ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE
February 5, 2025
3:30 p.m.

MEMBERS PRESENT

Senator Cathy Giessel, Chair
Senator Bill Wielechowski, Vice Chair
Senator Matt Claman
Senator Forrest Dunbar
Senator Scott Kawasaki

MEMBERS ABSENT

Senator Shelley Hughes
Senator Robert Myers

COMMITTEE CALENDAR

PRESENTATION(S): CORDOVA ELECTRIC COOPERATIVE

- HEARD

SENATE BILL NO. 61
"An Act relating to an electronic product stewardship program; relating to collection, recycling, and disposal of electronic equipment; establishing the electronics recycling advisory council; and providing for an effective date."

- HEARD & HELD

PREVIOUS COMMITTEE ACTION

BILL: SB 61
SHORT TITLE: ELECTRONIC DEVICE RECYCLING
SPONSOR(s): SENATOR(s) TOBIN

01/24/25	(S)	READ THE FIRST TIME - REFERRALS
01/24/25	(S)	RES, FIN
02/05/25	(S)	RES AT 3:30 PM BUTROVICH 205

WITNESS REGISTER

CLAY KOPLIN, Chief Executive Officer
Cordova Electric Cooperative

Cordova, Alaska
POSITION STATEMENT: Delivered the presentation, Cordova Electric Cooperative.

LOUIE FLORA, Staff
Senator Löki Tobin
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Presented SB 61 on behalf of the sponsor.

LYNN ZENDER, Executive Director
Zender Environmental Health and Research Group
Anchorage, Alaska
POSITION STATEMENT: Presented Electronics Product Stewardship in Alaska, relating to SB 61.

SCOTT KLAG, Consultant
Product Stewardship Institute
Portland, Oregon
POSITION STATEMENT: Testified in support of and answered questions on SB 61.

LELAND REHARD, Environmental Program Coordinator
City of Columbia
Columbia, Missouri
POSITION STATEMENT: Testified in support of SB 61.

ACTION NARRATIVE

3:30:20 PM
CHAIR GIESSEL called the Senate Resources Standing Committee meeting to order at 3:30 p.m. Present at the call to order were Senators Kawasaki, Dunbar, Claman and Chair Giessel. Senator Wielechowski arrived during the course of the meeting.

PRESENTATION(S): CORDOVA ELECTRIC COOPERATIVE

3:31:26 PM
CHAIR GIESSEL announced the presentation, Cordova Electric Cooperative.

3:31:41 PM
CLAY KOPLIN, Chief Executive Officer, Cordova Electric Cooperative (CEC), Cordova, Alaska, moved to slide 1, a photo of the Cordova waterfront, and began the presentation, Cordova Electric Cooperative. He suggested the Cordova story could serve as a model for other communities and for the energy industry in

general. Referring to the importance of the seafood industry to Cordova, he acknowledged the pressure that industry was currently facing. He said the presentation would include the interface between the energy industry and the seafood industry.

3:32:50 PM
MR. KOPLIN moved to slide 2 and summarized the story of Cordova as one of resilience:

[Original punctuation provided.]

Resilience

The capacity to recover quickly from difficulties; toughness. Starts from a position of strength / capacity, is devastated by events, and returns to a position of strength. Resides with people and organizations, not resources or technology.

Copper River & NW Railroad – Closed 1938
Great Alaska Earthquake 1964
Exxon Valdez Oil Spill 1989

3:33:45 PM
MR. KOPLIN moved to and narrated slide 3, a topographical map illustrating the key components of the Cordova Electric Cooperative (CEC) with photos and brief descriptions of each component:

[Original punctuation provided.]

CEC Grid Architecture

Humpback Creek Hydroelectric Plant
1250kW (2 x 500 kW + 1 x 250 kW)
17,000 foot [underground] UG and submarine transmission line

HBC Edge Cloud
Water Cooled
Decentralized Cloud

Power Creek Hydroelectric
6278kW (2 x 3124 kW)
25 kV transmission ties to Eyak Substation, Inflatable dam

City of Cordova

1,566 customers, 18MW
One Substation
78mi UG distribution lines

Battery Energy Storage System
1 MW, 1MWh ABB/SAFT at Eyak Substation

Orca Power Plant
10.8 MW Diesel Control Center, CEC

3:34:12 PM
MR. KOPLIN moved to slide 4 and highlighted Cordova's journey from struggling with outages and aged infrastructure to becoming a reliable and affordable utility, particularly in renewables. He emphasized three "levers" as key to Cordova's transformation:

- cooperation with partners
- adaptation to environmental and financial challenges
- innovation

3:35:24 PM
MR. KOPLIN moved to slide 5, highlighting the cooperative partnerships Cordova has established with these entities:

[Original punctuation provided.]

COOPERATION: BETTER TOGETHER

Cordova Telephone Cooperative, Inc.
The Eyak Corporation
City of Cordova, Incorporated 1909
Sandia National Laboratories
The State of Alaska
Native Village of Eyak
NRECA - America's Electric Cooperative
Alaska Department of Fish and Game
Pacific Northwest - National Laboratory
United States Senate
Department of State - United States of America
Idaho National Laboratory
Chugach
Alaska Center for Energy and Power

MR. KOPLIN said there were many other organizations in addition to this list who have allowed Cordova to do very creative things on their path.

3:35:47 PM
MR. KOPLIN moved to slide 6 and said partnering with the state was transformational for CEC. In 2000 Cordova developed the Power Creek Hydroelectric Project. They got $12 million of funding in cooperation with their native corporations from the Indian Energy act and the State of Alaska, through House and Senate Bill 528 which included a large capital bill for debt reimbursement. CEC paid off the remaining debt on the Power Creek project with that state capital funding:

[Original punctuation provided.]

Power Creek Hydroelectric: Local, Affordable, Reliable
Energy Project Cost: $24M - $12M Federal, $12M State of Alaska

[Photo of the Power Creek hydroelectric dam]

Power Creek Run of River Hydro Intake

3:36:22 PM
MR. KOPLIN moved to slide 7 and said the Power Creek project transformed the Cordova community by providing seven percent of its electricity and reducing base rates by 20 percent. CEC nearly eliminated diesel use in the summer, saving 70 percent of diesel usage annually, equating to 1.5 million gallons and $50 million in diesel fuel cost savings over 20 years.

3:37:09 PM
MR. KOPLIN explained that Cordova residents voted to de-regulate [energy rates], allowing the board of directors to make quick and creative decisions on rates without significant legal costs or time investment. Communication and cooperative efforts between CEC and the seafood industry were possible because of the extra energy capacity and creative rate structure, encouraging local seafood processors to invest in high-efficiency equipment, shifting operations onshore. This resulted in an additional $750,000 in raw fish tax revenues annually, benefiting the state and the city of Cordova for community needs like education and infrastructure:

[Original punctuation provided.]

Power Creek
Project
Benefits/Outcomes

- Provides 70 percent of Community's Electricity
- Reduced rates ~ 20 percent
- Reduced diesel fuel use 70 percent (1.4M gallons/year) - $50M in 20 years
- $0.06/kWh seafood incentive rates
- Moved floating processing onshore
- Increased Cordova and State Raw Fish Taxes ~ $750K/year each
- Attracted tens of millions in shipping and seafood infrastructure investments
- Grew sales allowing CEC to keep rates flat for 20 years

3:38:55 PM
SENATOR KAWASAKI noted the $.06 per kwh rate offered to the seafood industry and asked about the process to approve those rates. He asked whether Regulatory Commission of Alaska (RCA) approval was required.

3:39:19 PM
MR. KOPLIN appreciated the opportunity to clarify that Cordova Electric Cooperative (CEC) voted to deregulate, which allowed the rate-making authority to transfer from the RCA to the board of directors for CEC. He explained that CEC follows a simplified rate filing process and the national regulatory rate structures, which includes public hearings and is essentially the same process used by the RCA. CEC developed an incentive rate structure that the board reviewed and approved within 40 days. This new rate structure, beneficial for the seafood industry by enhancing the use of local plants, particularly during winter and shoulder seasons, also aims to promote the use of air source heat pumps and electric vehicles. The strategy aligns with the board's goal of increasing kilowatt-hour sales to reduce costs.

3:41:08 PM
SENATOR CLAMAN asked how many years ago CEC opted out of RCA regulation.

3:41:15 PM
MR. KOPLIN said it was soon after the cooperative was established, in the late 80's.

3:41:28 PM
SENATOR CLAMAN noted that pre-dated the RCA. He expressed surprise that this was possible and asked whether the

predecessor to the Regulatory Commission of Alaska (RCA) was required to allow CEC to [vote for deregulation].

3:41:56 PM
MR. KOPLIN explained that cooperatives in Alaska, as outlined by the Alaska Power and Telephone Act, are self-governed by their customer-owners, with an elected board of directors making decisions.

3:41:58 PM
SENATOR WIELECHOWSKI arrived.

3:42:20 PM
MR. KOPLIN said, anecdotally, over 80 percent of the cooperative's members voted to deregulate, indicating a strong vote of trust in the board's ability to set fair rates, rather than relying on the Regulatory Commission of Alaska (RCA).

3:42:36 PM
SENATOR KAWASAKI noted that some funds for the Power Creek project were from the state, and some were federal. He mentioned the Eva Creek Windfarm and the intent of Golden Vally Electric Association (GVEA) to be sure state residents received benefit from state spending on the project. He asked whether there was similar intent and follow through by CEC to pass along rate reductions to consumer residents.

3:43:28 PM
MR. KOPLIN explained that the strategy to reduce rates to residents by nearly 20 percent was made possible through state funding for debt reimbursement. The strategy avoided significant interest costs and contributed to consistently reduced rates [for residents] as funding tranches were received. Additionally, the success of seafood sales contributed to maintaining flat rates for nearly 20 years.

3:45:12 PM
MR. KOPLIN moved to and narrated slide 8:

[Original punctuation provided.]

Avg Daily kW Load 2012 w/Excess Hydro

CEC Controls System Frequency by Deflecting up to 750kW of water, a waste of energy (orange), and there is excess in summer (green), and not enough in winter (black/diesel)

[The graph uses colored bars to illustrate the energy in the CE system for each day of the year 2012.]

MR. KOPLIN said CEC approached the Alaska Center for Energy and Power (ACEP) and explained that CEC was generating extra hydro-generated energy they wanted to use, and they were seeking ways to use the lost power. ACEP offered to assist with battery energy storage.

3:45:47 PM
MR. KOPLIN moved to slide 9 and narrated the animated graphic illustration of CEC energy dynamics January 1 - through September of 2014. He described the challenge of managing the fluctuations of supply and usage to provide quality power.

[Original punctuation provided.]

Cordova Seasonal Load Dynamics
Partners: Cordova Electric Cooperative, ACEP, SNL,
CESA – funded through DOE OE

[Animated graphic illustration]

3:46:41 PM
MR. KOPLIN moved to slide 10 and described CEC's collaboration with Alaska Center for Energy and Power to optimize their highly automated grid system using a battery energy storage system (BESS). Funded by Sandia National Labs, the BESS was right-sized for the grid, enabling it to balance power in real-time and significantly reduce diesel fuel consumption by 50,000 gallons in the first year. The project involved working with advanced companies ABB and Saft to perfect communication algorithms, crucial for maintaining a reliable microgrid:

[Original punctuation provided.]

A US Department of Energy Sponsored Microgrid
Battery Energy Storage Application
(Dr. Imre Gyuk, Director of Energy Storage Research,
Office of Electricity)
PARTNERS: US DEPT OF ENERGY-SANDIA-NRECA-ACEP-CEC;
SAFT/ABB PACKAGE

3:48:25 PM
MR. KOPLIN moved to slide 11 and said of all the important partnering for CEC's operations, the most important partners are

the customers. He said CEC moved its customers to the top of its organizational chart, followed by the board of directors, and then staff. He presented a five-minute "CEC Customer Engagement" video following a local fisher receiving a tour of CEC's operations and learning the history of Cordova's power generation. She reflected on CEC's efforts to save power and money by continually improving efficiency.

3:54:38 PM
SENATOR CLAMAN noted the inflatable portion [of the dam at Power Creek] and asked how long it lasts and how much it costs to replace it.

3:54:57 PM
MR. KOPLIN described avalanche and flooding events that caused significant damage to the dam and the way those events modified the design and operation. He said there is a 50-year life expectancy for the dam. It has cost around $1 million to replace the rubber bladder; it has been replaced twice. He said the operation and maintenance costs for the dam are generally quite low.

3:56:52 PM
SENATOR CLAMAN noted the difference between CEC's dam design and a typical concrete dam.

3:57:06 PM
MR. KOPLIN said the bladder itself is about $250,000 and with other factors and logistics, replacement costs are around $300,000.

3:57:18 PM
MR. KOPLIN moved to slide 13, comprised of photos of damage from floods and avalanche to the dams at Power Creek and Humpback Creek over the years. He noted that a lot of bad things can happen, and CEC has learned to adapt their equipment and their system to the environment.

3:57:57 PM
MR. KOPLIN moved to slide 14. He said the reason he went to Cordova 26 years ago from Kodiak Electric was that he appreciated the visionary perspective Cordova exemplified by developing a policy to convert to underground power lines. He noted that during the past several weeks, there were no power outages in Cordova during the 90-100 mph wind storms:

[Original punctuation provided.]

100% Underground Power Lines: Reliability

[photo of a utility worker maintaining/repairing overhead power line]

3:58:35 PM
MR. KOPLIN moved to slide 15. He emphasized the importance of continuing to modernize and optimize projects. He provided details for each of the bulleted upgrades and innovations noted on the slide, describing the conditions that led to them and the degree of improvement and efficiency each provided. He said most of these improvements cost tens of thousands of dollars and paid for themselves almost immediately:

[Original punctuation provided.]

OPTIMIZING HYDRO

- Instream Flow – 22,000 gal
- Trash Screens – 15,000 gal
- BESS Control – 25,000 gal
- Valve Upgrade – 20,000 gal
- Power Factor – 5,000 gal
- Diesel Warm – 25,000 gal
- Diesel Upgrades – 40,000 gal
- 2024 Trend: 80 percent+ Hydro, 200,000-gallon reduction or 1/3 of remaining diesel

4:01:12 PM
MR. KOPLIN moved to slide 16 and said innovation was the third lever in CEC's formula for success. He described financial innovation and the partnership with CoBank to manage debt using low interest opportunities:

[Original punctuation provided.]

INNOVATION: A PATH TO THE FUTURE

[photos depicting examples of CEC innovation]

4:01:57 PM
MR. KOPLIN moved to slide 17. He described the repair of a fault in a 3.5-mile submarine cable using old technology that was on hand. The crew lifted the damaged cable, spliced in new cable

and re-energized the line the next day. He said this experience represented a $60,000 expense for what would have been a $500,000 repair. He noted again the effect of creating efficiencies by innovating and partnering with other entities:

[Original punctuation provided.]

[photos depicting:
a fishing crew on the deck of a fishing boat with a repurposed net reel
a Metro-Tel Cable Hound (cable locator equipment) &
Repurposed net reel spooled with standard underground cable]

4:03:07 PM
MR. KOPLIN moved to slide 18 and reiterated that CEC had a highly automated system with a lot of data. CEC hosted the largest GRID modernization project in the U.S. with the Department of Energy, achieving the most successful project to date in terms of modernization breakthroughs.

[Original punctuation provided.]

GRID
MODERNIZATION
LABORATORY
CONSORTIUM
U.S. Department of Energy

Resilient Alaskan Distribution system Improvements using Automation, Network analysis, Control, and Energy storage (RADIANCE)

Rob Hovsapian / Abraham Ellis
Idaho National Laboratory / Sandia National Laboratory
DOE Project Overview - December 13, 2017

4:03:24 PM
MR. KOPLIN moved to slide 19. He said CEC's entire energy grid was modeled on the National Renewable Energy Lab's campus. CEC uses the model to evaluate potential projects for their impact on the grid:

[Original punctuation provided.]

Resilience Week

CEC Digital Blueprint development for Real-time CHIL & PHIL [Controller-Hardware-in-the-Loop and Power-Hardware-in-the-Loop] evaluation

[Photo: 250 kW electric boiler as dispatchable load and saves diesel fuel 1500 gal/month]

[Photo: CEC Microgrid's Eyak Substation with BESS]

[Diagram: CEC's status, data and control system - components and connections]

4:03:37 PM
MR. KOPLIN moved to slide 20 and said CEC had an agreement with a boiler company and next-generation developer of heat pumps to test their product and measure the possible cost savings for customers [of using heat pumps]:

[Original punctuation provided.]

Heat Pumps

- Test Agreement – US Manufacturer
- Incentive Programs
  - CEC Mini-grant
  - USDA RESP 0 percent Loans
  - IIJA Incentives
- Aligns with sales growth strategy
- Can save customers substantially
- Supported by Winter Incentive Rate

4:04:00 PM
MR. KOPLIN moved to slide 21 and said this [cloud and data services opportunities] was where he and Senator Giessel began the conversation about CEC's experience and implications for the entire state [of Alaska]. He described the local area cloud server installed inside CEC's hydro plant and said the setup offered multiple efficiencies, allowing for the sale of excess hydropower and bringing cloud services directly to the community. He explained that the local server provided data security and sovereignty, reducing reliance on distant cloud servers. He said there was a Nexus between energy, data, and communications presenting emerging opportunities for Alaska:

[Original punctuation provided.]

HEAD IN THE CLOUDS:
LOCAL AREA CLOUD/
EDGE COMPUTING

- Grow Sales
- Utilize Capacity
- Cloud Services "Inside the Fence"
- Data Security and Sovereignty
- Crossing the Digital Divide – Local Tech
- Cloud / AI Development Space

4:06:10 PM
MR. KOPLIN moved to slide 22 and played a video describing the partnership and innovations achieved between CEC, Greensparc, and HPE GreenLake. In the video, Sam Enoka describes Greensparc's vision to bridge the digital divide by bringing data infrastructure that is cheaper, faster and greener to the most difficult to reach markets. Mr. Koplin describes CEC's features, data systems and desire to localize data processing and improve CEC's efficiency, reducing the cost of energy and improving reliability. Mr. Enoka reports that this partnership developed and deployed the Cordova data center in 30 days:

4:09:29 PM
MR. KOPLIN said that the resulting data server allowed Cordova Electric Cooperative (CEC) to sell excess renewable energy, increasing revenues and reducing energy costs for customers. He emphasized the opportunity for Alaska to develop and operate data centers and generate revenue, benefitting many facets of community life in the state.

4:10:41 PM
MR. KOPLIN moved to slide 23 and said the other part of data that is seen as a threat to many is artificial intelligence (AI) processing. He noted excess capacity and the possibility of building more excess capacity in the fiber-optic grid and said that could also be an opportunity to sell into a global market:

[Original punctuation provided.]

BIG DATA: BIG OPPORTUNITY
AI LLM – Capacity Bottleneck – Alaska Climate and Infrastructure - Scaling

[Illustration: Tech-Grid style map of North America with light arcs connecting population centers.]

COOPERATIVE
EXCHANGE
EXPERIENCE THE POWER OF SHARING

4:11:16 PM
MR. KOPLIN moved to slide 24 and said the winter incentive rate schedule was developed in response to the seafood industry's appeals for help with energy costs. He said once a customer reached a threshold where they have paid their fair share of energy costs, their rate drops to $.06 per kwh,

[Original punctuation provided.]

Temporary Winter Incentive
Rate
Public Hearing

September 25, 2024
Implemented: October 1, 2024

4:11:42 PM
MR. KOPLIN moved to slide 25 and said most CEC customers were hovering just below the 1,000-kwH threshold and if they added an air source heat pump, they would land in the incentive range. He explained that the savings on heating bills will be significant. He noted that for businesses and residents heating bills are generally three times their electric bill, so making heat less expensive makes a big impact on overall energy costs:

[Original punctuation provided.]

Proposal

Two-part incentive rate structure

- Top winter users in the cannery and large power rate class have an incentive tier based on historical winter maximum usage
- Large power, general service, and residential rate classes have an incentive tier implemented

Incentive Rate of 6 cents / kwh
Effective Oct 2024- Mar 2025

[Rate Table comparing four rate tiers plus a proposed Incentive Tier]

4:12:20 PM
MR. KOPLIN moved to slide 26 and said CEC worked with the Renewable Energy Fund to address the costs of a high-altitude [dam] project. Access to low-interest federal funding is available now. However, a review of local opportunities suggested that the Humpback Creek Project with the upstream addition of a thin-arch dam would allow storage of about three days of operating water, eliminating the need for summer diesel use, as well as significant reduction of winter diesel use. Redesign and upgrade to that existing facility will approximately triple the current diesel off-set and combining Humpback Creek storage with Crater Lake Storage will bring CEC to approximately 95 percent renewable energy:

[Original punctuation provided.]

HUMPBACK CREEK STORAGE ADDITION

- Build 70' Thin Arch Dam
- Connect Dam to Existing Penstock
- Remove (2) 500kW Francis Turbines with
- Install (1) 1,300kW Pelton Turbine Generator
- Upgrade Switchgear and Hydraulics
- Triple Output – Maximize Diesel Offset

4:13:45 PM
MR. KOPLIN moved to slide 27. He said Crater Lake was perched high above the [Cordova] community. The dam proposed would be fairly small, at about 25 feet tall with a small pipeline down to tidewater. He said the city experienced droughts and water shortages at a water treatment facility and the Crater Lake dam would provide hundreds of thousands of gallons of water storage which could be used when water is needed and would provide energy as well. He emphasized the multiple benefits of thoughtful infrastructure. He said Cordova would be seeking matching funds for the funding opportunity to move forward with these projects. He acknowledged the high up-front capital investments required for hydro projects but noted that the investment results in significant decreases in the cost of energy, as [Alaska has] experienced with the Bradley Lake dam:

[Original punctuation provided.]

Crater Lake – Design and Layout

[Text superimposed on topographical map of the proposed facility]

14” – 16” Diameter Pipeline
Approximately 3,800’ Long
20-25’ High Dam
125’-400’ Wide Dam
1713 Acre-Feet or 567,000,000 gal/year
2.2M kWh/Yr or 162,300 gal. diesel

4:15:02 PM
SENATOR CLAMAN asked for a comparison of the Humpback Creek dam with the inflatable dam [at Power Creek].

4:15:15 PM
MR. KOPLIN said Humpback Creek Dam and the watershed were about one fifth the size of Power Creek, and Power Creek has undergone significant design improvements. He said Power Creek produced about 70 percent of Cordova's energy last year and Humpback Creek produced about ten percent. He said Humpback Creek would grow from about two million to six million kWh annually and CEC realizes about 18 million kWh out of Power Creek.

4:16:19 PM
MR. KOPLIN moved to slide 28, a graph representing 2023 Hydro [Humpback Creek and Power Creek], Diesel, and Peak [Energy] Generation. He highlighted valve replacements and diesel efficiency improvements to the system over the past two years and the resulting reduction to diesel generation in the winter months of 2023.

4:16:34 PM
MR. KOPLIN moved to slide 29, a graph like the one on slide 28 depicting CEC power generation for 2024 and noted the increase in hydropower generation and the continued decrease in diesel consumption.

4:16:40 PM
MR. KOPLIN moved to slide 30, a graph like the one on slide 29 with the hypothetical additions of the upgrades to Humpback Creek and Crater Lake. He said the graph represented conservative estimates of what CEC expects from the upgraded hydropower systems, especially for the winter months when year-round residents and businesses would realize the greatest benefit.

4:17:02 PM
MR. KOPLIN moved to and narrated slide 31. He emphasized that the presentation barely scratched the surface of the CEC experience and he hoped for the opportunity to share much more.

He noted CEC was able to share with Greenland their experience using underground power lines to extract more energy from their power plant. As a result of the increased efficiency, Greenland deferred building a $30-40 million fourth turbine because they were producing enough power with the turbines they had; the underground power lines allowed more efficient power use:

[Original punctuation provided.]

THANK YOU! – Questions?

Cordova Center – Cordova, Alaska
2025 Alaska Power Association Annual Meeting
September 23-26
We Welcome Policy Tours and Field Hearings

ckoplin@cordovaelectric.com (907) 831-6339 M

[Alaska Power Association] APA & [ARECA Insurance Exchange] AIE
-ANNUAL-
MEETINGS
SEPTEMBER 23-26, 2025
THE CORDOVA CENTER
CORDOVA, Alaska
MORE INFORMATION:
WWW.ALASKAPOWER.ORG/ANNUAL-CONFERENCE

4:17:54 PM
SENATOR CLAMAN noted Cordova's decision to bury their power lines. He asked how long it took to accomplish community wide.

4:18:08 PM
MR. KOPLIN said it took 40 years, from 1978 when the cooperative was formed until 2011. The decision represented $68 million dollars in value to the community. He said underground power lines are much safer and there are many value streams for underground power. He said Cordova took advantage of every opportunity, such as repaving projects, and electric utility upgrade projects etc., over the forty years to lay conduit and upgrade circuits and continue to build the system. He emphasized the value of cooperation, collaboration and communication among

utilities and other entities to keep costs down and spread the project out over time. He said it was surprising how fast it gets done and how time goes by.

4:20:18 PM
SENATOR CLAMAN noted that Anchorage expects to take about 100 years to upgrade to underground power. The project is funded through property taxes and though it is taking time, he approved.

4:20:39 PM
SENATOR DUNBAR noted the potential application of Cordova's lessons to other Alaska communities and that the decision to pursue hydro power in Cordova was controversial.

SENATOR DUNBAR commended the innovative approach of CEC and the telephone cooperative. He emphasized the importance of pursuing funding and embracing innovation, even in a traditional community of fishermen. He also noted significant contributions of state and federal support and the establishment of the Cordova Center, which required external assistance.

4:22:35 PM
MR. KOPLIN humorously noted that policies may not keep the lights on, but they are crucial. He acknowledged controversies and objections as well as the tragic fatality that occurred during the development and construction of the Power Creek dam. He urged holistic consideration of future projects, though, and noted recent flooding and emergencies in communities downstream of the proposed Susitna-Watana dam. He advocated for the role of dams in responding to the impact of climate change on water supplies and in maintaining stable conditions for salmon and other aquatic life. He cited the example of the Columbia and Snake Rivers, which were showing increased salmon returns due to dams. He emphasized the value propositions of dam projects under consideration, urging that they be built now despite challenges and opposition, citing their energy cost savings and environmental benefits. He stressed the importance of leadership making hard, right choices.

4:25:22 PM
CHAIR GIESSEL thanked Mr. Koplin for bringing the presentation to the committee.

4:25:38 PM
MR. KOPLIN emphasized the important role of governance and leadership.

4:25:57 PM
At ease.

SB 61-ELECTRONIC DEVICE RECYCLING

4:29:55 PM
CHAIR GIESSEL reconvened the meeting and announced the consideration of SENATE BILL NO. 61, "An Act relating to an electronic product stewardship program; relating to collection, recycling, and disposal of electronic equipment; establishing the electronics recycling advisory council; and providing for an effective date."

4:30:33 PM
LOUIE FLORA, Staff, Senator Löki Tobin, Alaska State Legislature, Juneau, Alaska, explained that this legislation was first brought before the Senate Resources Committee in 2024. He paraphrased the written Sponsor Statement for SB 61 on behalf of the sponsor:

[Original punctuation provided.]

SB 61
Sponsor Statement

Senate Bill 61 creates a manufacturer-funded system for collecting and recycling electronic devices. Flat-screen televisions, computer monitors, and other electronic devices have grown integral to modern life, business, and education. With ever more devices, there is a growing problem of electronic waste in Alaska.

SB 61 introduces the practice of product stewardship for electronic devices sold in Alaska. Product stewardship is where the manufacturer of an electronic device assumes financial responsibility on a life-cycle basis for that device. Manufacturers allocate funding to cover collection and recycling activities. These costs are currently borne by communities, non-profit organizations, Tribes, and businesses.

Electronic waste associated with human health risks includes lead used in the cathode ray tubes found in computer and TV screens, cadmium used in rechargeable computer batteries, contacts and switches, and mercury used in the liquid crystal displays of mobile phones

and flat screen computer monitors as well as in switches, batteries, and fluorescent lamps. These components are especially problematic in rural Alaska where community landfills are often unlined, allowing harmful chemicals to be released into local waters. Landfill fires that include electronic devices can cause smoke inhalation hazards in communities.

If SB 61 passes, Alaska will join half the states in the nation, Canada, and many other countries in having a product stewardship law. Under SB 61 a manufacturer offering electronic devices covered under this bill for sale in Alaska would register with the Department of Environmental Conservation and allocate funding for the collection and recycling of devices proportional to the volume of their sales. Manufacturers would register individually or join a clearinghouse that specializes in implementing these programs and dividing the costs of the program among manufacturers. This will create a funding stream to cover the costs of collection, transportation and recycling which is currently funded by a mix of grants and local tax revenue.

SB 61 was developed by the Alaska Solid Waste Task Force. Stakeholders in the task force include the Alaska Native Tribal Health Consortium, the Alaska Department of Environmental Conservation, Kawerak Incorporated, and Zender Environmental. A product stewardship policy for electronic devices is supported by the Alaska Federation of Natives, the Alaska Municipal League, the Solid Waste Association of North America as well as numerous Alaska communities, organizations, and businesses.

4:33:44 PM
MR. FLORA explained that, under SB 61, manufacturers can register individually or join what is called a Product Responsibility Organization (PRO), referred to in SB 61 as a clearinghouse. He said a PRO specialized in implementing disposal programs and dividing the cost of the programs among manufacturers. The PRO model is generally well-accepted in states that have adopted legislation like SB 61.

4:34:26 PM
MR. FLORA said the manufacturers, or their PRO will propose a plan for the recycling of the goods. The plan will be reviewed

and amended by a 13-member advisory council created under SB 61, and ultimately that plan will be [submitted for] approval by the Department of Environmental Conservation.

4:34:48 PM
MR. FLORA said the fee paid by the manufacturers will cover the cost of collection, transportation and recycling efforts currently funded in Alaska by a mix of grants and local tax revenue. SB 61 will decrease the burden on local taxpayers and help alleviate concerns about what the federal funding picture might look like in the future.

4:35:55 PM
MR. FLORA noted expert resources available on-line to testify or answer questions.

4:37:05 PM
CHAIR GIESSEL announced invited testimony on SB 61.

4:37:57 PM
LYNN ZENDER, Executive Director, Zender Environmental Health and Research Group, Anchorage, Alaska, moved to slide 1 and introduced herself:

[Original punctuation provided.]

Electronics product stewardship in Alaska

February 5th
Senate Resources Committee
Dr. Lynn Zender
Director, Zender Environmental Health and Research Group
Member, Solid Waste Alaska Task Force

MS. ZENDER explained that Zender Environmental Health and Research Group was an 18-member non-profit based in Anchorage, primarily focused on serving rural communities to address waste management and water quality issues.

4:38:41 PM
MS. ZENDER moved to slide 2. She said the task force was comprised of solid waste experts from each organization who came together to identify issues beyond the control or influence of any one community. She said electronic waste (E-waste) was one of those issues:

[Original punctuation provided.]

What is the Solid Waste Alaska Taskforce (SWAT)?

Formed in December 2014, SWAT is a team of multiple organizations with statewide solid waste programs that work together for sustainable waste solutions in rural Alaska:

- Alaska Department of Environmental Conservation (ADEC)
- Alaska Native Tribal Health Consortium (ANTHC)
- Zender Environmental Health and Research Group
- Kawerak, Inc

4:39:17 PM
MS. ZENDER moved to slide 3, which contained a table of chemical compounds, their range and refences; and two diagrams:

- A sanitary landfill - MS. ZENDER highlighted the liner, leachate collection system and leachate treatment plant and said a sanitary landfill is required in every community in the United States, including the larger cities in Alaska.

- Unlined landfill - In rural Alaska, the landfills don't have liners or leachate treatment. She said the chemicals listed in the table of compounds and many more enter the environment because there is nothing to stop them.

4:40:05 PM
MS. ZENDER moved to slide 4. She noted the dead plants around the landfill and said they indicated that leachate and the chemicals therein were entering the surrounding waters and land:

[Original punctuation provided.]

[Overhead photo of a rural landfill situated on the tundra.]

Chemicals
migrate
because there is
nothing stopping
them.

4:40:29 PM
MS. ZENDER moved to slide 5, which contains a table of chemicals and compounds as well as an incineration plant diagram and a photo of a burn box in rural Alaska. She explained that burning is one method of reducing waste volume and an incinerator to treat all the [chemical] emissions is required everywhere in the U.S. except in rural Alaska.

4:41:06 PM
MS. ZENDER moved to slide 6 and said the chemicals listed in the table [on slide 5] will be released into the air [when using a burn box] and will result in the unfortunate circumstances depicted on slide 6. She said about 85 percent of rural Alaska communities burn at least sometimes:

[Original punctuation provided.]

Harmful
chemicals
release into the
air through
Open Burning

[Photo of a rural school and playground situated across a road from a landfill; smoke from a burn box is shown carried by the wind toward the school and playground.]

About three-quarters of landfills are within
one mile of town and one-quarter
are within 1000 ft of town.

4:41:35 PM
MS. ZENDER moved to and narrated slide 7:

[Original punctuation provided.]

Proximity to Water

[Photo of a fenced landfill situated within a few yards of a Subsistence River.]

Proximity: Nearly 30% are within 100 ft of a primary water body, about half flood yearly during breakup.

4:41:54 PM

MS. ZENDER moved to slide 8 and expressed concern about direct human exposure to chemicals released by burning or by leaching:

[Original punctuation provided.]

> Worker safety concerns.
>
> [Photo of an open, operating burn box with a person in proximity.]

4:42:24 PM
MS. ZENDER moved to slide 9. She said there have not been a lot of health risk studies done in rural Alaska, primarily because of the small populations. One study published in the American Journal of Epidemiology found that rural Alaska sites with the most hazardous waste content were linked with a four times greater chance of certain birth defects as well as other [adverse] birth outcomes. E-waste comprises the greatest volume of hazardous waste present in rural Alaska, containing lead, cadmium, flame retardants, phthalates, etc. that can cause cancer, developmental delays, birth defects, IQ loss and reproductive problems. She said it makes sense to pull out the E-waste:

[Original punctuation provided.]

> [Text accompanied by photos of open landfill with evidence of burning and with evident E-waste.]
>
> Sites with the most hazardous wastes were linked with a 4 times greater chance of certain types of birth defects, as well as other negative birth outcomes.
>
> E-wastes make up the biggest volume of hazardous waste.
>
> They contain chemicals like lead, cadmium, flame retardants, phthalates, that can cause cancer, developmental delays, IQ loss, reproductive problems, and more.

4:43:32 PM
MS. ZENDER moved to slide 10. She said there was very limited space to store e-waste when villages pull it out of landfills to avoid negative health impacts. She noted the high expense to construct facilities in rural Alaska. She said Americans generate about 40 pounds of e-waste per person per year:

[Original punctuation provided.]

Limited space to store e-waste.

[Text accompanied by photos of piled E-waste in indoor and outdoor settings.]

- A 500-person village can generate 20,000 lbs. of e-waste each year.
- Alaska makes around 25 million pounds of e-waste each year.

4:44:11 PM
MS. ZENDER moved to slide 11. She said safety was not part of the health risk study:

[Original punctuation provided.]

Safety is also a problem even when it doesn't look like it.

[Statement superimposed on a photo of a landfill with an open fire emitting heavy, black smoke.]

4:44:22 PM
MS. ZENDER moved to slide 12:

[Original punctuation provided.]

Lithium Battery Air Incidents
involving smoke, fire, or extreme heat
Cellular phone - 86
Other electronic device - 75
Laptop - 72

[Statement superimposed on subsequent photo of burning landfill from slide 12 engulfed in a fiery explosion.]

MS. ZENDER observed that it was not known whether the explosion in the photo was caused by a lithium battery, but it is known that lithium batteries are a fire safety issue. There were over 200 incidents of lithium battery error incidents last. She emphasized that these materials do not belong in landfills where there is combustible material and not a lot of control.

4:45:00 PM

MS. ZENDER moved to and narrated slide 13:

[Original punctuation provided.]

About 90% of communities can't afford to operate a backhaul program on their own and still run their landfill properly
backhaul creates jobs.

[Photos of village residents working to gather e-waste.]

Backhaul creates jobs, increases Alaska transporter revenues, protects people, and reduces future liability concerns.

4:45:33 PM
MS. ZENDER moved to slide 14 and said [Zender Environmental Health and Research Group] administers the Backhaul Alaska program on behalf of Solid Waste Alaska Taskforce (SWAT). The effort includes 94 communities. She emphasized the great work that is being done, but said it is grant-funded and not sustainable:

[Original punctuation provided.]

Backhaul Alaska helps to leverage logistics and supplies but is grant funded also…

- **Trainings** [Photo of people gathered around palletized e-waste.]
- **Logisitics** [Photo of excavator loading e-waste on a fishing boat
- **Supplies and Inventory Assistance** [Photo of packaging and appropriate chemical and hazardous labeling materials.]
- **Regional Coordination and Guidance** [Alaska map illustrating rural locations and connections.]
- **Site Visits and Safety Checks** [Photo of worker with apparent collected e-waste.]

4:46:18 PM
MS. ZENDER moved to and narrated slide 15:

[Original punctuation provided.]

The E-waste problem in Urban Alaska

- Even the best urban landfill liners fail and will eventually release toxic chemicals to water and land.
- Alaskans depend on the environment for their food – salmon, moose, berries can all be impacted.
- It's a big liability risk.

4:46:50 PM
MS. ZENDER moved to and narrated slide 16:

[Original punctuation provided.]

The E-waste problem in Alaska

- it is inconvenient because there are few locations and there are restrictions on what is accepted.
- But making people pay to drop-off their electronics is a big disincentive. We want to capture the full waste stream.
- Our schools and small businesses pay when they are struggling.
- Our big cities pay for e-waste disposal when those funds could go to balance budgets.

4:47:39 PM
MS. ZENDER moved to and narrated slide 17:

[Original punctuation provided.]

We want to recycle , but it is so expensive.

Disposal costs are burdening our governments, our schools, small businesses, non -profits, and the public.

[Graphic illustration comparing the cost of waste recycling in the Lower-48, Urban Alaska and Rural Alaska.]

4:47:59 PM
MS. ZENDER moved to and narrated slide 18. She said Solid Waste Alaska Taskforce (SWAT) identified the number one solution to be "Product Stewardship".

[Original punctuation provided.]

[Graphic depiction:
1. Manufacturers make the product $
2. Interim Public Use of Product
3. Recycle the Product $
4. Safe Disposal

- A law that shifts the cost of safe recycling/disposal to the producers.
- Producers pay for the product development and they pay for its disposal – the full life cycle of the product.
- Because producers have to pay for disposal – they are motivated to produce less toxic, more durable, repairable, and /or more recyclable products. Market Efficiency.

4:48:35 PM
MS. ZENDER moved to slide 19, a map of the United States identifying states with U.S. Electronics Laws in 2024. She noted that Hawaii also has backhaul costs and backhaul issues because they do not have any processors in state.

4:48:56 PM
MS. ZENDER moved to and narrated slide 20:

[Original punctuation provided.]

E-waste legislation for Alaska

- SWAT researched product stewardship in Maine, BC, Hawaii and consulted with stakeholders around the state over several years.
- Product Stewardship Institute (PSI) helped incorporate experiences from other states through a template
- A stakeholder advisory group discussed and drafted a framework that fits Alaska.

4:49:44 PM
MS. ZENDER moved to and narrated slide 21:

[Original punctuation provided.]

Resolutions: Alaska Federation of Natives, Alaska Municipal League, multiple small communities, the Solid Waste Association of North America, Alaska Chapter

Some of the Groups, Tribes, Organizations who have provided input for a Framework that will work for Alaska. 2018 - 2023

- Alaska Support Industry Alliance
- UAA Cooperative Development Center
- Alaskans for Litter Prevention and Recycling
- Maniilaq Association
- Saltchuk
- Alaska Marine Lines
- Aleut International Association
- ANVCA
- Alaska Air Carriers Association
- Denali Commission

- TetraTech
- Waste Management
- Alaska Municipal League
- Knik Tribe
- AVCP
- Anchorage Municipality
- Curyung Tribe
- Solid Waste Assoc. N. America
- Total Reclaim
- Interior Greenstar
- Central Recycling

4:49:50 PM
MS. ZENDER moved to and narrated slide 22:

[Original punctuation provided.]

Every community is covered.

- Larger communities (over 5,500) get year-round drop-off centers
- Offroad communities would have essentially a shipping van(s) to store waste, and recycling,

shipping, supplies, and labor would be covered to ship out accumulated electronics annually.
- Schools would be included as would smaller business and nonprofits.

4:50:06 PM
MS. ZENDER moved to and narrated slide 23. She emphasized the agreement among stakeholders that Product Stewardship in Alaska should not cost the state anything:

[Original punctuation provided.]

To know

- Producers covers all costs: collection, transportation, processing, recycling, education, program administration, and ADEC oversight/administration.
- There has never been a documented price increase in computers/electronics after a bill has passed – here or worldwide.

4:50:57 PM
MS. ZENDER moved to and narrated slide 24.

[Original punctuation provided.]

The Bottom Line…Why not?

By incorporating disposal costs into the product, the Market makes health protection and cost much more efficient than what we could otherwise do.

- No obligations on Alaska Retailers.
- No taxes or fees for Alaska consumers.
- No additional cost for the State.

4:52:10 PM
SCOTT KLAG, Consultant, Product Stewardship Institute, Portland, Oregon, affirmed SB 61 and said its provisions place it as one of the best product stewardship laws in the country. He emphasized that SB 61 would not put a financial burden on the state and that all costs of the program, including the costs of administration and oversight, are to be carried by the manufacturers.

4:54:19 PM
LELAND REHARD, Environmental Program Coordinator, City of Columbia, Columbia, Missouri, emphasized and affirmed the high degree of collaboration among stakeholders to develop SB 61 and the high value placed on building consensus by the Solid Waste Alaska Taskforce (SWAT).

4:55:04 PM
SENATOR DUNBAR noted concerns about Section 46.06.250 of SB 61 describing civil penalties for prohibited acts:

- He questioned the enforceability of individualized penalties, especially in everyday scenarios like disposing of old devices.
- He expressed doubts about the necessity of these penalties for the bill's operation.
- He suggested potential disparities in the application of penalties across different neighborhoods, noting significant fines for repeated violations.

4:56:47 PM
MR. FLORA said it was his understanding that the fines [proposed in SB 61] apply to the manufacturers, the clearing houses and the collection site administrators [as well as residents]. He said the fee structure included latitude for situational flexibility. He advocated keeping some penalty in the legislation to ensure accountability and to ensure that SB 61 produces results.

4:58:08 PM
MR. KLAG affirmed that this was an issue in other states. He highlighted the ability to hold manufacturers accountable to the provisions of SB 61 and to address proper disposal by residents. He cautioned against singling people out and the importance of informing people about disposal bans. He encouraged the development of robust community education and promotion programs by the advisory committee and said those programs should include information about available [disposal] services.

5:00:15 PM
MS. ZENDER said she was aware of regulations in place in Anchorage against discarding electronic devices in trash cans. She said she was not sure how the city of Anchorage enforced the regulation.

5:01:02 PM

SENATOR DUNBAR said he would investigate further [outside of committee].

5:01:16 PM
CHAIR GIESSEL held SB 61 in committee.

5:01:46 PM
There being no further business to come before the committee, Chair Giessel adjourned the Senate Resources Standing Committee meeting at 5:01 p.m.