



CHUGACH ELECTRIC ASSOCIATION, INC.
ANCHORAGE, ALASKA

OPERATIONS COMMITTEE MEETING

AGENDA

Mark Wiggin, Chair
Harold Hollis, Vice Chair

Sisi Cooper, Director
Bettina Chastain, Director

February 8, 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. *December 7, 2022 (Cacy)*
- IV. PERSONS TO BE HEARD (4:15 p.m.)
 - A. *Member Comments*
- V. NEW BUSINESS (scheduled) (4:20 p.m.)
 - A. *Beluga River Unit Update (Armfield) (4:20 p.m.)*
 - B. *Gas Supply Update (Gerlek / White) (4:30 p.m.)*
 - C. *Grant Funding Update (D. Highers) (4:50 p.m.)*
- VI. EXECUTIVE SESSION* (scheduled) (5:20 p.m.)
 - A. *Cybersecurity (McCarty) (5:20 p.m.)*
 - B. *Substation Security (Freeman / Travis) (5:40 p.m.)*
 - C. *Personnel Matters – Board Vacancy (Board) (6:00 p.m.)*
- VII. NEW BUSINESS (none)
- VIII. DIRECTOR COMMENTS (6:45 p.m.)
- IX. ADJOURNMENT* (7:00 p.m.)

* *Denotes Action Items*

** *Denotes Possible Action Items*

2/3/2023 9:55:30 AM

CHUGACH ELECTRIC ASSOCIATION, INC.
Anchorage, Alaska

December 7, 2022
Wednesday
3:30 p.m.

OPERATIONS COMMITTEE MEETING

Recording Secretary: Sandra Cacy

I. CALL TO ORDER

Chair Wiggin called the Operations Committee meeting to order at 3:31 p.m. in the boardroom of Chugach Electric Association, Inc., 5601 Electron Drive, Anchorage, Alaska.

A. Roll Call

Committee Members Present:

Mark Wiggin, Chair
Harold Hollis, Vice Chair
Bettina Chastain, Director
Erin Whitney, Director (*via teleconference*)
Sisi Cooper, Director

Board Members Present:

Rachel Morse, Director (*via teleconference*)
Sam Cason, Director (*arrived during executive session, time was not noted*)

Guests and Staff Attendance

Present:

Arthur Miller	Kate Ayers	Dustin Highers
Sherri Highers	Andrew Laughlin	David Caye
Matthew Clarkson	Arden Quezon	Jean Kornmuller
Sean Skaling	Steve Gerlek,	Ron Vecera
Josh Resnick	Consultant	Bart Armfield,
Brian Meisner,	Andrew White	Consultant
Contractor		

Via Teleconference:

Antony Scott, Member	Julie Hasquet	Josh Travis
Shaina Kilcoyne, Member		

II. APPROVAL OF THE AGENDA

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

III. APPROVAL OF THE MINUTES

Director Hollis moved and Director Chastain seconded the motion to approve the November 15, 2022, Operations Committee Meeting minutes. The motion passed unanimously.

IV. PERSONS TO BE HEARD

- A. *Member Comments*
None.

V. NEW BUSINESS

None.

VI. EXECUTIVE SESSION

- A. *One Campus Plan (Resnick)*
- B. *Decarbonization Goal (Ayers/Skaling/D. Highers)*
- C. *Gas Supply Update (White/Armfield/Gerlek)*

At 3:40 p.m., Director Cooper moved and Director Hollis seconded the motion that pursuant to Alaska Statute 10.25.175(c)(1) the Operations Committee go into executive session to discuss and receive reports regarding financial matters, the immediate knowledge of which would clearly have an adverse effect on the finances of the cooperative. The motion passed unanimously.

Director Cason joined the meeting and time was not noted.

The meeting reconvened in open session at 5:21 p.m.

VII. NEW BUSINESS

None.

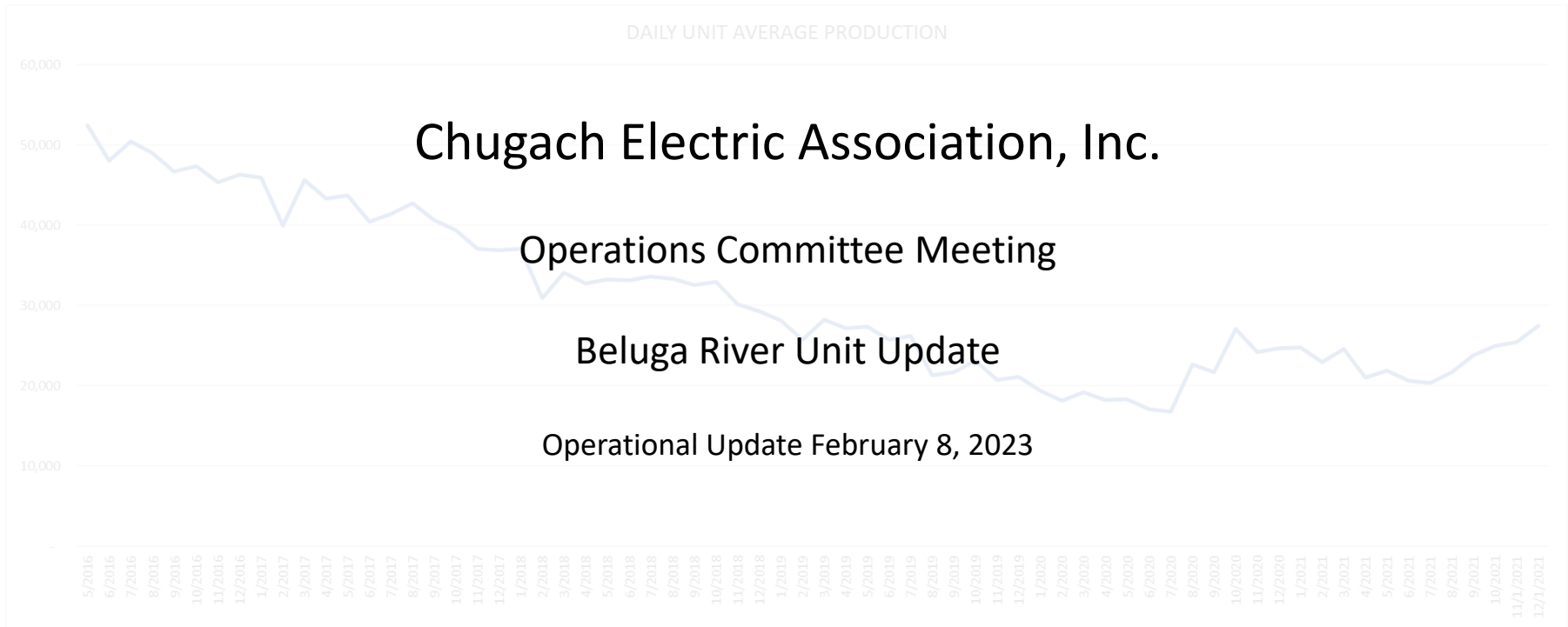
VIII. DIRECTOR COMMENTS

Comments were made at this time.

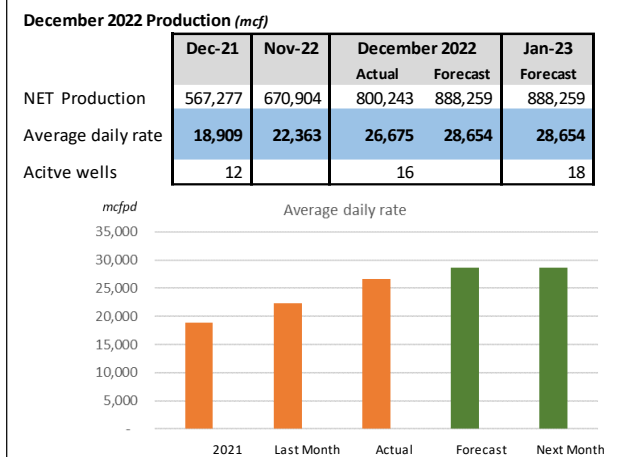
IX. ADJOURNMENT

At 5:26 p.m., Director Chastain moved and Director Hollis seconded the motion to adjourn. The motion passed unanimously.

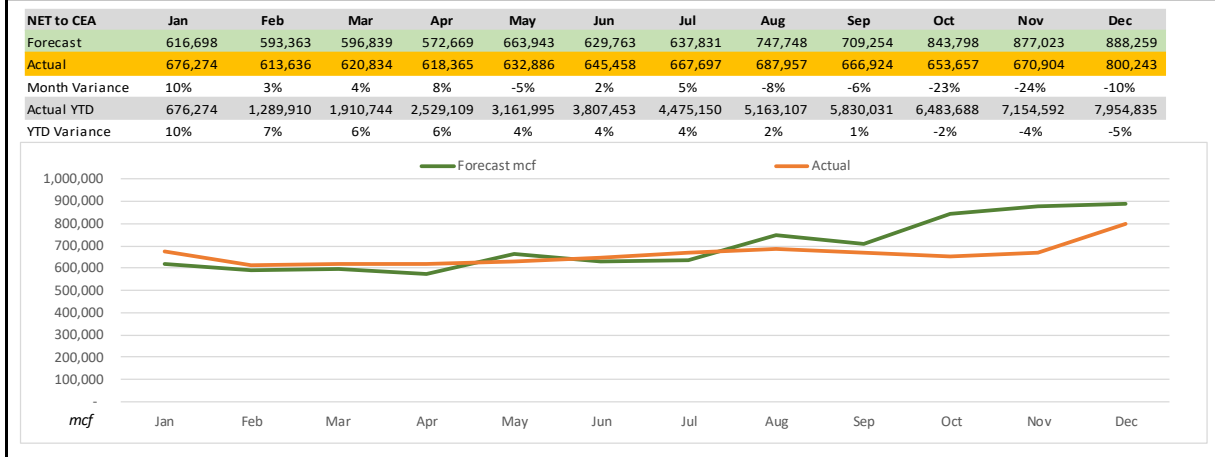
Beluga River Unit Operational Update



Production - NET to Chugach



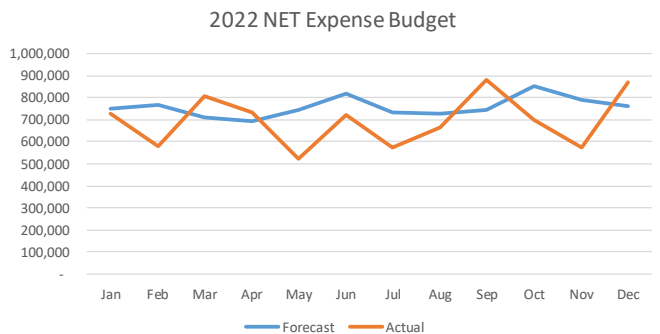
Production Forecast to Actual - NET to Chugach



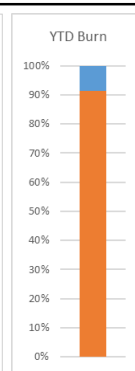
NET YTD Production (mcf) **7,954,835**

Budget Performance

BRU OPEX (Net CEA) *				
	Forecast	Actual	YTD Cum Delta	Variance
Jan	751,233	725,585	(25,648)	-3%
Feb	769,574	577,401	(217,821)	-14%
Mar	711,365	805,069	(124,117)	-6%
Apr	695,689	735,286	(84,520)	-3%
May	745,233	522,688	(307,065)	-8%
Jun	820,256	720,582	(406,739)	-9%
Jul	735,355	573,567	(568,527)	-11%
Aug	724,369	663,695	(629,201)	-11%
Sep	741,963	882,428	(488,736)	-7%
Oct	852,147	699,281	(641,602)	-9%
Nov	789,321	571,414	(859,509)	-10%
Dec	761,349	871,866	(748,992)	-8%
Total	9,097,854	8,348,862		



* does not include taxes and royalty



CAPEX Commitment

NET to Chugach	
Total CAPEX Budget	\$ 26,536,588
CAPEX Spend to Date	\$ 24,463,340
Balance Remaining	\$ 2,073,248

BRU - Gas Transfer Price	
Field Ops	2.57
ARO Surcharge	0.52
Capital Recovery	1.41
GTP / mcf	\$ 4.50

GTP effective 10/1/22

Activity Highlights

- Production YTD at 5% below 2022 forecast estimate
- Q4 production was delayed by equipment availability of control valves
- BRU 241-34T F-pad continues to perform at ~ 6.0 MMPD best well in field
- Production increase expected to continue into 2023 (9.0 billion net target)
- Peak field day rate of 41,691 mcf during December (27,795 net to Chugach)
- Drilled and completed 4 new wells in 2022
- O&M costs remain below budget forecast (-10%)
- Year end exit rate target 25,201 mcfpd net to Chugach
- Actual Year End rate of 26,479 mcfpd net to Chugach
- Effective 2022 savings of \$ 30,269,674

Production

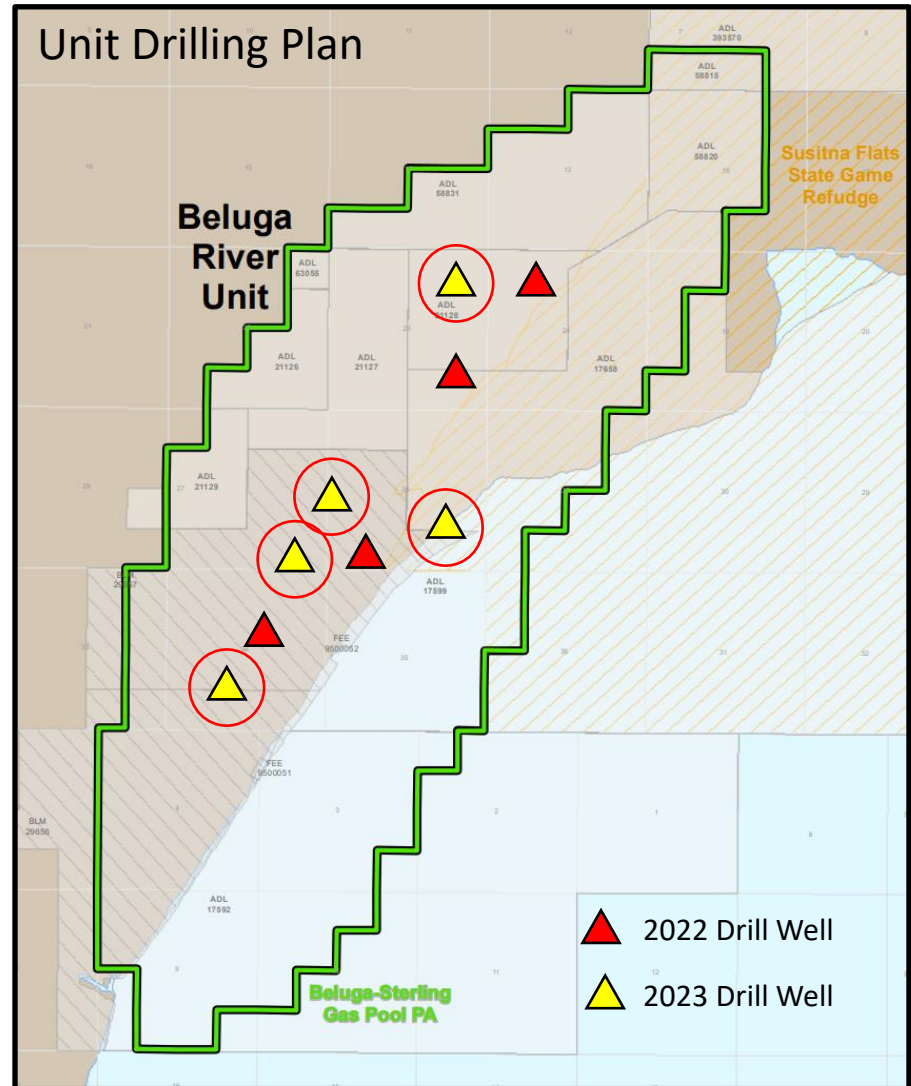
- Current rate ~ 40 mmcfpd
- Forecast to peak at 49 mmcfpd
- Projected exit rate 2023 of 47.6 mmcfpd
- Chugach net production ~10 bcf 2023

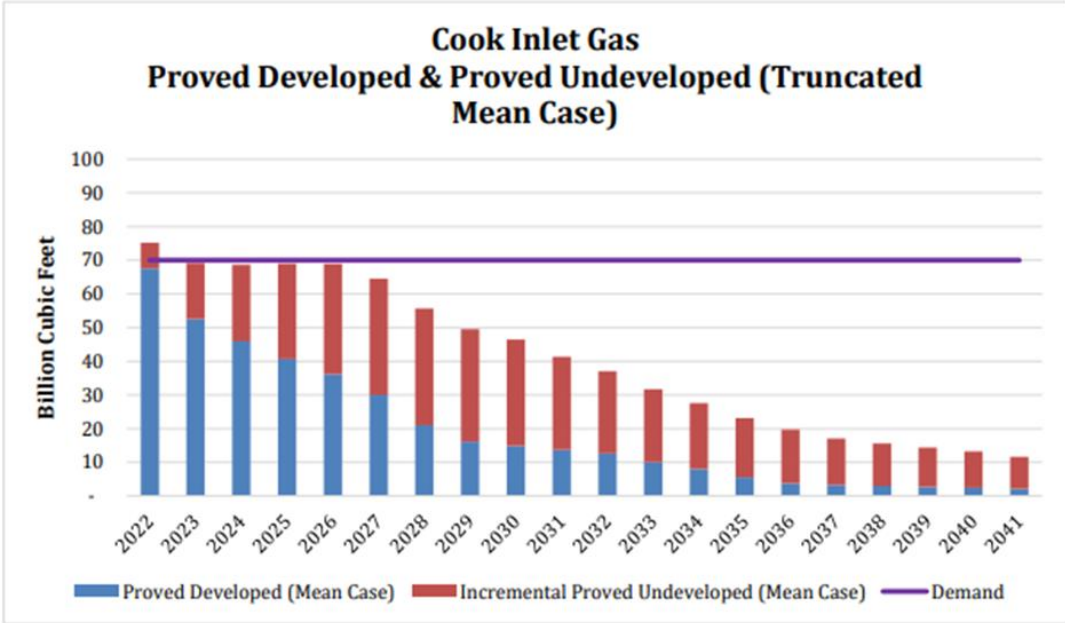
Drilling

- 5 New Drill Wells in 2023
- Drilling planned in July
- Target Sterling/Beluga formations
- Continue to refine Tyonek potential
- Multiple workover planned

Operations

- Install support infrastructure new drilling
- Enhance compression capacity at K-pad
- Expand BRU/BPP sharing options





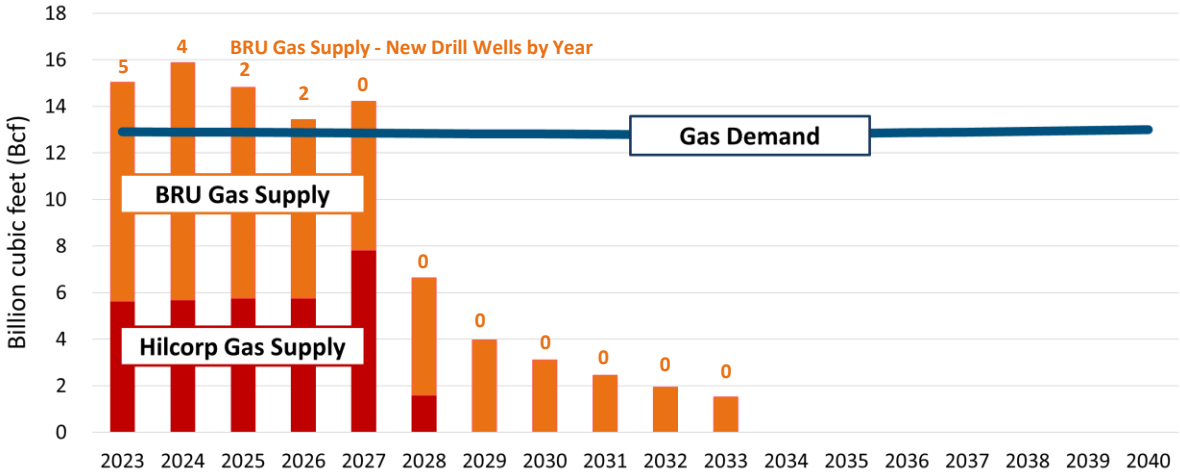
Department of Natural Resources Division of Oil and Gas

2022 Cook Inlet Gas Forecast

- 820 bcf of remaining reserves
- Estimated 70 bcf annual demand
- Expected shortfall 2027
- Significant decline into next decade

Source: 2022 Cook Inlet Gas Forecast - DNR
 Note: Incremental Proved Undeveloped (Mean Case) forecast assumes 15 successful new wells per year; New well production assumes 50% probability (P50)

Chugach Cook Inlet Gas Supply Forecast



Chugach BRU Internal Forecast

Contract & Production Supply

- 109 bcf remaining reserves (gross)
- Estimated 13.8 bcf annual demand
- Expected shortfall 2028
- HAK contract expires 3/31/2028

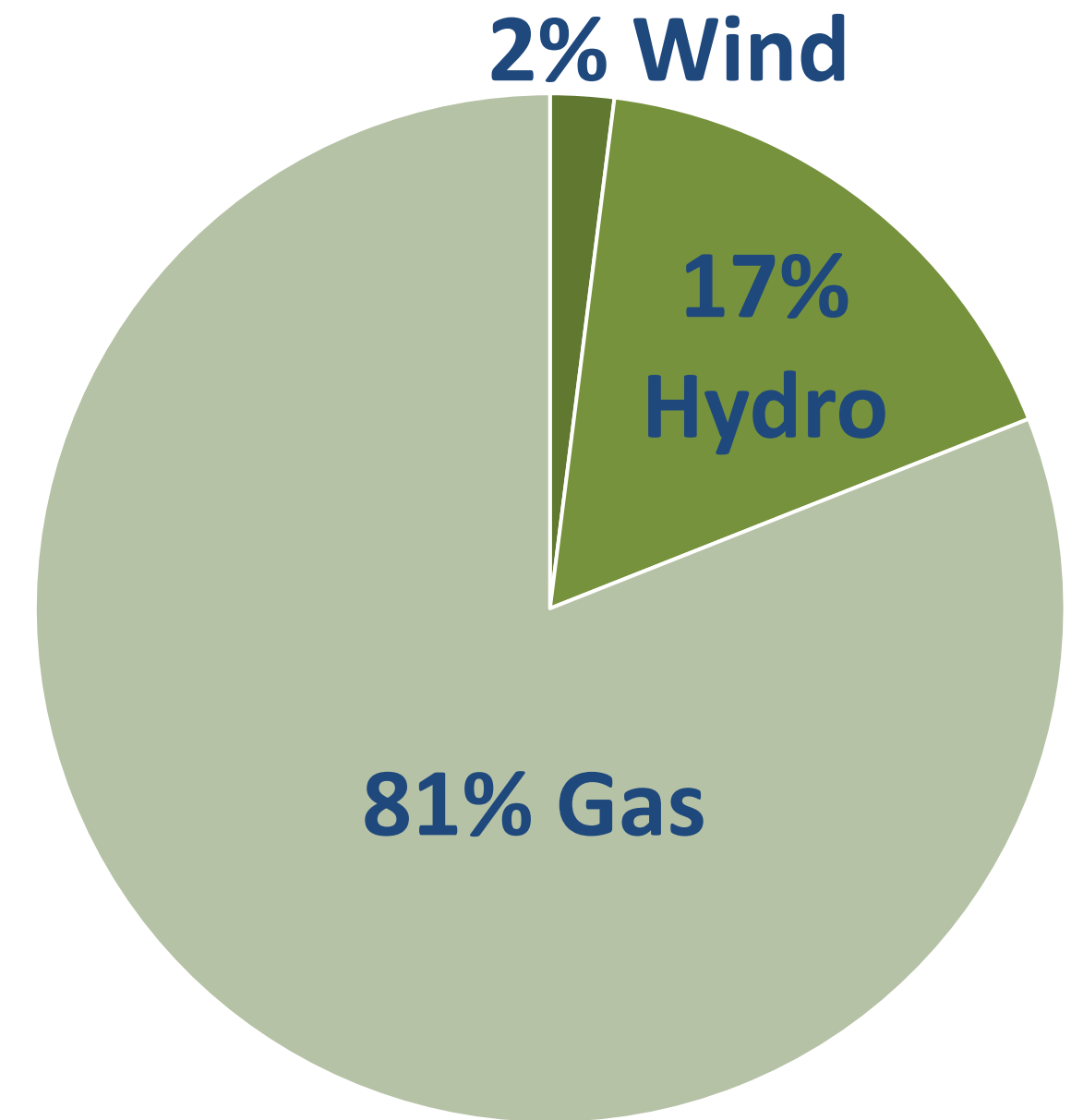


**CHUGACH**

***Gas Strategy Update
Operations Committee***

Chugach by the Numbers

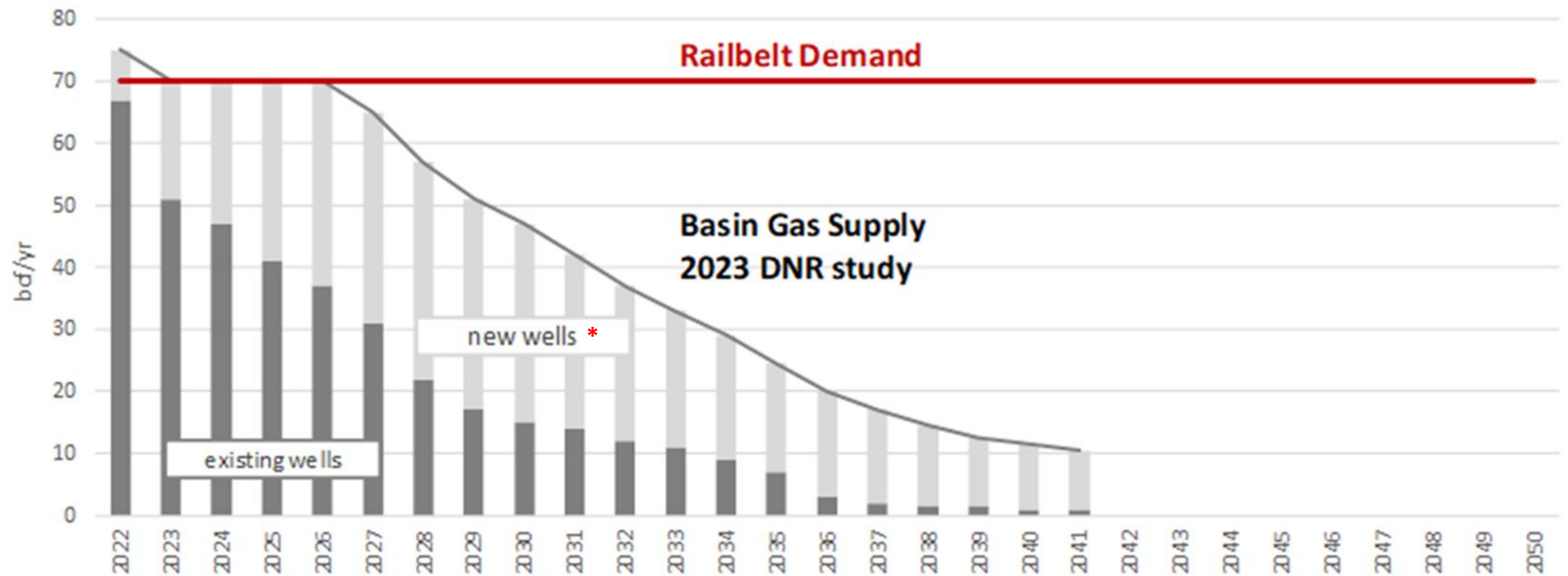
- ▶ **Gas fired (thermal) generation is primary source of firm power for members**
- ▶ **Cook Inlet production provides 100% of gas requirements for thermal generation**



**Generation Source
by kWh (2022)**

DNR Report

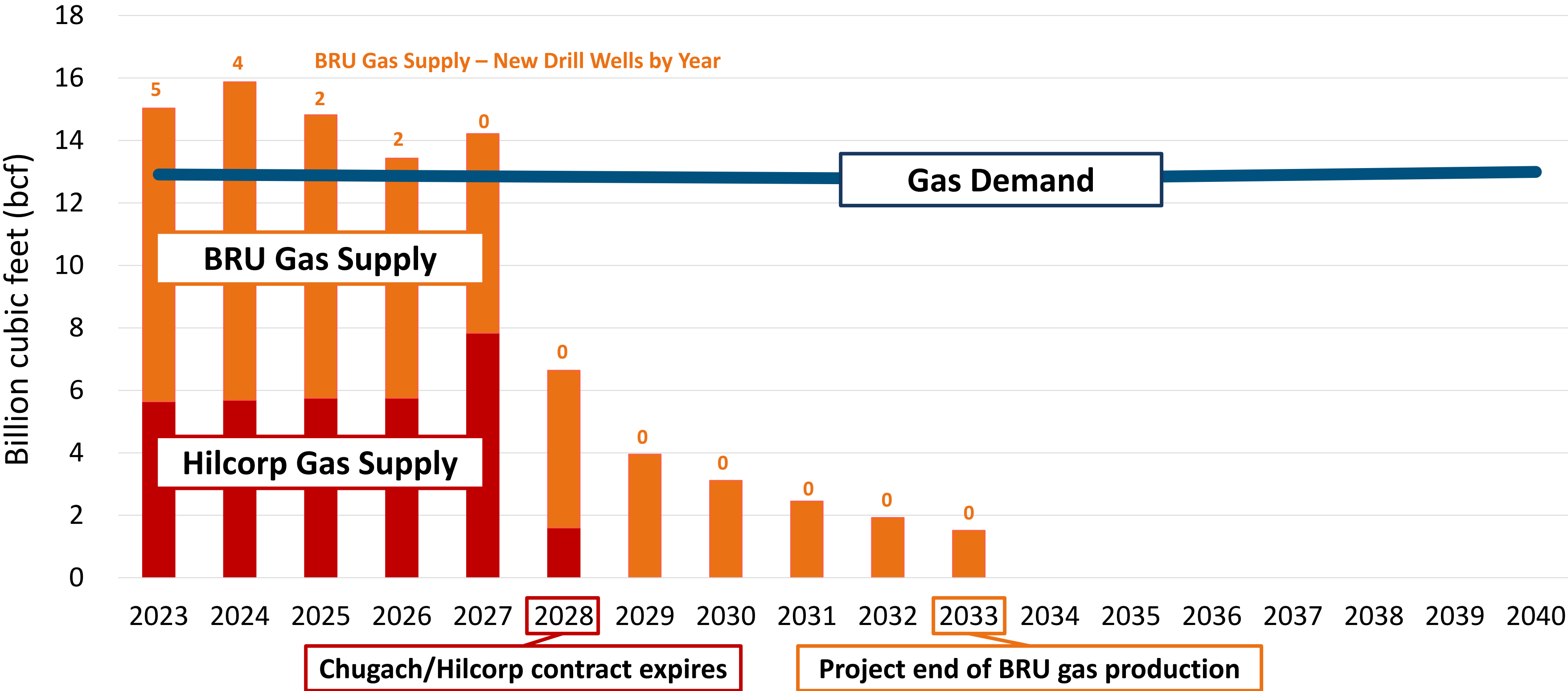
Cook Inlet gas begins running out in four years



Forecast proved developed & proved undeveloped (truncated mean case)

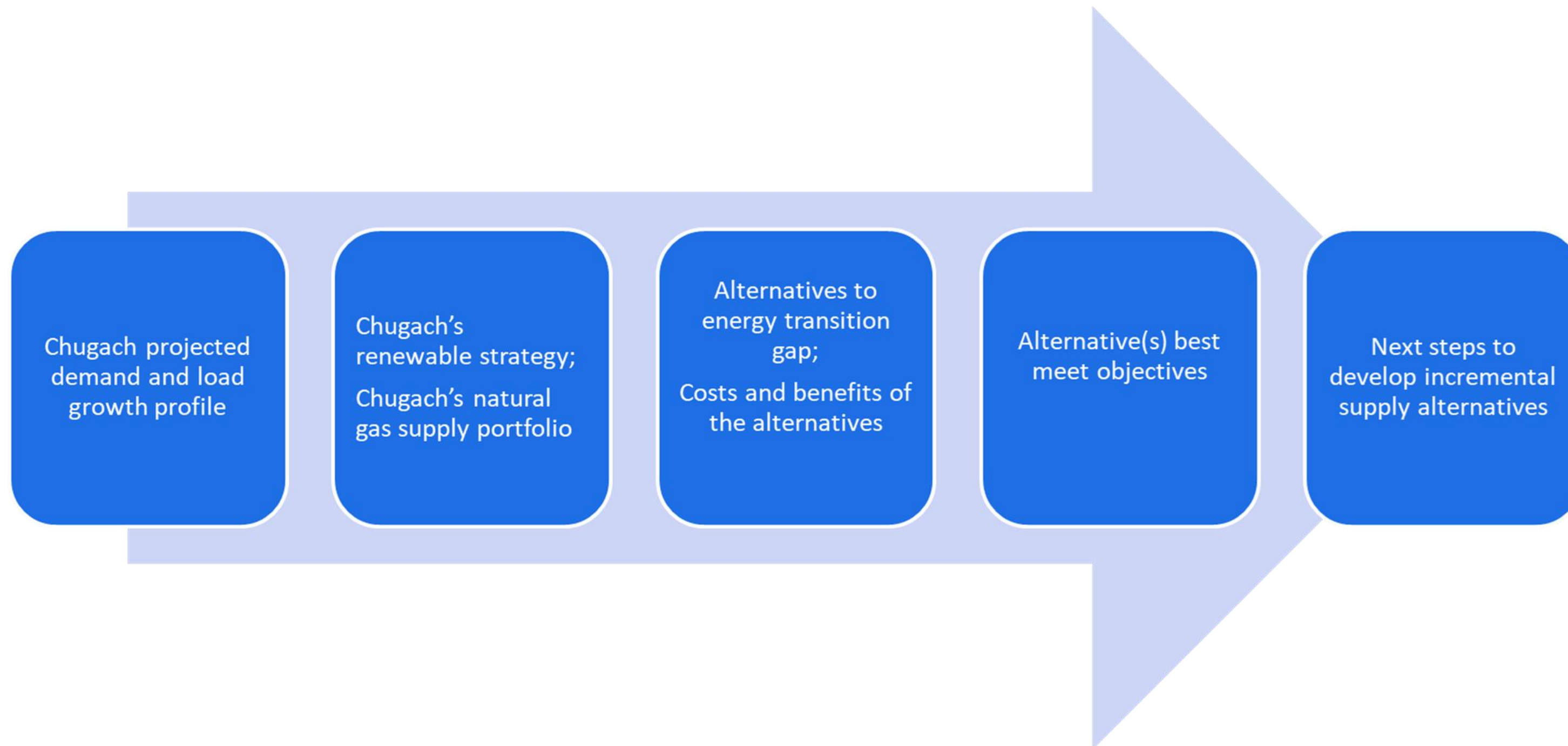
* Forecast assumes 15 successful new wells per year; New well production assumes 50% probability (P50).

Chugach Gas Forecast



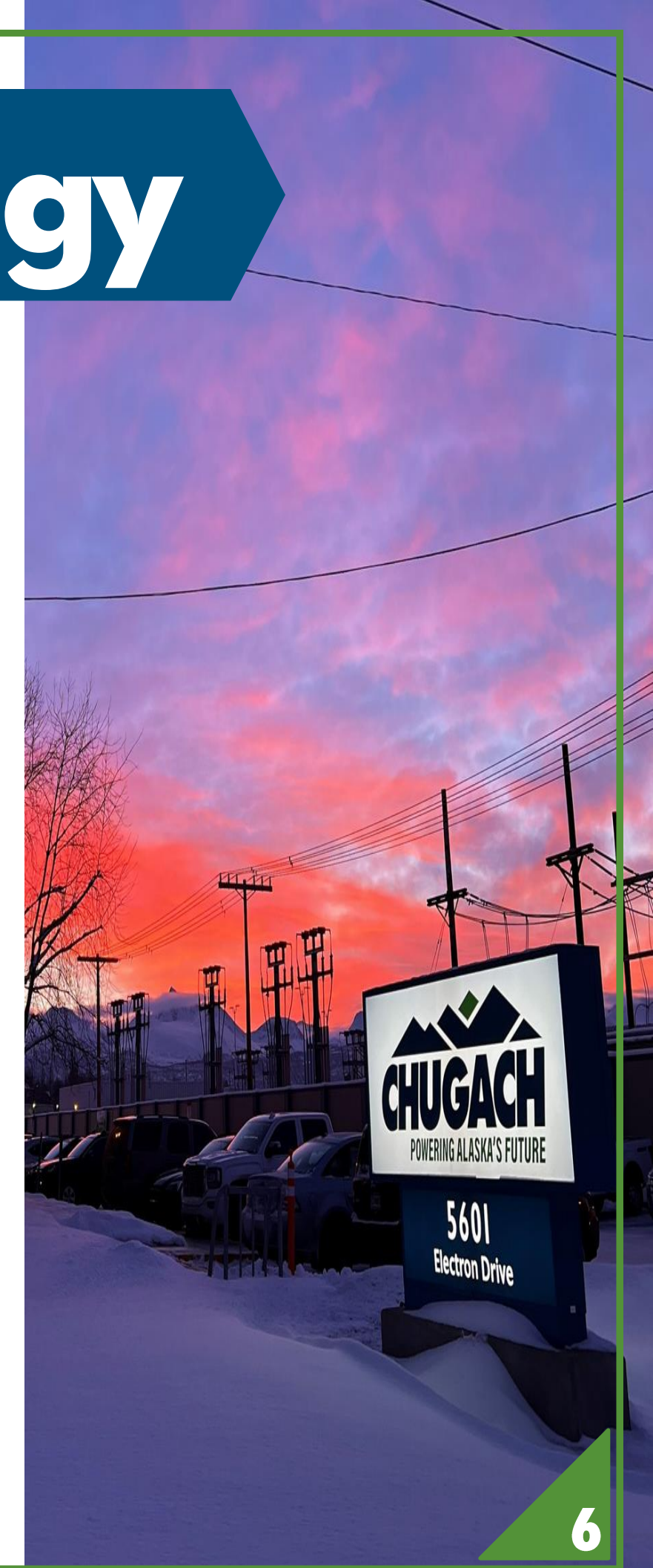
Study Approach/Methodology

► Hired Black & Veatch



Study Approach/Methodology

	Options	Schedule	Risks	
Additional Regional natural gas supply	Cook Inlet onshore conv gas		Resource constraint; Outside of Chugach control	Yellow
	Cook Inlet offshore conv gas			Yellow
	Lower Cook Inlet offshore conv gas			White
North Slope natural gas	Alaska LNG Project	4 to 10 Years	Outside of Chugach control	Yellow
	Alaska in-state Pipeline (Bullet Line)	6 to 8 Years	Outside of Chugach control	Yellow
	LNG trucking or truck/rail/pipe	2-5 years		Yellow
LNG Global ⁽¹⁾ Imports	Existing Kenai infrastructure	2-5 years	Outside of Chugach control	Yellow
	New built FSRU	2-5 years		Green
	Land-based LNG	3-5 years		Green
Other fuel substitute	Blue hydrogen	3-5 years	Requires pipeline transportation	Red
	Blue ammonia	3-5 years		Yellow
	CNG	18 -24 months	Difficult to scale	Yellow



Questions



CHUGACH ELECTRIC ASSOCIATION

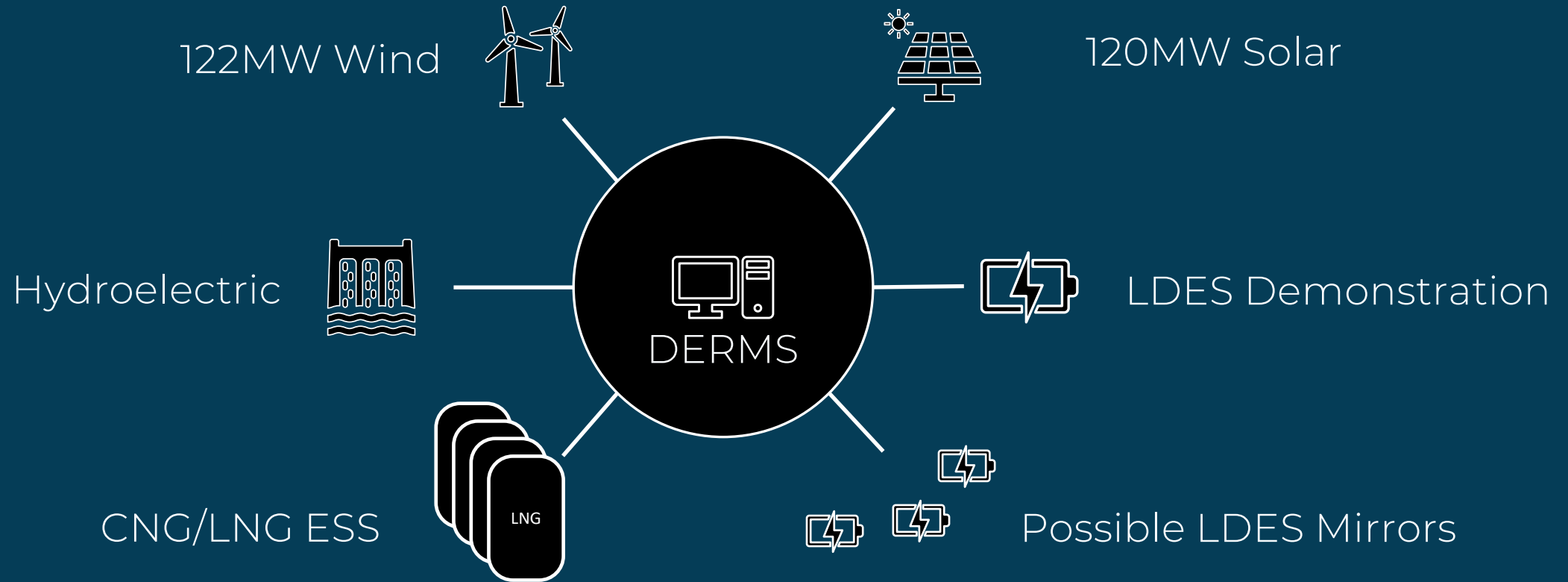
DECARBONIZATION PROGRAM GRANTS OVERVIEW

OPERATIONS COMMITTEE MEETING
FEBRUARY 8, 2023



CHUGACH

RENEWABLE ENERGY SYSTEMS PROGRAM





Grid Services & Reliability
Demonstration


Long Duration Energy
Storage Demonstrations

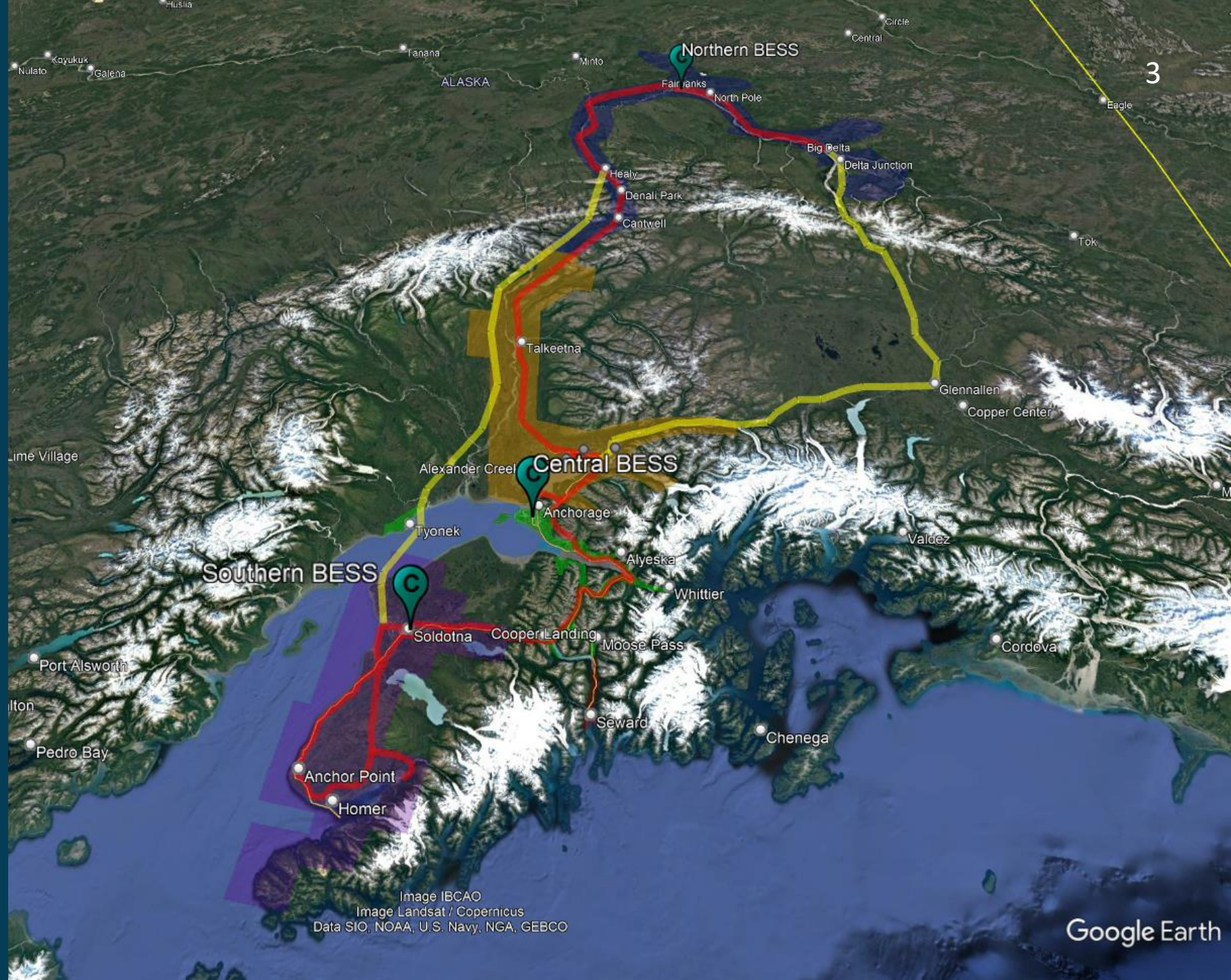
Lab Call for Long
Duration Energy Storage

GRID RESILIENCE & INNOVATIVE PARTNERSHIPS GRANT

 Topic 1 – Grid Resiliency
Railbelt Backbone Reconstruction

 Topic 2 – SmartGrid
BESS/HVDC Controls

 Topic 3 – New & Innovative
Railbelt Innovative Resiliency



GRANTS SUMMARY

AWARDED

- URBAN SUSTAINABILITY DIRECTORS NETWORK: BENEFICIAL ELECTRIFICATION AND ENERGY STAR® INCENTIVE PROGRAM

CURRENT

- FOA-2745: GRID SERVICES & RELIABILITY DEMONSTRATION
- FOA-2867: LONG DURATION ENERGY STORAGE DEMONSTRATION
- L001: LAB CALL FOR LONG DURATION ENERGY STORAGE (UTILITY PARTNER WITH SANDIA NATIONAL LABORATORIES)
- FOA-2740: GRID RESILIENCE & INNOVATION PARTNERSHIP (TOPICS 1, 2 & 3)

PROSPECTIVE / WATCH LIST

- FOA-2841: ENERGY IMPROVEMENTS IN RURAL OR REMOTE AREAS
- IIJA SECTIONS 40332, 40333: HYDROELECTRIC INCENTIVE PROGRAMS
- NATIONAL RENEWABLE ENERGY LABORATORIES (NREL) LAB CALL FOR LONG DURATION ENERGY STORAGE
- IIJA SECTION 40555: TRANSFORMER REPLACEMENTS
- 49 U.S.C. 5339(c): LOW-NO PROGRAM

Chugach Electric Association, Inc.
Anchorage, Alaska

Summary of Executive Session Topics

- A. Cybersecurity – discussion regarding current cybersecurity practices. (AS 10.25.175(c)(1) and (3)). Public disclosure of Chugach’s cybersecurity practices could expose Chugach to cyberthreats and cyberattacks that could not only jeopardize utility reliability, but also result in significant legal and financial consequences for Chugach.
- B. Substation security – discussion regarding current physical security standards and preventive measures. (AS 10.25.175(c)(1) and (3)). Public disclosure of Chugach’s substation security practices could expose Chugach to substation threats and attacks that could not only jeopardize utility reliability, but also result in significant legal and financial consequences for Chugach.
- C. Personnel matters (AS 10.25.175(c)(4))