.0 Bcf/y

Conversion factors with existing CEA generating efficiency

1.0 Bcf = 130,208 MWh
100,000 MWh = 0.77 Bcf



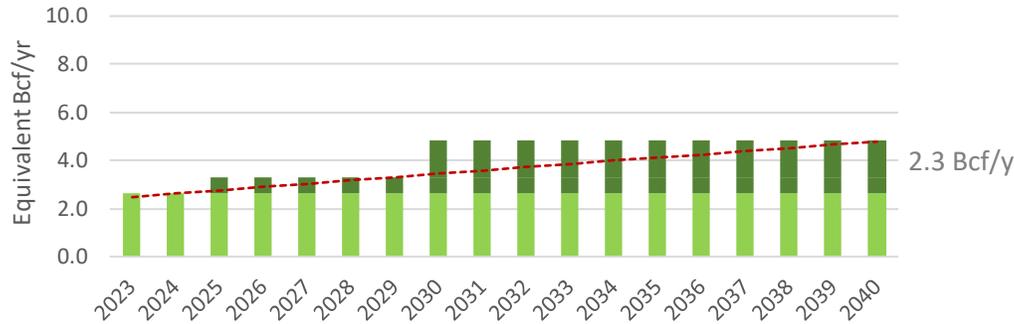
Total Energy Range Comparison
A – currently satisfied by thermal generation
B – current clean energy contribution

Chugach Clean Energy

- New clean energy projects + associated grid upgrades
- Current clean energy 15% hydro 2% wind equivalent to 2.5 Bcf/y
- - - 50% emission reduction goal by 2012-2040 equivalent to 6.4 Bcf/y

Chugach Clean Energy Uptake Scenarios

Meet 2040 Emissions Reduction Goal



1 Elevated Uptake
equivalent to 6.8 Bcf/y

2 Meet 2040 Emissions Reduction Goal
equivalent to 2.3 Bcf/y (remaining to reach goal)

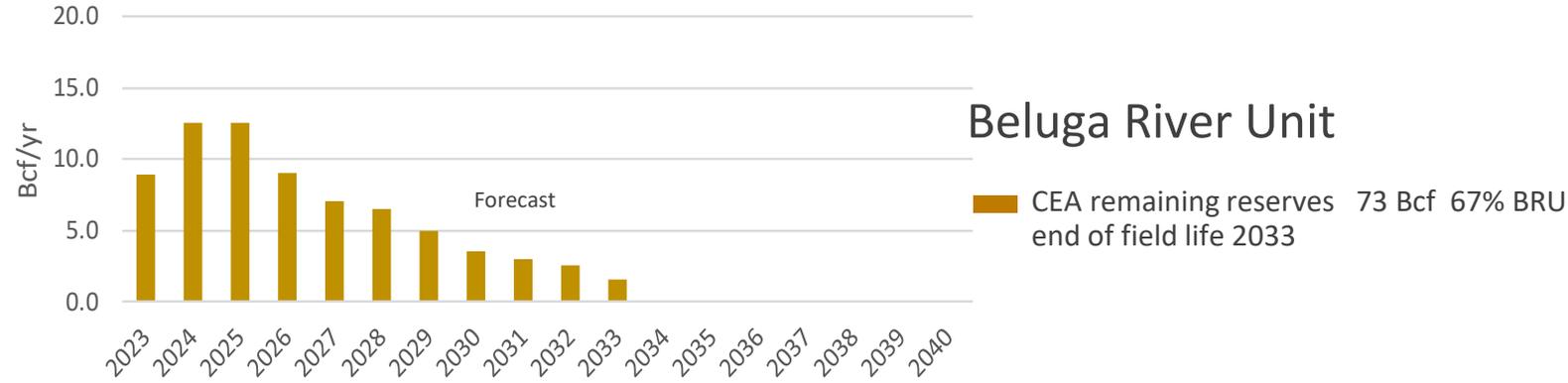
3 Meet 2025 Clean Energy Goal
equivalent to 0.8 Bcf/y

Chugach Clean Energy Uptake

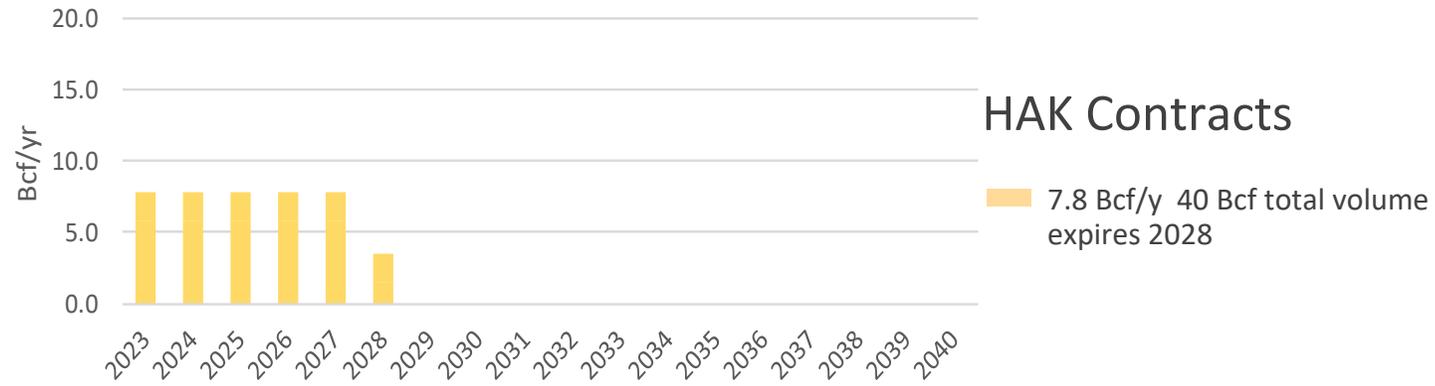


Clean Energy Uptake Range Comparison

Chugach Cook Inlet Gas Supply



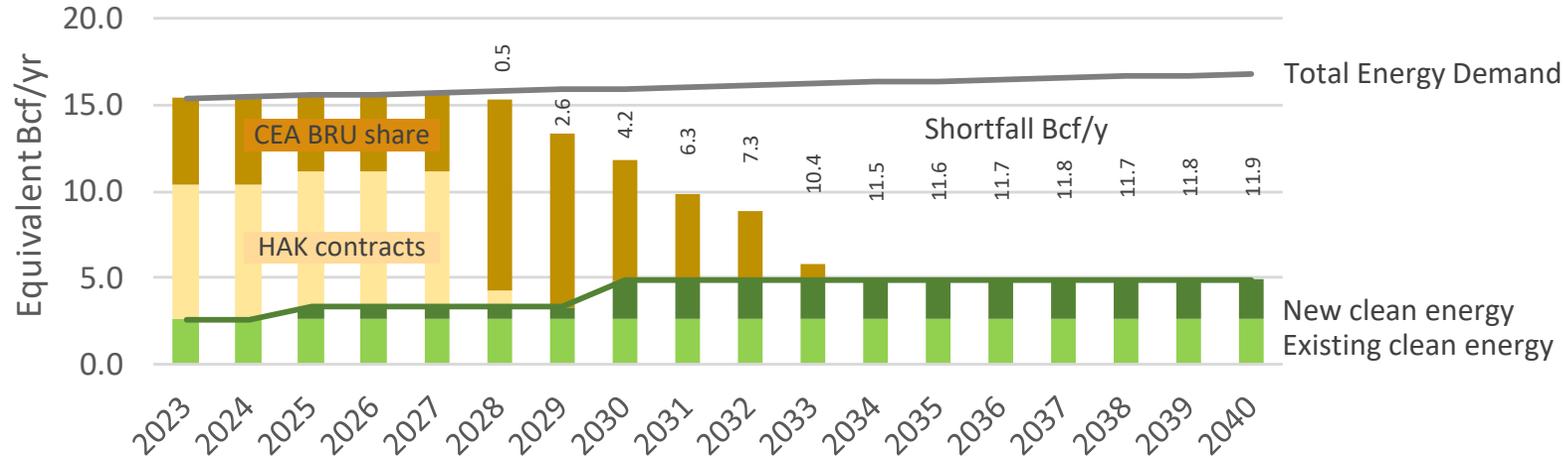
	<u>Bcf</u>
BRU share	73
HAK contracts	<u>40</u>
Total Remaining	113



Example Chugach Energy Planning

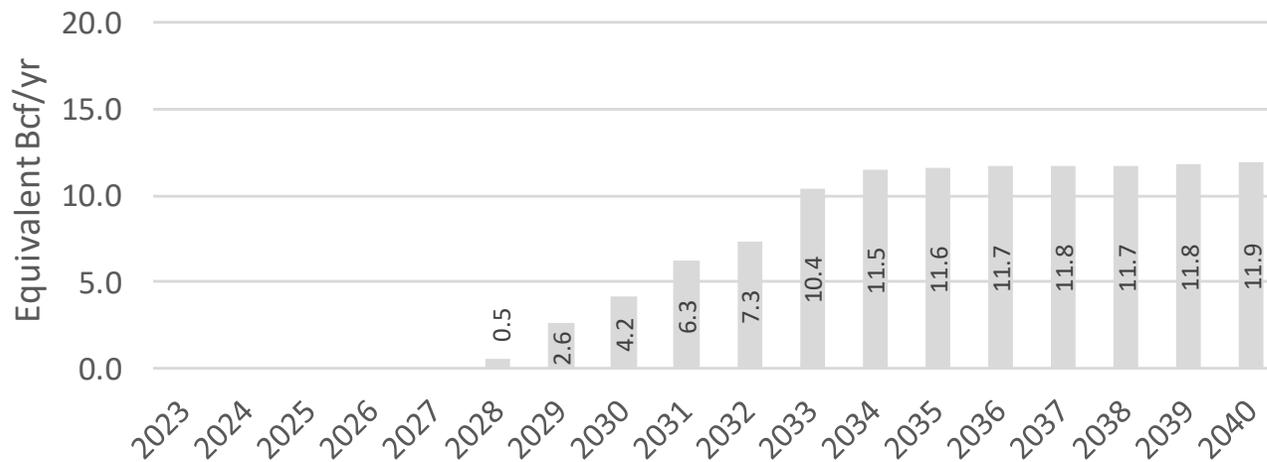
Moderate Electrification Growth Scenario

Meet 2040 Emission Reduction Goal



Chugach Energy Planning Example And Natural Gas Gap

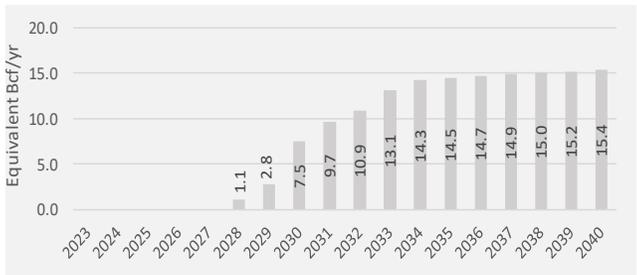
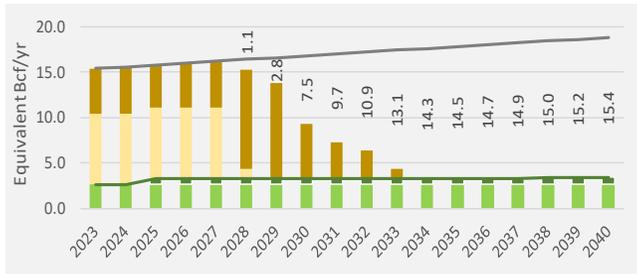
Example Chugach Natural Gas Gap



Range of Chugach Natural Gas Gaps

Large Gap Scenario

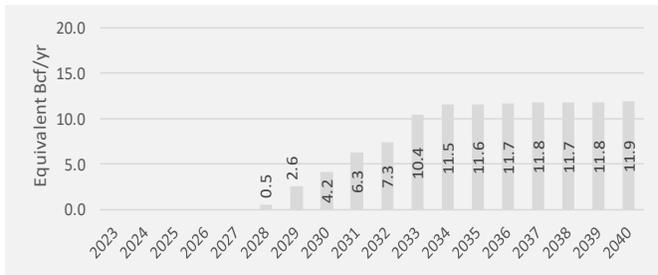
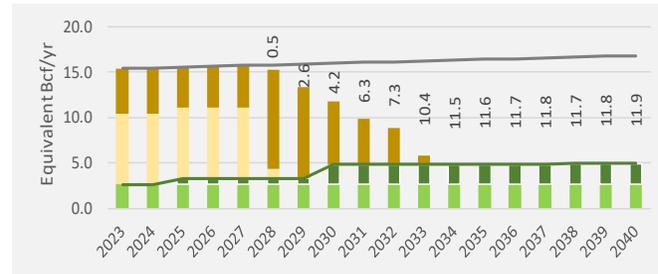
Elevated Electrification Growth
Minimum Clean Energy Uptake



▲
Gap Starts
2028

Middle Gap Scenario

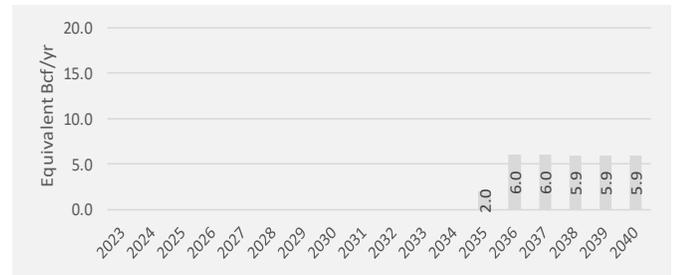
Moderate Electrification Growth
Meets Emissions Goal Clean Energy Uptake



▲
Gap Starts
2028

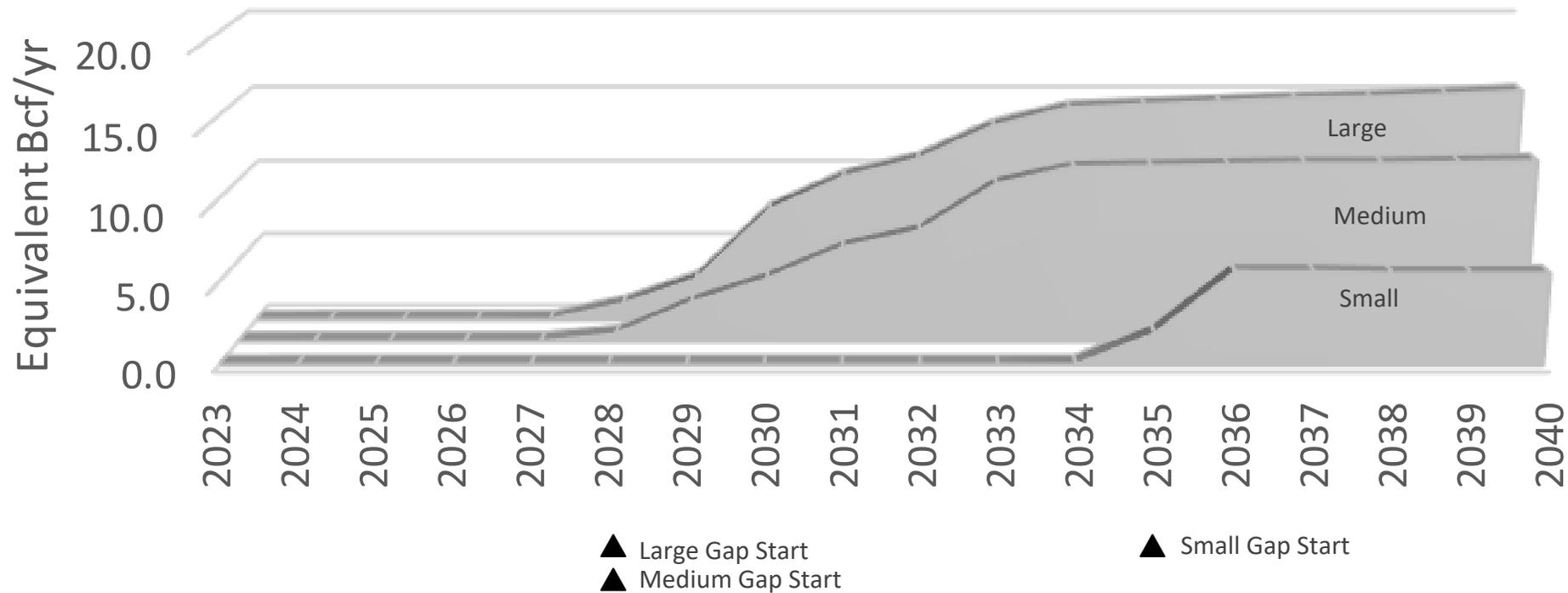
Small Gap Scenario

No Electrification Growth
Maximum Clean Energy Uptake



▲
Gap Starts
2035

Range of Chugach Natural Gas Gaps



Chugach Transition Energy Options

Option		Project Cost	Cost of Supply	Schedule to Place into Service	Risks to CEA	Status
Additional Cook Inlet Natural Gas Supply	Cook Inlet Onshore Conv Gas			Work in progress		
	Cook Inlet Offshore Conv Gas					
	Lower Cook Inlet Offshore Conv Gas					
North Slope Natural Gas	Alaska LNG Project (42" pipeline from North Slope to Nikiski)					
	Alaska LNG Project (Pipeline Accelerated)					
	Alaska in-state Pipeline (Bullet line, 24" to 36" pipeline)					
	LNG Trucking or Truck/Rail/Pipe					

Chugach Transition Energy Options

Options			Project Cost	Cost of Supply	Schedule to Place into Service	Risks to CEA	Status
Global LNG Import Facilities	Land-based LNG	Alaska LNG Project (Terminal Accelerated)			Work in progress		
		Grass Roots New Land-based Import Facility					
		Nikiski LNG Export Facility Retrofit to Import Facility					
	Floating Storage Regasification Unit (FSRU) Wheeling Option	Chartered FSRU					
		Retrofit FSRU					
		New Built FSRU					

Chugach Transition Energy Options

Options		Project Cost	Cost of Supply	Schedule to Place into Service	Risks to CEA	Status
Other Alternatives	Blue Hydrogen			Work in progress		
	Blue Ammonia					
	Compressed Natural gas (CNG)					
	Diesel					
	Coal Bed Methane					
	Coal					
	Arctic Fox Pipeline, 12" pipeline from North Slope to Fairbanks ⁽⁴⁾					

Key observations and Next Steps

- Clean energy, remaining Cook Inlet gas, and energy conservation alone can not resolve CEA's natural gas supply shortfall
- Study is in progress on the cost and economics of alternative supplies to meet CEA's remaining natural gas gap
- Economics and timing of joining a larger Railbelt solution will be investigated after CEA stand alone options are complete

Chugach Electric Association, Inc.
Anchorage, Alaska

Summary of Executive Session Topics for
Operations Committee Meeting on March 15, 2023
Agenda Item VI.

- A. Discussion regarding legal matters concerning Order U-22-010(12) issued by the Regulatory Commission of Alaska on March 3, 2023, regarding the investigation into the Power Pool Energy Exchange and Settlement Practices. (AS 10.25.175(c)(3))
- B. Discussion of financial matters related to natural gas supply. (AS 10.25.175(c)(1))
- C. Discussion regarding personnel matters concerning CEO evaluation. (AS 10.25.175(c)(4))