CITY AND BOROUGH OF SITKA

Work Session
Sustainability Commission

Officers: Chair Aurora Taylor, Vice Chair Elizabeth Bagley, Secretary Erik de Jong
Members: Gerry Hope, Adam Vail
Staff Liaison: Bri Gabel, Sustainability Coordinator
Assembly Liaison: Tim Pike

Monday, May 4, 2026	7:00 p.m.	**Harrigan Centennial Hall**

I. OBJECTIVES

A. Comprehensively review the Sitka Community Renewable Energy Strategy (SCRES) Project

II. AGENDA - *Times are estimates; the work session is anticipated to adjourn no later than 8:00 p.m.*

7:00-7:30: Presentation of the SCRES project timeline

7:30- 8:00: Commission discussion

III. PACKET MATERIALS

Early Inspirational Documents

- Molokai Community Energy Resilience Action Plan (CERAP) (Molokai Clean Energy Hui, 2023)
- Juneau Renewable Energy Strategy (City and Borough of Juneau, AK, 2018)

Project Scoping Materials

A. Initial Community Strategy Project Proposal (March 2023)
B. Scoping Question Analysis (September 2023)
C. Final Energy Technology Initiative Partnership Project (ETIPP) Scope (February 2024)
D. SCRES Logic Model (March 2024)
E. Scoping Survey Results (March 2024)
F. Energy Concept Map (April 2024)
G. Energy Education Modules (May 2024)

Project Deliverables:

Green House Gas Emissions Inventory

- 2023 Greenhouse Gas Emissions Inventory (January 2026)
  - Sitka Energy Inventory Technical Report (December 2025)
  - Sitka GHG Inventory Draft (November 2024)

Energy Education Modules

Community Engagement

- Webinar Series (October-November 2024)
- Radio Series (Sept-November 2024)
- Energy Quest Workshops (March-May 2025)
    - Final Report (March 2026)

Energy Scenarios:

Possible Futures for Southeast Alaska (Spruce Root Inc., 2024)

The Bandung Scenarios, Possible Futures of Energy in Indonesia (Reos Partners, 2014)

H. SCRES Draft Scenario Narrative Summaries (July, 2025)

Finalization:

I. Current SCRES Outline

J. May 11th 2026 Community Energy Planning Workshop Flyer

CITY AND BOROUGH OF SITKA

Sustainability Commission
Project Proposal
Developing a Community Renewable Energy Strategy

This form is designed to help you explore possible opportunities the Commission may want to pursue as part of their annual work plan. This information will help you communicate your project to Commissioners, City staff, and the public.

YOUR INITIAL IDEA: *What result/outcome are you hoping for? Why should your project be prioritized by the Commission this year?*

This project will develop a Community Renewable Energy Strategy that charts the course for energy investments and community action for the city over the next 10 years.

The 2021 ETIPP technical assistance documented the ability of our grid to accommodate intermittent distributed sources of energy, such as wind and solar, as well as projected demand growth that will exceed our firm hydropower capacity by 2030. Projections (2021 ETIPP) reflecting electrification of heating and vehicles show demand far exceeding our generating capacity of even high-water years (60-70% above our firm capacity of low-water years). Projecting growth in electric energy demand is subject to many variables and can be explored more deeply in the development of a Community Renewable Energy Strategy. As demand exceeds generating capacity, at first in low water years and subsequently in average and high-water years, new renewable generating capacity will be required before 2030 if Sitka is to avoid resorting to diesel fuel generation to supplement our hydropower. A diesel fuel requirement will increase electric utility cost in unpredictable ways because of the instability in fossil fuel markets and subverts our intent to lower our community carbon footprint. Although we have gained enormously from the first ETIPP grant, much remains to be done to fulfill sustainability goals. Specifically, Sitka needs a community-wide greenhouse gas emissions inventory so that progress toward decarbonization can be measured. We need community involvement to plan a timeline for what renewable energy sources can be developed with possible federal subsidy. We also need to consider what municipal policies for the entire community can maximize conservation and efficiency to stretch our available renewable energy as far as possible as we build for future self-sufficiency.

1 Make it RELEVANT *What Sustainability Commission goal(s) does this priority help accomplish?*

1. *Fossil fuel use reduction and development of local renewable energy resources.*
2. *Aligns with City Strategic Plan (2022-2027) Goal 1: To preserve the quality of life for all Sitkans and objective 1.3: Identify opportunities to relieve the burden of energy costs, while also meeting the city's sustainability ambitions.*
3. *Aligns with Section 2 of resolution 2022-18: "The city recognizes that the greatest opportunity to decarbonize rests with the broader community, which comprises the vast majority of the carbon emissions originating in Sitka, and City staff will look for opportunities to collaborate, incentivize, set policy and engage with local businesses, institutions, and residential and commercial developments to encourage similar decarbonization efforts in the private sector."*

2 Make it SPECIFIC *Specifics help clearly define what you want to do. Use action words such as facilitate, organize, develop, plan, study, etc.*

A Community Renewable Energy Strategy will establish a shared vision of Sitka's energy future. The goal is to shape a roadmap of community and policy action to achieve both sustainability and strategic goals.

Components of the strategy could include but are not limited to: refreshing the existing baseline assessment of community emissions; forecasting energy demands and identifying priority actions; recommending feasible renewable energy options for the city to pursue, and municipal policies for consideration to increase efficiency (such as electrifying heating and land/marine transportation).

Public support for a Community Renewable Energy Strategy is critical and best developed through robust and continuous public involvement as a strategy is formulated.

3 Make it MEASURABLE *How will success be measured?*

What is the impact are you hoping to have?	How will you know that you are having that impact? (indicators)
A Community Renewable Energy Strategy with a 2022 emissions inventory will allow measurement toward goals to achieve energy independence by target dates, e.g. by 2030 and 2050.	*An updated 2022 emissions inventory.*
A Community Renewable Energy Strategy will refine insights gained from the initial ETIPP assessment regarding additional renewable energy resources needed, feasible, fundable, and in what timeframe to meet the increasing demand for renewable electric energy as fossil fuel use is decreased and as our energy demands grow.	*Municipal endorsement of a Community Renewable Energy Strategy (a road map) reflected in seeking federal and state fiscal support. For example, funding potentially available from the bipartisan infrastructure act and Inflation Reduction Act which allows municipalities to apply for the equivalent of tax credits for renewable energy.*
Well-researched municipal policy options to increase energy supplies, reduce emissions, increase efficiency and energy conservation. Such as up-to-date building codes (e.g. requiring electric heating and cooking in new construction, electric vehicle charging infrastructure in new congregate living buildings), incentivizing conversion of resistive electric heating to heat pump heating and hot water, facilitating businesses to obtain low interest loans (e.g. for a commercial property assessed clean energy program), and helping low income Sitkans to access financing for energy conservation measures and energy audits.	*Audits or surveys conducted to establish possible efficiency gains in buildings, potential conversion to heat pumps, electric appliances, vehicles, and boats. Assembly ordinances and actions to encourage energy transition.*
Public support of measures to leverage investment in new energy resources with federal or state grants; of policies that move the community toward decarbonization with the potential to ease the costs of living in Sitka and promote community health.	*Robust discussion among stakeholders of options being considered by the Assembly through public town halls, ballot initiatives, and submission of comments.*

Quantify your indicators. *How will you measure your identified indicators? By how much?*

The first two desired impacts are either accomplished or they are not. The impact of potential policy-related ordinances will be estimates of possible energy savings made in the plan itself. Public involvement in the development of a renewable energy strategy can be quantified by the number of public meetings, stakeholder consultations, and comments received, etc.

4 Make it ACHIEVABLE

Do you have the resources required to execute this project? If not, can you obtain them? Is the level of effort for this project on par with what achievement of the project will produce? How can this project be accomplished?

Current City staff lack the expertise and time to undertake the task of developing a detailed and comprehensive Community Renewable Energy Strategy. One pathway for the City to provide for such a plan would be to contract and pay for the capacity to complete an energy plan such as was recently done for the 2022-2027 Sitka Strategic Plan.

An alternate path, one that has many advantages, is to apply for a second grant from the Energy Transition Initiative Partner Program (ETIPP). Some of the advantages include;

- *The ETIPP alternative would provide dramatic cost savings to the city.*
- *More flexibility than a private sector contract.*
- *Depth of technical specialty renewable energy planning.*
- *The timing of the next ETIPP application period allows for quickly getting to work. Plan drafting and public engagement could begin relatively quickly (avoiding lengthy city budgetary allocation and contract procurement efforts).*

- *Synergy and efficiency potential resulting from NREL's deep familiarity with Sitka's energy "landscape" after having done the first ETIPP grant.*
- *Technical experts from the National renewable Energy Labs can help tailor a plan to promote competitiveness in grant applications.*

There are other potential pathways not under City control where an entity other than the City and Borough of Sitka leads the effort to develop a Community Renewable Energy Strategy, such as the Sitka Tribe of Alaska or a local nonprofit group. These options are not explored here.

Identify your stakeholders

Name	What is their role/capability/time commitment?
Sustainability Commission	*Assist municipal staff to prepare either an ETIPP grant application or a contract request for proposal. The commissioners do not have the expertise to develop the Community Renewable Energy Strategy, but they could assist technical advisors or contractors to convene public participation for input and secure letters of support from the community.*
Sustainability Coordinator	*The coordinator has an oversight role in coordinating both efforts of the Sustainability Commission and municipal departments with expertise in developing a Community Renewable Energy Strategy. The Community Renewable Energy Strategy envisioned is a significant task and would require technical assistance with the required capacities. In either case the Sustainability Coordinator would be the lead City contact in the strategy development.* *In the event of an Assembly authorization for contracting a Community Renewable Energy Strategy, the Sustainability Coordinator would lead the Request for Proposals, evaluating responses, and administering any contract entered. The coordinator would also represent the project before the Assembly in terms of setting budget priorities and authorizing expenditures.*
City Departments	*A Community Renewable Energy Strategy will affect many departments. These include the Electric Department, which administers energy infrastructure, the Planning Department, which t oversees housing development and land use, the Public Works Department, the Finance Department that might have to weigh in on incentives and policy costs, the Health Needs and Social Service Department to oversee implications for environmental justice, etc. Our Electric Department would likely be most impacted in the development of a grant proposal or contract, but other departments would need to have input into the development of the strategy.*
Sitka Tribe of Alaska	*As a parallel governmental structure to the City and Borough of Sitka government, the STA has an interest in the development of energy resources. In addition, the Tribe has access to unique resources provided in energy efficiency and the energy transition available to American Indians and Alaska Natives. Some of these resources are available for weatherization and electrification of low-income houses and transportation, which might impact electric load in Sitka. Collaboration between Sitka's two governmental entities can only strengthen our ability to obtain federal assistance in developing a Community Renewable Energy Strategy paying special attention to issues of cultural and environmental justice.*

Estimate financial commitment		Notes:
Initial Costs	$ *Staff resources*	*For an ETIPP application the initial cost would be limited to staff time in preparing a proposal in response to an open application period that is anticipated in February. This is considerable and would likely require reprioritization of efforts within the planning and electric departments. This application would have to be completed within a short time between when an application was authorized, and the closing of the application period*

		(likely mid-April to May). This poses some challenges but also limits the costs in staff time. *In calculating the initial costs for the contracting option (to the point of having a signed contract), staff time estimates would have to allow for the preparation of a request for proposal, an evaluation of responsiveness, and then all procurement requirements. However, before work could begin on a RFP an estimated contract cost would need to be generated and authorization secured through Assembly budget deliberation.*
Future Costs	$ *>200,000*	*We anticipate the staff time required (costs) to administer either a partnership with NREL in an ETIPP grant or a contract with private industry to be similar. The difference lies in that we pay nothing for the technical assistance through ETIPP for developing an energy plan and we pay the full price of a contract. The estimated value of the technical assistance provided in the first ETIPP grant was $200,000, this might be a figure to use for roughly estimating a cost of contracting.* *The costs that might be incurred from implementing recommendations from a Community Renewable Energy Strategy are not known. However, failure to plan for and invest in additional renewable energy sources will have profound effects on costs of electric utilities if the Electric Department must resort to diesel generation to supplement hydropower should it be insufficient.*

Other Necessary Resources

Name/Item	Rationale/Method of procurement/other important information

5 Make it TIME-BOUND

A commitment to a deadline helps focus efforts on completion of the project within one year. A timely project will usually answer the question: When? What can I do 6 months from now? What can I do 6 weeks from now? What can I do today?

Timeframe	Action Step/Milestone
1 Month	*Review and take stock of relevant resources and other energy strategies to inform the new application.*
March 28, 2023	*Assembly decision on potential ETIPP application*
3 Months	*Prepare application or request for proposals*
6 Months+	*Work with the coordinator and key stakeholders to define the details and parameters of either the grant application or a contract.* *Although this is dependent on the scoping results, potential actions could include: conducting audits/surveys to assess gaps that need to be addressed; identification of policies for motivating community emissions reductions; construction of feasible roadmap with projects scheduled in time to meet strategic goals.*

Your Project Pitch:

Suggested format: (I or accountable party) will (action word/s) (object of the priority) by (time) for the purpose of (relevance/results).

This project is to develop a Community Renewable Energy Strategy that charts the course for energy investments and community action for the city over the next 10 years. Having the vision and roadmap positions us to compete strongly for federal and state money intended to support energy conservation efforts and renewable energy projects.

The city's latest electric demand forecasts show a growth in demand that will reach the firm power capacity of our hydroelectric assets soon. This is true even without a focus on decarbonization that is necessary to reduce community greenhouse gas emissions. Growth projections that estimate growth in demand associated with the electrification of heating and land transportation far exceed what we can provide. At current growth rates, without a focus or incentives for decarbonization, the anticipated load growth will exceed firm capacity in the very near future. The community of Sitka needs to define its energy future, consider sustainability and decarbonization goals, further evaluate feasibility, identify funding opportunities, and begin taking critical steps towards building the future we want.

OBSTACLES AND MITIGATION

What is the biggest challenge preventing you from achieving this goal?	What actions can you take to reduce or remove that challenge?
The biggest obstacle to creating a Community Renewable Energy Strategy would be the failure to secure a grant for the technical assistance to develop the renewable energy strategy and fail in the alternative to authorize and contract for one.	*To have the best chance of having a successful ETIPP grant proposal, the Commission, Sustainability Coordinator, and Electric Department need the earliest decision that proposal preparation is a priority. If an application for the ETIPP grant is decided against or an application is unsuccessful, effort would then need to be applied to gaining authorization to pursue contracting for a plan.*
Overextension of city staff.	*Overextension can be addressed in part by reprioritizing the expectations of the Sustainability Coordinator and the staff supporting her. The Sustainability Coordinator will need to be supported by being temporarily relieved of other responsibilities while they work to complete an ETIPP application proposal in a compressed time frame following a potential Assembly authorization to do so in late March. Alternatively, if the contracting option is chosen, a similar prioritization for this task should be given to the city staff and the coordinator. Obtaining strong support from the Sustainability Commission and Electric Department will be critical.*
Ambition to develop a significantly detailed GHG inventory not aligned with needs of the strategy.	*There are many approaches to develop GHG emissions inventories, some of which can be quite extensive both technically and in terms of time commitments. However, the approach that is recommended in this proposal is a fit for purpose GHG inventory that would identify the relative emissions of critical community and city sectors to define potential entry points for GHG reduction across these major sectors. Furthermore, putting in place a replicable and updatable process for city staff with support from the Sustainability commission to periodically update this inventory should be a priority.*

What resources are most critical to this project? Is it possible to change scope and/or scale if necessary?

The most critical resource is staff and commissioner time to prepare a proposal for a Community Renewable Energy Strategy. If this is not feasible, their time will still be needed to identify the resources needed to secure progress toward building a Community Renewable Energy Strategy that will guide decisions by the Assembly in providing a renewable energy future while preserving cost of living in Sitka.

What are potential financial or other tangible benefits that may be realized if this project is prioritized?

- *A renewable energy strategy initiated in the next year will provide the direction and vision for targeted proposals for renewable energy sources that are likely to be supported by the bipartisan infrastructure bill and the Inflation Reduction Act. An energy strategy can also support conservation and efficiency measures, also supported by those two pieces of federal legislation, that can extend what our hydropower can support and lower the cost of living in Sitka.*

Is there any other information that is important when considering this project?

- *It is the considered opinion of this Commission that applying for the 2023 round of ETIPP assistance is the current best option and a great opportunity for our community.*
- *If a grant proposal is not successful this year, the preparation will strengthen Sitka's position to apply to other sources of funding, such that the time invested in proposal development will not be wasted.*
- *Staff and some commissioners have been told by the Alaska local partner of the National Renewable Energy Laboratory, the Renewable Energy Alaska Project staff, that federal technical staff for the previous ETIPP project enjoyed working with the municipal utility and felt that Sitka served as a good model for similar communities. The implication was that a proposal for a Community Renewable Energy Strategy through a new ETIPP grant would be well-received. This encouragement makes the investment of staff and commissioner time worth making, since the technical expertise and timeliness are hard to come by otherwise without considerable expense and difficulty in specifying the contractual expectations. Our previous experience is that the grantee and the national laboratories spend the first months narrowing the scope of the grant proposal requests. This exercise would help Sitka understand what remains to be defined in their future, while allowing the city to best obtain the resources needed for our future security and sustainability.*
- *Better defining our community decarbonization goals will help us build a clear path to achieving these targets in a timely way. We aim to learn from the experience of a growing list of communities across the US that have identified decarbonization targets aligned with the Paris Agreement to keep global temperature rise below 1.5 degree Celsius. For Sitka to develop similarly aligned goals, would seem to be called for given our recognition by resolution of the climate emergency and the call for zero municipal emissions by 2030.*

Early Sitka Energy SPARC Scoping Questions Analysis - DRAFT 9/15/23

Engagement	Understanding what currently exists	Future scenarios, projections	Feasibilities of future, paths/steps to get to it
Questions			
How do we engage with the limitations and constraints of this being a city-run project? How do we get community input on this? How do we keep the public informed? What/when will rate payers be told before projects move forward? How will they be informed? How is the community going to be involved? How can we determine what the public needs to know to make informed choices? What are our avenues for education? How do we get the broader community to engage in energy preservation? How can we determine what the public needs to know to make informed choices? How do we get the broader community to engage in energy preservation?	How does owning our utility change our planning process? Where are we now in terms of energy resilience? Who are our biggest energy users? What role does emergency preparedness play? Are there areas that have more vulnerable electric infrastructure than others? Where should we be planning below-grade redundant systems? How can we marry those projects with street replacement projects? What energy preserving structures are already use here in Sitka?	How does tourism impact our expected load growth? How do efficiency measures impact our future load? How can we consider electric barges and ferries? How do we factor in technology changes/estimates that are now on the horizon?	What is each sector's willingness to change? What policies can we have in place to use our energy most efficiently? Can we create a "first on, last off" policy/code for interruptible loads? What is the energy demand of a decarbonized Sitka be given different socioeconomic factors/scenarios? What are the consumer savings/costs associated with goals and policies? Can we create a comprehensive model that includes all of the supply and demand factors so that we can do financial modeling on an ongoing basis? How can we as a community help institute programs that originate from ETIPP?
Supporting Elements			
Stakeholder mapping Rooted in values	GHG emissions inventory Educational materials for current system Outline previous efforts Increase community literacy	Costs of each scenario Fine tune load projections	Economic analysis Methods for prioritizing levels of influence for the commission Outlined possible paces to achieve their goals

Guiding Questions

Where are we now?

Questions for Technical Experts

- Where are we now in terms on energy resilience?
- What role does emergency preparedness play?
- Are there areas that have more vulnerable infrastructure than others?

Questions for the Community

- How do we engage with the limitations and constraints of this being a city-run project?
- How is the community going to be involved?
- What energy preserving structures are already use here in Sitka?

Potential Activities/ Deliverables

- Stakeholder mapping
- Educational materials for current system
- Outline previous efforts
- Increase community literacy
- GHG emissions inventory

Where are we going?

Questions for Technical Experts

- How does tourism impact our expected load growth?
- How do efficiency measures impact our future load?
- How can we consider electric barges and ferries?
- How do we factor in technology changes/estimates that are now on the horizon?
- Where should we be planning below-grade redundant systems?
- How can we marry those projects with street replacement projects

Questions for the Community

- How does owning our utility change our planning process?
- How do we get the broader community to engage in energy preservation?
- How can we determine what the public needs to know to make informed choices?

Potential Activities/ Deliverables

- Fine tune load projections

Where do we want to go?

Questions for Technical Experts

- What is the energy demand of a decarbonized Sitka be given different socioeconomic factors/scenarios?

Questions for the Community

- What are the types of projects, priorities for each group?

Potential Activities/ Deliverables

- Costs of each scenario
- Outlined possible paces to achieve their goals

How will we get there?

Questions for Technical Experts

- What policies can we have in place to use our energy most efficiently?
- Can we create a “first on, last off” policy/code for interruptible loads?
- What are the consumer savings/costs associated with goals and policies?
- Can we create a comprehensive model that includes all of the supply and demand factors so that we can do financial modeling on an ongoing basis?

Questions for the Community

- What is each sector’s willingness to change?
- What are the consumer savings/costs associated with goals and policies?
- How can we as a community help institute programs that originate from ETIPP?

Potential Activities/ Deliverables

- Economic analysis
- Methods for prioritizing levels of influence for the commission
  Outlined possible paces to achieve their goals

ETIPP 2021
What is are our renewable energy resources?

Sitka Energy SPARC (ETIPP 2023)

ETIPP Technical Assistance Project Scope

Community: Sitka, AK

Project Title

Sitka Community Renewable Energy Strategy (SCRES)

Points of Contact

Below are the individuals who can be contacted to obtain information about any aspect of the project. If the people below do not have an answer, they can ask the people who do.

- **Community Representative:** Bri Gabel, Sustainability Coordinator, City and Borough of Sitka, bri.gabel@cityofsitka.org
- **Regional Partner:** Haleigh Reed, Microgrid Project Manager, Renewable Energy Alaska Project, hreed@realaska.org
- **Technical Lead:** Molly Grear, Environmental Engineer, Pacific Northwest National Laboratory, molly.grear@pnnl.gov

Background

Community

The City and Borough of Sitka (CBS) is a remote community off the southwest coast of Alaska, accessible only by boat or plane. As a self-sustaining grid, Sitka relies almost entirely on local hydropower generated at the Green and Blue Lake dams and uses diesel as needed.

ETIPP Project Summary

The ETIPP program is a multi-organizational collaboration to provide technical assistance to Sitka for energy assessments, greenhouse gas inventories, and assist in public outreach and energy education. These projects aim to provide critical expertise in engineering, grid resilience, and energy use to understand current use, future needs, and options for meeting those needs. Sitka was part of the ETIPP Cohort 1 in 2021 which focused on renewable energy assessments in the area and is now participating in cohort 3, a more directed effort to expand public awareness around their energy use, gather public input on strategic vision, and explore opportunities for expanding and strengthening their power generation profile long-term.

Goals & Anticipated Impacts

- Establish a shared vision of Sitka's energy future to guide energy-related community decisions.
- Shape a roadmap for community and policy actions that advance the shared energy vision.

Other Key Community Contacts

Name	Title	Email
City and Borough of Sitka (CBS)		
Amy Ainslie	Planning & Community Development Director	amy.ainslie@cityofsitka.org
Melissa Henshaw	Public & Government Relations Director	melissa.henshaw@cityofsitka.org
Mike Schmetzer	Interim Electric Utility Director	mike.schmetzer@cityofsitka.org
John Leach	Municipal Administrator	john.leach@cityofsitka.org
CBS Sustainability Commission		
Katie Riley	Chair	katie.really@gmail.com
Sitka Tribe of Alaska		
Gerry Hope	Transportation Director	gerry.hope@sitkatribe-nsn.gov

Implementation: Activities and Deliverables

Activity 1: Community Engagement

Pacific Northwest National Laboratory (PNNL) will assist the City and Borough of Sitka (CBS) in the development and implementation of a multifaceted approach for public engagement in Sitka while reviewing energy status, needs, energy potential, and scoping of future energy goals as they are developing the Sitka Community Renewable Energy Strategy (SCRES). This effort aims to utilize surveys, in-person events, and educational outreach materials to increase energy literacy in the community and engage as many perspectives as possible to inform a community vision for renewable energy. Community engagement will include development of scenarios to be analyzed in Activity 4.

The precise nature of what events, methods, and objectives in this process will be determined alongside the community throughout the project. As this process progresses, PNNL will provide analysis of the community's energy portfolio or potential opportunities to inform community visioning and decision making, as well as support in facilitation and community engagement.

Deliverables:

- 3-4 site visits, including workshops, events, and working meetings
- Analysis to support data driven decision making for the community

Activity 2: Energy Education

PNNL will partner with REAP and CBS to provide materials and events to increase the energy literacy of the community. At least 4 topic areas of focus will be developed around energy education and grid resilience. These may include but are not limited to: renewable energy basics, Sitka energy grid 101, rate demystification, and a history of hydropower in Sitka. PNNL will provide analysis to support energy education on these topics, as well as instruction or trainings in collaboration with REAP and CBS. Energy education topics will be aimed at multiple demographics, including school age and the public, throughout the project.

Deliverables:

- Learning material posted to SCRES website
- On site education events

Activity 3: Greenhouse Gas Emission Inventory

PNNL will develop an updateable Greenhouse Gas Inventory. The inventory will include sources of emissions shown in the following table.

Proposed GHG Included Sectors		
SCOPE 1		
Sector	**Details**	**Potential Data Source***
Electricity Consumption	Utility owned by the municipality	Total electricity generated from the utility annually, with percentage of diesel generation.
Heating Oil Combustion	Fuel is imported to Sitka	Total heating oil imported annually to Sitka from gas station data, with assumption on % that goes to heating.
Land Transportation	Include cars, trucks, buses, snow mobiles	Total gasoline and diesel sold annually at gas station with assumption on % to land transportation. Alternatively, utilizing NEI data.
Water Transportation	Ferries, boats that leave and return to Sitka	Total gasoline and diesel sold annually at gas station with assumption on % to water transportation. Use database of registered vessels and their approximate uses.
Wastewater	Wastewater treatment plant is owned by the municipality	Total gallons of wastewater treated annually.

SCOPE 3		
Sector	**Details**	**Potential Data Source***
Waste	Exported through shipping to Washington	Total tons of waste shipped to WA. Estimated break down on waste type by percentages
Air Travel	Flights to and from Sitka	# of flights in/out of Sitka, with estimates of fuel consumption on trip
Marine Travel	Included shipping materials such as heating oil, food, and consumer products to Sitka, as well as tourism passenger vessels	# of barges in/out of Sitka with estimates of fuel consumption on trip

**Potential data sources may change after discussion and availability of data.*

Geographic boundaries of each sector will be further defined during the implementation of the inventory.

PNNL will also develop a case study to dive deeper into specific industry or industries and to understand the seasonality of GHG emissions.

Deliverables:

- Report detailing GHG Inventory Assumptions and methods
- Excel spreadsheet that can be updated for future year's inventory

Activity 4: Development of Community Renewable Energy Strategy

PNNL will assist in the development of the final SCRES document outlining the vision for the community's energy future. PNNL may provide inputs on the document, such as background data analysis about the community's energy portfolio, baseline GHG inventory, results of community engagement work, and modeling potential future energy scenarios for Sitka.

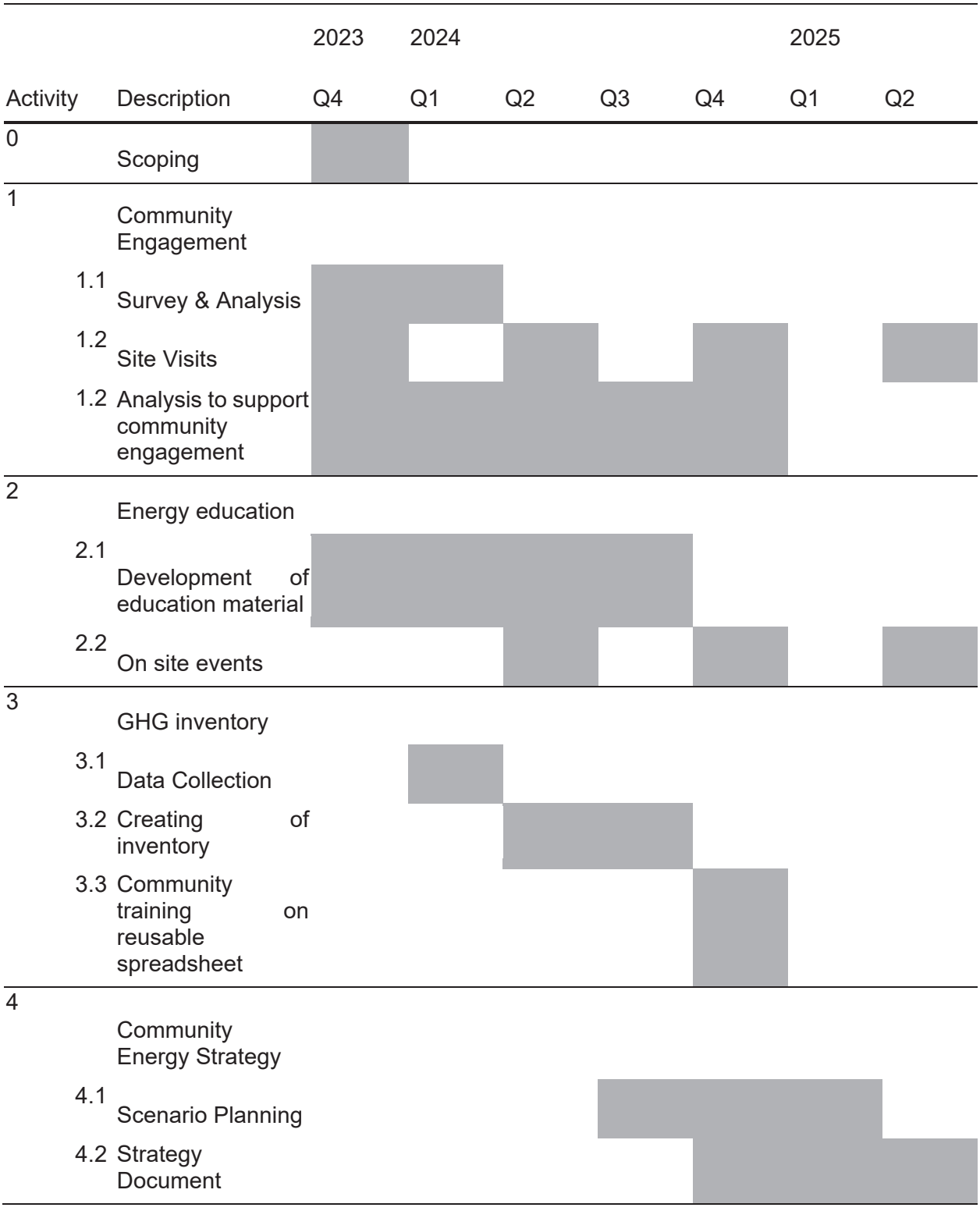
In the process of scenario and strategy development, PNNL will provide policy actions and recommendations to CBS.

PNNL will co-produce the strategy document, contributing significantly to the writing of the strategy, but CBS is ultimately responsible for the publication of the final strategy document. PNNL will continue engagement with the city and the strategy process through the publication of the document.

Deliverables:

- 3-4 future energy scenarios and energy generation mix

Schedule:
The Period of Performance for this effort is 18 months



Signatures:

Digitally signed by Bri Gabel
Date: 2024.02.06 14:49:22 -09'00'

2/6/24

Community Lead, CBS **Date**

John M. Leach

Digitally signed by John M. Leach
Date: 2024.02.08 12:46:08 -09'00'

2/8/24

Municipal Administrator, CBS **Date**

Haleigh Reed

Digitally signed by Haleigh Reed
Date: 2024.02.13 17:55:20 -05'00'

2/13/24

Regional Partner **Date**

Molly E Grear

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Date: 2024.02.13 15:24:36 -08'00'

2/13/24

Technical Lead **Date**

David Martinez Biro

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Date: 2024.02.13 14:42:55 -09'00'

2/13/24

ETIPP Regional Lead **Date**

Sitka Community Renewable Energy Strategy (SCRES) Logic Model

Project Vision: Establish a shared vision of Sitka's energy future to guide energy-related community decisions.

Project Goal: Shape a roadmap for community and policy actions that advance the shared energy vision.

Project Objectives: Inventory Sitka's GHG emissions. Educate the public to effectively participate in community decision making. Reach broad areas of the community that are underrepresented in energy discussions.

INPUTS	2. ACTIVITIES	OUTPUTS	OUTCOMES (Start here)

Describes what you need to do your achieve your activities
 	
• People (staff, consultants, volunteers)
• Materials (artifacts, workbooks, software)
• Information (databases, surveys, research)
• Standards (Prior frameworks and models, curriculum)
• Equipment and Facilities (computers, website, exhibit halls, classroom)
• Existing Partnerships
	• Development of products such as exhibits, programs, documents that are internal related (Recruit participants, create materials, coordination activities, marketing, administration)
	• Development of services such as trainings involving end-users (Workshops, projects, mentoring, tours)
	• Creation and convening of partnerships
		• Updateable Community GHG Emissions Inventory
		• Informational website*
		• 12 education modules*
		• 10 community meetings*
		• 6 workshops*
		• 3-5 scenarios for modeling
		• Final report of SCRES
		
		**numbers pulled from Molokai CERAP for illustrational purposes*
			• Knowledge
			• Attitudes
			• Skills
			• Behavior
			
			The community will:
			• Knowledge
			  ○ know where Sitka's electricity comes from
			  ○ **know how electricity rates are determined**
			  ○ Learn how to engage in the public process as necessary
			  ○ Rate comparison across AK, USA, WORLD?
			  ○ Understand why energy matters
			• Attitudes
			  ○ See electricity as a valuable resource that should be conserved
			  ○ Support CBS and the Commission in their efforts
			• Skills
			  ○ Find constructive ways to contribute to the energy vision
			  ○ Participate in collective energy decision making
			• Behavior
			  ○ Use less energy as they learn more ways to save energy
			  ○ Will electrify more

The mission of the City and Borough of Sitka is to provide public services for Sitka that support a livable community for all.

Sitka Community Renewable Energy Strategy

Community Scoping Survey Report

EXECUTIVE SUMMARY

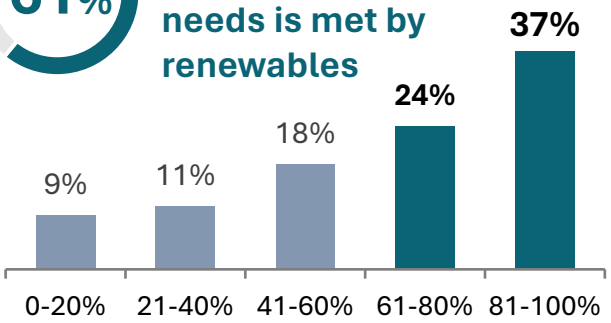
When asked to describe where Sitka's electricity comes from in one sentence...

63% Nearly 2/3 just said *hydro, hydropower, hydroelectric,* or simply *dam(s)*

36% The other 1/3 named one or both dams

51% Of those who did:
Half named both dams
48% named only Blue Lake
1% named only Green Lake

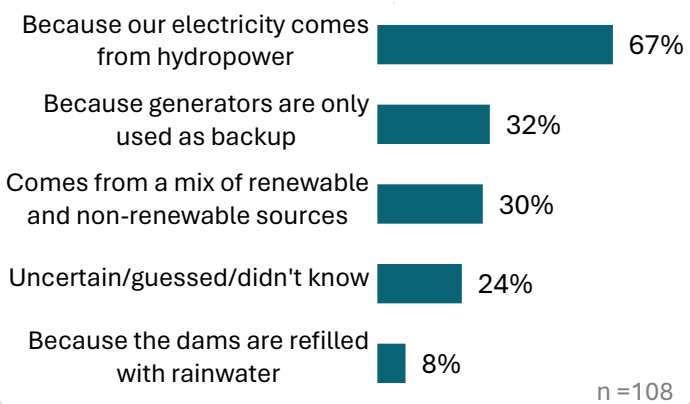
61% Most respondents thought most of Sitka's energy needs is met by renewables



How much of Sitka's energy needs do you think is met by renewable energy?

n =139

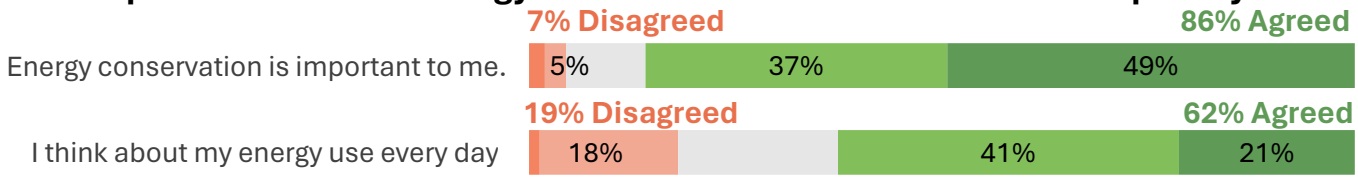
When asked why, the most common explanations for their choice were:



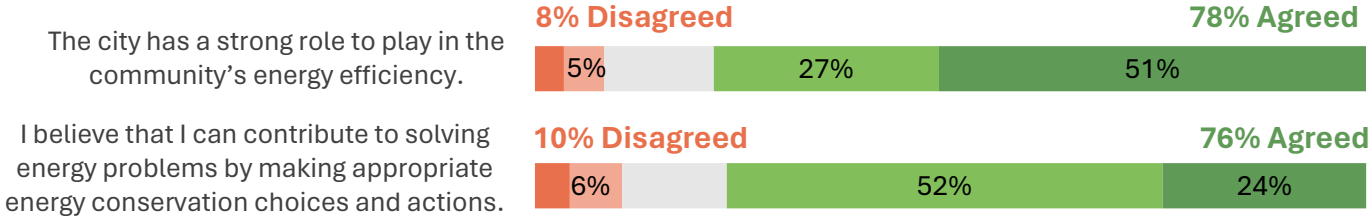
n =108

Most questions asked were about the operations and infrastructure of Sitka's electric grid (50%).

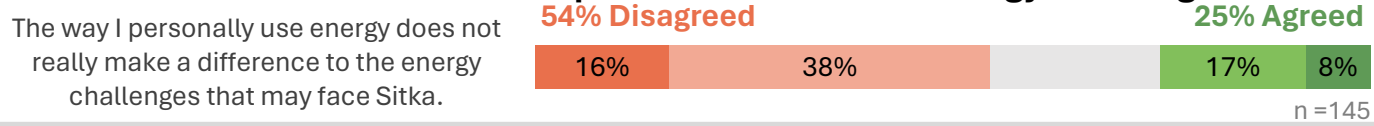
Respondents valued energy conservation and think about it frequently...



...and saw the City and themselves as having large roles in energy efficiency...



But were more divided on how their personal use affects energy challenges in Sitka.



n =145

Common themes from open-ended comments were:

Affordability | Reliability | Self Sufficiency & Independence | Energy Efficiency | Transparency | Environmental Responsibility

Sitka Community Renewable Energy Strategy
Community Scoping Survey Report

Prepared By: Bri Gabel, Sustainability Coordinator

BACKGROUND

The Sitka Community Renewable Energy Strategy (SCRES) is a City and Borough of Sitka-led project heavily supported by its Sustainability Commission in collaboration with energy experts via technical assistance from the Department of Energy's Energy Transition Initiative Partnership Project (ETIPP).

Vision:

Establish a shared vision of Sitka's energy future to guide energy-related community decisions.

Mission:

Shape a roadmap for community and policy actions that advance the shared energy vision.

PURPOSE

To inform development of the SCRES technical team's approach for public energy education and engagement to bolster community knowledge and participation in future energy visioning.

EVALUATION QUESTIONS

1a. What are the gaps in the community's understanding of Sitka's energy landscape?

1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

2. What are the best ways to increase understanding and share energy knowledge with the community?

3. What values does the community want to guide the development of the Community Renewable Energy Strategy?

4. What is the action is the community currently taking to conserve energy?

Comparisons between demographic groups were made, when possible, to further inform the SCRES engagement strategy.

LIMITATIONS

In addition to typical sampling biases inherent in survey-based methodologies, such as self selection and potential accuracy of self-reported data, the findings in this report should be interpreted with several limitations in mind and should be considered exploratory in nature.

The sample collected is not large enough to be considered truly representative of the community of Sitka and is highly likely to be skewed towards members of the community with a preestablished interest in energy. This is likely due to recruitment methods via channels highly linked to CBS and its Sustainability Commission as well as the purpose of the SCRES.

Additionally, comparisons between demographic groups were difficult as sample sizes, particularly for renters, varied between 26 and 30 responses, depending on the question. Comparisons were attempted between the largest sample groups possible, but still occasionally fell below what is typically considered statistically significant in some cases. These comparisons were aggregated from 5-point scales to 3-point scales.

Future efforts should be made to continue gather data to further refine SCRES scenarios and reach audiences underrepresented these results as well as those not easily reached by typical engagement methods.

METHODOLOGY

An was developed to gauge participant's attitudes around energy conservation, understanding of the current energy landscape of Sitka, and desired involvement. They survey also asked about preferred ways to receive information and/or engage with the SCRES work. Finally, the survey offered space for open-ended space for energy-related questions. The survey could be taken online via the *Survey Monkey* platform or via physical copies located at various events and locations.

RECRUITMENT

The survey was open from November 28th, 2023, to February 29th, 2024. Various recruitment methods were utilized including social media, attendance to in person events, PSAs, bulletin boards, and through advertisements in the local paper. Efforts to track the success of each method was attempted by creating unique QR codes and URLs when possible. However, due to the simplicity of directing participants directly to the webpage was simpler, the success of each recruitment method can only be estimated. For example, CBS social media directed prospective participants to the SCRES site, not a unique link.

TRACKED COLLECTORS

Location	Collector Type	Responses	
		Digital	Paper
SCRES site	Link	114	
Sustainability Email invitation (11/28)	Link	19	
Sustainability Commission site	Link	16	
City Hall Flyers	QR Code	6	
SCRES Tech Team Outreach (2/5)	QR Code/Link/Paper	3	2
Electrification Expo (2/17)	QR Code	3	
Tourism Task Force Events	QR Code	4	4
Sitka Daily Sentinel (2/16, 2/21,2/23, 2,28)	QR Code	4	
Utility Counter	QR Code	4	1
Library	QR Code	0	0
Paper Drop Offs	NA		1
Total		**172**	**8**

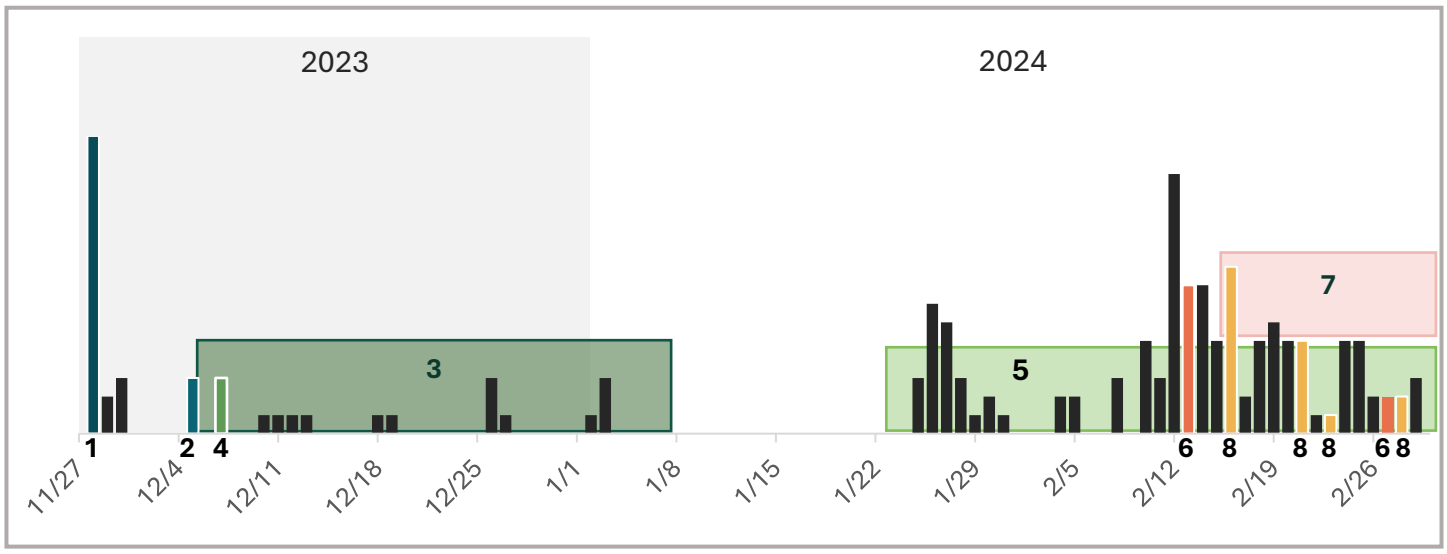
Validated Responses*	Opened Link Only**	Usable Total
164	12	**152**

*Online responses were validated through two screening questions: *1) Are you a robot? 2) Do you currently live in Sitka, Alaska?* 8 responses were removed via screening questions.

**Some participants only answered the screening questions before exiting the survey, answering no other questions.

SURVEY RESPONSES OVER TIME

November 28, 2023 – February 29, 2024



Number	Activity	Date(s)
1	Emailed Sustainability mailing list	11/28
2	SCRES Tech Team Engagement (Ginger Build, Schools, etc.)	12/5
3	Social Media- Ginger Build	12/6-1/8
4	Tourism Task Force Town Hall	12/7
5	Social Media - SCRES	1/24-2/29
6	Assembly Meeting Announcements	2/13 and 2/27
7	Raven Radio PSA	2/16-2/29
8	Daily Sitka Sentinel Ads	2/16, 2/21,2/23, 2,28

DATA INSIGHTS

of responses were valid

Only 8 were removed via screening questions

of respondents completed the survey

12 responses answered no questions after the screening.

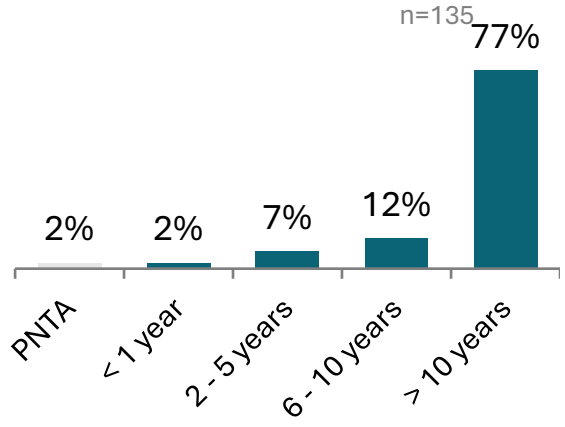
was the average time spent

DESCRIPTION OF SAMPLE

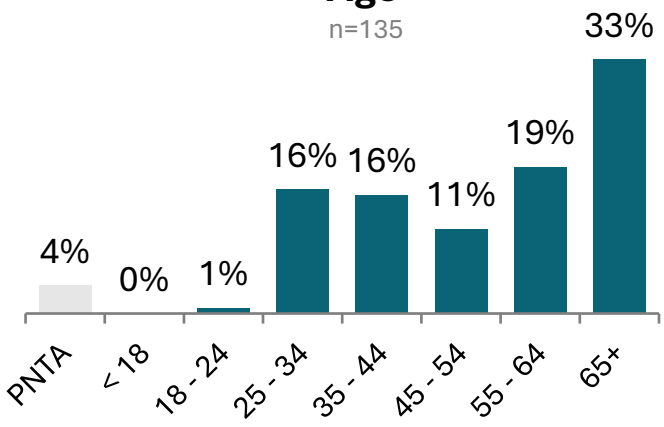
81-89% of participants provided some or all their demographics

PNTA = Prefer not to answer

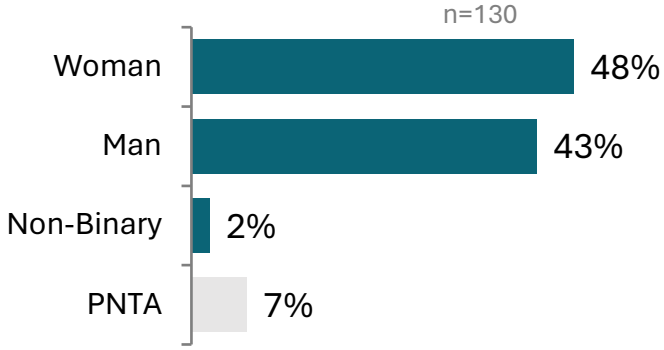
Sitka Residency Length



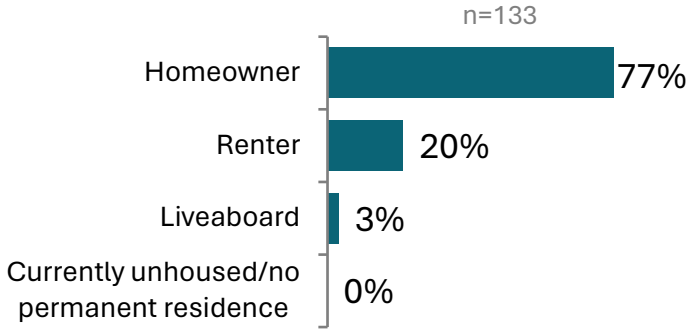
Age



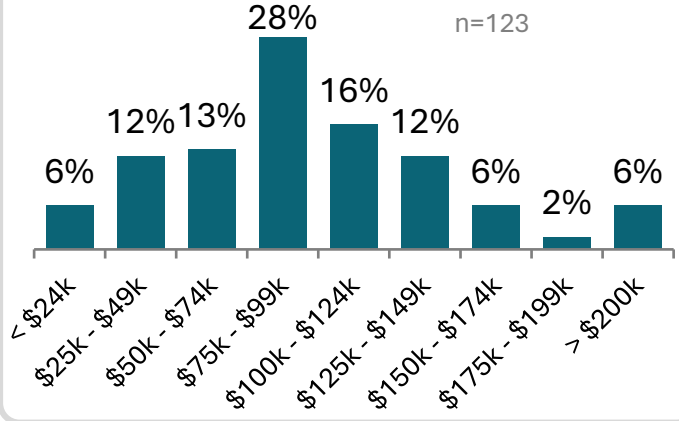
Gender Alignment



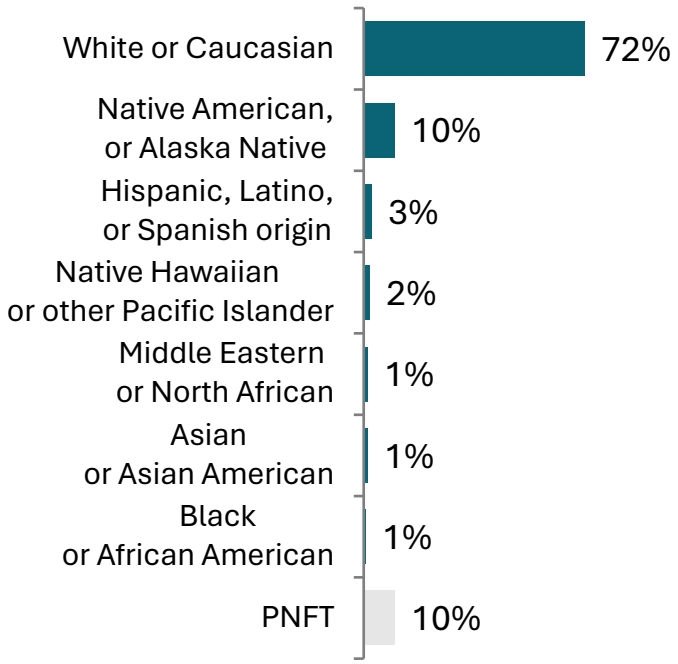
Housing Status



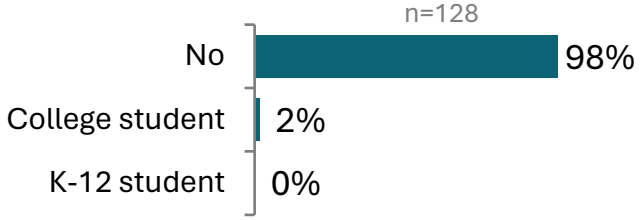
Household Income



Race



School Enrollment



ACCURACY OF COMMUNITY REPRESENTATION

To determine how well the sample represented the community of Sitka, demographics were compared to the most recent census data available; the 2022 American Community Survey (ACS). Limitations of even the ACS to fully capture the diversity of the community should also be taken into consideration. Overall, the sample represented the community within moderate reason, with overrepresentation of homeowners, those 65 years old or older, and White or Caucasian individuals and underrepresentation of those less than 24 years old, Asian and Asian American individuals, and those currently enrolled in school.

Age	2022 ACS	Survey Results	+/-
<18%*	4% (15-17)	0%	-4%
18-24	8%	>1%	-7%
25-34	17%	16%	-1%
35-44	17%	15%	-2%
45-54	14%	16%	+2%
55-64	18%	19%	+1%
65+	19%	33%	+12%

**The 2022 ACS uses more granular age brackets. For this comparison, only the ages 15-17 age group was used.*

School Enrollment	2022 ACS	Survey Results	+/-
Not Enrolled	78%	98%	+20%
K-12	16%	0%	-16%
College	6%	2%	-4%

Housing Status	2022 ACS	Survey Results	+/-
Homeowner	67%	77%	+10%
Renter	30%	20%	-10%
Liveaboard	NA	3%	NA

Gender*	2022 ACS	Survey Results	+/-
Woman	48%	53%	5%
Man	52%	47%	-5%
Non-Binary	NA	2%	NA

**The 2022 ACS reports only a sex ratio. To compare the sample to the ACS, non-binary responses were excluded to calculate sex ratio.*

Household Income	2022 ACS	Survey Results	+/-
< $24k	10%	6%	-4%
$25k - $49k	14%	12%	-2%
$50k - $74k	14%	13%	-1%
$75k - $99k	17%	28%	+9%
$100k - $124k	25%	16%	+3%
$125k - $149k		12%	
$150k - $174k	10%	6%	-2%
$175k - $199k		2%	
> $200k	9%	6%	-3%

Length of Residency	2022 ACS	Survey Results	+/-

ACS does not collect this data; no comparison is available.

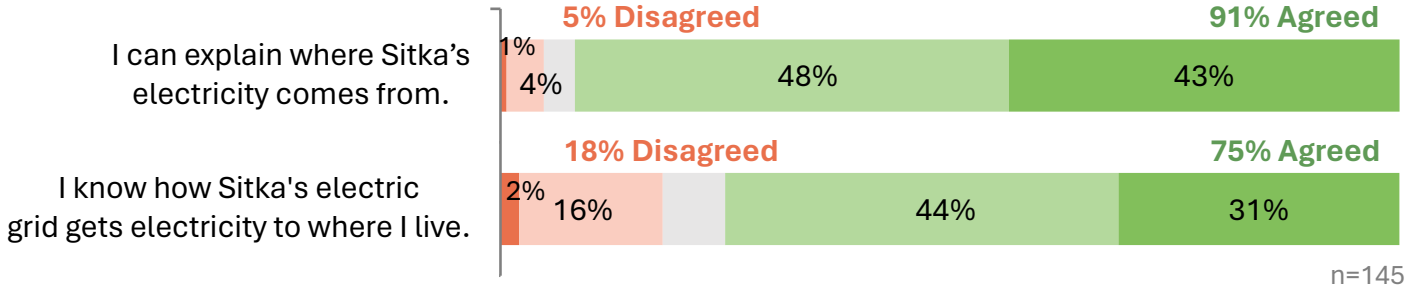
Race – Alone or in Combination*	2022 ACS	Survey Results	+/-
White or Caucasian	66%	72%	6%
American Indian or Alaska Native	17%	11%	-5%
Asian or Asian American	9%	2%	-7%
Hispanic or Latino	5%	3%	-2%
Native Hawaiian or Other Pacific Islander	2%	2%	0%
Black or African American	1%	1%	0%
Middle Eastern or North African	Not Available	1%	NA

**The 2022 ACS does not allow for selection of multiple races only "more than one race". ACS results show that 17% selected 2 or more races. Only 5% of survey participants chose more than one option.*

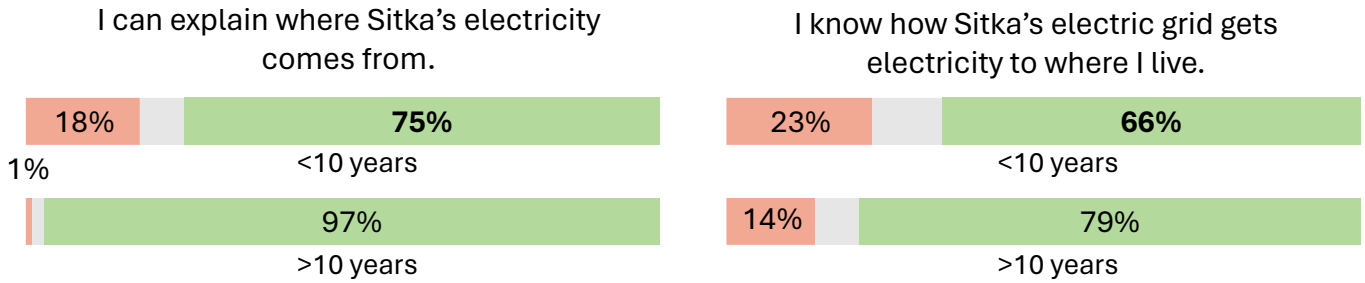
1a. What are the gaps in the community's understanding of Sitka's energy landscape?

Disagreed = Strongly Disagree (1) + Disagree (2)
Agreed = Strongly Agree (5) + Agree (4)

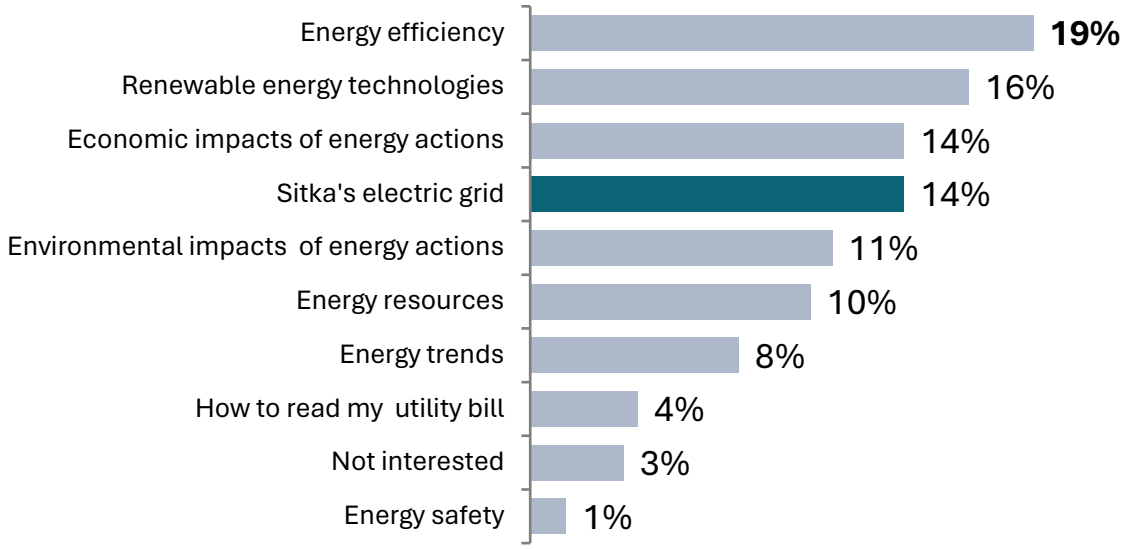
Almost all participants felt they could explain where Sitka's electricity comes from, but they were less confident in explaining the grid.



But residents who have lived in Sitka for less than a decade were less confident in their ability explain both the source and the grid.



Regardless, it was still one of the most popular choices that respondents would like to know more about.



1a. What are the gaps in the community's understanding of Sitka's energy landscape?

When asked to describe where Sitka's energy comes from in one sentence...

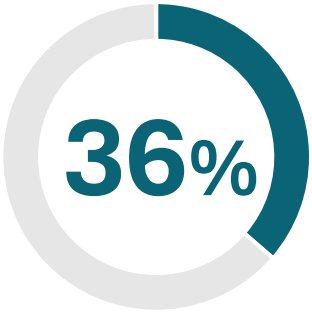
1/3 just said *hydro, hydropower, hydroelectric,* or something similar.

About 1/3 just said the *dam* or *dams*

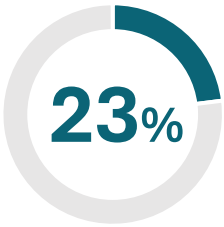
About 1/3 named one or both dams

Most said *the dam*

Half named both dams
48% named only Blue Lake
1% mentioned only Green Lake



1/3 of respondents stated that there is only one dam or only named Blue Lake



About ¼ mentioned diesel generators as backup or for high electric use scenarios

very few participants explained that Sitka's energy comes from hydroelectric and other fossil fuels.

Open-ended questions showed the following themes:

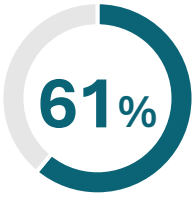
Operations of Infrastructure (50%)
Operations of the Blue Lake Project (18%)
Integration of renewables and when (17%)
Resiliency, self sufficiency, and independence (8%)

Social Concerns (31%)
Transparency in energy planning (9%)
The impacts of large consumers (11%)
Environmental impacts of oil (7%)
Population changes and tourism (4%)

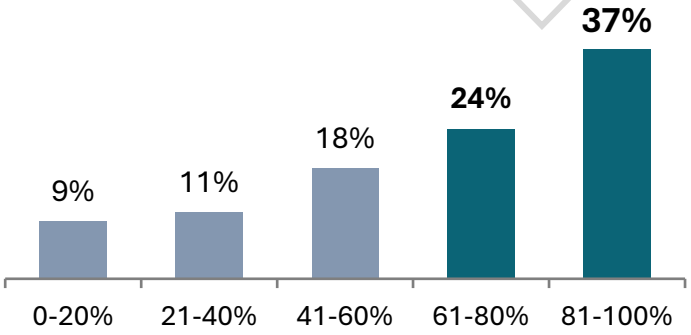
Financing (44%)
Affordability of the Blue Lake Expansion Project (16%)
Rate concerns, in general (16%)
Affordability of new generation (14%)

Ways to be more energy-efficient (16%)
Weatherization (11%)
Heat pumps (5%)

1a. What are the gaps in the community's understanding of Sitka's energy landscape?

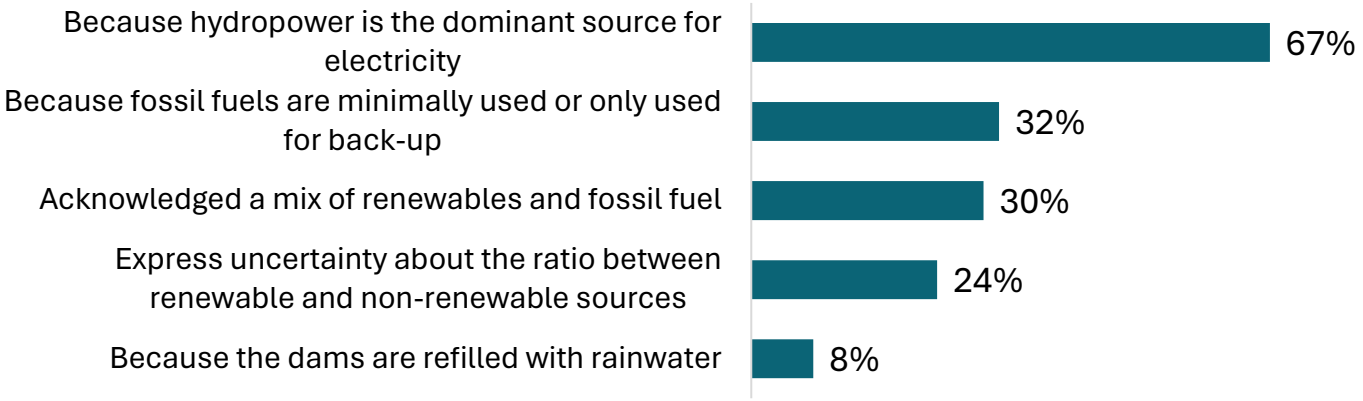


The majority of respondents thought most of Sitka's energy needs are met by renewables



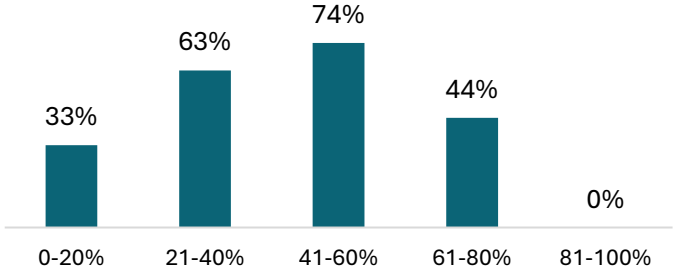
78% of respondents provided their reasoning.

Most common explanations for their choice:



Those who mentioned fossil fuels or a mix of energy sources chose a lower total renewable percentage more often.

Mentioned of oil in their explanation



The most mentioned reasons for fossil fuel uses were:

Backup for hydroelectric
Home heating
Transportation
(Cars, boats, and shipping)

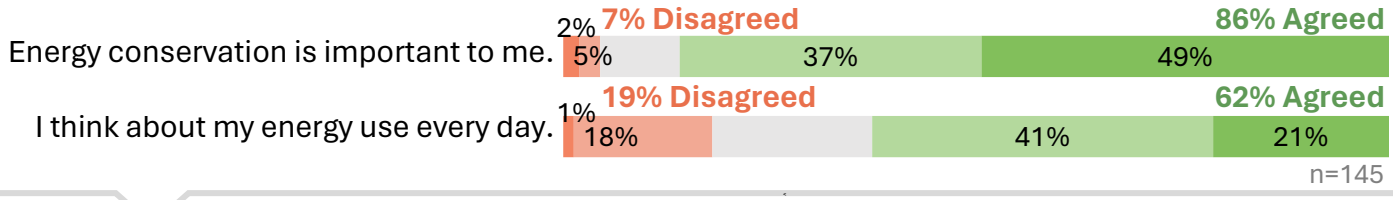
Other reasons included:

Sitka's remote location
Cruise tourism
Fishing

1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

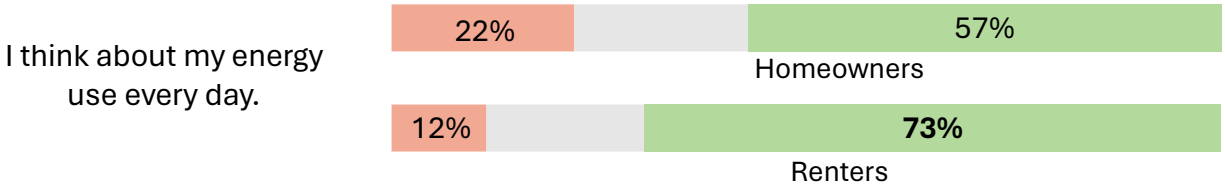
Disagreed = Strongly Disagree (1) + Disagree (2)
Agreed = Strongly Agree (5) + Agree (4)

In general, respondents value energy conservation and think about it frequently.

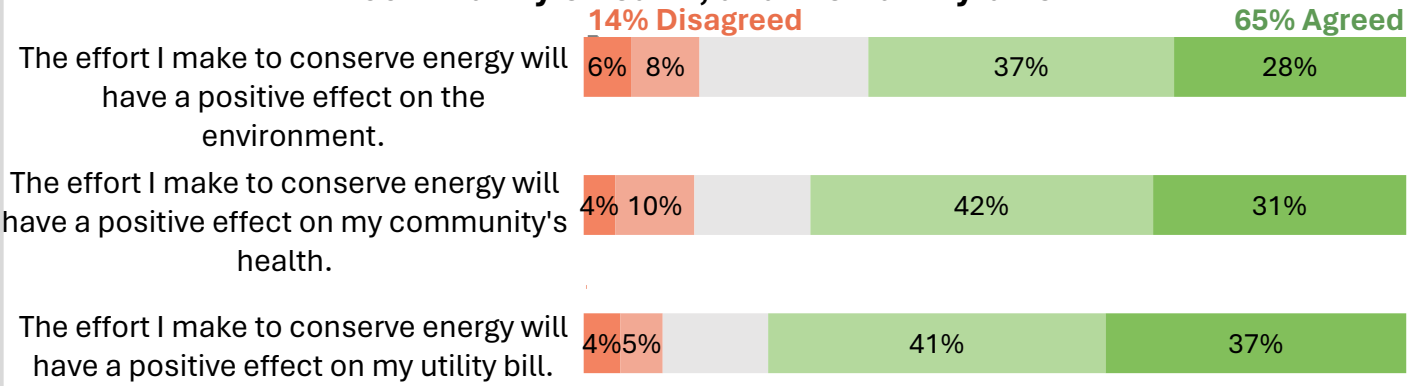


n=145

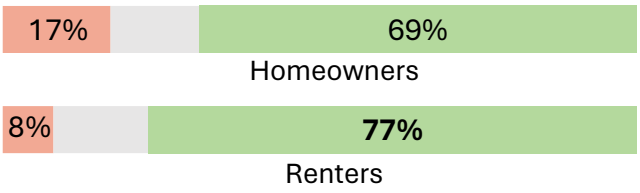
But renters thought about their every use every day more often than homeowners.



Most see their choices as having positive impacts on the environment, the community's health, and their utility bills.

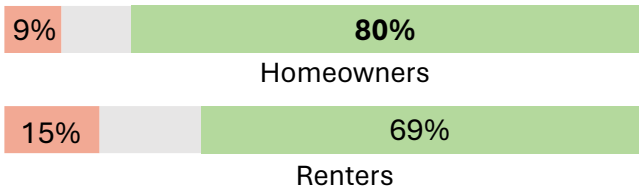


But more renters thought their efforts had positive effects on the community's health...



Homeowners were twice as likely to disagree with their efforts having positive effects on the community's health...

...and more homeowners agreed that their efforts had positive effects on their utility bills.



... but was the opposite for positive effects on utility bills. Renters were almost twice as likely to disagree with that statement.

1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

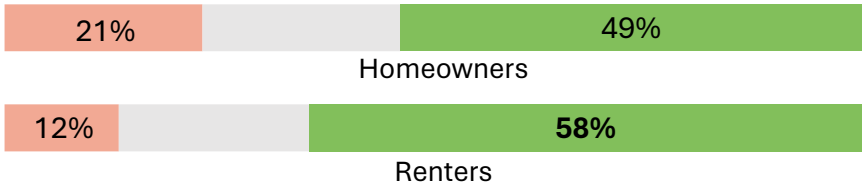
Disagreed = Strongly Disagree (1) + Disagree (2)
Agreed = Strongly Agree (5) + Agree (4)

Despite potential barriers, most were willing to do more to save energy.

I would do more to save energy if I knew how.

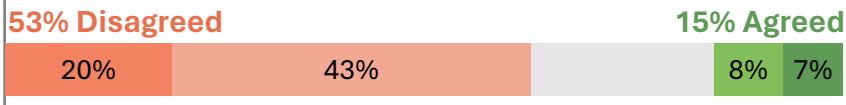
More renters than homeowners indicated their willingness to do more.

I would do more to save energy if I knew how.



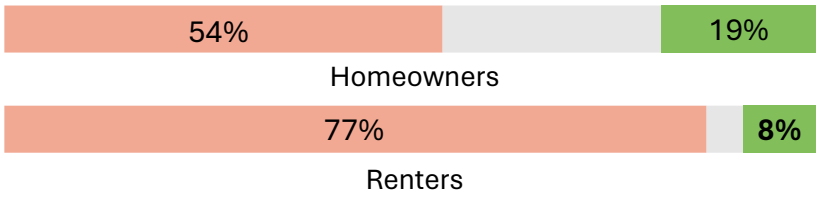
And most were willing to conserve more energy, even if it reduced their comfort.

I am not willing to conserve energy at my home if that comes at any cost to my comfort.



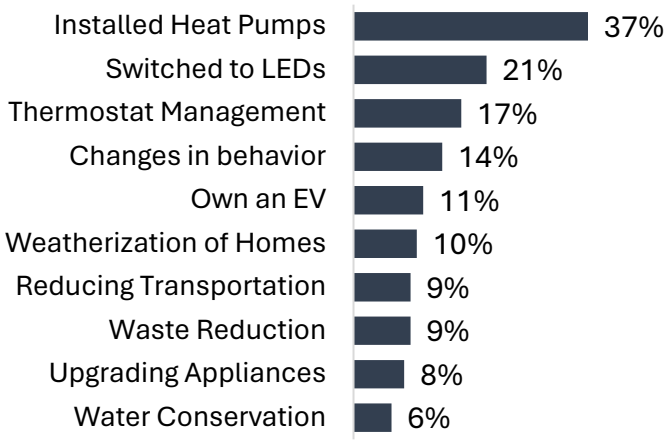
Renters were also more willing to conserve energy at the cost of their own comfort.

I am not willing to conserve energy at my home if that comes at any cost to my comfort.

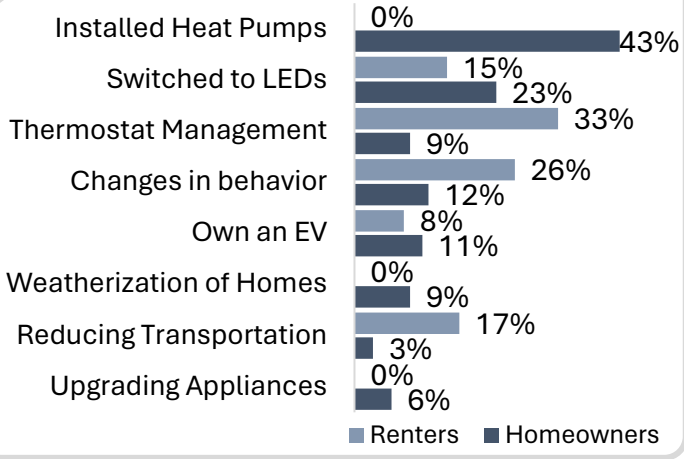


Similarly, energy conservation actions differed depending on homeownership.

All responses



Renters compared to homeowners



Renters more often cited changes in behavior, like turning off lights or unplugging appliances, and energy management while homeowners more often sited infrastructure upgrades.

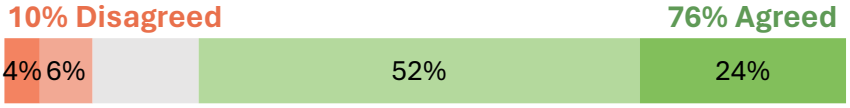
1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

Disagreed = Strongly Disagree (1) + Disagree (2)
Agreed = Strongly Agree (5) + Agree (4)

Respondents saw the City and themselves as having large roles in energy efficiency.

The city has a strong role to play in the community's energy efficiency.

I believe that I can contribute to solving energy problems by making appropriate energy conservation choices and actions.



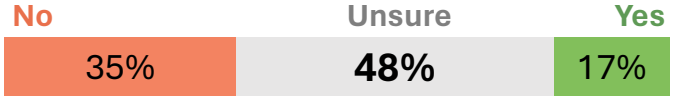
But were more divided on how their personal use affects energy challenges in Sitka.

The way I personally use energy does not really make a difference to the energy challenges that may face Sitka.

Similarly, although half of respondents said their voices do help impact energy policies...

I believe I have a voice in helping to impact energy policies.

...nearly half said they were unsure about participating in energy planning.



Would you like to participate in energy planning?

Open-ended questions showed the following themes:

Suggestions (24%)

Promoting/incentivizing electrification (19%)
Electric vehicles in the City fleet (5%)

Social Concerns (24%)

The impacts of large consumers (11%)
Public involvement and education (6%)
Population changes or cruise impacts (4%)

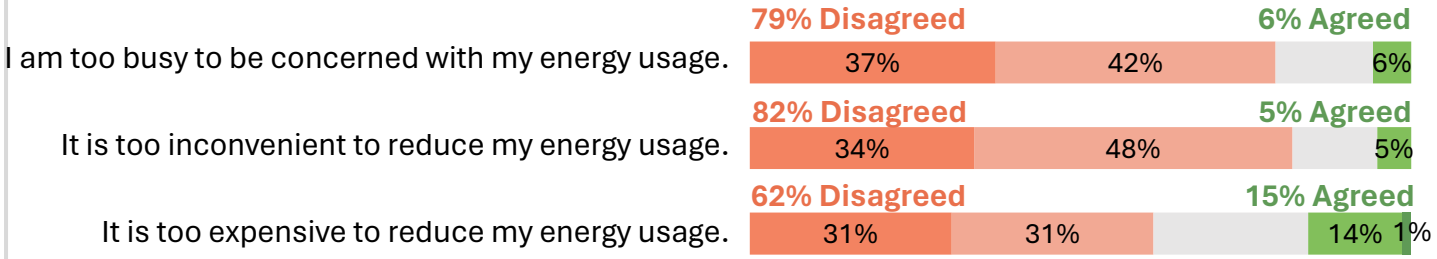
Environmental Concerns (17%)

Impacts of additional renewable generation (10%)
Impacts of current oil uses (7%)

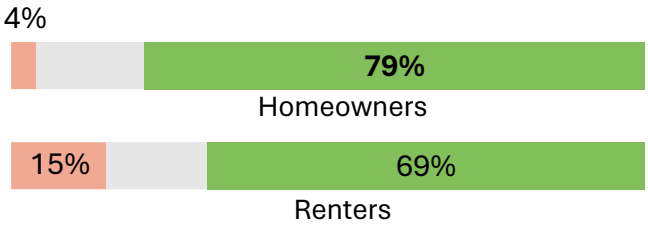
1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

Disagreed = Strongly Disagree (1) + Disagree (2)
Agreed = Strongly Agree (5) + Agree (4)

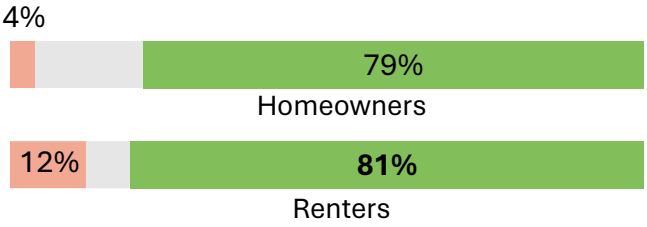
Most respondents did not indicate that their schedules, convenience, or expense was a barrier to reducing their energy usage.



However, renters were more likely to respond that scheduling, convenience, or expense was a barrier in reducing their energy usage.

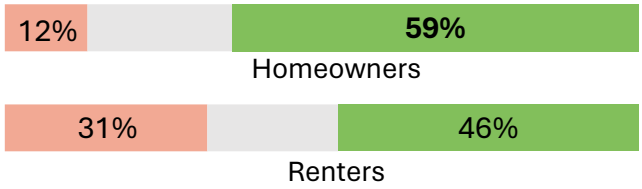


Renters were three times as likely to say that they were too busy.



Renters were three times as likely to say that it was too inconvenient.

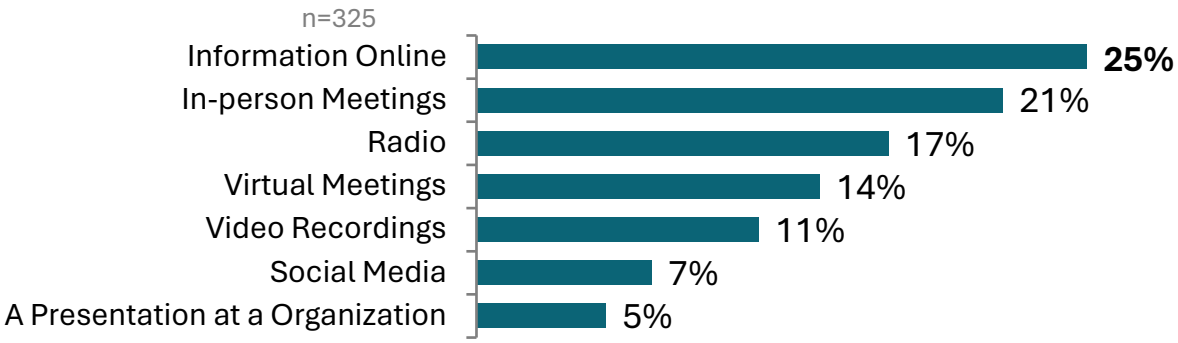
The largest barrier was the expense with 1/3 of renters saying it was too expensive to reduce their energy usage.



This response was 2.5 times more common in renters than homeowners, with more than half of homeowners indicating that expense was not a major barrier.

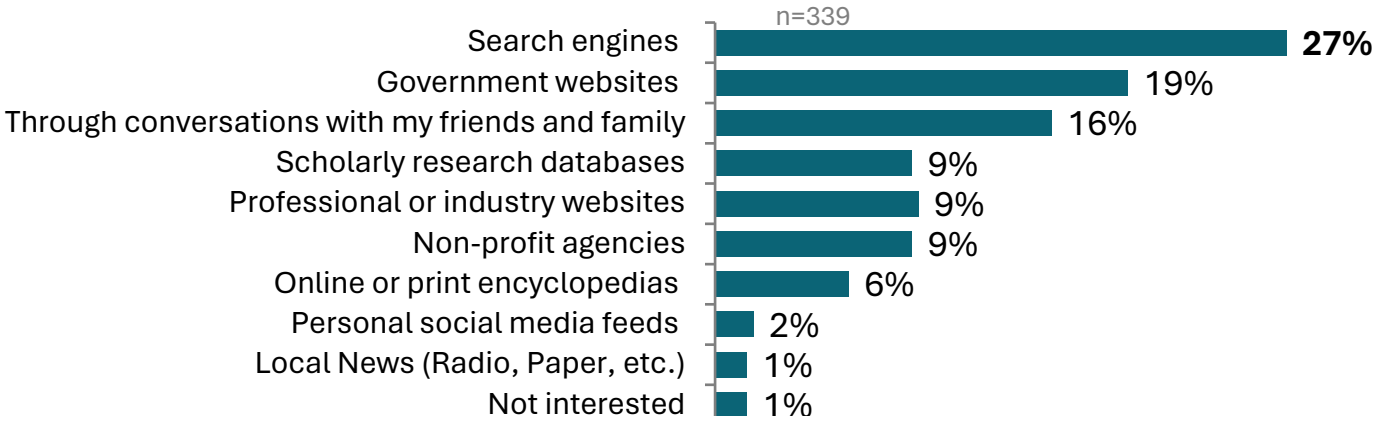
2. What are the best ways to increase understanding and share energy knowledge with the community?

Respondents would like to engage by:



Requested Organizations (No order): City Assembly, Sitka Chamber of Commerce, Sitka Sound Science Center, Sitka Unitarian Fellowship, Transition Sitka

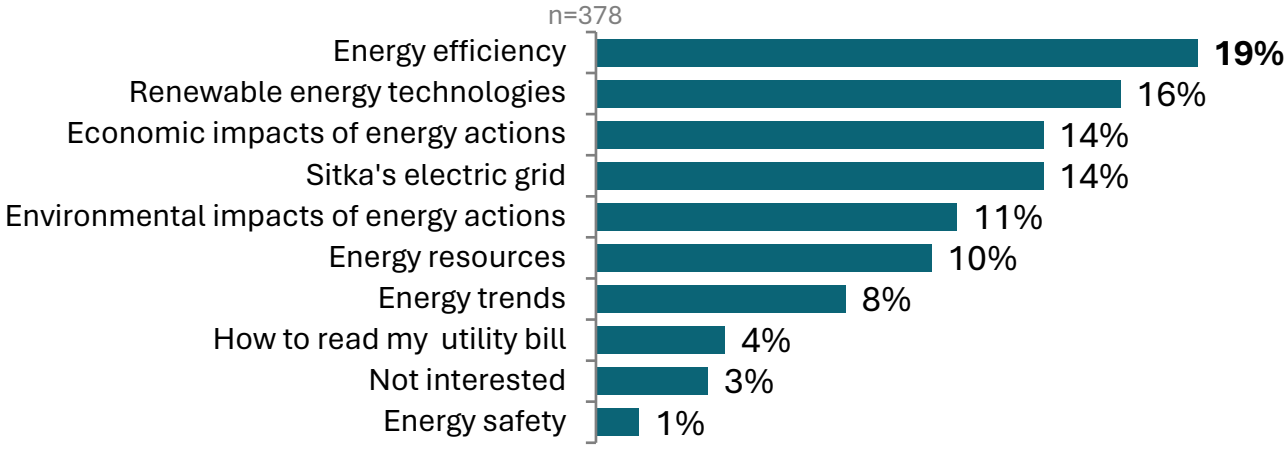
Respondents looked for energy information through:



Most respondents were willing to encourage their friends and family to make energy-efficient choices.

I encourage my friends and family to make energy-conservation choices.

Respondents wanted to learn more about:



3. What values does the community want to guide the development of the Community Renewable Energy Strategy?

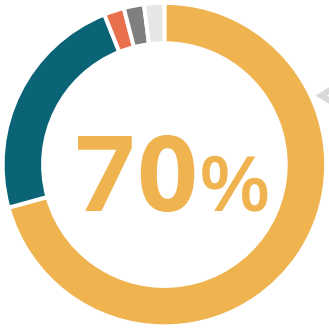
All open-ended response opportunities were aggregated, and the following themes emerged. No percentages were attributed but the relative prevalence is conveyed through the size of text.

Affordability
Reliability
Self Sufficiency & Independence
Efficiency & Energy Conservation
Transparency
Environmental Responsibility

4. What is the action is the community currently taking to conserve energy?

PRIMARY HEAT SOURCE OF HOMES:

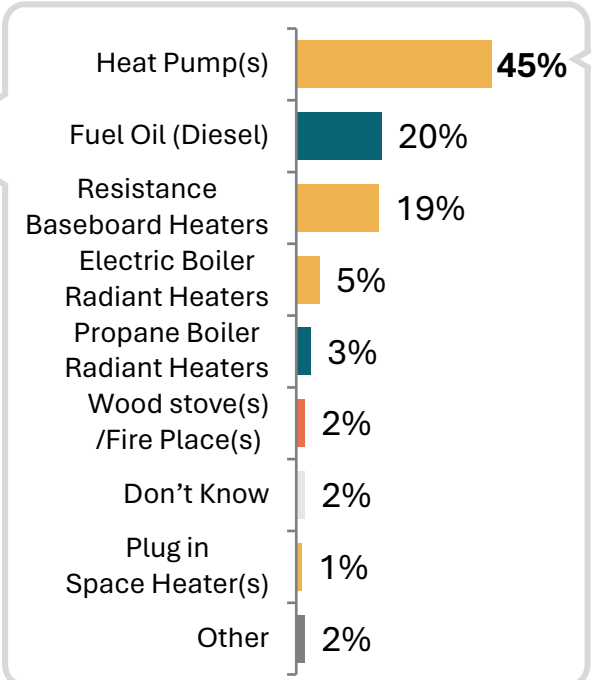
n=147

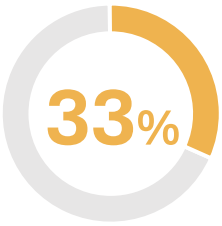


of homes were heated with electricity

23% with fossil fuels

2% with biomass



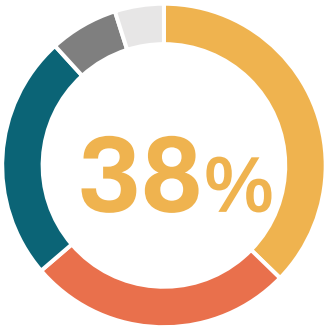


1/3 had more than one heat pump

86 heat pumps were reported

SECONDARY (BACK UP) HEAT SOURCE OF HOMES:

n=141



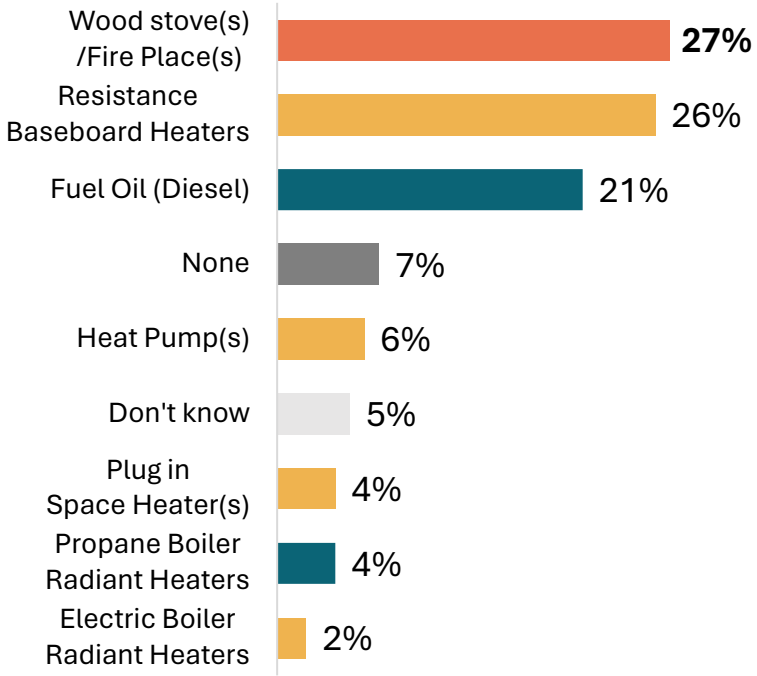
of homes had electric back up heat systems...

27% used biomass

25% used fossil fuels

7% had no back up

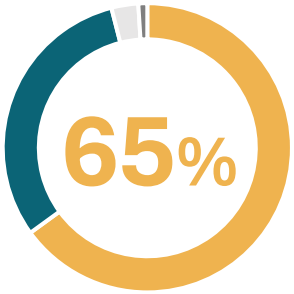
...but biomass was the most common source of back up heat



RESULTS

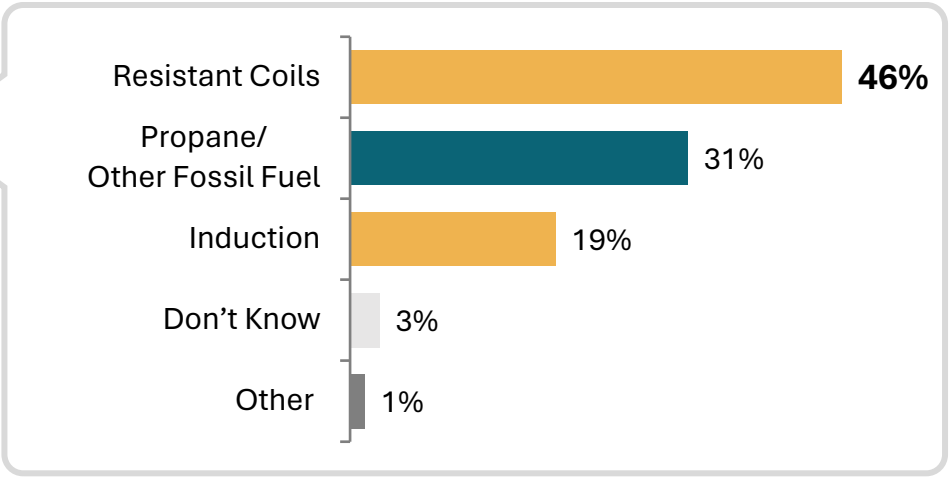
KITCHEN COOKTOPS:

n=147



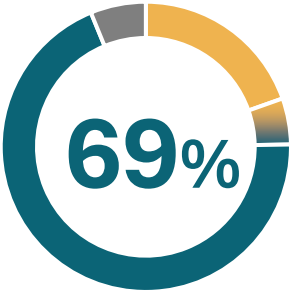
used electric cooktops

31% used fossil fuels



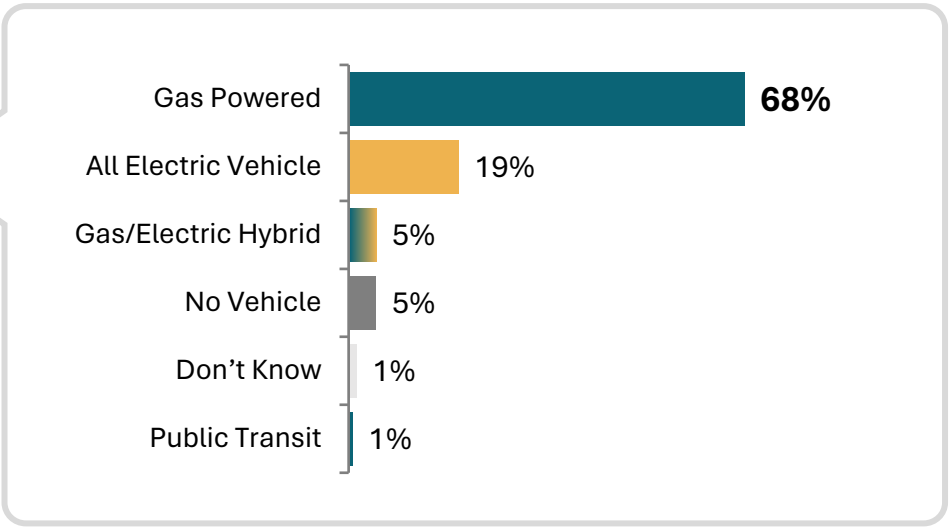
TRANSPORTATION:

n=146



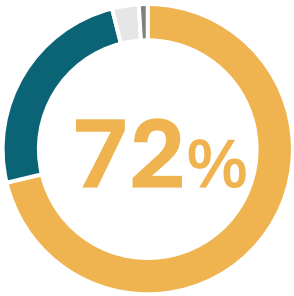
drive personal or used public gas-powered vehicles

19% drive all electric vehicles



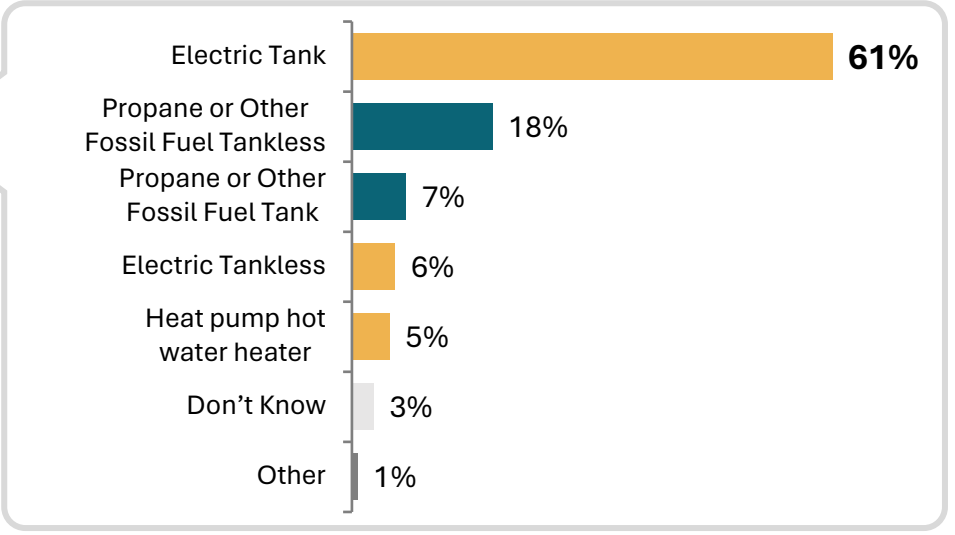
HOT WATER HEATERS:

n=145



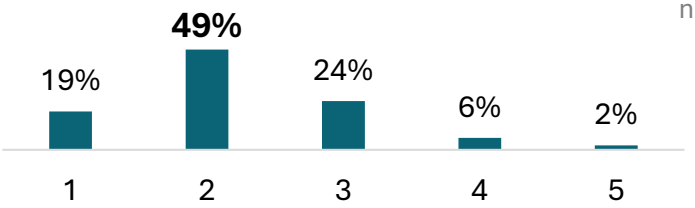
used electricity to heat water

25% used fossil fuels



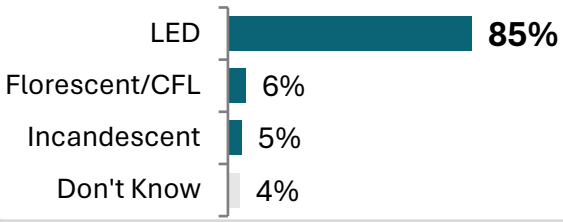
NUMBER REFRIGERATORS AND/OR FREEZERS:

n=138



LIGHTING:

n=141



CONCLUSIONS

1a. What are the gaps in the community's understanding of Sitka's energy landscape?

In general, respondents indicated they felt comfortable explaining Sitka's energy generation and distribution, but most did not expand beyond hydroelectric generation or Blue Lake, specifically. Regardless, most respondents indicated they wanted to know more.

Most respondents thought most Sitka's energy needs come from renewable sources. This was largely attributed to its hydroelectric capacity for electricity, however, many acknowledged that they don't know the exact composition of Sitka's energy usage or where unsure of the exact ratio of renewable and fossil fuels. This may be attributed energy and electricity being used interchangeably in communications or through differences in individual understanding of the distinction.

Respondents had questions about specifics about how the electric generation and transmission infrastructure work and how renewables will be integrated and when. Many questions were specific to day-to-day operations of the current generation and infrastructure, such as the role of back up generators and whether the need for additional generation was warranted, and if so, when.

Respondents wanted to know more about was financing, both existing infrastructure and potential future infrastructure. Many questions were specific to the funding of the Blue Lake Expansion Project and how that debt may be increased with additional renewable generation.

1b. What are gaps in the community's energy knowledge that inhibit informed decision making?

Most agreed that their energy use plays a role in Sitka's energy usage and that their voices impact energy policy, but only the majority were unwilling or unsure about participating in energy planning.

Overall, respondents were actively thinking about energy and were willing to do more. Many saw their choices to conserve energy had a positive impact on the environment, the community's health, and their utility bills. Renters were more likely to indicate they did not see positive impacts from their choices on their utility bills.

Although the majority didn't indicate challenges in reducing their energy usage, renters were more likely to indicate barriers, including their schedules, convenience, and most significantly, cost.

2. What are the best ways to increase understanding and share energy knowledge with the community?

Respondents were highly self motivated to gather information on their own. Making information regarding energy and specifics about Sitka's energy landscape on available online was highly requested via open-ended comment sections and highly selected on the survey.

3. What values does the community want to guide the development of the Sitka Community Renewable Energy Strategy?

Affordability, reliability, and self-sufficiency and independence were the most common themes from open-ended comments and emphasize the need for realistic and achievable outcomes of the SCRES.

RECOMMENDATIONS

To increase the community's understanding of Sitka's energy landscape:

Build consensus on what "Sitka's energy landscape" includes or does not include. For example, some respondents asked if certain modes of transportation for certain purposes, like air travel or grocery barges, were part of this landscape and how they played a part. This will allow for better conversations to take place about what Sitka's energy landscape can or should look like.

Make the distinction between energy and electricity clear and how our electric generation and grid can support Sitka's energy needs and overall independence. Consistently differentiating energy and electricity will further clarify areas that can be changed quickly vs those that are still technologically lacking. Similarly, illustrate the grid clearly to showcase current limitations and what will need to be done to achieve the shared energy vision.

Be realistic in how much hydroelectric power supports the community now and how it will become more critical in the future. It is possible that because of Sitka's renewable electric generation there is a misconception that most of Sitka's energy needs are from renewable sources. It is possible this is due to the existing messaging of "100% renewable" being used without explanation in the larger context of Sitka's energy landscape.

To promote informed decision making in the community:

Highlight the impacts of individual choices and actions on the energy landscape. Overall, there was a lack of consensus around who uses the most energy and how individual changes impact Sitka's energy needs. Show how impacts do impact Sitka's grid and how it is a community effort.

Build ways for community members to see their impact in the development of the SCRES throughout the process. Most respondents were unsure about participating in energy planning. While no reasons were given, showing how their input shapes the direction of the SCRES will be critical to increase engagement.

Most respondents were willing to encourage their friends and families to conserve energy. They may be willing to encourage other to participate as well. Based on the general willingness and attitudes around energy conservation, it is possible that those who participate in the beginning will encourage others to get involved if their input is readily integrated.

Create connections to things they see as important to increase engagement and confident decision making. Use areas of interest, such as efficiency, renewable technologies, or financial benefits to help participants feel informed to make choices now and in the future.

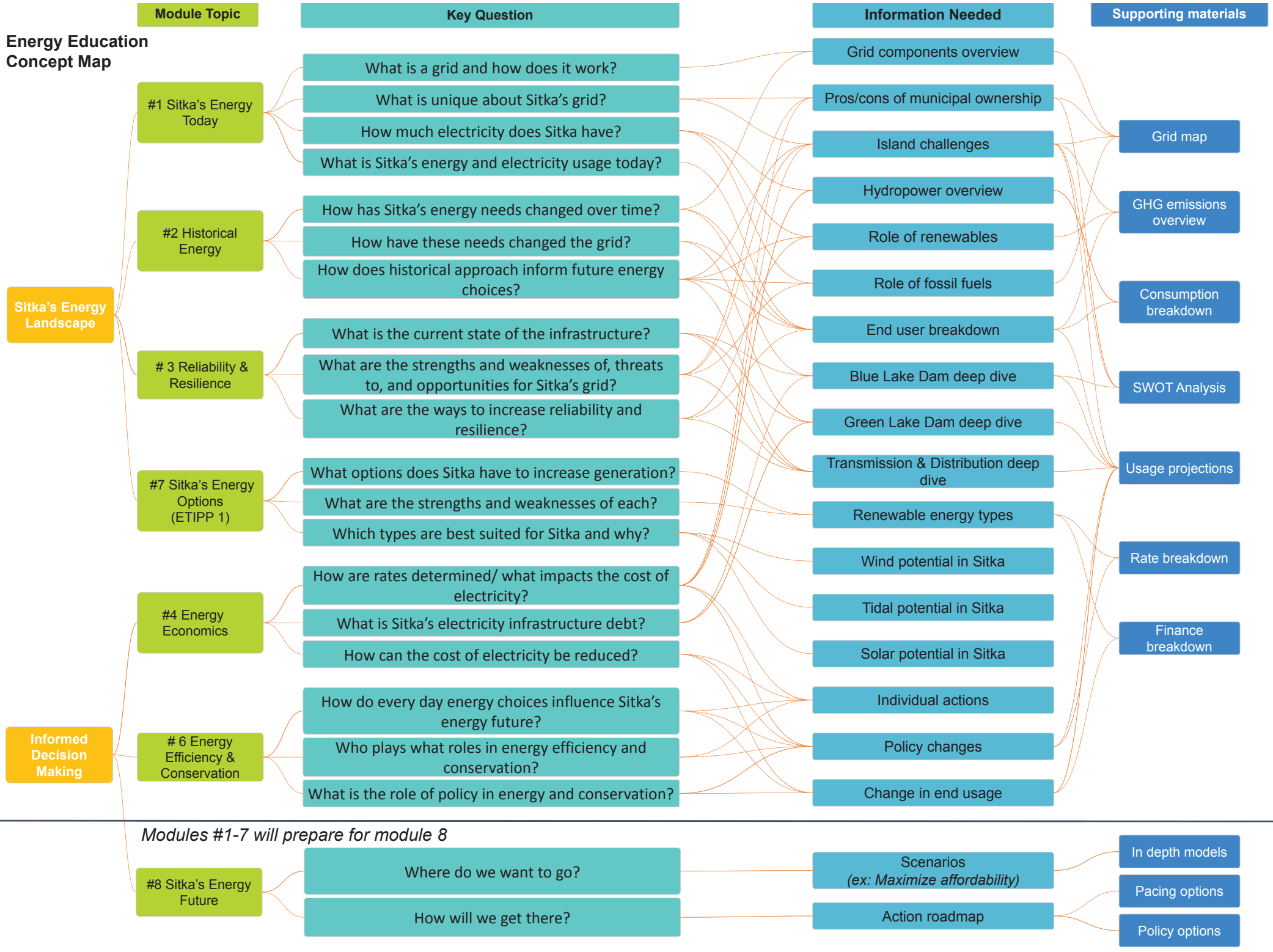
To increase understanding and share energy knowledge with the community:

Consider the different priorities and actions of different community groups and their ability to engage in the SCRES based on those priorities and actions. Reported actions of energy conservation varied greatly as a whole and differentiated between certain groups. Take advantage of the variety of ways participants would like to engage by but be mindful of how different groups are able to engage and able to make change. Consider tailoring some engagement to certain groups so information shared is applicable and meaningful.

In general:

Keep collecting data. If certain aspects of the original survey can be used to inform or refine scenarios, consider continuously collecting the information throughout the development of the SCRES.

Energy Education Concept Map



SCRES Energy Education Modules

No.	Module Topic	Key Question
1	Sitka's Energy Today	What is a grid and how does it work?
		What is unique about Sitka's grid?
		How much electricity does Sitka have?
		What is Sitka's energy usage today?
	Objectives	
	1.1	Participants will be able to list the 3 major components of the grid
	1.2	Participants will be able to compare islanded and interconnected grids
	1.3	Participants will be able to describe Sitka's energy users
	1.4	Participants will be able to identify which group of energy users they belong to.
2	Sitka's Energy History	How has Sitka's energy needs changed over time?
		How have these needs changed the grid?
		How does historical approach inform future energy choices?
	Objectives	
	2.1	
3	Reliability and Resilience	What is the current state of the infrastructure?
		What are the strengths and weaknesses of, threats to, and opportunities for Sitka's grid?
		What are the ways to increase reliability and resilience?
	Objectives	
	3.1	
4	Energy Economics	How are rates determined/ what impacts the cost of electricity?
		What is Sitka's electricity infrastructure debt?
		How can the cost of electricity be reduced?
	Objectives	
	4.1	
5	Self Sufficiency and Independence	How do we balance generation and distribution?
		How does investment in the grid translate to self-sufficiency and independence?
		What are the social, cultural, and environmental impacts associated with new infrastructure?
	Objectives	
	5.1	
6	Energy Efficiency and Conservation	How do everyday energy choices influence Sitka's energy future?
		Who plays what roles in energy efficiency and conservation?
		What is the role of policy in energy and conservation?
	Objectives	
	6.1	
7	Sitka's Energy Options	What options does Sitka have to increase generation? (ETIPP 1)
		What are the strengths and weaknesses of each type?
		Which types are best suited for Sitka and why?
	Objectives	
	7.1	

SCRES Energy Education Modules

8	Sitka's Energy Future	Where do we want to go?
		How will we get there?
Objectives		
8.1		

Outcomes from the SCRES Logic Model

The Community Will:

Knowledge

- Know where Sitka's electricity comes from
- Understand Sitka's energy is used
- Know how electricity rates are determined
- Understand how their rates compare across AK, USA, and globally
- Know what options Sitka has for renewable expansion (ETIPP1)
- Understand energy debt, how it financed, where it comes/came from

Attitudes

- Understand why energy matters
- See electricity as a valuable resource that should be conserved
- Support CBS and the Commission in their efforts on renewable energy

Skills

- Have the tools and confidence to participate in collective decision-making about energy
- Learn how to engage in the public process
- Setting a personal energy budget

Behavior

- Will electrify more to reduce fossil fuel use
- Use electric energy more efficiently

Affordability	Decreasing the residential energy burden of electric infrastructure through minimal rate increases and reducing consumption in the near term.	
Sub-Themes:	**Definition:**	**Example:**
Lowest Impact to Rates	Focus on implementing renewable energy options that minimize costs for individuals and the community and are perceived as low cost to deploy and maintain.	*"I want to electrify our community but in a way that prevents rate payers from increasing rates so they are unaffordable and people move and leave due to cost of living"* *"Building roads for wind is not cheap or a good idea."*
Increasing Utilization of Existing Infrastructure	Prioritizes using existing infrastructure to inform extent of electrification or explicitly limiting generation/consumption options based on existing grid capabilities.	*"Variable electric rates to encourage use during spill events"* *"Electrify based on our hydropower."* *"No diesel use! Limited or no additional renewables"* *"improve the opportunity and efficiency for new and existing generation"*
Energy Efficiency and Conservation	Strategies for making home energy upgrades to reduce consumption	*"We wanted to lower electricity use for houses"* *"Be efficient with our homes' energy use."* *"more focus on efficiency less on new energy"*
Consumption Diversification	Increasing commercial/industry demand to shift consumption and related cost burden to non-residential sectors	*"many costs should be taken on by private industry (cruise port, commercial heating, etc)"* *"Build another dam to generate electricity for power-hungry industries."*

Draft Narrative (Summary)

IN THE YEAR 2050, SITKA SUPPORTS RESIDENTIAL AFFORDABILITY BY USING RENEWABLE ENERGY TO BRING NEW CUSTOMERS

In this scenario, Sitka's energy future is shaped by efforts to reduce the energy-cost burden to residents. While the need to cover operational costs remains, Sitka's renewable energy surplus attracts new, larger-scale power consumers which allows residential rates to stabilize. Some deferred maintenance is accomplished in this scenario, but grid upgrades that enable larger-scale power consumption are prioritized sometimes at the cost of longer-term resiliency. Efforts to promote energy efficiency and conservation for residents help slow residential load growth and lower bills. Projects that increase the output of existing hydropower capabilities are completed. While residents and the utility benefit from the additional revenue, gaps in intermittent power availability in light of load growth and inconsistent climate and weather conditions are of increasing concern. The community grapples with solutions to address these gaps, with some preferring a focus on conservation and small-scale generation, while others prefer large-scale generation projects (i.e. additional hydropower, geothermal, nuclear, etc.) that, in order to build and operate without increasing residential energy-cost burden, will require at-scale power purchase commitments from commercial users or other forms of commercial investment.

Reliability	Ensuring consistent availability of dependable electricity supply across the community and minimizing disruptions in power far into the future and in unknown circumstances.	
Sub-Themes:	**Definition:**	**Example:**
Diversifying Utility-Scale Generation	Deploying a mix of energy resources to ensure reliability	*"Since we already have hydro, solar would work well when there's more water—better hydro, less water—better solar." "Wave power and tidal power could help diversify energy sources."*
Energy Security	Prioritizing actions to address access to energy over decades or with minimal amounts of reinvestment and/or waste.	*"More long-term operations with less short-term changes."*
Crisis Preparedness	Retaining access to fallback sources or strategies to manage emergencies or unexpected shortages in hydropower production	*"Even though I had a bit of excess energy I think it was perfect because it leaves room in case something bad I can't predict happens." "Always have the option to use diesel during a crisis." "We needed just a little bit more excess energy, just in case"*

Draft Narrative (Summary)

IN THE YEAR 2050, SITKA'S RENEWABLE ENERGY REMAINS RELIABLE DESPITE CLIMATE CHALLENGES.

This scenario, climate uncertainty puts Sitka's renewable energy sources at risk both directly and indirectly. Residents have continued to electrify as oil prices fluctuate, increasing Sitka's reliance on its hydroelectric projects for both power and water. Intense storms become more frequent, and the utility moves critical transmission lines underground to ensure power remains available with long term plans to move distribution as well. As rainfall becomes less consistent and/or more intense, the utility develops multiple, smaller renewable energy projects that can take advantage of Sitka's intermittent power sources. While these projects are slightly overbuilt and allow Sitka to completely eliminate diesel as a backup source, the investment is significant. Rates are adjusted to achieve long-term benefits, ensuring power is available regardless of environmental hazards. However, raises frustrate residents which are reliant on electricity make some hesitant to electrify or even switch back to oil. Simultaneously, oil prices continue to fluctuate, which causes rapid influxes of load growth that make aligning rates with required projects challenging. While the benefits of reliable, renewable energy are solidified, the sporadic changes in demand caused by electrification and changing environmental conditions require constant rebalancing and evaluation of goals.

Self-Sufficiency	Utilizing local energy to support necessities and reducing reliance on external energy.	
Sub-Themes:	**Definition:**	**Example:**
Distributed Generation Sources	Developing localized energy grids or smaller systems that reduce dependency on external grids and improve community-focused autonomy	*"Since we already have hydro, solar would work well when there's more water—better hydro, less water—better solar."* *"Wave power and tidal power could help diversify energy sources."* *"Wave power and tidal power could help diversify energy sources."*
Reducing Dependency on Fossil Fuels	Efforts to transition away from diesel fuel due to its high operational costs and import reliance, with a preference for affordable and renewable alternatives.	*"More long-term operations with less short-term changes."*
Food Security and Waste Stream Reduction	Using energy to grow food on island and utilizing waste streams locally to reduce imports and exports	*"Even though I had a bit of excess energy I think it was perfect because it leaves room in case something bad I can't predict happens."* *"Always have the option to use diesel during a crisis."* *"We needed just a little bit more excess energy, just in case"*

Draft Narrative (Summary)

IN THE YEAR 2050, SITKA USES ITS RENEWABLE ENERGY TO BECOME MORE SELF-SUFFICIENT.

In this scenario, community needs that are primarily met by outside services are supported by Sitka's renewable energy capabilities. Things like food, transportation, and waste are incentivized to electrify with new rate structures that help lower consumer costs. Hydroponic gardens lower the amount of produce shipped in, electric public transport is invested in and personal EVs are encouraged, reducing land-based emissions. Food waste is diverted to community-scale, electrified composting with other streams channeled to waste-to-energy facilities. While these changes require significant investment, the associated load growth and revenue help rate changes to remain lower than the off-island supply chain but are not unnoticeable. While electricity rates slightly increased, benefits were seen in some food prices, waste disposal costs, and land transportation. Residential solar creates a distributed network which helps take some pressure off the electric grid but balancing individual self-sufficiency opportunities with operational and maintenance costs of the utility is a significant challenge. Excess renewables are converted into small amounts of alternative fuels which are used for additional generation or stored. Additional fuel is used to power a small fleet of local ships, however, with the uncertain availability and low volumes, this fuel is expensive which slows conversion of marine transportation.

Innovation	Implementing forward-thinking energy solutions to address the most challenging electrification goals as soon as possible.	
Sub-Themes:	**Definition:**	**Example:**
Novel Technologies	Encouraging the use of cutting-edge technologies such as nuclear energy, geothermal systems, and alternative marine fuels to address energy challenges creatively.	*"Small nuclear energy could be dependable."* *"Shallow geothermal gardens near Mt. Edgecumbe."*
Marine-Based Energy Solutions	Exploring tidal and wave energy systems that utilize Sitka's coastal geography for forward-thinking renewable generation.	*"Tidal/Wave energy should be invested in."* *"Wave power alongside hydro could positively change energy production for Sitka."* *"Uncertain effectiveness, but tidal power should be studied further."*
Green Fuel Development	Generating green fuels from renewable energy sources for storage, transportation, or industrial uses.	*"Converting excess renewable power into green fuel and long-term energy storage."* *"Green-fueled combined heat and power, microgrid, and community uses for green fuel."* *"Hydrogen gas for heating combined with hydro's surplus."*

Draft Narrative (Summary)

IN THE YEAR 2050, ENERGY INNOVATION BROADENS SITKA'S RENEWABLE ENERGY IMPACT TO THE REGION AND BEYOND.

In this scenario, Sitka has become an incubator for new energy technologies by utilizing its islanded grid, excess renewables, and moderate climate. By focusing on innovation, Sitka captures first-mover advantages, solidifying itself as a hub for alternative fuel generation and distribution as well as marine energy sources such as tidal and wave power. Collaboration with industry leaders in alternative fuel production allowed Sitka to phase out its diesel generation plants earlier than expected, and overall capacity of the utility increased as result of new generation and storage opportunities. The market for alternative fuels was slower to develop, but as soon as large-scale marine transportation was capable of using these fuels, Sitka became a critical component in the larger shift from fossil fuels for the region. This quickly drew attention from the aviation sector, further solidifying the demand. Economic opportunities in the community expand with new developments, jobs, and access to cutting-edge technology for local energy use. However, there is competition for access to these new renewable energy resources due to large-scale commercial demand and their funding sources (i.e. the extent to which development of new energy sources were privately funded through power purchasing agreements or other forms of investment). Additionally, Sitka grapples with early adoption disadvantages such as early technology that became quickly outdated or were otherwise found to be infeasible long-term, and the utility struggles to balance the demands of ongoing operations with resources needed to foster and maintain innovative, diversified generation and distribution systems.

Proposed Outline of the Final SCRES

Section 1: Executive Summary - 5-6 pages

GOAL: Graphic-focused, bottom line and context, actions and themes.

i. Include Sustainability Commission vision and mission, as well as general context for program
ii. Some information about energy education, including some overview graphics about the current energy landscape (energy usage summary)
iii. Graphic about all the public events and opportunities for input
iv. Graphic/short narrative about the 4 guiding principles
v. Graphic summarizing potential energy uses and participants interests (hydroponic gardens, residential heating)
vi. Brief overview of potential actions and how they support guiding principles

Section 2: Set Context and Show Alignment

GOAL: Communicate why this is being done, key challenges, explain the need, show alignment with CBS, Sustainability Commission, and Utility.

i. Alignment with CBS Strategic Plan goals/actions….
    a. Improve quality of life, improve communications/strengthen community. Align resources/finances, Plan and invest in infrastructure, etc.
ii. Alignment with the Utility's goals…Utility statement / perspective
iii. Alignment with the Sustainability Commission's goals…
    a. What Sustainability Commission did: Identified the need for more *education, energy inventory*, and *actions.*
        i. perhaps include the learning goals and module list
        ii. Full detailed list in appendix

2.1 Where has Sitka been?

i. How has energy changed over Sitka's history
ii. Why things were built/order they were built
iii. Rates overtime

2.2 Where is Sitka now?

GOAL: Use the inventory work to explain where Sitka's energy comes from/goes and how it is used.

i. State of the utility
ii. Fuel usage inventory
iii. Current electricity usage
iv. Where does it go? Who are the primary users?

2.3 What is different moving forward?

i. New technologies for electricity use and generation

Section 3: Why is it challenging to talk between a utility and community? (Why this project is important) GOAL: illustrate how different players think about energy/communicate their priorities.

How do Sitkan's think about their energy now/What do Sitkan's care about?

i. Top priorities and values from qualitative research– introduce the guiding principles
ii. Who responded / who did we engage with for input?
iii. Where did we engage people?
iv. Interview summaries

Section 4: What can Sitka's energy future look like?

GOAL: Illustrate "scenarios" technically and with the guiding principles.

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i. Introduce the why of the Energy Quest game, its purpose, etc.

Load growth bands (energy scenarios)

i. Low growth, Business as usual (2% Year-over-year perpetually), high growth**,**
ii. Game scenarios -results and what they mean
    a. How each scenario support the guiding principles
iii. Technical best practices

Section 5: How can Sitka get there?

Goal: combine the technical aspects with guiding principles

i. Actions and Policy Options
    a. Guidance for how to be involved and at what scale

A City and Borough of Sitka Project

SITKA COMMUNITY RENEWABLE ENERGY STRATEGY

SCRES

Join the Sustainability Commission, energy engineers, and Spruce Root to

HELP MAKE SITKA'S ENERGY FUTURE

AFFORDABLE
RELIABLE
SELF-SUFFICIENT
INNOVATIVE

COMMUNITY ENERGY PLANNING WORKSHOP

MAY 11TH 5:00-7:00 PM

HARRIGAN CENTENNIAL HALL

cityofsitka.com/SCRES

QUESTIONS?
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