UAA Institute of Social and Economic Research
University of Alaska Anchorage

ACEP
Alaska Center for Energy and Power

# Energy Data in Alaska

## Alaska Energy Data Gateway

Dr. Diane Hirshberg
Dr. Jeremy Kasper
Leasi Vanessa Lee Raymond, M.A.

# Dr. Jeremy Kasper

Director, Alaska Center for Energy and Power

An oceanographer and physicist by training, Kasper is also a founding co-director of the Pacific Marine Energy Center, a consortium of marine energy research institutes and a DOE designated National Marine Energy Center consisting of UAF, the University of Washington, and Oregon State University.

# Dr. Diane Hirshberg

Director, Institute for Social and Economic Research (UAA)

Diane Hirshberg is the Director of the Institute of Social and Economic Research and Professor of Education Policy at the University of Alaska Anchorage.
Dr. Hirshberg teaches in the Master of Public Policy Program at the UAA College of Business and Public Policy. She has a Ph.D. in Education from UCLA, a Master of Public Administration from Columbia University, and two bachelor's degrees from UC Berkeley.

# Leasi Vanessa Lee Raymond, M.A.

Deputy Director for Strategic Initiatives, Alaska Center for Energy and Power

Lead of the Alaska Energy Data Gateway Revitalization effort (2024-present), building off current and former roles in data leadership as Indigenous Data Exchange Advisory board member, co-chair of the Arctic Data Committee, co-lead of the Alaska Geospatial Council's Energy Data working group, Interagency Arctic Research Priorities Collaboration (IARPC) Data Management non-federal co-lead, data advisor for the Inuit Circumpolar Council Alaska, and a decade of technical software development for data-centric web applications.

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# UAF Alaska Center for Energy and Power

Jeremy Kasper, ACEP Director

Applied energy research institute focused on strategically partnering & convening to advance:

- Economic, Social and Policy Aspects of Energy Systems
- Energy Systems Modeling & Analysis
- Technology Testing & Optimization
- Energy Innovation
- Storytelling, Education, Workforce Development & Knowledge Networks

ACEP's Mission: Fostering development of practical, innovative and cost-effective energy solutions for Alaska and beyond

ACEP's Vision: Alaska leading the way in innovative production, distribution and management of energy.

# ACEP Programs

Pacific Marine Energy Center (PMEC)

Power Systems Integration (PSI)

Energy Policy Innovation Center (EPIC)

Research Technology Infrastructure (RTI)

Education and Workforce Development

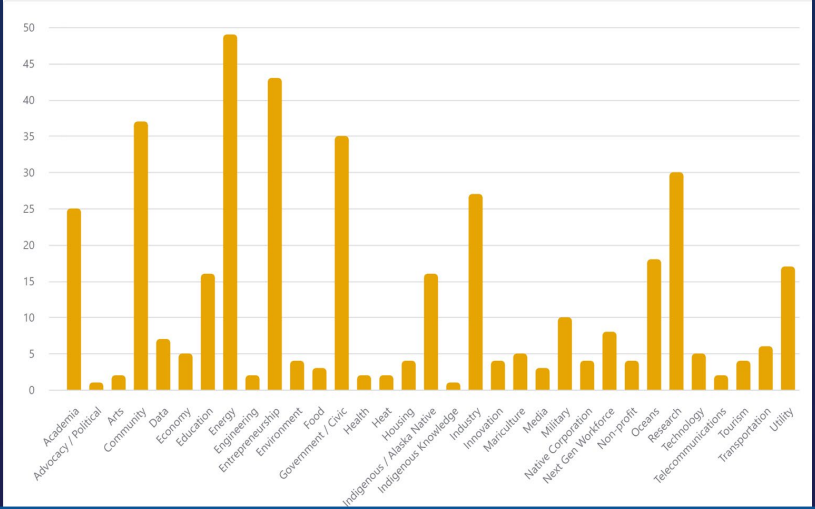
Grid Edge

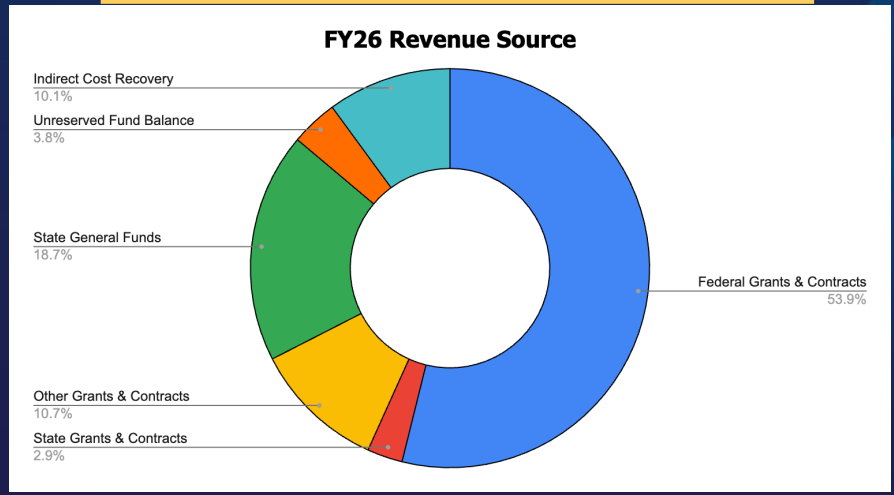
Storytelling

# ACEP Facts and Figures

**01** 80-100 researchers

**02** ~$14M in annual in expenditures



# Founded in 1961

CHAPTER 80

AN ACT

**Relating to the establishment of a business, economics and public administration research program by the University of Alaska; and providing for an effective date.**

(H.B. 161)

**Be it enacted by the Legislature of the State of Alaska:**

Section 1. The University of Alaska is authorized to establish a business, economics and public administration research program for the purpose of developing and publishing statistics and other information regarding the economy, government and resources of the state.

Sec. 2. This Act takes effect on the day after its passage and approval or on the day it becomes law without such approval.

Approved April 13, 1961

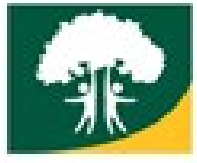
# About ISER

- ISER's research is non-partisan, independent, and available to the public.
  - Most of ISER's 1,800+ publications are available online at no cost through ScholarWorks@UA
- ISER's research is primarily funded through competitive grants and contracts with state and federal agencies, as well as private foundations, and through philanthropic support.
- Faculty and research professionals (RPs) come from a wide range of disciplines.
  - ISER researchers have expertise in many fields, including economics and fiscal policy, education policy, applied anthropology, behavioral health and psychology, natural resources management, and Arctic sustainable development

# Two centers within ISER

UAA Center for Alaska Education Policy Research
UNIVERSITY of ALASKA ANCHORAGE

CAEPR researchers focus on education policy issues, evaluate education policies and programs, act as a clearinghouse for education-related research at ISER, and provide analyses on education topics to policymakers.



UAA Center for Behavioral Health Research & Services
UNIVERSITY of ALASKA ANCHORAGE

CBHRS' multi-disciplinary team of faculty, research professionals, and students engage in collaborative research and evaluation that addresses applied and behavioral health issues within and outside Alaska.

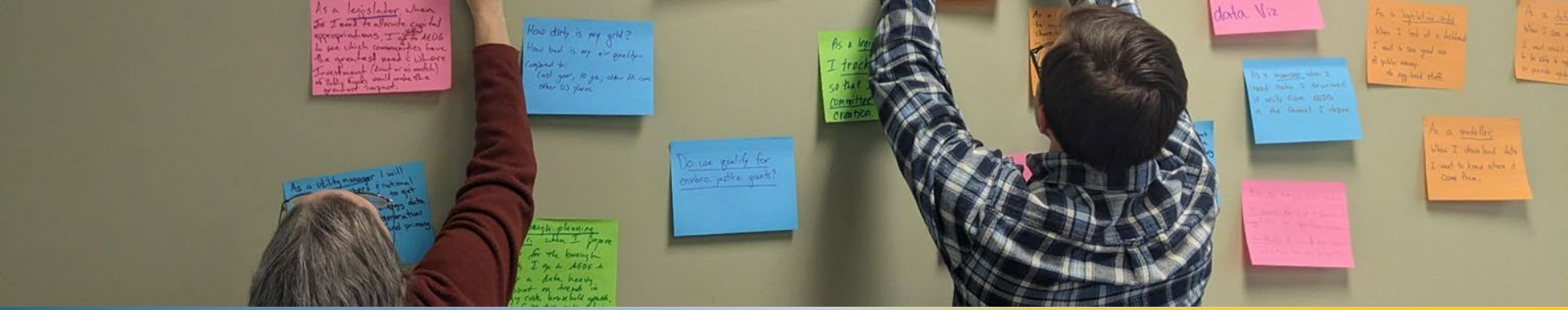
# ISER does more than just research

- ISER faculty teach UAA classes in economics, public policy, resource management, and other areas
- They testify to the legislature and answer queries from local and national policymakers Alaska
- Researchers give public lectures and talks across Alaska
- They are featured regularly in the media

# ISER – Enhancing the well-being of Alaskans

ISER enhances the well-being of Alaskans and others, through non-partisan research that helps people understand social and economic systems and supports informed public and private decision-making. ISER carries out its mission by:

- Focusing attention on critical economic and social issues in Alaska, the Arctic, and similar regions
- Engaging in basic and applied research leading to better understanding of those issues
- Disseminating knowledge through publications and other media, community involvement, public service, and teaching




# Alaska Energy Data Gateway

The Alaska Energy Data Gateway is a public resource funded by the State of Alaska to ensure energy and socioeconomic data is easily accessible.

# A public resource that continues to evolve

A highly sought-after public resource providing data dashboards, tools, and new datasets to meet Alaska's energy data needs.

# Alaska Energy Data Gateway 3.0

**2010** v1.0 Developed by Alaska Center for Energy and Power & Institute of Social and Economic Research (ISER)

**2017** v2.0 redesigned & extended by ACEP and ISER & Lawrence Berkeley National Laboratory (LBNL).

**2024** Alaska State Legislature allocates funding to support the revitalization of the AEDG

**2025** v3.0 redesigned and extended by ACEP & ISER

*Three RePower 2.05 megawatt turbines at the Eva Creek Wind Farm (Rich Stromberg, AEA)*

## Public Data

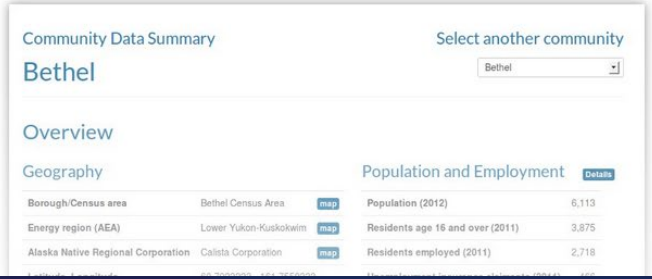
The Alaska Energy Data Gateway provides the public, as well as project developers and researchers, with comprehensive energy data from across the state. With this information, the public can make informed decisions about energy issues in their communities and see how similar issues are being addressed in other parts of the state. To access our public data, choose one of the options below.

Most of the data in the Alaska Energy Data Gateway is available at the community level with the intent of providing information to assist communities in their on-going energy development and efficient energy use. Information can be downloaded and combined with data from the Alaska Community Database Online to provide comprehensive community information.

### Community Data Summaries

Community Data Summaries show a selection of current data about communities, including geography, population and employment, fuel prices, electric rates, and more. To see the data summary for a community, select the community from the menu below.

Select a community

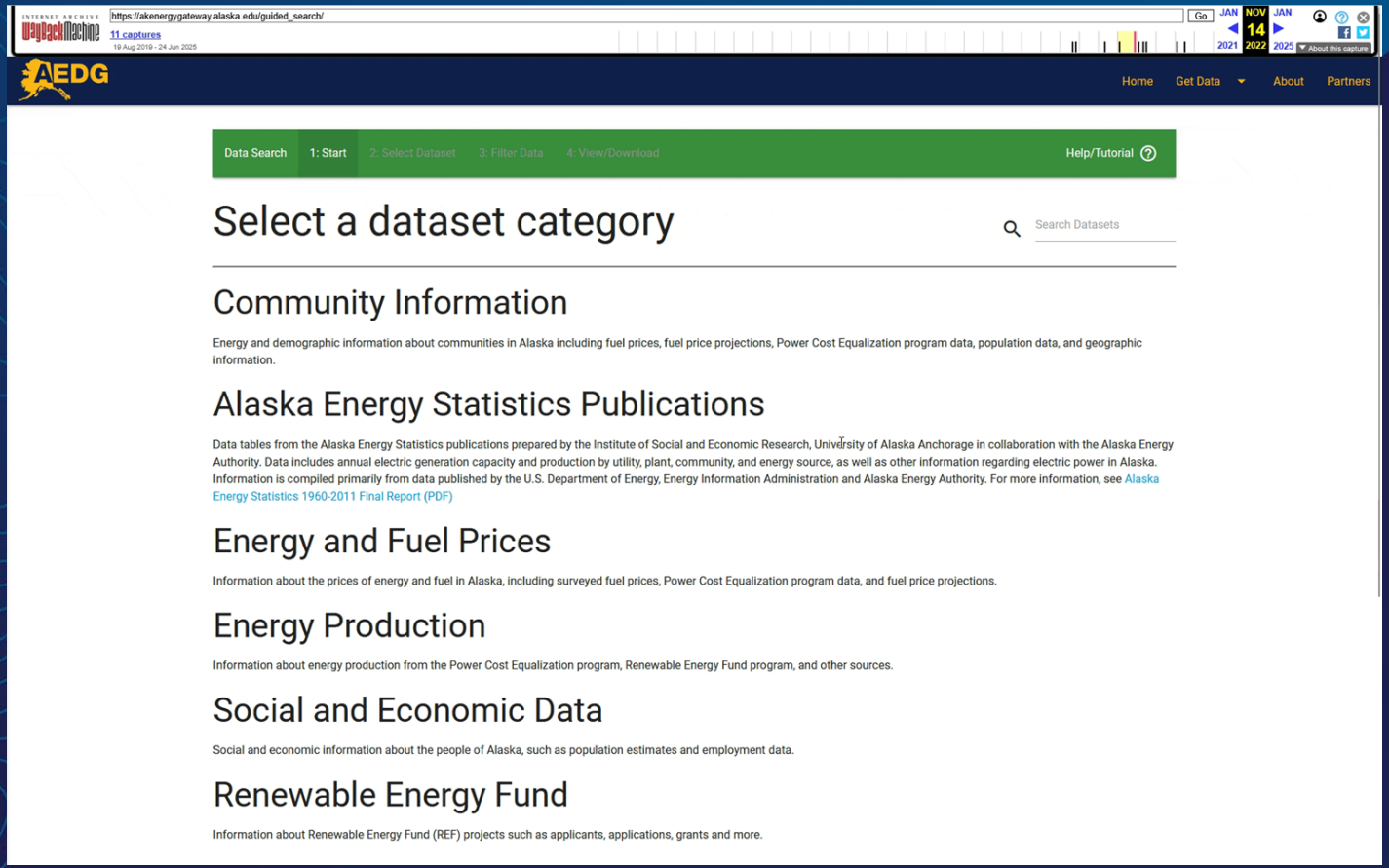



### Data Search Tool

The Data Search tool provides capabilities to browse, search, filter, preview, and download all of our public datasets in a variety of file formats with complete documentation. To use the data search tool, click the button below.

Data Search

AEDG v1.0


https://akenergygateway.alaska.edu/guided_search/
11 captures
19 Aug 2019 - 24 Jun 2025
AEDG
Home
Get Data
About
Partners
Data Search
1: Start
2: Select Dataset
3: Filter Data
4: View/Download
Help/Tutorial
Select a dataset category
Search Datasets
Community Information
Energy and demographic information about communities in Alaska including fuel prices, fuel price projections, Power Cost Equalization program data, population data, and geographic information.
Alaska Energy Statistics Publications
Data tables from the Alaska Energy Statistics publications prepared by the Institute of Social and Economic Research, University of Alaska Anchorage in collaboration with the Alaska Energy Authority. Data includes annual electric generation capacity and production by utility, plant, community, and energy source, as well as other information regarding electric power in Alaska. Information is compiled primarily from data published by the U.S. Department of Energy, Energy Information Administration and Alaska Energy Authority. For more information, see Alaska Energy Statistics 1960-2011 Final Report (PDF)
Energy and Fuel Prices
Information about the prices of energy and fuel in Alaska, including surveyed fuel prices, Power Cost Equalization program data, and fuel price projections.
Energy Production
Information about energy production from the Power Cost Equalization program, Renewable Energy Fund program, and other sources.
Social and Economic Data
Social and economic information about the people of Alaska, such as population estimates and employment data.
Renewable Energy Fund
Information about Renewable Energy Fund (REF) projects such as applicants, applications, grants and more.

AEDG v2.0

akenergygateway.alaska.edu

# Atka

House District 37

# Scenario: Energy Planning

The community of Atka wants to diversify its energy generation source

## Your role:

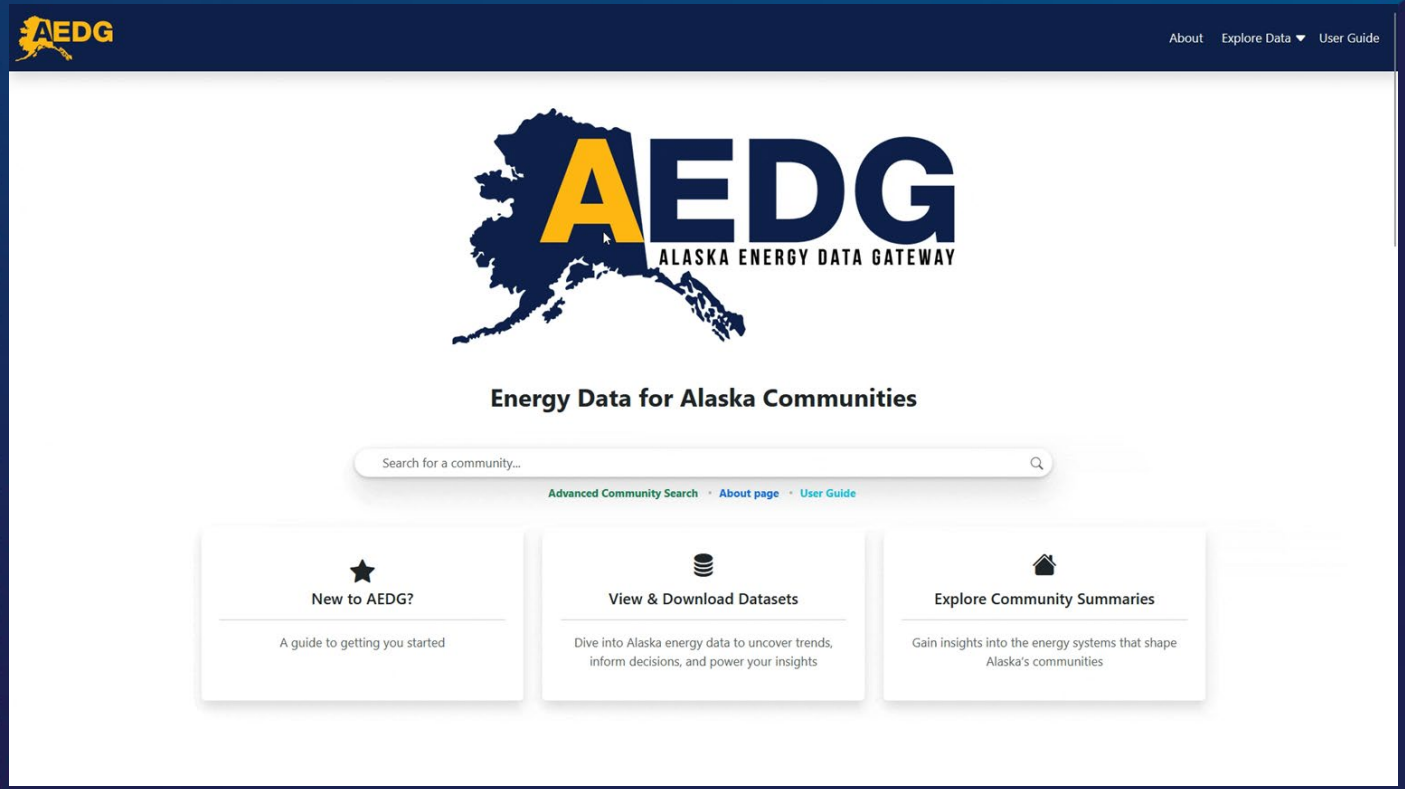
Build an overview of Atka's energy system today.

01 Call a friend

02 Google

03 Call the City of Atka

04 Explore the AGC data portal, PCE data, and the 2016 RACEE profiles

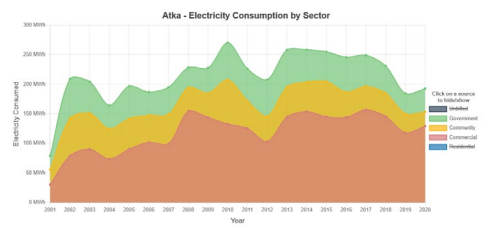



Exploring Atka with the AEDG

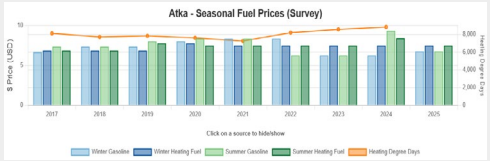
# Briefing

## Atka, AK Energy System

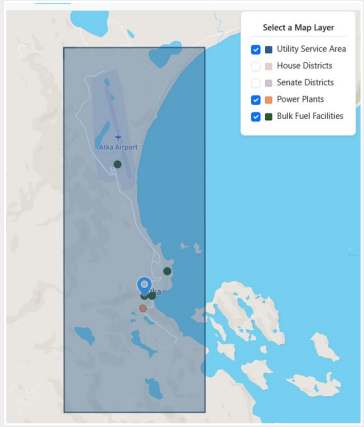
Atka is a PCE-eligible community with hydro-electric and diesel generation. Atka's hydroelectric dam was installed in 2011.



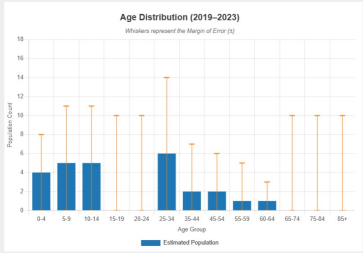

Atka has a large percentage of its electricity use going to commercial consumption, with commercial users being the largest type of rate payer.




Fuel prices in Atka saw a low of $3.58 in 2005 for heating fuel, and a high of $8.40 for heating fuel in the summer of 2024 at the Atka Native Store.




Atka's grid includes four bulk fuel facilities and one power plant, predominantly at some distance from the Atka airport.




Atka's population is between 30 and 60 people, with most of the population under the age of 35

# Energy insights simplified

Atka, AK

# Access, usability, and presentation

Connecting Alaskans to Alaska's energy data

# Defining energy data

Information about how electricity, heat, and transportation fuels are sourced, generated, stored, distributed, used, and governed; and the impacts on the built, natural, and socioeconomic environments.

-2023 Alaska Energy Security Task Force's State Energy Data Subcommittee Report

# It’s complicated



106 utilities

With different capacity, needs, and interest in data collection

186 grids

With no single entity required to store or validate spatial data about these grids

Regulated & unregulated utilities

Creating huge variance in the type and quality of data collected, stored, and made publicly accessible

# Energy data requires partnerships

## UAA's Institute of Social and Economic Research

Social and economic data expertise, datasets, data visualization, system design, user testing

## UAF's Alaska Center for Energy and Power

System design and development, data cleaning, preparation, visualization

# Energy data from many sources

- Department of Labor & Workforce Development
- Department of Transportation
- Department of Revenue
- Department of Natural Resources
- Department of Commerce, Community and Economic Development's Division of Community and Regional Affairs (DCRA)
- Alaska Energy Authority (AEA)
- Regulatory Commission of Alaska (RCA)
- Alaska Housing Finance Corporation

# Other important data sources

01

## Energy Information Administration

Federal agency, only some of Alaska's utilities required to report data

02

## U.S. Geologic Survey

Geographic names to cross reference across data sets

03

## U.S. Census Bureau

Federal data product for population, census tracts, Alaska Native Regional Corporations

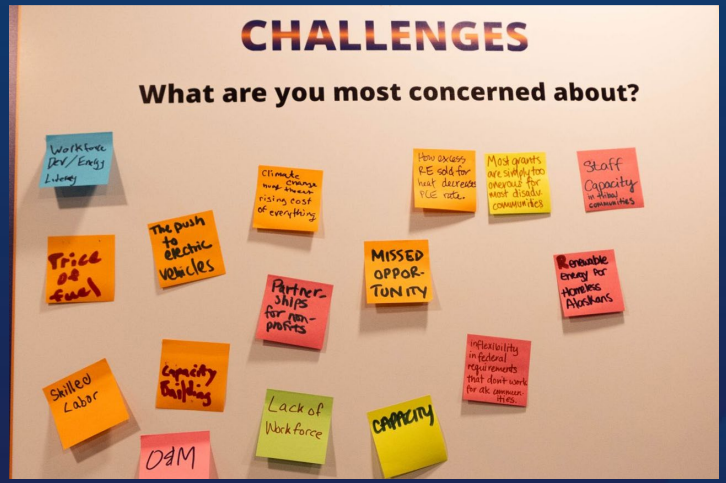
04

## Alaska Energy Statistics

a long-running collection of data and reports about energy production, consumption in Alaska

# Energy data in Alaska

Requires people

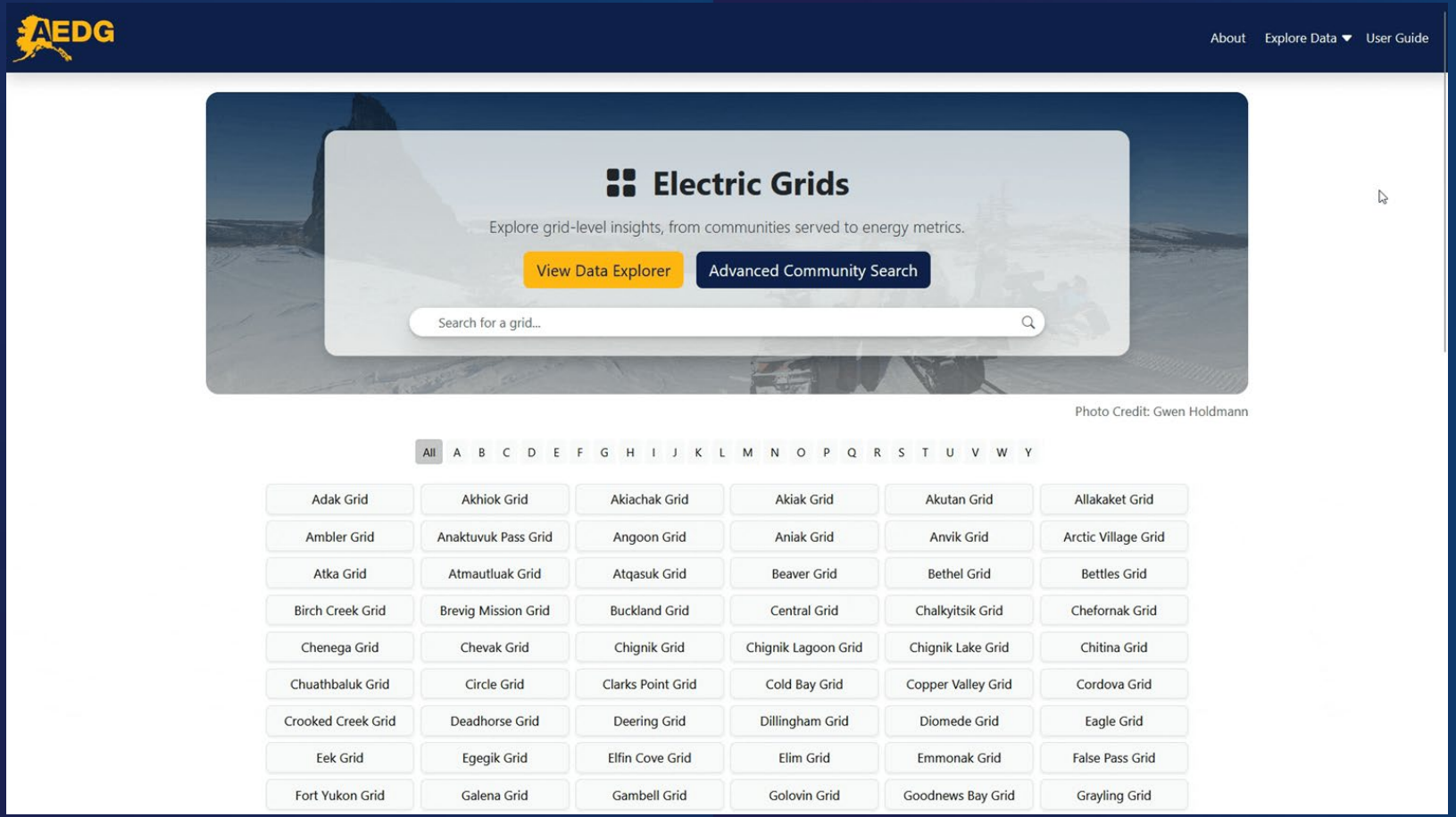



# What's new

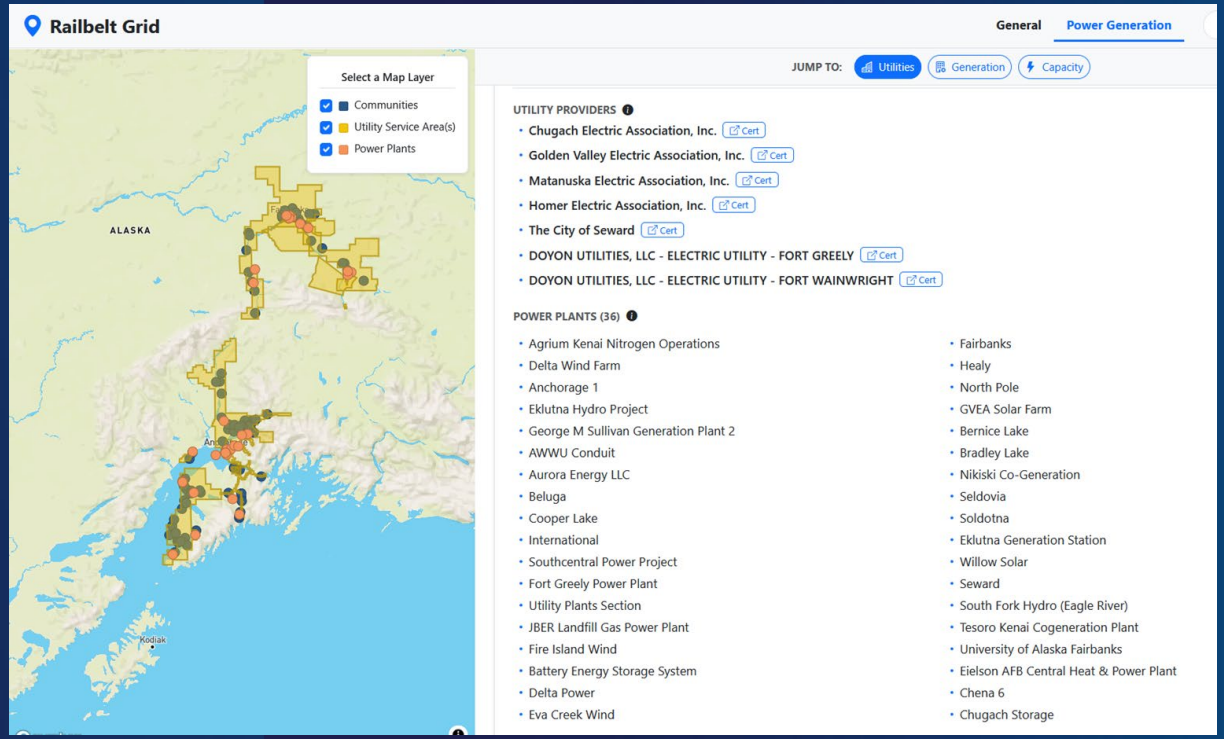
With AEDG 3.0

# Regional grids

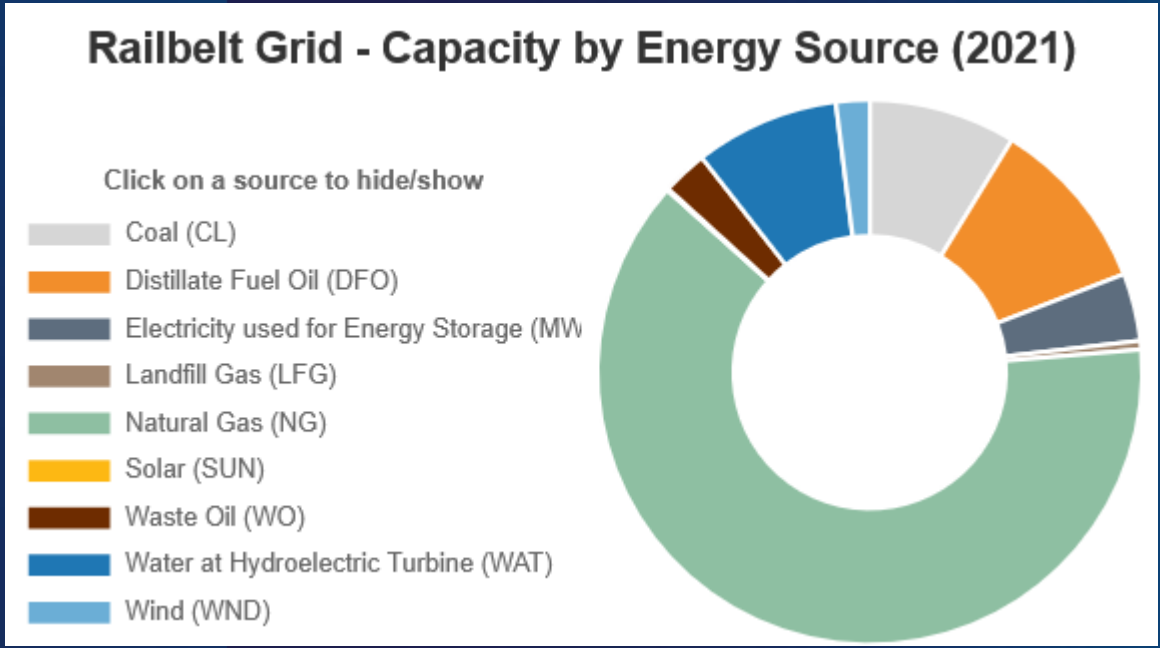
Putting community energy in the context of interconnected grids


AEDG
About
Explore Data
User Guide
Electric Grids
Explore grid-level insights, from communities served to energy metrics.
View Data Explorer
Advanced Community Search
Search for a grid...
Photo Credit: Gwen Holdmann
All A B C D E F G H I J K L M N O P Q R S T U V W Y
Adak Grid
Akhiok Grid
Akiachak Grid
Akiak Grid
Akutan Grid
Allakaket Grid
Ambler Grid
Anaktuvuk Pass Grid
Angoon Grid
Aniak Grid
Anvik Grid
Arctic Village Grid
Atka Grid
Atmautluak Grid
Atqasuk Grid
Beaver Grid
Bethel Grid
Bettles Grid
Birch Creek Grid
Brevig Mission Grid
Buckland Grid
Central Grid
Chalkyitsik Grid
Chefornak Grid
Chenega Grid
Chevak Grid
Chignik Grid
Chignik Lagoon Grid
Chignik Lake Grid
Chitina Grid
Chuathbaluk Grid
Circle Grid
Clarks Point Grid
Cold Bay Grid
Copper Valley Grid
Cordova Grid
Crooked Creek Grid
Deadhorse Grid
Deering Grid
Dillingham Grid
Diomede Grid
Eagle Grid
Eek Grid
Egegik Grid
Elfin Cove Grid
Elim Grid
Emmonak Grid
False Pass Grid
Fort Yukon Grid
Galena Grid
Gambell Grid
Golovin Grid
Goodnews Bay Grid
Grayling Grid

# Railbelt Grid



# Railbelt Grid



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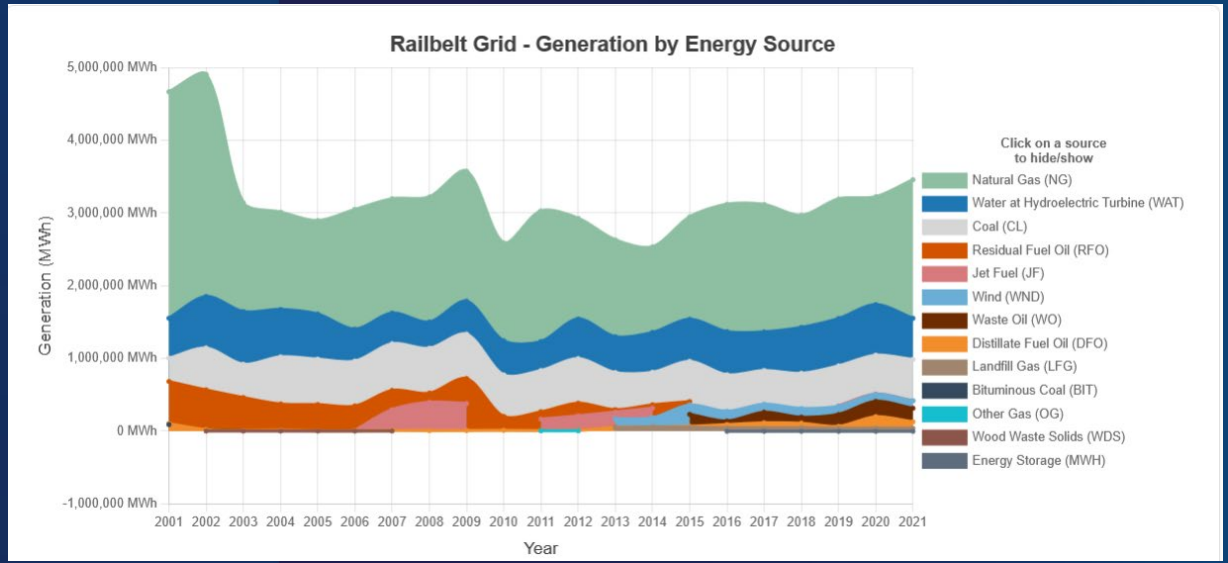
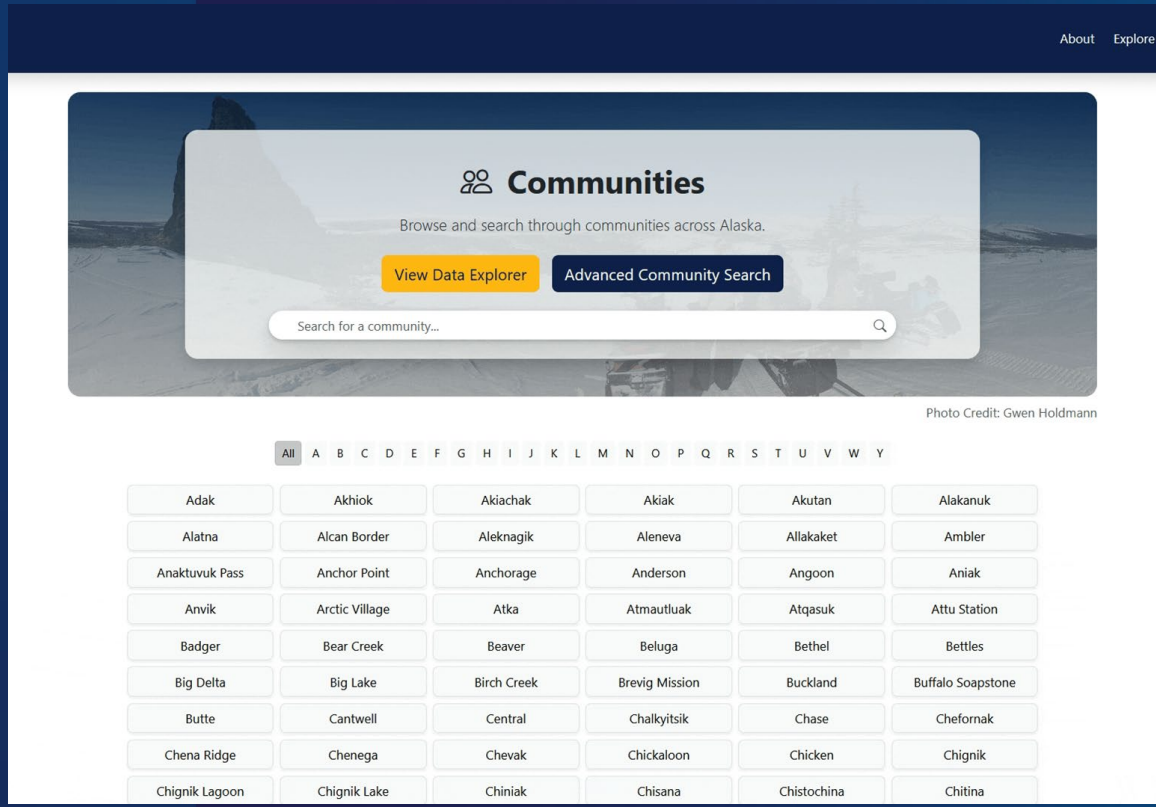


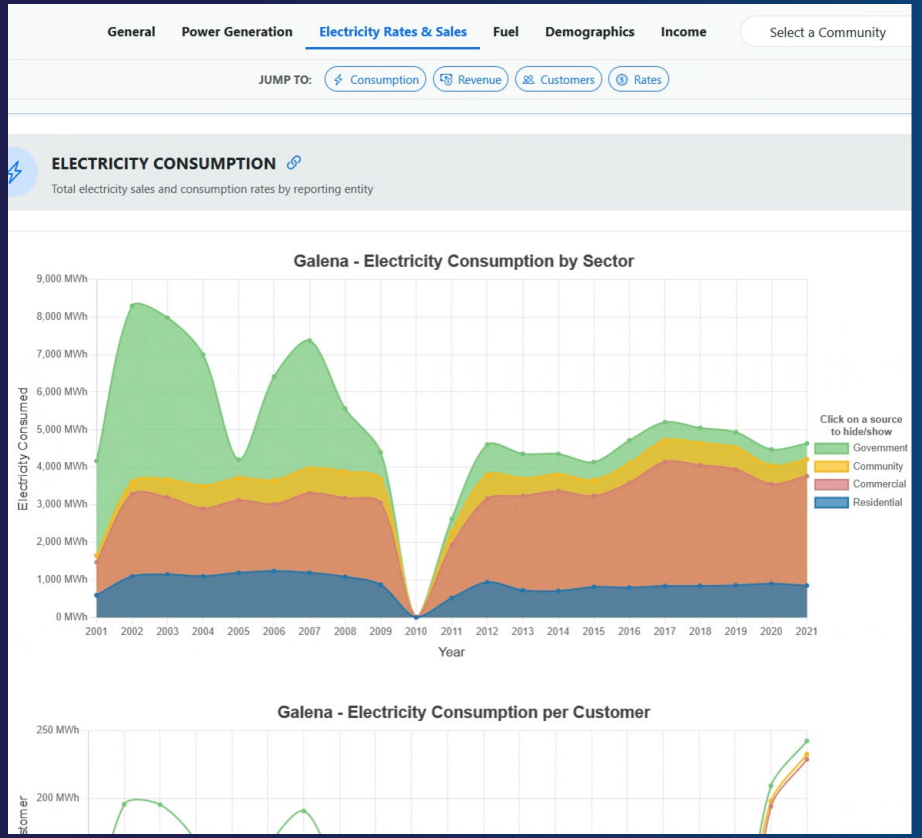
# Governance Relevance

Search by Legislative district, or Regional Corporation to see lists of all communities by district



# Customization

Change data visualizations in real-time, depending on user needs.



# Usability

A major concern of AEDG users was bringing the value of the data into a modern web browsing experience.

# Process for Revitalizing the AEDG

## System Design

October 2025 - May 2025

## User Research

October 2025 - April 2025

## Data Cleaning & Validation

July 2025 - present

## User Feedback & Improvements

March 2025 - ongoing

## Data Visualization

April 2025 - present

## Future Needs

Heat & natural gas, independent power producers, and Interties

# Heat & Natural gas

There is little to no data access to information about heat or natural gas available for public use, because those services are provided by private for-profit companies with no requirement to share data.

# Independent Power Producers

Information about IPP's power generation is dependent on the utility who purchased power from them, and their reporting.

# Interties

Due to the interconnected nature of electrical grids, electricity to a community is sometimes provided by a generation source far distant from the community.

# akenergygateway.alaska.edu

Alaska Energy Data Gateway

# Thank you!

Dayne Broderson, ACEP
Vanessa Collier, ISER
Steve Colt, ACEP
Elizabeth Dobbins, ACEP
Liam England, ACEP
Sara Fisher Goad, UAF
Will Fisher, ACEP
Alora Greer, ACEP
Diane Hirshberg, ISER
Gwen Holdmann, ACEP
Mike Jones, ISER
Jeremy Kasper, ACEP
Jesse Kasmarski, UAF
Ian MacDougall, ACEP
Nicole Mah, ACEP
Carolyn Tix, ISER
Vanessa Lee Raymond, ACEP
Brett Watson, ISER

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