ALASKA ENERGY AUTHORITY

Alaska EV Working Group

Quarterly Meeting
July 30, 2026



ALASKA ENERGY AUTHORITY

50 YEARS OF SERVICE

Agenda

Introductions

Presentation – Can batteries power electric cars in Alaska?

- ***Venkat Srinivasan,*** *LENS Consortium*

Presentation – AK Clean Cities Coalition and Lithium Battery Shipping

- ***Tim Leach,*** *Launch Alaska*

Presentation – AK Rural Energy Development DC Fast Charging

- ***Kris Hall,*** *ReCharge Alaska*

Program Update

- ***Quinlan Harris,*** *Alaska Energy Authority*

Around the Room Updates

- ***All***

Venkat Srinivasan



JULY 2026

CAN BATTERIES POWER ELECTRIC CARS IN ALASKA WINTERS?

VENKAT SRINIVASAN
Director, Low-cost Earth-abundant Na-ion Storage (LENS) Consortium
Argonne National Lab

U.S. DEPARTMENT OF ENERGY

Argonne NATIONAL LABORATORY · BERKELEY LAB · Brookhaven National Laboratory · Pacific Northwest NATIONAL LABORATORY · Sandia National Laboratories · SLAC NATIONAL ACCELERATOR LABORATORY

FSU | FLORIDA STATE UNIVERSITY · UNIVERSITY OF HOUSTON · UIC · UNIVERSITY OF MARYLAND · THE UNIVERSITY OF RHODE ISLAND · UC San Diego · VIRGINIA TECH · WISCONSIN UNIVERSITY OF WISCONSIN-MADISON

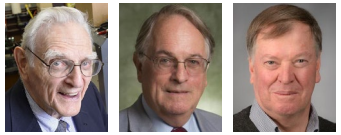
LENS
LOW-COST EARTH-ABUNDANT NA-ION STORAGE CONSORTIUM

Storage penetration has increased in the past decade

1975-1983

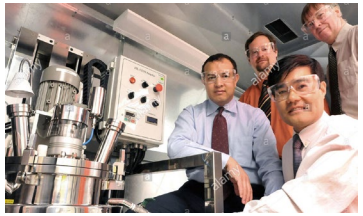
Pioneering research

Goodenough
Whittingham
Thackery



2000

Argonne's nickel-manganese-cobalt cathode



2007

Starting with personal devices



2010

- **60 MWh grid storage**
- **12,500 US EVs**



2012

2024

- **80,000 MWh grid storage**
- **4M US EVs**



2025

Now energy storage is ubiquitous in our lives





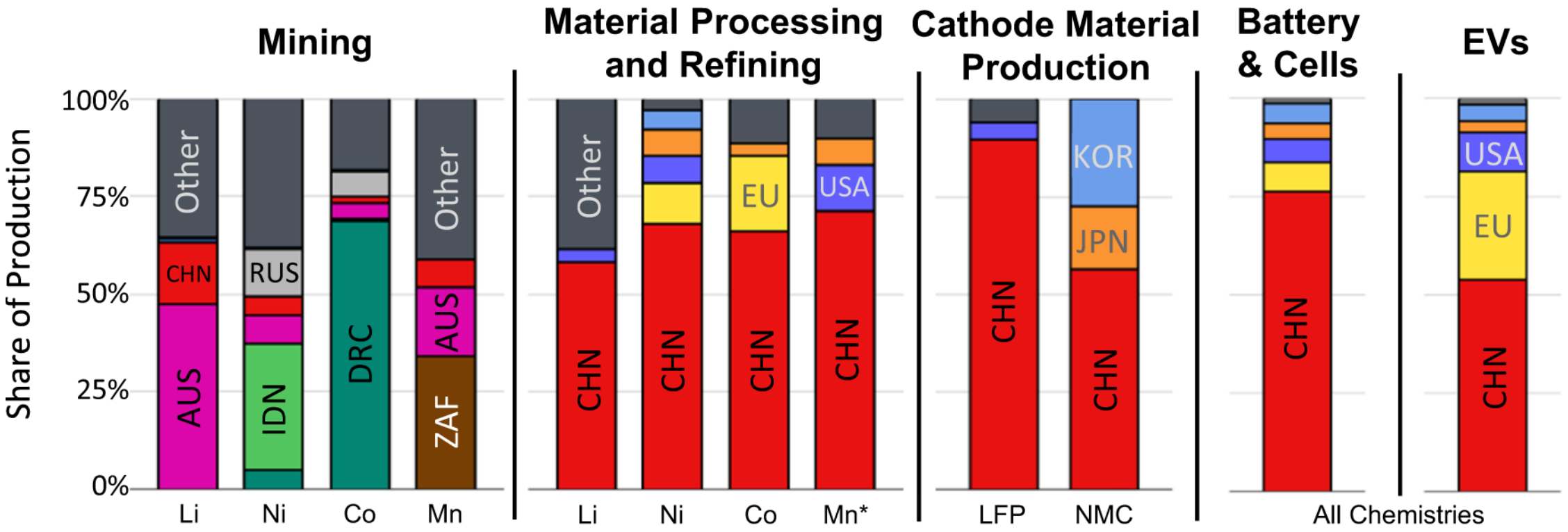




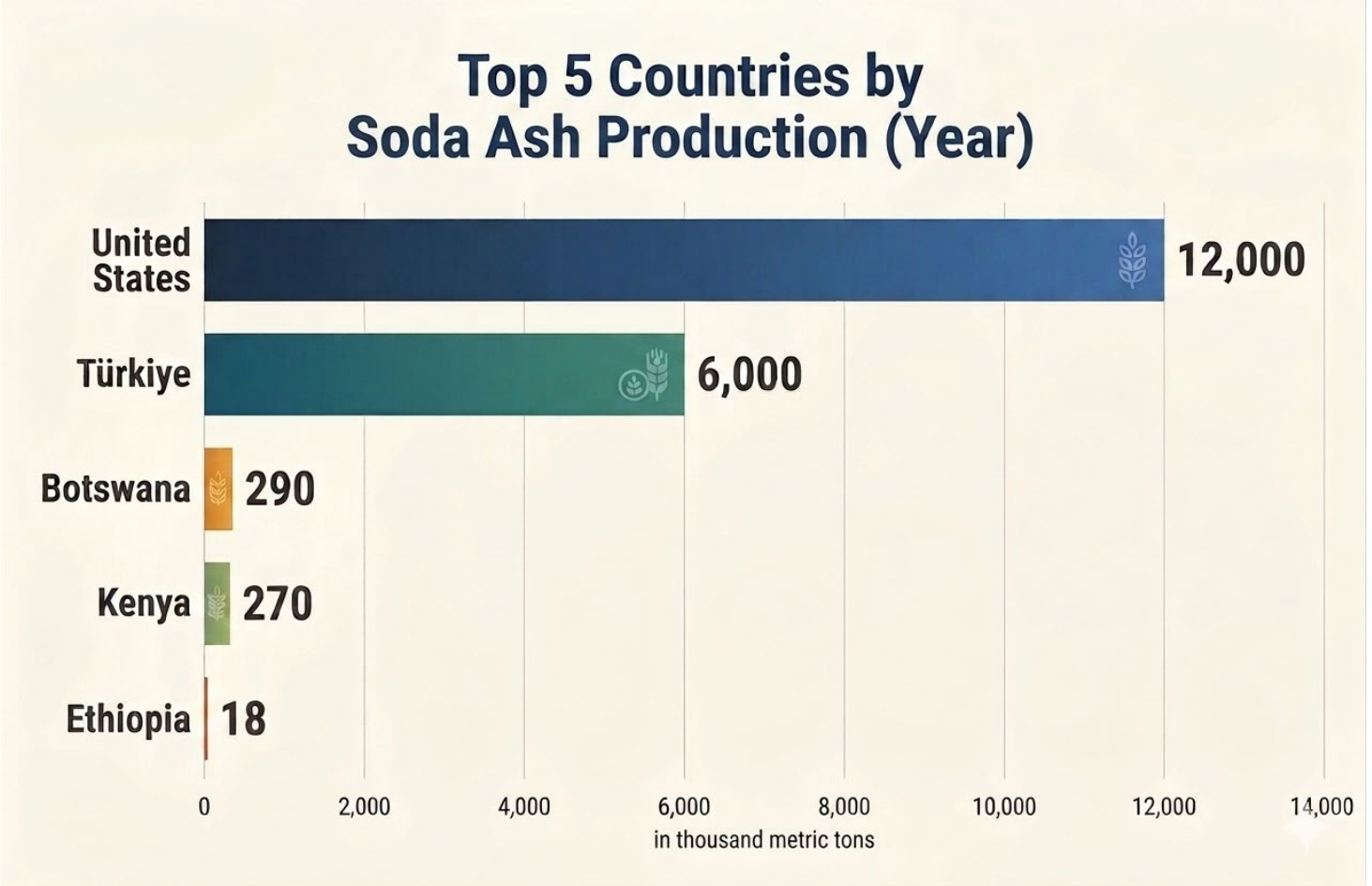
We need different battery technologies for different applications

Catch: PRC controls lithium battery supply chain and is doubling down

Challenge for both NMC and LFP cathodes

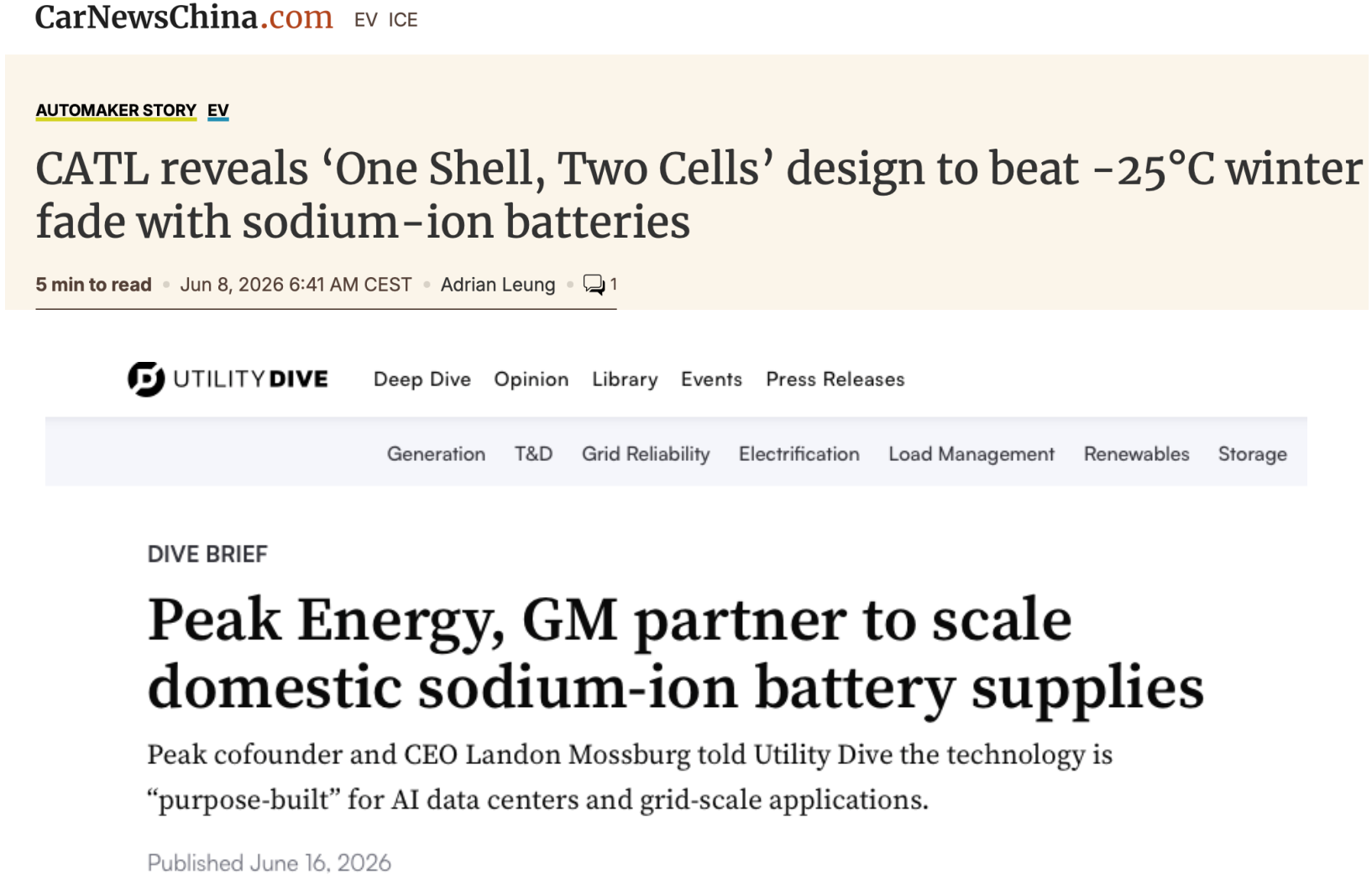


Sodium batteries are a strategic opportunity for the US



- No cobalt, copper, and graphite. Low/no Ni.

Two areas where sodium is getting traction right now



CarNewsChina.com EV ICE

AUTOMAKER STORY EV

CATL reveals ‘One Shell, Two Cells’ design to beat -25°C winter fade with sodium-ion batteries

5 min to read • Jun 8, 2026 6:41 AM CEST • Adrian Leung • 1

UTILITY DIVE Deep Dive Opinion Library Events Press Releases

Generation T&D Grid Reliability Electrification Load Management Renewables Storage

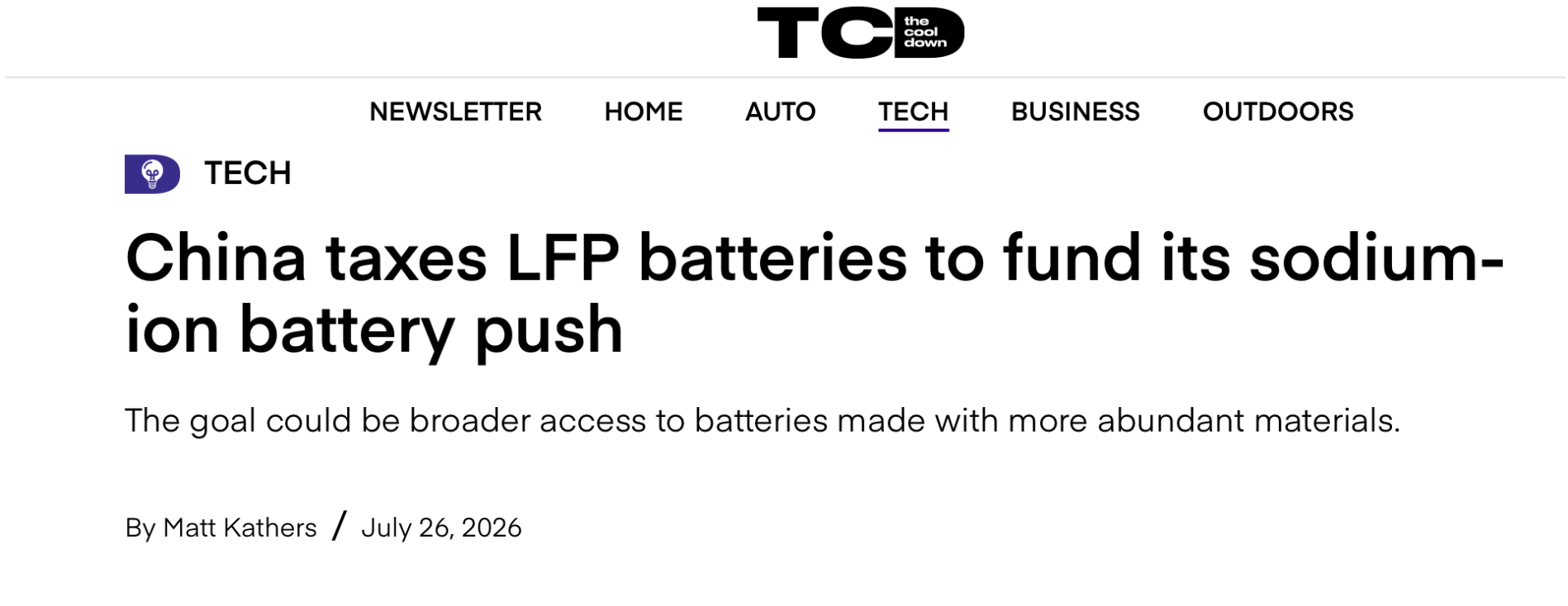
DIVE BRIEF

Peak Energy, GM partner to scale domestic sodium-ion battery supplies

Peak cofounder and CEO Landon Mossburg told Utility Dive the technology is “purpose-built” for AI data centers and grid-scale applications.

Published June 16, 2026

China is already pushing on sodium batteries



TCD the cool down

NEWSLETTER HOME AUTO TECH BUSINESS OUTDOORS

TECH

China taxes LFP batteries to fund its sodium-ion battery push

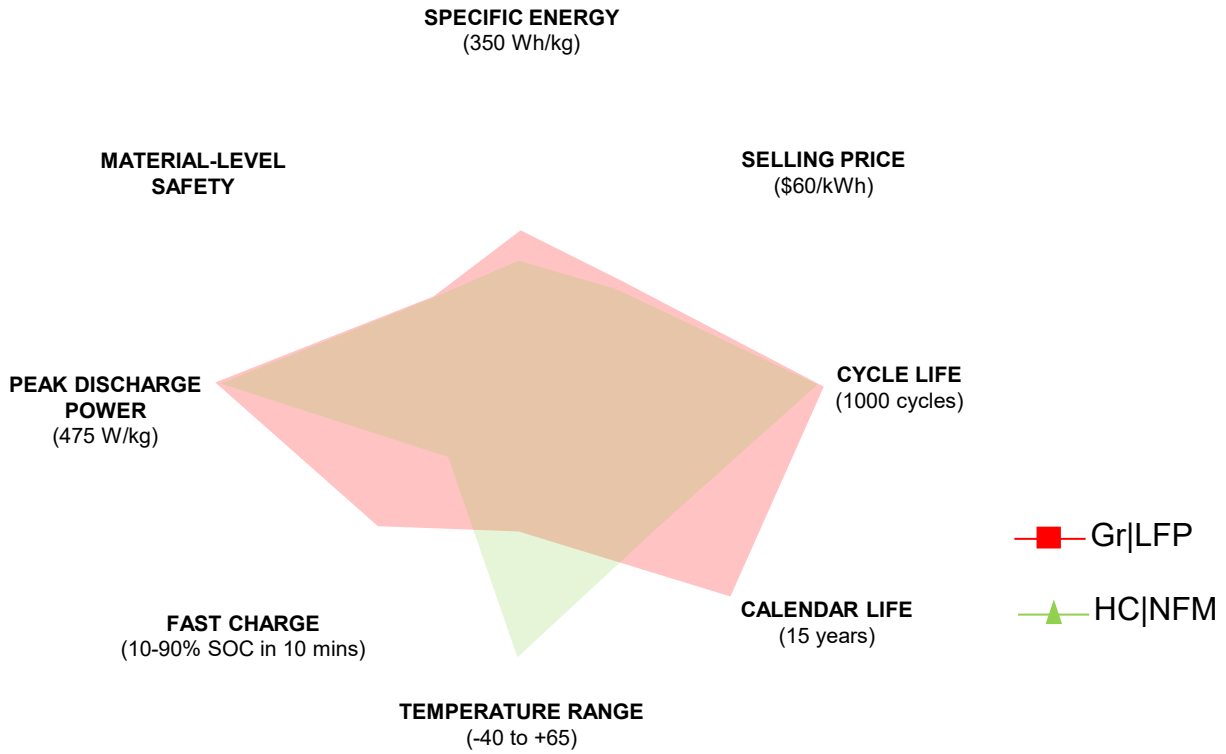
The goal could be broader access to batteries made with more abundant materials.

By Matt Kathers / July 26, 2026

U.S. DEPARTMENT OF ENERGY

LENS LOW-COST EARTH-ABUNDANT NA-ION STORAGE CONSORTIUM

But there are challenges for sodium. Energy density being the primary



Low-cost Earth-abundant Na-ion Storage (LENS) Consortium

Flagship US program to develop sodium batteries

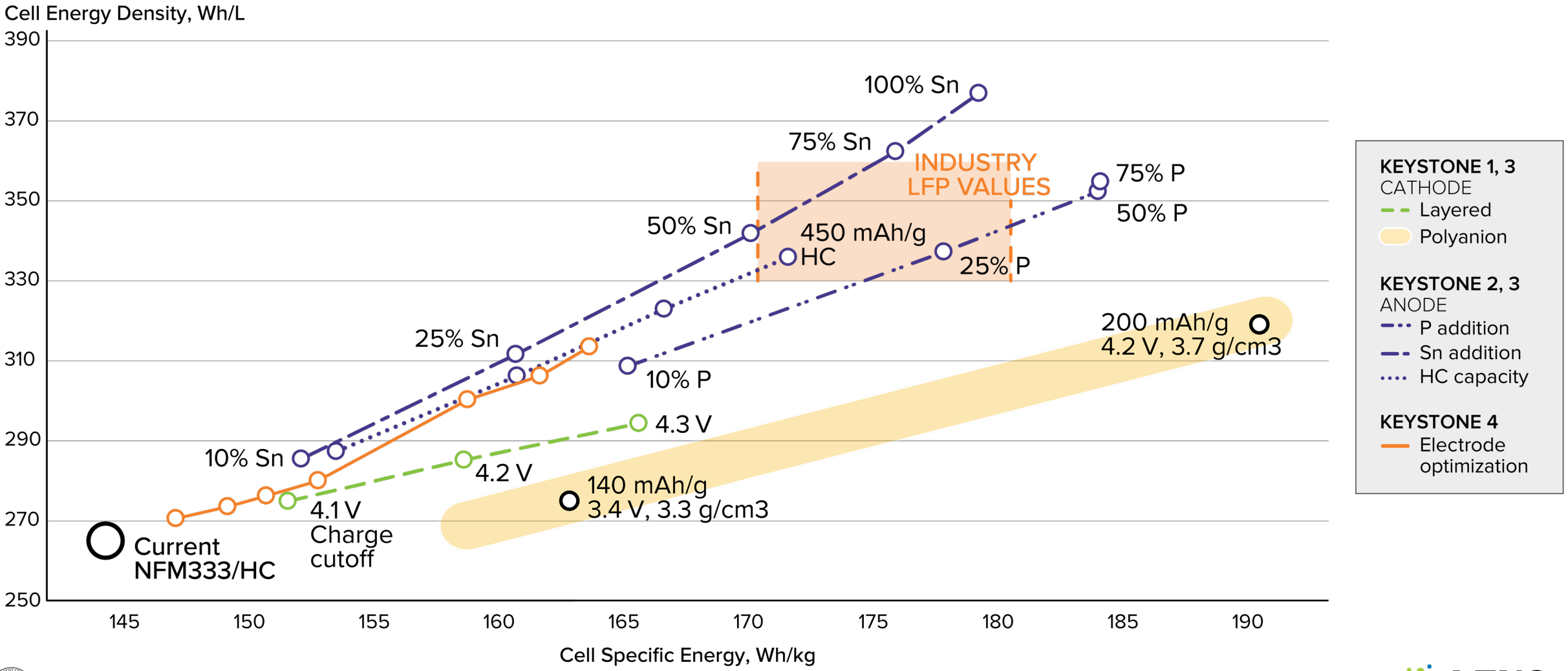
- Develop a new class of sodium-ion batteries (NIBs) with
  - Energy density and cost beating Li-ion batteries
  - Long life, low cost, and high safety
  - No reliance on critical elements
  - Wide temperature range of operation to expand adoption in multiple use cases

- 6 National Labs and 8 universities

- Funding: $10M a year for 5 years (2024-2029)



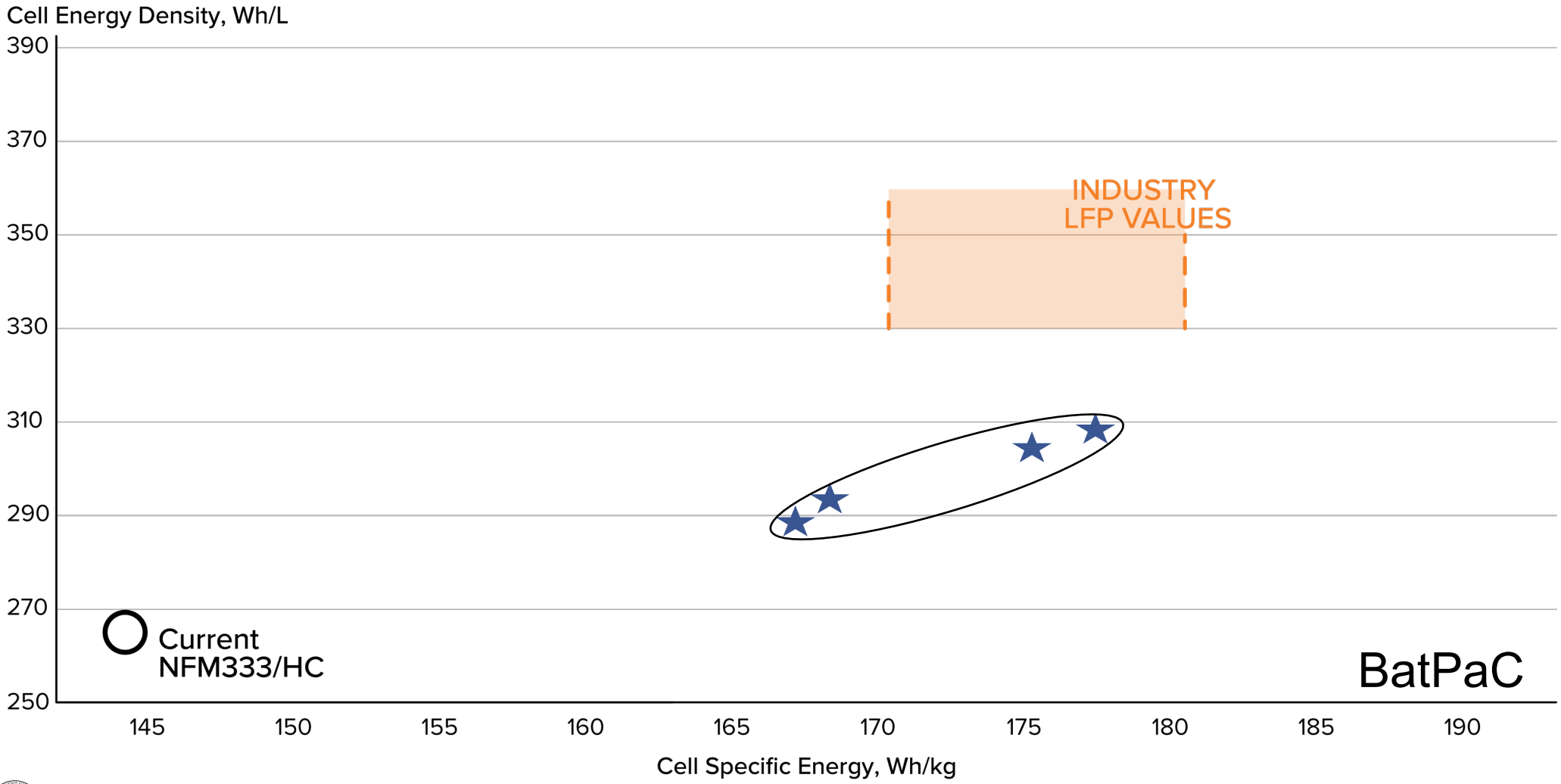
Pathways to increase energy density/decrease cost



U.S. DEPARTMENT OF ENERGY

LENS
LOW-COST EARTH-ABUNDANT NA-ION STORAGE CONSORTIUM

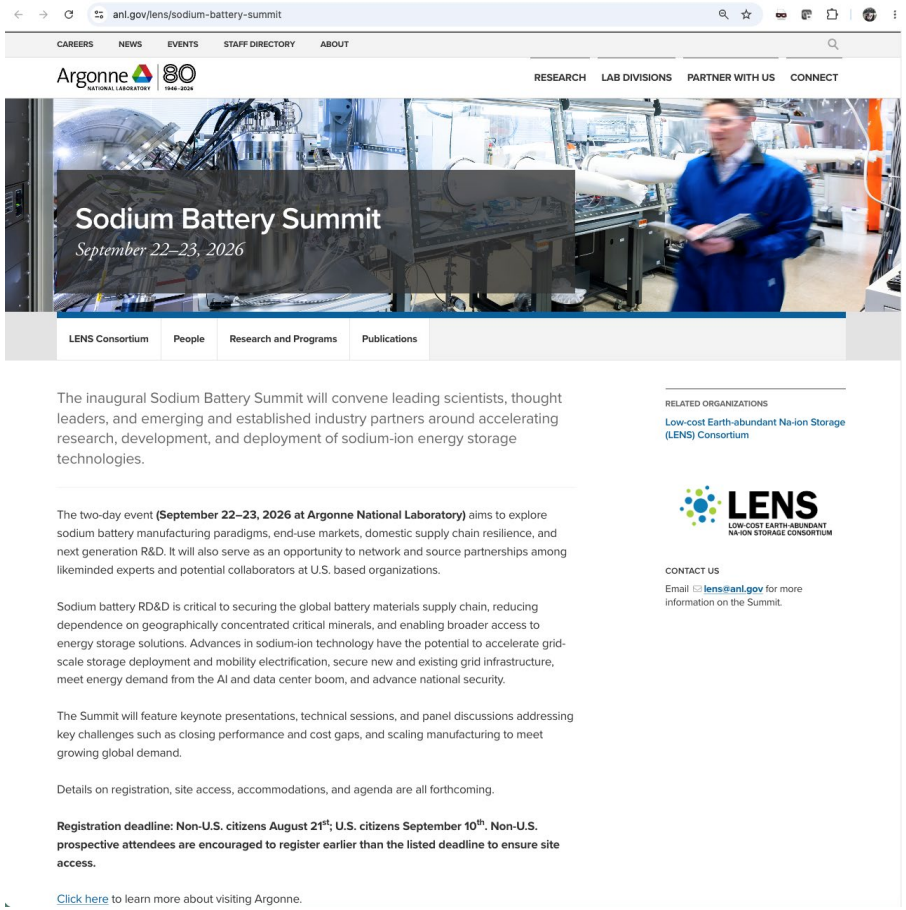
LENS is Presently Building and Testing Cells Approaching LFP Energy Densities



INAUGURAL SODIUM BATTERY SUMMIT (NaBS)

September 22-23, 2026

- Program themes
  - End-Use Markets
  - Developing a Domestic Supply Chain
  - Innovation Beyond Current State-of-the-Art R&D
  - Expanding the Sodium Ecosystem



- Confirmed speakers from DOE, DoW, GM, Unigrid, Peak Energy, Clarios ULRI…
  - Plus, a slate of battery researchers.

Vision: to convene everyone across the sodium ecosystem to identify gaps & opportunities

Tim Leach



Clean Cities and Communities

Alaska Clean Cities and Communities Coalition & Lithium Battery Shipping Update

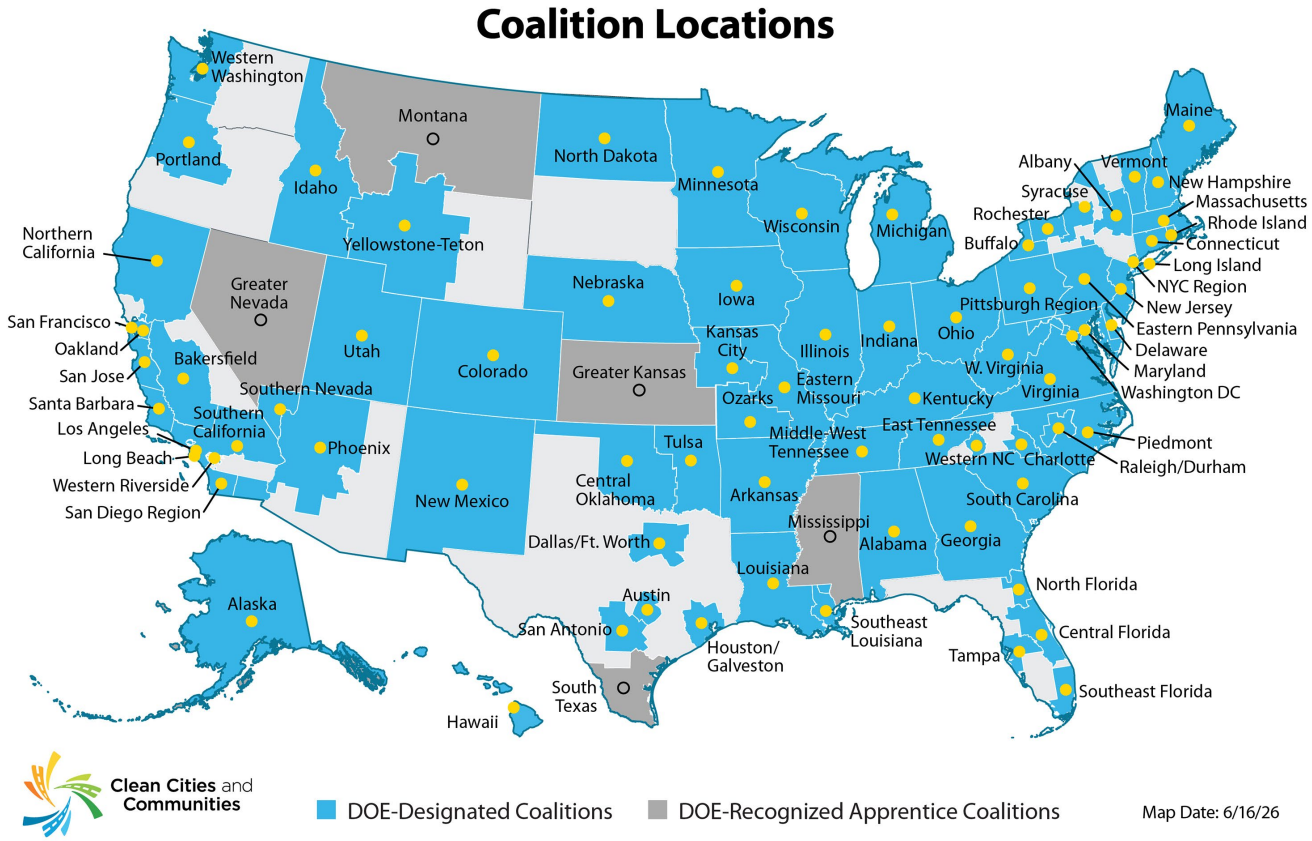
July 30, 2026

Alaska EV Working Group

Tim Leach

CC&C: What We Do

- Clean Cities and Communities (CC&C) is a U.S. Department of Energy (DOE) partnership to foster transportation and energy choices nationwide.
- More than 75 DOE-designated Clean Cities and Communities coalitions work locally in urban, suburban, and rural communities to strengthen the nation's energy security, support economic prosperity, and improve air quality.









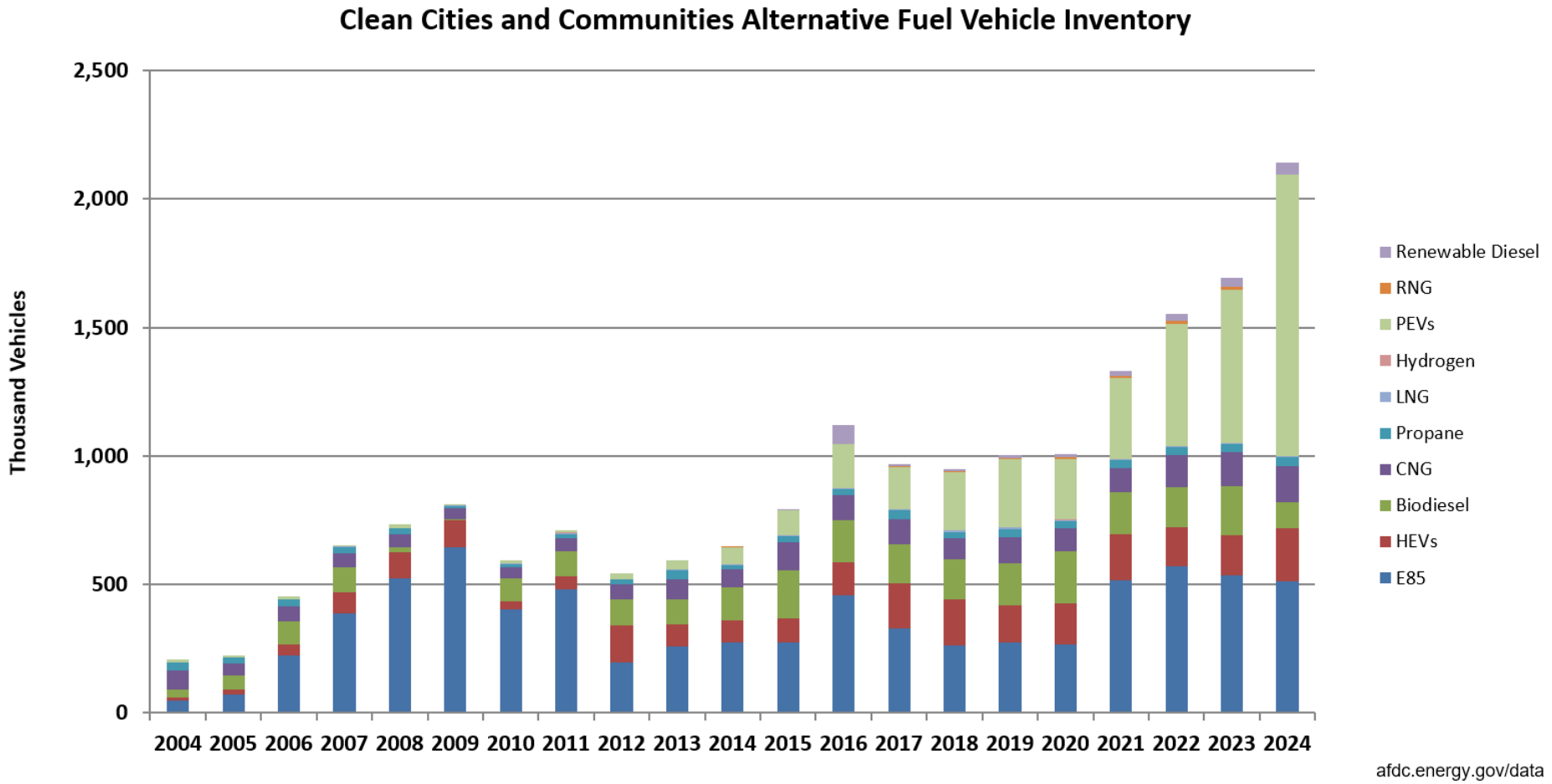


CC&C Results

- Coalition projects supported decision making enabling:
- >2 million alternative fuel vehicles on the road
- >72 million tons of emissions prevented
- Energy use impact of >14 billion gasoline gallon equivalents
- Nearly 40,000 public and private stakeholders.

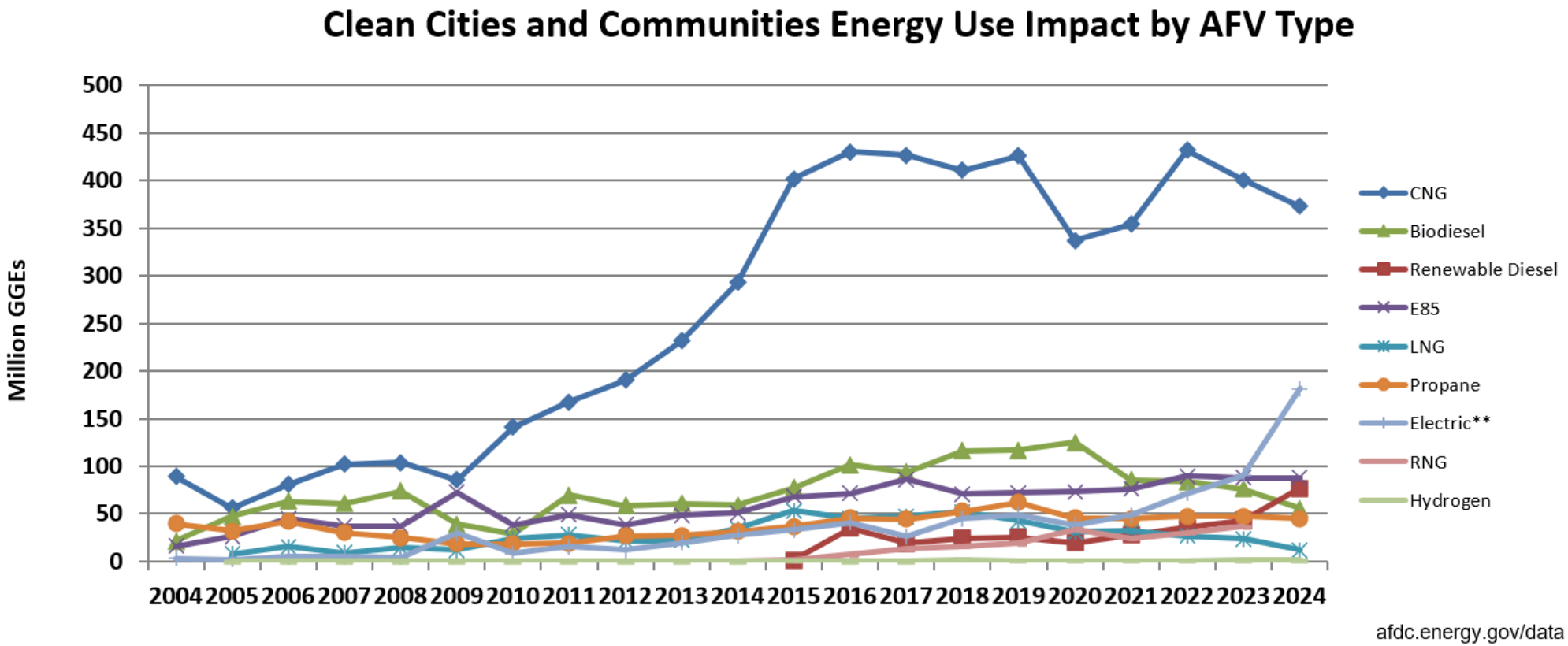
30+ Years of Transforming Transportation

CC&C Impact



afdc.energy.gov/data

CC&C Impact


Clean Cities and Communities Energy Use Impact by AFV Type
Million GGEs
500
450
400
350
300
250
200
150
100
50
0
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
CNG
Biodiesel
Renewable Diesel
E85
LNG
Propane
Electric**
RNG
Hydrogen
afdc.energy.gov/data

AK4C Mission

AK4C exists to advance U.S. and Alaska leadership in the transportation sector by accelerating the modernization of Alaska's transportation systems through development and deployment of innovative technologies, the production and use of alternative fuels, and the implementation of energy-efficient practices.



Strategically Advance Innovative Transportation

(SĀ – IT with me)

Access technical assistance and hands-on problem-solving support.



Connect to unbiased, data-driven tools and resources



Build partnerships



Receive personalized experience rooted in local context



Collaborate on funding opportunities



Alt. Fuels - Why Should I Care?

A view from above

- TSAIA - critical gas station for transpacific air cargo



Alt. Fuels - Why Should I Care?

A view from above

- TSAIA - critical gas station for transpacific air cargo
- Port of Alaska - U.S. Commercial Strategic Seaport



Alt. Fuels - Why Should I Care?

A view from above

- TSAIA - critical gas station for transpacific air cargo
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- Dutch Harbor - largest commercial fishing port in U.S. by volume & located along Great Circle route



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Alt. Fuels = Economic Development Opportunity for Alaska

Coalition Advisory Committee

- Michelle Wilber, **Alaska Center for Energy and Power**, Research Engineer, *AK4C Chair*
- Curtis Thayer or designee, **Alaska Energy Authority**, Executive Director
- Justin Schuster, **Alaska Municipal League**, Senior Energy Program Manager
- Michael Rovito, **Alaska Power Association**, Deputy Director
- Shaina Kilcoyne, **Alaska Venture Fund**, Clean Energy Program Director
- Bart Sowa, **GTI Energy**, Program Director
- Ottar Mobley, **Launch Alaska**, Chief Deployment Officer
- Cady Lister, **Renewable Energy Alaska Project**, Executive Director
- Robert Venables, **Southeast Conference**, Executive Director
- Rebecca Garrett, **Alaska Department of Transportation and Public Facilities**, Frontier Roads and Sustainability Program Director, *non-voting observer*

Alaska Lithium Battery Shipping Safety: Background

- *The Trigger*
  - Sinking of the Morning Midas on June 23, 2025
- *The Response*
  - Matson, TOTE, and Alaska Marine Lines stopped shipping EV and PHEVs and large lithium batteries starting in July 2025.
  - Other shippers continue shipping EVs, including AMHS, Bowhead Transport, Ruby Marine. EV shipping pivots to ground shippers.
  - Matson approves limited EV shipping in fall 2025
- *The Impact*
  - Increased cost via ground shipping alternative. Decreased or no availability for some communities.





Alaska Lithium Battery Shipping Safety: Project Update

- *AK4C worked with:*
  - Stakeholders, including Alaska Marine Lines, DOT&PF, American Waterways Operators and MITAGS, to define concerns and topics of interest
  - National Laboratory of the Rockies (NLR) to conduct preliminary literature review for topics of interest
  - NLR Alaska Campus to scope additional focused research
- *Utilities (AEL&P, AP&T, CEA, and APA)*
  - Submitted letter to shippers identifying importance of EVs and shipping
  - Conducted stakeholder outreach to Matson

Alaska Lithium Battery Shipping Safety: Topics of Interest

- Assess transportation safety risk associated with battery-powered vehicles and battery energy storage systems
- Review domestic and international transportation standards, regulations, and operational practices
- Examine intermodal requirements relevant to AK's operating environment
- ID practical fire detection, monitoring, suppression, containment, and emergency response measures



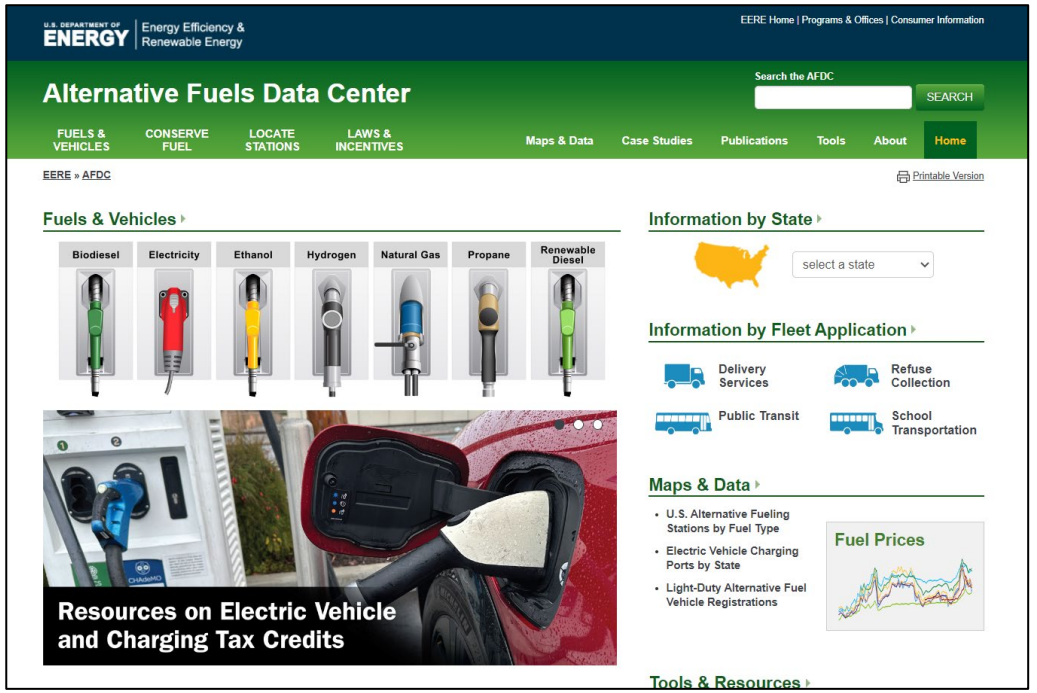
Alaska Lithium Battery Shipping Safety: Topics of Interest

- Evaluate cargo handling practices, state-of-charge management, documentation, inspection procedures, vessel considerations, operational protocols that reduce risk
- Examine labeling, traceability, certification, and risk-classification
- Evaluate options for collection, reuse, recycling, disposal, and other end-of-life management practices for lithium batteries in AK and remote regions
- ID opportunities for pilot projects, technical guidance, workforce training, and operational improvements that support safe and reliable transportation



Access Tools and Resources

- Alternative Fuels Data Center: afdc.energy.gov
  - Maps and data
  - Publications and case studies
  - Digital tools and calculators.
- FuelEconomy.gov
  - Data and calculators to help drivers improve fuel economy
  - Gas mileage tips.
- Clean Cities and Communities: cleancities.energy.gov
  - History and current activities, including coalition search
  - Open funding opportunities.
- Technical Response Service: technicalresponse@icf.com.



Clean Cities and Communities

Thank You

Tim Leach
AK4C, Coalition Director
tim.leach@launchalaska.com



Kris Hall



AEA EV WORKING GROUP · JULY 30, 2026

Alaska Rural Energy Development DC Fast Charging

Year one on Autel: what $140k built, what the winter proved.

Kris Hall

ReCharge Alaska

RT50s in Delta Junction and Glennallen

01

J-3400 Standard is Here

Increasingly, EV users are buying J-3400 (NACS) vehicles. RT50s could not communicate with the J-3400 standard. Impacting new EVs being driven up from the L48 and existing J-3400 users

Could not support the OEM cold weather testing as most are on the J-3400 standard

02

Power ceiling.

RT50 is not designed for expansion, locked at 50 kW at 125 amps. Modern EVs are designed for higher charging rates and larger batteries. Autel MaxiCharger DC was chosen for the wide variation of power outputs from 60 kW to 120 kW.

03

Limited station intelligence.

RT50s do not capture vehicle MAC address for AutoCharge and Plug-n-Charge. Manual authentication every session; friction points for some users.

They were driver-experience rubs — and they showed up in usage.

$140k installed. Two sites. One Alaska winter.

FUNDING

$96k AEA grant

$44k ReCharge Alaska match

DEPLOYED

Glennallen

1× Autel UF60A3001 · Sept 2025

Delta Junction

1× UF60A3001 + 1× UF120A3001

Installed Jan 30, 2026





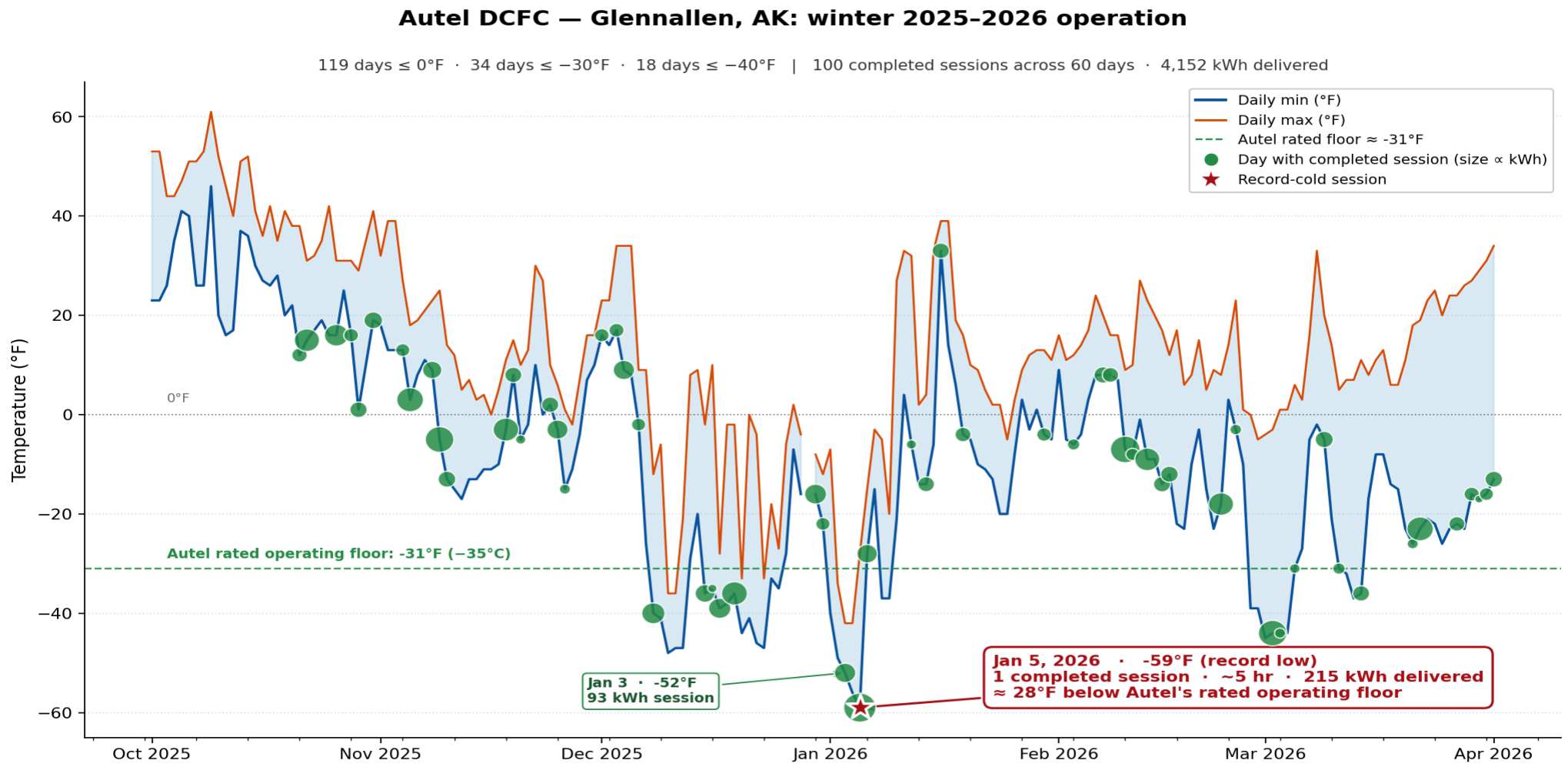




Same grid constraint. Different hardware envelope.

	Old RT50	Glennallen (UF60A3001)	Delta (UF60A3001 + UF120A3001)
Effective power to driver	45.75 kW (grid-capped)	**47.5 kW (same grid cap, more efficient AC→DC) 1-July no cap, increased to 60 kW**	**120 kW & 60 kW**
Max current	125 A	200 A	200 A
NACS / J-3400	Legacy Tesla only, no CT or J-3400 And required an Adapter	**✓ native**	**✓ native**
AutoCharge	—	**✓ yes (MAC-based)**	**✓ yes (MAC-based)**
ISO 15118 Plug & Charge	—	**✓ hardware-ready**	**✓ hardware-ready**
Expansion path	locked at 50 kW	**→ 60 kW at new EV rate → 120 kW expansion planned**	**already at 120 kW Site maxed out for grid connection**

Glennallen, Oct 2025 – Apr 2026.



Temperature: Alaska Climate Research Center, Station USC00503304 (Glennallen KCAM). Sessions: Autel backend export, Oct 2025–Apr 2026. Installed model: Autel MaxiCharger DC Fast UF60A3001 (60 kW DC). Manufacturer operating range: −31°F to +131°F.

Coldest session: −59°F, Jan 5, 2026 (≈28°F below Autel's rated operating floor)

Incremental capability. Real pacing constraints.

GLENNALLEN

Un-nerf, then upgrade

- 47.5 kW → 60 kW as soon as new operating model takes effect; 1-July-2026. Site is functioning at 60 kW now.
- Long-term path to provide more power offered to users is currently being evaluated with behind the meter upgrades and existing equipment upgrades.

VALDEZ

Next rural site under evaluation

- In discussion with City of Valdez and potential hosts
- Site host in Tok is confirmed
- Site host in Homer is confirmed
- Pursuing Alaska Rural EVSE Deployment (ARED) grant pathway
- Equipment and site specifics under evaluation — not publicly committed

PACING

Alaska's construction window can be the constraint

- CVEA halts new installations ~mid-September
- Tok's AP&T has not been engaged for discussions of an EV Rate. Work is needed before installing equipment.
- Homer construction window is larger than other regional areas we're exploring. Site has already been identified for 4 connectors.

This corridor provides more than kWh

OEM COLD-WEATHER TESTING

Alaska as a cold-weather EV development destination.

- Rivian tested R2 prototypes at Delta Junction this past winter.
- Lucid and other OEMs have used Alaska corridors for cold-weather programs historically.
- Providing reliable charging options will drive more frequent OEM cold weather testing. Which in turn will help the EVs offered by OEMs to Alaskan users.

YEAR ONE, BY THE NUMBERS

$140k	installed ($96k grant + $44k match)
3 chargers	across 2 sites
148 sessions	Glennallen + Delta through Apr 19
-52°F	coldest charging session
−59°F	coldest measured temperature for operating equipment Jan 5, 2026

Alyeska Tire’s Two Terra53 chargers are joining the network.

NETWORK ONBOARDING

Charger #1 and Charger #2 located at Alyeska Tire

Alyeska Tire's two Terra53 DC fast chargers are being brought onto the ReCharge Alaska network under the request of Alyeska Tire. OCPP allows for real-time access to charge events to support reliability.

PRICING MODEL

Free charging is ending

Paid service. With the pricing model as specified by Alyeska Tire. The intent is to reduce users from parking their EV and coming back at a later time to grab it. Which caused the charger to not be accessible until their return.

ACTIVATION

App-only — no card reader on the unit

The Terra53 hardware has no onboard credit-card reader. All sessions start through the ReCharge Alaska app, the same activation method drivers already use at our other sites.



Alyeska Tire — Girdwood

Terra53 DC fast chargers, dual-port

Chugach Electric Association HYC400 Chargers

SITE STATUS

Cooper Landing Three Bears site

Construction is 99% complete. Working on handover to Operations. Site is comprised of four each HCY400 chargers. Each charger has both NACS and CCS connectors with simultaneous charging power share at 50 kW increments. Total site power is 500 kW until the final transformer is installed.

TIMELINE

Expected live in about a week

Commissioning and testing is planned for this week with the target of end of July to be online for users. Tasks include charger labeling, credit card reader configuration, and charger configuration.

WHY IT MATTERS

Chugach Electric is investing in EVs

Cooper Landing Three Bears is one of four sites planned under CEA's rollout.



Cooper Landing — Three Bears

CEA-installed chargers, pre-commissioning

We'd welcome conversation.

UTILITIES

Continue open dialogs with Utilities for how we manage and bring EV charging to their regions.

EV Community

Current EVSE Fleet meets our requirement for user experience.
Trust ✓
Setting the stage for expansion to open more travel routes.

OEMs

Planning cold-weather programs?
The corridor is live, instrumented, and expanding.

We'll keep publishing the data.

Kris Hall · ReCharge Alaska · kris.hall@rechargealaska.net

Quinlan Harris



ALASKA ENERGY AUTHORITY

AEA EV Program Update

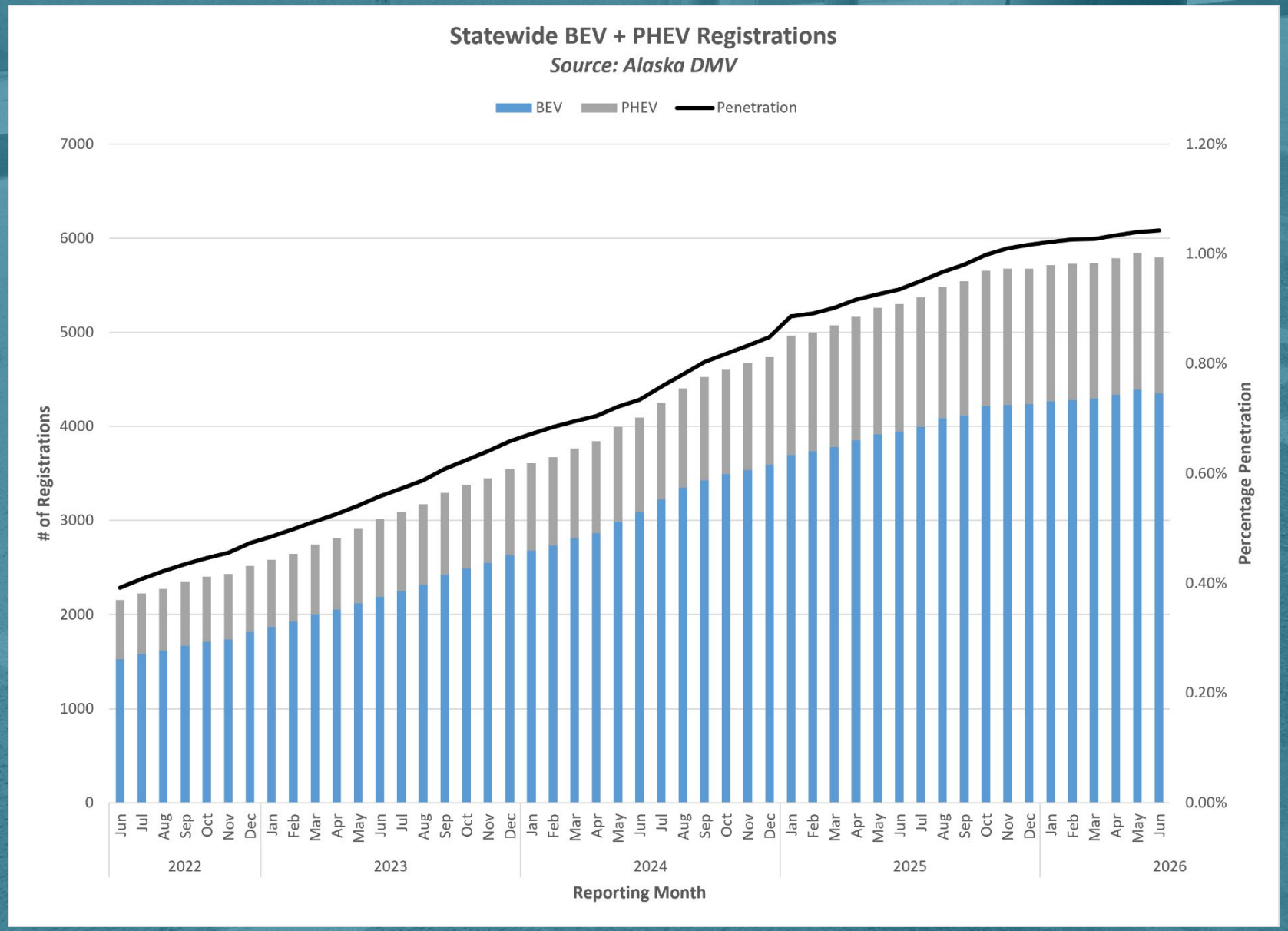
Quinlan Harris
Project Manager

EV Working Group

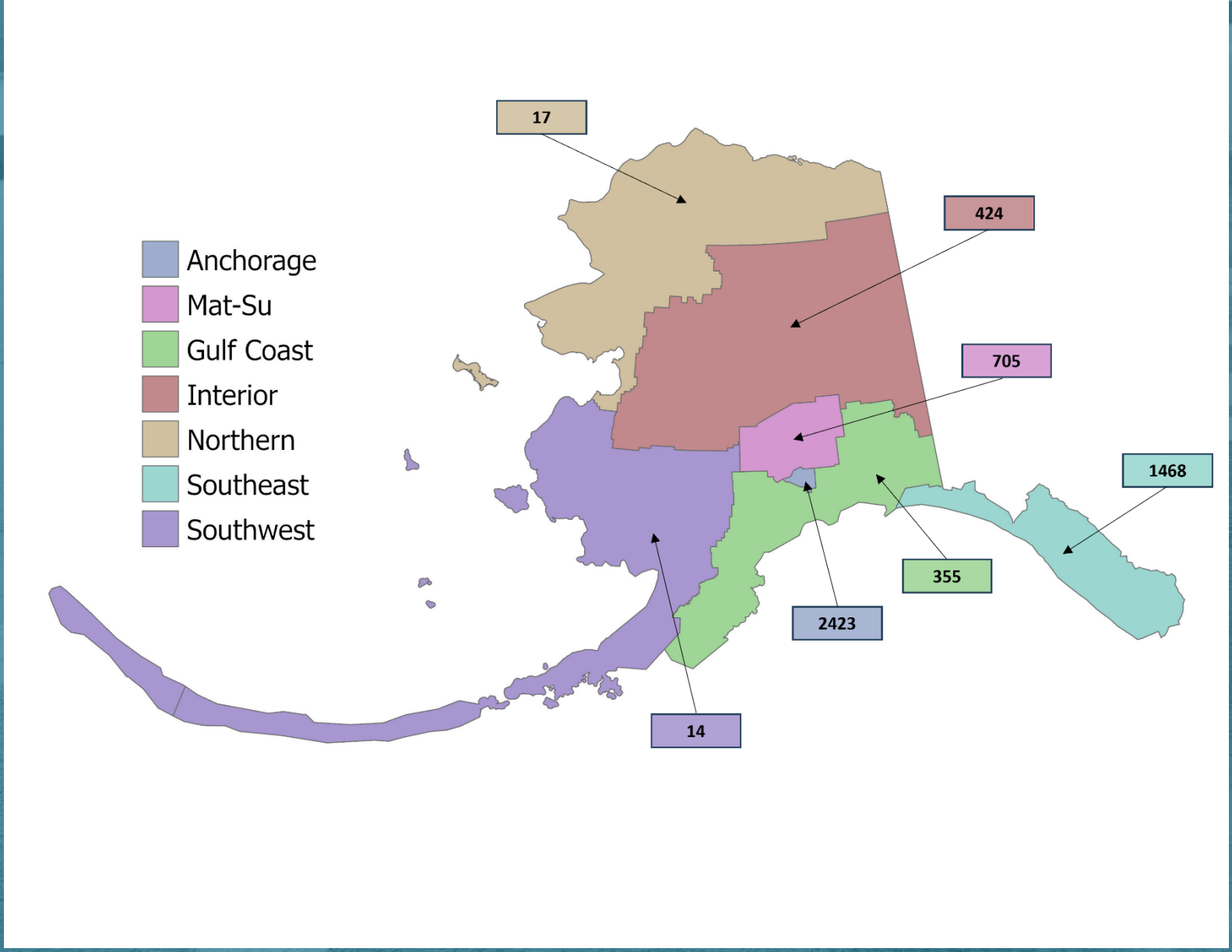


ALASKA ENERGY AUTHORITY

BEV+PHEV Adoption Data



BEV and PHEV Geographic Distribution





ALASKA ENERGY AUTHORITY

Alaska Rural EVSE Deployment

Engaging and supporting transportation and mobility options for Alaskan communities.

Meeting communities where they are

Focus priorities through stakeholder engagement to identify communities and sites with interest

Targeting 9+ communities for installation

Commissioned
2 Communities
Chargers **3**

Identified
6+ Interested Sites
Sites

Federal

Funded through the DOE Transportation Technologies Office, focused on improving mobility options and sparking economic opportunity

Support reliability, resilience, and opportunity

FEDERAL FUNDS
$1.6M
To support installation

COMMUNITY
20%
Community Match

National EV Infrastructure (NEVI)

Significant emphasis on coordinating with state and federal partners to navigate Title 23 restrictions.

Now shifting focus to obligate or transfer federal funds in advance of the potential recission with the new fiscal year.

ORIGINAL AWARD

$52.4M

Title 23 Federal Funds

RECISSION

$37.5M

Remaining after recission

TIMELINE

FHWA Budget

Proposed federal budget rescinds all unobligated funding

NEAR TERM

Protect

Working with DOT, FHWA, and other federal partners to ensure funds can work for Alaska



Around the Room Updates





Alaska Energy Authority

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