

The background of the slide features a large, semi-transparent seal of the State of Vermont. The seal is circular and contains a landscape scene with mountains, a river, a boat, and a plow. The text "THE STATE OF VERMONT" is visible around the perimeter of the seal.

AESTF State Energy Data
Subcommittee Report

August 29, 2023

State Energy Data Subcommittee: Formation

Chair:

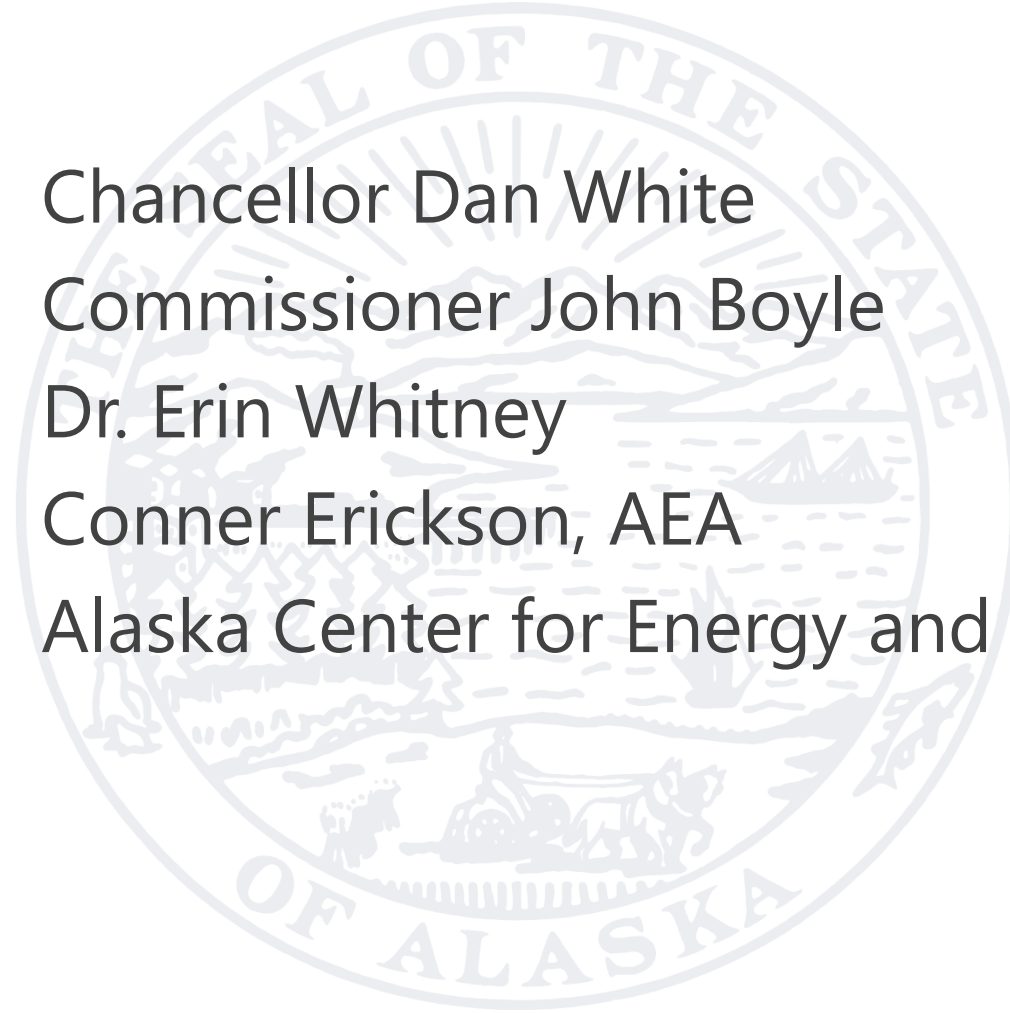
Chancellor Dan White
Commissioner John Boyle
Dr. Erin Whitney

Observer:

Conner Erickson, AEA

Support:

Alaska Center for Energy and Power (ACEP)



State Energy Data Subcommittee: Purpose

Support the AESTF's duty to establish a statewide energy plan that includes:

- Establish a baseline energy portfolio for the State of Alaska
- Develop and maintain a public database of task force information and recommend strategies for sharing energy data and information through an energy data portal

State Energy Data Subcommittee: Responsibilities

- Identify valuable energy data resources, data ownership, and determine data availability
- Identify data systems, products, services, and platforms used for data collection, storage, documentation, preservation, and sharing

State Energy Data Subcommittee: Deliverables

- Inventory of available energy data, data ownership, and data availability
- Inventory of data systems, products, services, and platforms used for data collection, analysis, and reporting
- SWOT analysis of data end users and their needs
- Recommendations for data schemas, frameworks, partners, and standardizations to improve interoperability and collaboration between data and service providers to establish, serve, and maintain data tools

Alaska Energy Security Task Force

Technical Advisory Committee: Formation

State Energy Data Subcommittee established the a Technical Advisory Committee to support the plan development by leveraging existing projects, collaborations, partnerships, and subject matter experts. The TAC developed draft deliverables for the State Energy Data Subcommittee's consideration.



Chair:	Brittany Smart (ACEP)
Data Providers:	Diane Hirshberg (ISER), Vanessa Raymond (ACEP), Mark Spencer (AHFC)
Data Modelers:	Erin McKittrick (AKWarm), Neil McMahon (DOWL), Conner Erickson (AEA)
Platform Providers:	Leslie Jones (DNR), Dayne Broderson (ACEP)
Data End Users:	Katie Conway (Denali Commission), Grace Beaujean (DCCED), Chad Nordlum (Native Village of Kotzebue), Nolan Klouda (UA CED), Ian Mills (UA CED), Connie Fredenberg (MTA Online)

Technical Advisory Committee: Process

In order to produce draft deliverables in a timely fashion, ACEP coordinated a two-day facilitated Energy Data Retreat in Anchorage, Alaska.

- ACEP secured Vision Foresight Strategy to facilitate the Energy Data Retreat
- A pre-survey was sent to interested TAC members to gather initial thoughts on SWOT and recommendations ahead of the retreat
- Two-day Energy Data Retreat
 - Day One – SWOT
 - Day Two – Recommendations

Energy Data: Defined

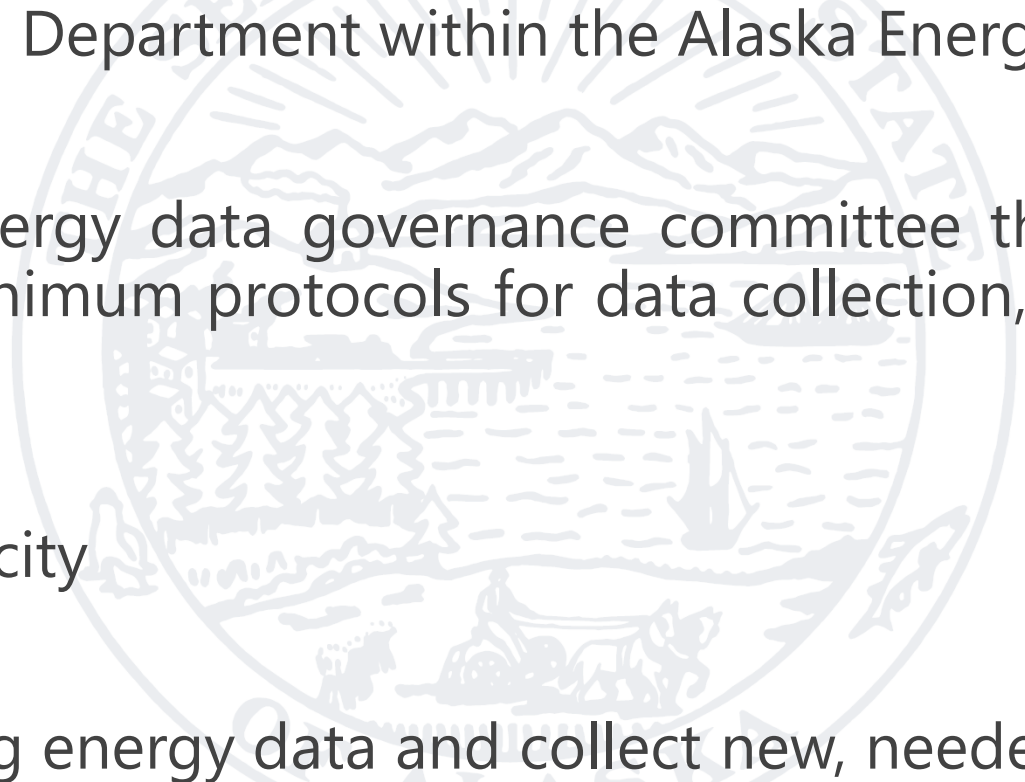
For clarity, the TAC established and defined the term “energy data” in this report as follows:

“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.”

Summary SWOT (Strengths, Weaknesses, Opportunities, & Threats)

Strengths	Weaknesses
Valuable energy data needed for decision-making already exists, especially for electrical energy	<ul style="list-style-type: none">● Existing data can be inconsistent, inaccessible, provided in formats which do not meet end-user needs● Thermal and transportation datasets are lacking
Opportunities	Threats
Increase collaboration and data sharing	<ul style="list-style-type: none">● Security and access concerns● Lack of sufficient funding/staffing to meet needs

Prioritized Recommendations

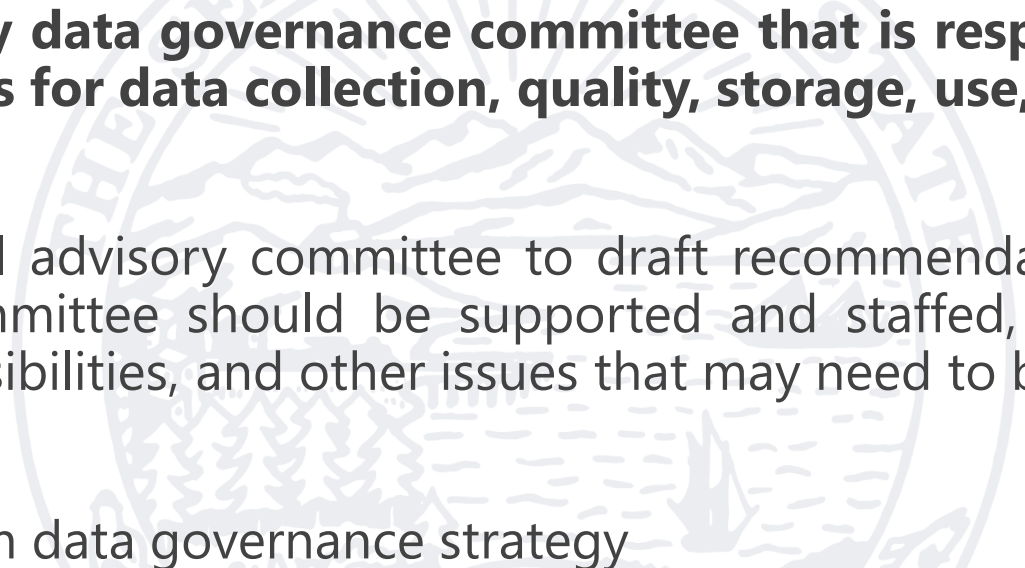
1. Establish a Data Department within the Alaska Energy Authority (AEA)
 2. Establish an energy data governance committee that is responsible for establishing minimum protocols for data collection, quality, storage, use, and access
 3. Fund data capacity
 4. Improve existing energy data and collect new, needed data
- 

Recommendations: Priority #1 Actions

1. Establish a Data Department within the Alaska Energy Authority (AEA)

- a. Fund, develop, and implement a technical and needs assessment
- b. Fund, develop, and implement a capital asset plan
- c. Develop and fund an operating and maintenance budget, to include the identification of potential funding sources and mechanisms
- d. Appropriately staff the department based on the technical and needs assessment

Recommendations: Priority #2 Actions

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- The seal of the State of Alaska is faintly visible in the background. It features a central figure of a Native Alaskan in a traditional outfit, holding a bow and arrow. The figure is surrounded by a circular border containing the text "THE SEAL OF THE STATE OF ALASKA".
- 2. Establish an energy data governance committee that is responsible for establishing minimum protocols for data collection, quality, storage, use, and access**
 - a. Form a technical advisory committee to draft recommendations on where the data governance committee should be supported and staffed, committee membership, scope of responsibilities, and other issues that may need to be addressed
 - b. Fund a long-term data governance strategy

Recommendations: Priority #3 Actions

3. Fund data capacity

- a. Establish dedicated data collection and analysis positions in state agencies that are responsible for collecting, analyzing, hosting, distributing data in formats that are accessible, and liaising with the AEA Data Department
- b. Provide professional development and/or skills training opportunities for staff and other agency partners as it relates to data collection and analysis

Recommendations: Priority #4 Actions

4. Improve existing energy data and collect new, needed data

- a. Fund a gap analysis of energy data, including existing data, accessibility, quality, age, and what is needed for decision making
- b. Revitalize, fund, and maintain energy data platforms and services that ensures the availability and accessibility of data
- c. Conduct a data audit of the Regulatory Commission of Alaska (RCA), to include recommendations
- d. Expand the Power Cost Equalization (PCE) report and extent of such data reported
- e. Expand the definition of “energy data” by adopting the TAC definition, ensuring the term is inclusive of heat/thermal and transportation fuel data

State Energy Data Subcommittee: Discussion Points

- Develop a stronger statement regarding the importance of ongoing funding for all aspects of energy data
- Consider adopting the following as a priority recommendation (currently included in Appendix B: Recommendations):

“Identify and assign the responsible agency or organization for energy data collection, aggregation, and sharing in Alaska State Statute”

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Appendix A: SWOT – Strengths

- Strong network of agencies monitoring, developing, and regulating energy resources and data, including DNR, AEA, ANTHC, RCA, Denali Commission, and the University of Alaska system
- Passionate stakeholders and energy champions
- Alaska Energy Data Gateway provides community, regional, and statewide dashboards for baseline energy data
- The Alaska Affordable Energy Strategy serves as a useful template for information which would be useful for future potential data platforms and services to offer
- Alaska Geospatial Office and Alaska Geospatial Council administers the State Open Data Geoportal and fosters collaboration
- RCA requires reporting by regulated and PCE-eligible utilities
- RCA reports have been converted to text and put in a database by ACEP
- AEA currently has two different infrastructure inventories underway
- Existing data is heavily used and useful for energy and related activities
- Federal and state demographic data is available and consistent
- DCCED community profile maps have baseline information for rural communities
- ACEP shares information through community and virtual meetings, presentations, and publications
- AHFC recently improved ARIS data access methods to improve availability for energy data analysis
- ACEP is leading the effort to publish an update to the Alaska Energy Statistics Workbooks and Report
- Willingness of organizations to share their available data with external organizations
- Individual initiatives across various agencies have been very successful over time
- Energy data is a priority for many stakeholders, public and private, who are seeking such information to support projects and programs

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Appendix A: SWOT – Weaknesses

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- Alaska Energy Data Gateway data has not been updated since 2017
 - Lack of metadata standards or controlled vocabularies across the energy data landscape
 - Alaska Geospatial Office is not sufficiently staffed
 - Energy data is difficult to access and/or is not shared in a format that is easily usable or that meets the needs of end-users
 - Lack of authoritative energy data and sources
 - Lack of centralized database leads to disparate data sets and duplication of efforts
 - Lack of a defined plan for data management and distribution, including energy, labor, and other socio-economic datasets
 - Lack of project and data coordination
 - Lack of adequate foundational data, such as Railbelt transmission lines and utility data that need to include more key attributes in the existing datasets
 - Existing energy data lacking in quality, provenance, and thus reliability
 - Non-residential rates and community facility rates in PCE communities, including other fees or demand charges, are not included in monthly PCE reports to AEA or annual reports to the RCA
 - Lack of clarity in reporting on wind, solar, and hydro energy data
 - Federal data has long time lags and sampling issues
 - Issues related to access of proprietary data, such as location of assets and infrastructure
 - Lack of data in rural communities, especially regarding thermal/heat
 - Existing Alaska Energy Statistics Workbooks and Report has not been updated in 10 years
 - Significant data gaps in thermal/heat production and use with no existing formalized data collection processes established
 - Lack of seasonal understanding of energy generation and sales
 - Energy data from some communities is missing due to lack of reporting
 - Railbelt energy data is segmented by utility, limited to certain regulated utilities, and not available Railbelt-wide
 - DCCED community profile maps are outdated snapshots of information
 - Lack of baseline datasets, especially in rural communities
 - Communities lack the workforce, skill sets, and capacity needed to create and manage the data required
 - Lack of capacity and knowledge on how to secure funding opportunities
 - Funding agencies requiring deliverables inhibits coordination on energy projects
 - Lack of technical capacity, data leadership, and sufficient funding
 - Lack of reporting requirements for unregulated utilities
 - Lack of understanding, technical skills, and capacity by utilities and independent power producers to know what data is useful and how to make it available
 - Requesting and receiving data can be very onerous and time intensive

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Appendix A: SWOT – Opportunities

- Leverage existing data infrastructure and sources, such as the Alaska Energy Data Gateway, to inform decision making for project and policy development
- Funding agencies could require energy data reports as a requirement of funding opportunities
- Leverage the Alaska Geospatial Council as a collaborative space regarding energy data sharing and distribution
- Use the Alaska Affordable Energy Strategy as a resource for the development of a statewide energy data inventory
- Shared interest of communities and researchers to coordinate and improve on unified data
- Strengthen existing pathways to better understand thermal/heat production and use
- Standardize energy data collections, aggregation, and association between various data sources, and regularly share the datasets to have better maintained and consistent statewide electrical production data
- Identify gaps where energy data exists
- Understanding what kinds of data are the most valuable to potential stakeholders
- Unprecedented levels of federal funding opportunities
- New technologies are available for data collection
- Influx of federally funded projects could lead to new, updated data collection on energy and infrastructure across the State
- Increased interest in the Arctic as a matter of national security and energy transitions could lead to increased community-military partnerships
- Funding opportunities allow for new infrastructure and connectivity in rural communities
- The establishment of the AESTF provides a platform to have collaborative discussions to identify needs and best practices while offering recommendations

Appendix A: SWOT – Threats

- Lack of cybersecurity protocols and restrictions on existing websites, data portals, and increasingly tech-reliant energy systems limit the ability to host and serve sensitive or restricted datasets
- Existing data is out of date and not being updated or maintained on a regular basis
- Inconsistent, sporadic, or lack of sufficient funding for data collection, distribution, analysis, and modeling
- Military solutions to meet their energy needs will heavily influence the options available for the surrounding communities, with decisions being influenced by national energy security frameworks
- Lack of workforce, technical skills, and capacity across the state, but especially pronounced in rural communities, to collect, manage, update, collate, analyze, and distribute energy data
- Poor technical choices and/or lack of coordination at critical junctures that hamstring data reliability, access, and reusability

Alaska Energy Security Task Force

Appendix B: Recommendations

- Identify and assign the responsible agency or organization for energy data collection, aggregation, and sharing in Alaska State Statute
- Fund the revitalization of the Alaska Energy Data Gateway in a version which is reflective of current and future needs and leverages newer sharing platforms including ongoing update and maintenance efforts
- Increase capacity of the Alaska Geospatial Office to support energy data management and distribution needs
- Incentivize or mandate private entities to share heating fuel information, such as tank farms, heating oil purchase costs and volumes, and delivery methods and costs
- Fund an update and implement the Alaska Affordable Energy Strategy
- Establish an Energy Working Group as part of the Alaska Geospatial Council
- Develop a long-term data management strategy to ensure data quality, reliability, and public and private access
- Keep energy systems up-to-date with proper security restrictions and access controls, allowing for granular and proper data sharing and access
- Establish a public database of statewide electric utility data to include railbelt, coastal, and rural data
- Leverage existing Alaska Geospatial Data Portal to provide public and restricted access of energy data managed by AEA and other appropriate agencies
- Adequately fund the Alaska Geospatial Office to support additional staff to meet statewide data needs
- Re-license existing data sources to partner agencies to support collaboration and access
- Secure the Alaska Geospatial Office in Alaska State Statute with accompanying operating budget
- Identify authoritative data sources
- Use authoritative energy data to inform energy policy and project development
- Establish a task force to develop energy data cyber security requirements
- Require AEA to create and track offset diesel data, kWh sales by all rate classes, kWhs sold for heat and at what price, and identify the specific renewable resource used by the utility
- Require PCE calculations to value excess renewably-generated energy that is used for heat by providing a waiver
- Use bulk fuel loan data by DCRA to begin capturing the rural heating load
- Fund a comprehensive survey to identify the size and generation type of the thermal load in Alaskan communities, ensuring military demands are included
- Fund an inventory and assessment of transportation fuel datasets needed and available to develop a regional- or community-level transportation energy burden study, ensuring such an effort is repeatable
- Coordinate with rural utilities to establish baseline infrastructure needs
- Research and explore establishing an Alaska Data Trust, similar to a Land Trust

Email and Website



Email

AEA-hosted info email account created to capture correspondence related to the Task Force.

info@akenergysecuritytaskforce.com



Website

AEA-hosted external webpage houses the Task Force's schedule, public notices, recordings, minutes, documents, and resources as they are created.

<http://akenergysecuritytaskforce.com>