Rural Clean Energy Legislative Report

Washington State Department of Commerce

As required by the 2021-2023 Capital Budget section 1064(14)(a)

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Report to the Legislature

Director Lisa Brown

ENERGY DIVISION

V3.0

Acknowledgments

Washington State Department of Commerce

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Executive summary

Overview

Washington has experienced an explosion of clean energy legislation and activity in the past decade. These laws have underscored the reality that a transition to clean energy is not complete unless it is also just and equitable. Because of laws like the [Clean Energy Transformation Act (CETA),](#) Washington requires technologies and strategies that benefit everyone in the transition to clean energy, including rural and Tribal communities, as well as a mix of clean energy technologies to meet its greenhouse reduction goals.

In addition to the equity requirements of our clean energy laws, new statutory requirements for state agencies established in the [Healthy Environment for All (HEAL) Act](#) will help to ensure that state policies and investments prioritize outcomes that address environmental injustice, especially through the reduction of health disparities for overburdened communities.[1] [2] While rural communities are not necessarily defined as overburdened communities, it is undeniably necessary to work more strategically and intentionally to ensure rural communities — and especially the most vulnerable populations within rural communities — benefit from a transition to a clean energy economy.

The [2021 State Energy Strategy](#) (2021 SES) takes a data-driven approach to develop greenhouse gas reduction strategies across the transportation, buildings, industry and electricity sectors. A key finding of the strategy is that the significant deployment of clean energy technology is necessary to meet greenhouse gas emissions targets established by the Washington State Legislature. The equity chapter in the 2021 SES calls for solutions that ensure rural communities and Tribes, especially those who are disproportionately impacted by climate change, can participate as partners in Washington's clean energy transition.[3]

Complementary to the 2021 SES sectoral analysis is identifying clean energy investments and strategies that meet the needs of rural communities. To identify the best strategy for achieving clean energy solutions in rural communities, the Legislature directed the Department of Commerce to establish the Rural Energy Work Group under the Clean Energy Fund (see [Introduction](#) for more details). This work group identified technologies and strategies that align with 2021 SES recommendations and support rural community priorities. As recognized by the work group, rural clean energy extends beyond reducing greenhouse gas emissions and includes supporting rural priorities, including community health care resilience,[4] reducing operating costs by replacing expensive diesel generators with renewable energy, and providing workforce opportunities. While some state and federal funding opportunities exist to help meet these needs, there are also numerous barriers to access that must be addressed. Additionally, there should also be more diverse grant opportunities to fill funding gaps for programs supporting rural community needs. This report provides recommended strategies to increase

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[1] Overburdened community is defined as: "A geographic area where vulnerable populations face combined, multiple environmental harms and health impacts, and includes, but is not limited to, highly impacted communities as defined in RCW [19.405.020](#)" https://app.leg.wa.gov/RCW/default.aspx?cite=70A.02.010

[2] Per RCW 70.A.02.010 (8)" 'Environmental justice' means the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental and health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm."

[3] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021, from Washington State Department of Commerce: [https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/,](https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/) (Pg 20)

[4] Huff, C. (2021, May 15). *Growing Power Outages Pose Grave Threat to People Who Need Medical Equipment to Live: Shots - Health News: NPR*. Retrieved from NPR: National Public Radio: https://www.npr.org/sections/health-shots/2021/05/15/996872685/growing-power-outages-pose-grave-threat-to-people-who-need-medical-equipment-to-#:~:text=Press-,Growing%20Power%20Outages%20Pose%20Grave%20Threat%20To%20People%20Who%20Need,home%20face%20a%20c

investments in rural clean energy needs guided by the recommendations from the work group and stakeholder outreach.

Legislative mandate

This report was produced to satisfy the portion of the requirements of section 1064(14)(a) of the 2021-2023 Capital Budget[5] mandating that Commerce complete this work as follows:

> $150,000 of the appropriation is provided solely for the department to develop targeted rural clean energy strategies informed by rural community and business engagement, outreach, and research. The department must convene a rural energy work group to identify investments, programs, and policy changes that align with the 2021 state energy strategy and increase access to clean energy opportunities in rural communities and agricultural and forestry management practices. The group must identify existing federal funding opportunities and strategies to leverage these funds with state capital investment.

> By June 30, 2022, the department shall report recommendations and findings from the rural energy work group to the office of financial management, the governor, and the appropriate legislative committees and present a strategic plan for state rural clean energy investment. The work group will present a strategic plan for state rural clean energy investment that will be included in a legislative report due by June 2022.

Recommendations from Commerce and the Rural Clean Energy Work Group

Commerce convened a work group that met four times between fall 2021 and spring 2022. This report provides the initial framework for a holistic strategy for increasing rural energy investments informed by engagement with rural and Tribal communities. As one work group member said, "Rural communities have unique needs despite commonalities." Commerce and the Rural Clean Energy Work Group recommend more targeted and continuous outreach in the future to understand diverse needs of rural and Tribal communities.

Drawing on input from the work group, interviews and public comments, Commerce and the Rural Clean Energy Work Group recommend the following high level goals to the Legislature:

○ **Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants.**

○ **Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience while providing co-benefits for economic and workforce development.**

○ **Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sectors.**

○ **Ensure equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding for clean energy projects in rural communities.**

With the influx of new money from the federal Infrastructure Investment and Jobs Act (IIJA), state matching funds will be needed in order to unlock opportunities for rural communities. Although there are numerous programs from IIJA (See Appendix E: Resources) that are relevant to rural communities, specific details on opportunities are continuously being updated and so a broad approach to leveraging this funding with state investments will be required. In addition, Commerce will need new investments, programs and strategies to fill known federal funding gaps, to increase capacity for communities to apply to and manage opportunities, and

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[5] Washington Substitute House Bill 1080 (2021). Section 1064 (14) (a). 1080-S.SL.pdf (wa.gov)

to mitigate additional barriers to accessing state and federal funding. Commerce recommends investing a minimum of $26 million to create and staff the following programs to support these goals. For more information on the Infrastructure Investment and Jobs Act (IIJA), please see "Appendix E: Resources." Since IIJA funding programs are continuously released, the resources listed in the appendix will contain the most up-to-date information.:

- $16 million in the operating budget to:
  - Develop new strategic fund for technical assistance and capacity building for local governments and Tribes.[6]
  - Provide funding for state government grant staff to provide technical assistance to applicants, including but not limited to ongoing training and webinars on grant writing, project management, and grant reporting.
  - Develop a centralized hub for information on grant resources and FTEs to manage this resource hub and answer technical questions.
  - Fund targeted outreach in multiple rural counties across the state to provide information regarding agriculture and forestry-related tools and technologies that contribute to state emission reductions while providing economic benefits.
  - Support the development of local cultural ambassadors — people who are known and trusted in communities, and who can spread awareness of opportunities and resources in every county.
  - Provide funding to develop a framework for measuring and tracking the equitable distribution and impact of state capital investments, and to guide future investments.
  - Fund ongoing technical assistance for Commerce staff to provide training and webinars on grant writing, project management and grant reporting. Support match funding for federal grants including the Section 40101(d) Formula Grant Program to States & Indian Tribes and internal state agency capacity for new programs.

- $10 million in the Capital budget to:
  - Develop a new Commerce grant program focused on pilot projects for dual use agriculture.
  - Create a new grant program to incentivize innovative approaches to wood economies, woody waste products and carbon sequestration.[7]
  - Provide additional funding for the Clean Energy Fund and other grants to expand programs, including but not limited to Dairy Digester Bioenergy, Industrial Symbiosis and Grid Modernization.
  - Host or provide funding for a Tribal grant program.

This legislative report provides further explanation of the four primary goals outlined above, as well as a strategic plan with specific strategies that will contribute towards these goals. The Washington State Department of Commerce believes that, through action by our agency and others, and in coordination with rural community partners and other stakeholders, it will be possible to advance clean energy innovation and an equitable transition to clean energy economies in rural areas of Washington state. We remain committed to acting to achieve the goals of the 2021 State Energy Strategy in ways that are guided by and respond to the needs of Washington's rural communities.

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[6] Lack of technical expertise for developing clean energy projects, and small government and rural community staffing capacity were identified as top barriers by the Rural Clean Energy Work Group. Through the IIJA, the US Department of Agriculture Rural Development program and the US Department of Energy will be releasing grants for technical assistance, but many of these opportunities are program specific and additional funds are needed for technical assistance and capacity building more broadly.
[7] This opportunity can be used as match for federal opportunities like the USDA Forest Service Wood Innovations and Community Wood Grants.

Introduction

The importance of a rural energy strategy for Washington
The 2021 State Energy Strategy (2021 SES)[8] identifies rural clean energy as a priority for the state. It identifies sector-specific strategies to support rural clean energy based on decarbonization modeling grounded in greenhouse gas reduction and clean energy mandates for Washington. Under the [Climate Pollution Limits bill](#), the greenhouse gas limit was updated to 45% below 1990 levels by 2030, 70% below 1990 levels by 2040, and 95% below 1990 levels, as well as net-zero emissions, by 2050. The emissions limit for 2030 equates to roughly a 50% reduction relative to the most recent pre-pandemic emission levels of 2018 and 2019.

To support this emissions mandate, the Washington Legislature passed the Climate Commitment Act[9] during the 2021 session, which established an economy-wide cap and invest system.[10] With enforceable emission reductions starting in 2023, the Climate Commitment Act caps and reduces emissions from large emitters while providing new funds directed towards investments for accelerating the transition to an equitable and resilient clean energy future. This law is also supported by sector-specific decarbonization policies like the Clean Energy Transformation Act, which puts Washington on a path to 100% clean electricity by 2050.

> **Approach to rural clean energy in this report**
> Clean energy goes beyond achieving emissions reductions through technologies like solar panels and electric vehicles. In rural communities, clean energy can support a crosscutting set of priorities in economic development and climate-smart agriculture, benefitting the land, farmers and community resilience in the face of increasing threats from climate change. **Therefore, a true clean energy transition ensures that all communities benefit based on their unique needs.** This report uses a holistic approach to identifying rural clean energy priorities by starting with the question "**What do rural communities need including but not limited to clean energy?**" The work group then identified clean energy technologies, programs, strategies and policies that supported these needs. The report also takes a broad approach to defining clean energy by mentioning technologies referenced in the 2021 SES and Clean Energy Fund 5 proviso, including but not limited to organic waste management and biological carbon sequestration.

How are we providing the required information?
Commerce convened a work group to develop recommendations and meet the requirements of this proviso. Membership consisted of representatives from Commerce, other Washington state agencies, trade organizations, non-governmental organizations, Tribes or Tribal organizations, and federal organizations. Commerce also solicited comments through a public comment form and conducted interviews with organizations representing rural and Tribal interests.

The Clean Energy Fund
The Clean Energy Fund (CEF) funds the development, demonstration and deployment of clean energy technology. Gov. Jay Inslee has continued to champion the fund, which was established in 2013, and the Legislature again invested capital in a series of grant programs such as Grid Modernization, Research, Development and Demonstration (RD&D), Grants to Non-Profit Lenders, and Electrification of Transportation.

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[8] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021, from Washington State Department of Commerce: https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/
[9] Washington SB 5126 (2021-22), "Concerning the Washington climate commitment act." https://app.leg.wa.gov/billsummary?BillNumber=5126&Initiative=false&Year=2021
[10] Washington SB 5126 (2021-22), "Concerning the Washington climate commitment act." https://app.leg.wa.gov/billsummary?BillNumber=5126&Initiative=false&Year=2021

Since its inception, the program has funded diverse on-the-ground projects like community solar, emerging and novel technologies, and vehicle electrification. Since 2013, the Legislature has appropriated $211 million in clean energy investments that is highly leveraged from non-state sources.

"Over the past eight years, CEF has run several programs open to eligible applicants in rural communities and the agriculture and forestry sectors, including:

- Wood Energy for Public Facilities Program
- Grid Modernization
- Solar Deployment
- Research, Development and Demonstration (RD&D)
- Electrification of Transportation Systems
- Dairy Digester Enhancement Program

Several of these programs were one-off funding opportunities, while others will continue with Clean Energy Fund 5 (CEF5) solicitations. However, Rural Clean Energy Innovation Grants under CEF5 is the first grant program that will focus exclusively on the clean energy needs of rural communities and Tribes in the state."[11]

Clean Energy Fund 5 (CEF5)
The Clean Energy Fund is in its fifth iteration. The CEF5 proviso allocates $4.75 million to the Rural Clean Energy Innovation grants program. After the deduction of 3% for administration costs, $4.6 million is available for rural clean energy and dairy digester projects. This grant program reserves 20% of the funding for projects with Tribal governments, designated subdivisions and agencies. Potential projects include those that advance energy efficiency, beneficial electrification, demand response, resilience, carbon sequestration and organic waste management. The grants can also fund various project stages, including predevelopment, research and development, pilot projects, strategic implementation, field trials, and data dashboards and tools to inform rural project development.

In addition, 40% is allocated to dairy digester bioenergy projects that produce renewable natural gas and biofertilizers, reduce emissions, and improve soil, air and water quality. The Dairy Digester Bioenergy program is an expansion of the CEF4 Dairy Digester Enhancement Program, which allocated $970,000 from the 2019-2021 biennial capital budget. The CEF5 Dairy Digester Bioenergy Program provides funding for projects that enhance the viability of dairy digester bioenergy projects. This includes nutrient management systems that produce renewable natural gas and value-added biofertilizers, generate electricity and heat, reduce greenhouse gas emissions, and improve soil health and air and water quality.

Previous work to address barriers to the Clean Energy Fund
In previous biennia, the Legislature tasked Commerce with reviewing state clean energy investments, specifically the Clean Energy Fund, and developing recommendations to improve CEF programs. For example, the Energy and Climate Policy Advisory Committee (ECPAC) was created "to develop recommendations to the legislature for the coordination of existing resources, or the establishment of new ones, for the purposes of examining the costs and benefits of energy-related policies, programs, functions, activities, and incentives."[12]

The committee's work focused on reviewing the historical structure and outcomes of CEF programs and developing recommendations for adjustments to the programs. The final report identified CEF investments that can best help Washington meet its clean electricity and greenhouse gas reduction goals and contribute to

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[11] Washington State Department of Commerce (2021). *Rural Clean Energy handout*. Retrieved March 2022 from Rural Clean Energy Innovation - Washington State Department of Commerce
[12] Washington Clean Energy Transformation Act, WA. SB 5116 (2019). https://lawfilesext.leg.wa.gov/biennium/2019-20/Pdf/Bills/Session Laws/Senate/5116-S2.SL.pdf

rebuilding our state's economy.[13] Successful approaches will enhance equity, innovation, economic growth and job creation, including putting the state at the forefront of the national clean energy economy.

Among other things, the ECPAC report recommended that in providing appropriations for the CEF, the Legislature include clear direction to:

- Use the 2021 State Energy Strategy and its equity and environmental justice lens to guide CEF investments.
- Expand funding for the electrification of transportation and grants to nonprofit lenders programs.
- Continue support for clean energy research and innovation.
- Provide funding to expand outreach, technical assistance and education.

Many of these recommendations were incorporated into existing legislation. In addition, some of the ECPAC recommendations overlapped with the findings of the rural clean energy work group. The work group leveraged these findings by further exploring solutions that were recommended in the ECPAC report.

Defining 'rural'

For the purposes of this report, Commerce selected a working definition that would best support the goals of the legislative report and complement the Rural Clean Energy Innovation grant programs, which may be informed by key findings from the study. For this working definition, Commerce chose the USDA Business Programs eligibility criteria and drew on the USDA Rural Development Rural Eligibility Map.[14] The eligibility map defines rural: "Rural areas are any areas other than: (1) A city or town that has a population of greater than 50,000 inhabitants; and (2) The urbanized area contiguous and adjacent to such a city or town, as defined by the U.S. Bureau of the Census using the latest decennial census of the United States." This definition aligns with the eligibility criteria in the USDA Rural Energy for America Program.[15] Areas that would generally be eligible under this definition include Anacortes, Bremerton and Pullman.[16]

The definition draws on the U.S. Census, based on Census places and Census Urbanized Areas,[17] which we felt were more detailed than county-level classifications used in other rural definitions. Our approach in selecting this definition was to establish eligibility for the Rural Energy Innovation grants that would be consistent with the Rural Energy for America program. We also believe that this definition aligns with a goal of the proviso, which are to "identify federal opportunities and strategies to leverage these funds with state capital investments."

As our research evolved, we recognized that this single definition may not meet the diverse priorities and challenges of rural communities identified by the work group and public comment. For example, work group discussions focused on the needs of rural individuals, small governments, businesses and the agriculture and

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[13] Washington State Department of Commerce (2020, November). *Energy Policy Advisory Committee.* Retrieved October 1, 2021, from Energy and Climate Policy Advisory Committee: https://www.commerce.wa.gov/wp-content/uploads/2020/12/ECPAC-Report_11-24-2020.pdf

[14] USDA Rural Development. (2022). *Rural Business Services Eligibility.* Retrieved August 13, 2021, from https://eligibility.sc.egov.usda.gov/eligibility/welcomeAction.do?pageAction=rbs

[15] https://www.ecfr.gov/current/title-7/subtitle-B/chapter-XLII/part-4280/subpart-B/section-4280.103 § 4280.10 7 CFR 4280.3 "Rural Area"

[16] In general, some cities or towns may include both eligible and ineligible addresses because ineligible areas may not only be in a city with population exceeding 50,000 but also located in the "urbanized area contiguous and adjacent to such a city or town, as defined by the U.S. Bureau of the Census using the latest decennial census of the United States." At the time of publication, the Rural Eligibility Map had not been updated with 2020 Census data and therefore used 2010 Census data from the decennial census. The eligibility may change once the map has been updated with 2020 Census data.

[17] Hailu, Asnake PhD. Washington State Department of Health. (2016, October 27). *Guidelines for Using Rural-Urban Classification Systems for Community Health Assessment.* Retrieved from Guidelines For Using Rural-Urban Classification Systems for Public Health Assessment (wa.gov)., pg. 6; Cromartie, J., & Bucholtz, S. (2007, September 4). *Washington - Rural Definitions: State-Level Maps.* Retrieved from USDA Economic Research Service: https://www.ers.usda.gov/webdocs/DataFiles/53180/25602_WA.pdf?v=3305.9

forestry sectors (ranging from food security to aging infrastructure). As asserted by USDA Economic Research Service geographers and experts on rural data and classifications, John Cromartie and Shawn Bucholtz: "The *key is to use a rural-urban definition that best fits the needs of a specific activity, recognizing that any simple dichotomy hides a complex rural-urban continuum, with very gentle gradations from one level to the next.*"[18] Commerce concurs that any definition needs to be revised and tailored to the specific policy outcomes of any future grant program.

Finally, in hopes that we would receive comments to our public comment form from a variety of respondents ranging from individuals to businesses, we allowed the public to self-identify as "rural" rather than requiring they adhere to the working definition.

Priority topics and goals

The work group identified 12 priority topics as central to rural communities, including but not limited to clean energy. Commerce then developed cross-cutting recommended strategies to address priorities and barriers to meeting community needs and investment opportunities in clean energy. Commerce considered input from the work group, as well as interview findings and comments from the public comment form.

Priority topics

	Agriculture/climate-smart agriculture; wood biomass and carbon sequestration; water
	Broadband, digital equity
	Clean Energy projects/infrastructure
	Communities
	Economic impacts
	Equity
	Food security
	Health care

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[18] Bucholtz, S., & Cromartie, J. (2008, June 01). *Defining the Rural in Rural America*. Retrieved March 2022, from USDA Economic Research Service U.S. Department of Agriculture: https://www.ers.usda.gov/amber-waves/2008/june/defining-the-rural-in-rural-america/

🏢	Housing
🤝	Tribes
🔥	Wildfires
⚙️	Workforce development

Barriers

The first meeting, in which work group members were asked to identify community needs irrespective of rural energy and "how have these needs changed from previous years with impacts from COVID-19 and economic repercussions?" and "whose voice is not in the room," yielded dozens of discussion comments that focused on barriers to receiving grant programs and/or community benefits (see Appendix A, Meeting #1: "Gaps/barriers in grant programs and/or government benefits"). In subsequent meetings and homework, Commerce asked work group members to identify additional barriers, then Commerce categorized these into broad themes. Work group members were asked to rank barriers by urgency and importance in addressing them. These scores were averaged. Commerce further categorized the barriers into broad themes reflected in the table below. The top barrier in terms of importance and urgency is "lack of technical expertise for developing clean energy projects."

The recommended strategies throughout the report attempt to reduce these barriers while supporting priority topics. The 12 barriers articulated below are based on language from the work group and do not necessarily reflect Commerce's point of view.

Urgency and importance ranking	Barrier
1	Lack of technical expertise for developing clean energy projects
2	Aging or inadequate rural infrastructure
3	Lack of programs tailored for rural use cases
4	Small government and rural community staffing capacity
5	Cultural and language barriers
6	Lack of workforce in rural areas to build projects
7	Access to information
8	Lack of access to capital
9	Rural utility role, mission and capacity

10	Rural communities attitudes (perceived or otherwise)
11	Global supply chain/COVID-19
12	Climate policy goals not considering forestry and agriculture industry needs

Goals

The 14 strategies recommended by the work group support each of the four broad goals. Each of the four goals supports multiple priority topics and address the barriers identified by the work group.

- **Goal 1:** Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants.
- **Goal 2:** Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience while providing co-benefits for economic and workforce development.
- **Goal 3:** Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sectors.
- **Goal 4:** Ensure the equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding for clean energy projects in rural communities.

Summary of priority strategies

1) **Goal 1: Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants.**

   a) Create an accessible, centralized hub for grants, resources and education on available technical assistance, state and federal opportunities, and assistance around grant requirements.
   b) Foster the development of local cultural ambassadors — people who are known and trusted in communities, and who can spread awareness of opportunities and resources.
   c) Expand funding opportunities for technical assistance and capacity building for local governments and rural communities.
   d) Incentivize clean energy startups and encourage young people to stay in rural areas through technical education programs, apprenticeships and living wage jobs focused on clean energy.

2) **Goal 2: Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience while providing co-benefits for economic and workforce development.**

   a) Expand state grant and loan programs to fill technology and use case gaps for rural communities and broaden eligibility for certain programs.
   b) Prioritize resilient clean energy technologies, clean transportation, and affordable, reliable high-speed broadband for rural communities.
   c) Reduce barriers to applying for and managing grants after they are received.

3) **Goal 3: Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sector.**

   a) Reduce financial and operational risk for farmers and foresters by encouraging and incentivizing the adoption of new and existing clean energy technologies and supporting translational[19] R&D for clean

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[19] According to the University of Arkansas for Medical Sciences, translational research "translate (move) basic scientific discoveries more quickly and efficiently into practice." What is Translational Research? | UAMS Translational Research Institute. University of

energy technologies that are close to ready for deployment, with emphasis on the rural contexts in which they are used.

b) Expand education opportunities for small farmers, forest property owners and the general public around proven and emerging technologies and methods for transitioning to clean energy practices, tools, equipment and technologies.

c) Increase research and development in woody waste biomass products and carbon sequestration technologies, and support the development of wood energy opportunities and markets broadly.

d) Use a climate-smart agriculture and forestry framework for policy design, referenced in President Joe Biden's Executive Order 14008[20], USDA and the World Bank: "3 principles: Increased productivity (sustainably intensifying agriculture); Enhanced resilience (adapting to climate change); reduced emissions (mitigating greenhouse gas emissions)" [21]

4) Goal 4: Ensure the equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding of clean energy projects in rural communities.

a) Partner with Tribal nations to prioritize energy sovereignty.

b) Provide ample and diverse opportunities for community input around grant design and ensure accessibility around applying to funding opportunities.

c) Develop a framework for measuring and tracking the equitable distribution and impact of state capital investments and to guide future investments.

Commerce used the goals and recommended strategies to develop its strategic plan for rural clean energy investment. The plan incorporates many of these recommended strategies, focusing on those that required urgent action and where we believe we have the greatest ability to contribute to positive outcomes supporting the goals. The strategic plan also incorporates additional strategies identified in legislative and stakeholder conversations following the conclusion of the work group. Please see the Strategic Plan.

Arkansas for Medical Sciences. (2022). *What is Translational Research?* Retrieved May 3, 2022, from https://tri.uams.edu/about-tri/what-is-translational-research/; An article by Cory Whitney and Manfred Denich in Rural 21 explain how the agrifood sector can look at the concept of translation science in the health sector to incorporate 'implementation' research, which may help farmers overcome barriers to adopting R&D innovations. Implementation research can help "provide the link from the laboratory to the field."
Whitney, C. W. (2021). Rural21: The International Journal for Rural Development. *Closing the adoption gap*. Retrieved May 16, 2022, from https://www.rural21.com/english/current-issue/detail/article/closing-the-adoption-gap.html?no_cache=1

[20] The White House. (2021, January 27). *Executive Order on Tackling the Climate Crisis at Home and Abroad*. Retrieved January 2022, from The White House: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

[21] Buda, Dr. Anthony. (n.d.) *USDA Northeast Climate Hubs*. Retrieved March 5, 2022 from: https://www.climatehubs.usda.gov/hubs/northeast/topic/role-climate-smart-agriculture-climate-adaptation-and-mitigation-northeast.; World Bank. (2021). *Climate-Smart Agriculture*. The World Bank. April 5. Retrieved March 23, 2022 from. https://www.worldbank.org/en/topic/climate-smart-agriculture.

Overview of the Clean Energy Fund

The Clean Energy Fund (CEF) supports deployment of clean energy projects to communities across Washington. Since 2013, the Legislature has appropriated $211 million in clean energy investments that is highly leveraged from non-state sources. CEF investments have resulted in on-the-ground projects that have made our electric grid more resilient, expanded vehicle electrification, and accelerated market adoption of energy efficiency and renewable energy technologies. Due to its cost-share requirement, the CEF has been instrumental in accelerating diverse public-private partnerships to develop projects ranging from novel battery technologies to wave energy and Tribal microgrid projects. The funding has resulted in direct and indirect clean energy job creation, energy savings and emissions reductions, and allowed the state to become a leader in clean technology development.

Clean Energy Fund 1-5 Appropriations by Program
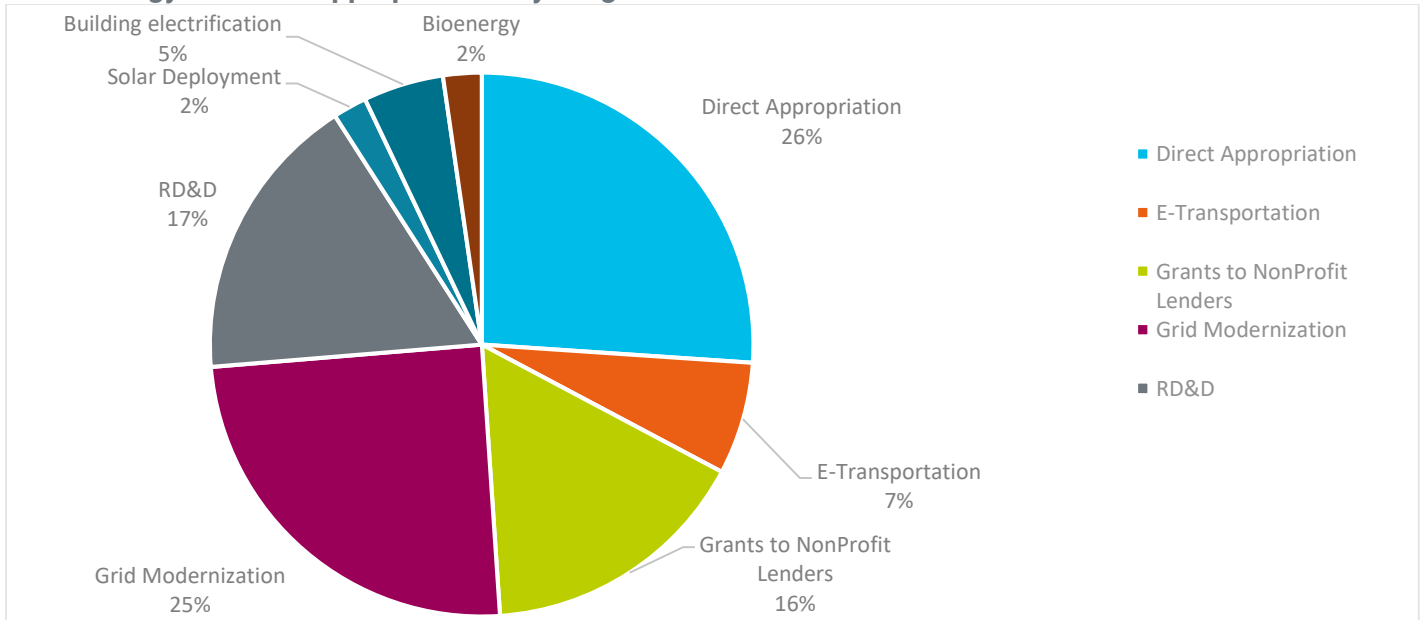
Analysis of previous rounds of grant funding based on the project location illustrates that CEF projects have been evenly split between urban and rural areas.[22] However, analysis of investments by dollars indicates that there are more CEF investments in urban areas.[23] [24]

The Department of Energy (DOE) and U.S. Department of Agriculture (USDA) provide important sources of federal clean energy grants in Washington. Review of clean energy grant funding from relevant DOE programs indicates that more projects and award dollars for both prime and sub-awards went to urban recipients than to

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[22] For this analysis, we used the USDA Business programs map definition: "Rural areas are any areas other than: (1) A city or town that has a population of greater than 50,000 inhabitants; and (2) The urbanized area contiguous and adjacent to such a city or town, as defined by the U.S. Bureau of the Census using the latest decennial census of the United States," to align with the eligibility criteria in USDA Rural Energy for America Program, 7 CFR 4280.3 "Rural Area". We used the USDA Rural Eligibility Map tool to search for project addresses. Disclaimer: The data for this map utilize 2010 census data and cities like Olympia and Lacey would be eligible under this definition. Note that this is analysis by Commerce staff using the mapping tool as a best estimate and any errors are our own.; At the time of publication 50% of projects were in urban areas and 50% of projects were in rural areas.

[23] At the time of publication, 59% of CEF 1-5 investments in dollars from projects under contract were in urban areas compared to 41% in rural areas. Note that this data may be incomplete due to some contracts being under negotiation.

[24] Several projects from the Grid Modernization program and the Electrification of Transportation program had statewide benefits. Projects that primarily benefited rural communities were considered "rural." Note that projects for Research, Development and Demonstration grants are for early stage technologies and therefore the project location may not be indicative of where the benefits will accrue once the technology is commercialized.

rural recipients.[25] Analysis of grant funding from relevant USDA grant programs indicates that more projects and award dollars for prime awards went to rural recipients.[26]

Drivers of these differences could be due to eligibility criteria or the types of eligible technologies and grants under each agency and each program.[27] Additionally, some prime award recipients were funding agencies that distributed awards to smaller governments and communities as pass-through dollars throughout the state, so the recipient location may be different from the final project location.[28] Additional reasons may have been due to barriers (addressed in later sections of this report) or research and development for technologies that are not yet deployed. This summary of state and federal clean energy investment is only a simplified snapshot of investment trends, and more thorough analysis should be completed to understand gaps in rural clean energy investments as recommended in later sections of the report (see Goal 4: Recommended strategy 4.C).

Clean Energy Fund 1-5 Geographical Distribution of Clean Energy Fund Projects under contract[29]

● Urban

● Rural

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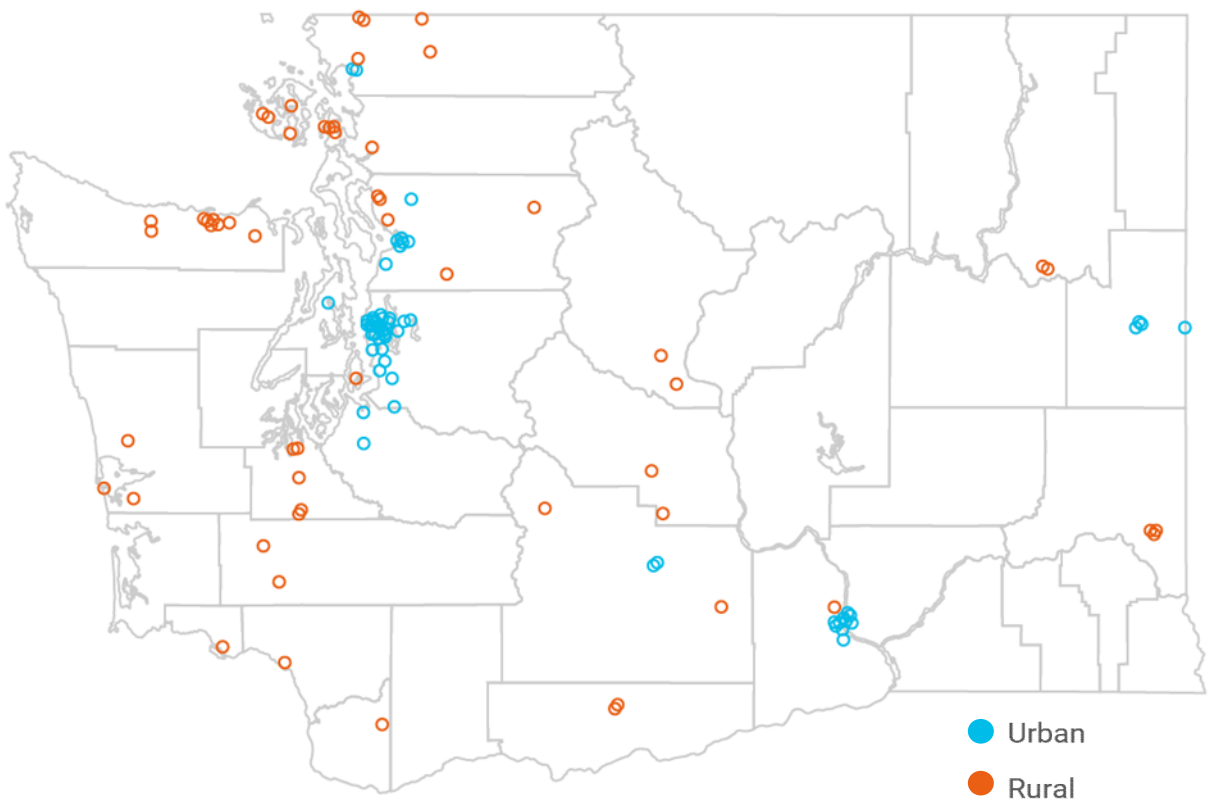
[25] For a full explanation of the methodology used to rank and assess projects for this report, please see Appendix D: Data Methodology.
[26] For a full explanation of the methodology used to rank and assess projects for this report, please see Appendix D: Data Methodology.
[27] For example, some grant programs focus on the deployment of clean energy while others focus on research and development of technologies that are not commercialized.
[28] Congressional Research Service (2022). *Tracking Federal Awards: USAspending.gov and Other Data Sources*. Retrieved June 2022. https://sgp.fas.org/crs/misc/R44027.pdf (Pg. 4)
[29] This estimate includes the original award amount for executed projects under contract, contingent awardees and contracts in negotiation and closed projects. Commerce excluded contingent awardees who returned their grants. Some data may be incomplete due to contingent awardees that have not selected their site.

Although CEF5 aims to increase opportunities for rural and overburdened communities through specific grant programs, carve outs and other incentives, the recommendations and strategic plan in the forthcoming sections will provide a roadmap for further increasing clean energy investments in rural and overburdened communities, specifically those with fewer resources and capacity.

Data collection and research

Commerce staff took a multi-pronged approach to developing the work group and collecting input on this report, with particular attention to Tribes. In addition to collecting information to inform the scope of innovation grants, Commerce also wanted to engage the public and impacted communities during the work group process to build awareness of the Clean Energy Fund in general and the Rural Energy Innovation solicitation in particular.

Rural Energy Work Group
Commerce staff identified a broad range of stakeholders:

- State agencies
- Non-governmental organizations and non-profits
- Federal agencies and organizations
- Local government organizations
- Tribes and Tribal organizations
- Other relevant stakeholders as recommended by Commerce or committee members

Given the proviso's focus on programs and funding mechanisms, the rural energy work group leaned on programmatic and clean energy expertise. These members were chosen based on their experiences supporting rural clean energy work. They were contacted via email.

Public comment and outreach
Given the timeline and capacity constraints for the work group, Commerce wanted to offer more feedback opportunities for members of the public and representatives from interested organizations. Several strategies were used to share information and collect input that could be represented in the final report, including a Tribal listening session and a public comment form. We received 39 comments in response to the form, which was open for about three months. In the comment form, people identified clean energy priorities, community priorities regardless of clean energy, barriers to meeting rural community needs, and recommendations to address barriers. Commerce compared the findings of the comments with recommendations and strategies from the work group and found significant overlap. Many of the comment recommendations aligned with recommendations from the work group, including expanded education, training and technical assistance, job creation, increased community feedback, more residential programs, and more financing for and investments in clean energy. Key differences are identified in specific sections of this report and the appendix. More information about the research methods and people contacted is available in the appendix.

Additional methods and response analysis is in Appendix C.

Tribal information and listening session
The rural energy program includes a 20% carve-out of funds for Tribal clean energy projects. To increase awareness and support access to these funds, Commerce thoughtfully and purposefully engaged with Tribal community members on this new grant opportunity, in addition to the work group sessions. Commerce conducted one Tribal information and listening session, which was separate from the work group meetings, to provide information about the grants, work group and broader clean energy funding opportunities available to Tribes. The meeting provided an overview of the Clean Energy Fund, Energy Retrofits for Public Buildings and other funding opportunities, an overview of the Rural Clean Energy Work Group and legislative report, and concluded with discussion and listening. This Zoom session was attended by 46 people with representation from government agencies, non-profits and non-governmental agencies who work with Tribes, and at least nine Tribes and one Tribal organization.

One-on-one interviews
In addition to larger sessions and the work group, Commerce conducted individual outreach to community organizations suggested by work group members. Commerce also sent out a newsletter offering to set up

individual meetings with Tribes to understand their priorities and build connections. Commerce staff held virtual one-on-one meetings with American Farmland Trust and Northwest Indian College in February 2022.

Limitations on in-person gatherings
The ongoing pandemic significantly limited our ability to conduct in-person meetings. Conducting activities digitally created inherent accessibility issues for people who lack sufficient broadband or have cultural reasons for not engaging virtually. The team had hoped to expand outreach to in-person meetings, which would have resulted in richer and deeper feedback and engagement with stakeholders — in particular, those with lived experiences. A key part of the strategic plan to implement a just clean energy transition includes deeper engagement with communities. Strategies for approaching this work can be found in the following sections: Strategic Plan, Goal 1 and Goal 4.

Data analysis
Commerce reviewed state grant data obtained through awards and the internal contract management system. In addition, Commerce reviewed federal energy grant data obtained through public sources like USDA, SBIR.gov and USAspending.gov.

Work group activities
The work group met four times between October 2021 and January 2022. Each meeting had a different focus, as outlined below.

Rural Clean Energy Work Group schedule

Meeting	Date	Focus
Kickoff Meeting #1	Oct. 13, 2021	Introductory meeting: history of CEF, background, context, proviso; roles and responsibilities; rural priorities and needs
Meeting #2	Nov. 30, 2021	Technologies, programs and investments that address rural community priorities and align with the 2021 State Energy Strategy; barriers to meeting the needs of rural communities
Meeting #3	Dec. 22, 2021	Federal opportunities; programs, policies and actions that decrease barriers; review and edit draft goals/guiding principles
Meeting #4	Jan. 26, 2022	Edit and brainstorm additional draft recommendations

Strategic Plan for Rural Clean Energy Investment

Strategic Plan Framework for Rural Clean Energy Investments

Background

The content included in Commerce's rural clean energy strategic plan is informed by the strategies recommended by the Rural Clean Energy Work Group; it also includes content that has been identified by Commerce staff in subsequent legislative and stakeholder conversations as important to include. The strategic plan, therefore, is deeply rooted in the recommendations from the work group while also selecting strategies that best align with our programs and ability as an agency to make progress towards those goals. Achieving our goals will require action and investments from Commerce and will require collaboration and partnership from other critical stakeholders, as well as new funding. Specific metrics for the indicators will be developed in the second half of 2022 and will be used to track implementation. Each strategy contributes to one or more of the 12 Priority Topics identified through the work group process.

Goal 1: Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
1.1 Create an accessible, centralized hub for resources and education on available state and federal opportunities for grants and rural clean energy technical assistance and support.	End of 2023	Work group recommended strategy 1.A	Number of unique visitors on website Number of participants in workshops	
1.2 Support the development of local cultural ambassadors — people who are known and trusted in communities and who can spread awareness of opportunities and resources.	2023-2024	Work group recommended strategy 1.B	Number of communities engaged Number of engagement efforts	
1.3 Create a strategic fund and increase overall funding for technical assistance and capacity building for rural communities and rural planning processes.	2023-2028	Work group recommended strategies 1.C and 2.C	New strategic fund created Increased money available for technical assistance and capacity related to comprehensive planning Funding available for post-award	

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
1.4 Work with the PNW Center of Excellence for Clean Energy and other partners and actively support technical education programs or apprenticeship based in or providing services in rural communities, and that support rural clean energy and related goals.	2023-2025	Work group recommended strategy 1.D	Number of collaboration meetings held Roadmap developed Number of graduates of training or apprenticeship programs	
1.5. Support the creation of locally-developed, equity-focused Clean Energy Economy Community Roadmap in two to four rural counties.	2022-2024	Commerce staff and WA Agency recommendations	Number of action plan processes 100% of local plans are developed based on genuine community involvement and collaboration Guidance provided to state about funding and policy needs to advance local aims	
1.6. Participate in an Integrated Energy Resilience Work Group and related federal planning processes that will support reducing administrative burdens and increasing rural energy resilience.	2023-2026	Commerce staff and Washington Agency recommendations	Number of counties and rural communities providing input	

Goal 2: Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience while providing co-benefits for economic and workforce development.

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
2.1 Develop a new Commerce grant program focused on pilot projects for dual use agriculture.	2023-2024	Work group recommended strategy 2.A	Completion of pilot project Number of climate-smart agriculture and forestry efforts in Washington kWh per acre[30] Dollars per kW saved Percent increase in crop yield (pounds per acre) Acres of farmland preserved Tons of GHG emissions reduced Gallons of water conserved	
2.2 In coordination with the Utilities and Transportation Commission, develop state cybersecurity standards for the energy sector to address increasing threats against energy critical infrastructure.	2023-2026	Work group recommended strategy 2.B	Develop standards	
2.3 Reduce barriers to applying for and managing Commerce grants after they are received. Conduct an evaluation of Commerce Clean Energy Grant programs through surveys and listening sessions and implement suggestions for reducing barriers to applying for and managing grants from Commerce.		Work group recommended strategy 2.C	Survey results Number of grant applications prior to efforts vs. post efforts	

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[30] University of Massachusetts Amherst, Clean Energy Extension. (2022). *Dual-Use: Agriculture and Solar Photovoltaics.* https://ag.umass.edu/clean-energy/fact-sheets/dual-use-agriculture-solar-photovoltaics

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
2.4 Learning from least-conflict solar siting and related processes, develop recommended best practices for developing and siting clean energy projects that equitably increase economic and health benefits for overburdened and rural communities. This should include tools for increasing economic returns, including tax revenue, to rural communities.	2025	Commerce staff and Washington agency recommendations	Develop recommendations	

Goal 3: Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sector.

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
3.1 Fund targeted outreach in multiple rural counties across the state to provide information regarding agriculture and forestry-related tools and technologies that will contribute to state emission reductions while providing economic benefits.	2023-2028	Work group recommended strategies 3.A and 3.B	Number outreach events offered/year Number of participants	
3.2 Complete one or more pilot efforts to collaborate and help to advance innovative climate-smart agriculture and forestry efforts under development in rural areas in Washington.	2025	Work group recommended strategy 3.B	Completion of pilot project Number of climate-smart agriculture and forestry efforts in Washington Tons of GHG emissions reduced Gallons of water conserved	
3.3 Create new grant program(s) to incentivize innovative approaches to wood economies, woody waste products and carbon sequestration.	2024-2026	Work group recommended strategy 3.C	Creation of program funds invested	

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
3.4 Contribute to the Clean Fuel Program's Agriculture and Forestry Carbon Capture & Sequestration Advisory Panel and help to advance recommendations that will support climate-smart agriculture and forestry practices that align with the state energy strategy goal to increase access to and participation in climate-smart practices for landowners and stakeholders.	2022-2026	Work group recommended strategy 3.D	Number of landowners participating	

Goal 4: Ensure the equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding for clean energy projects in rural communities.

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
4.1 Partner with Tribal nations to prioritize energy sovereignty: Host or provide funding for a Tribal clean energy mentorship program, where Tribes seeking to develop clean energy projects are matched with other Tribes who have already developed/deployed that specific type of clean energy.	2025-2027	Work group recommended strategy 4.A	Support from Tribes or Tribal organizations Number of participants Number of Tribes matched	
4.2 Support the establishment of a clean energy or climate resilience grant program developed or sponsored by a Tribal Nations or Tribal organization by 2027.	2023-2025	Work group recommended strategy 4.A	Support from Tribes or Tribal organizations Money invested	
4.3 Provide ample and diverse opportunities for community input around grant design and ensure accessibility around applying to funding opportunities:	Ongoing	Work group recommended strategy 4.B	Number of meetings Number of engagement efforts Number of participants Comparison of number of grant applicants prior to enhanced community engagement versus number of grant opportunities post enhanced community engagement	
4.4: Develop a framework for measuring and tracking the equitable distribution and impact of state capital investments and to guide future investments Conduct a gap analysis on the distribution of clean energy projects throughout rural communities in the state by 2024.	2023-2024	Work group recommended strategy 4.C	Ratio of rural to urban projects with state funds Number low income projects kW local renewable generation and consumption kW distributed energy for lower income customers Percent of total projects under contract for Tribes and overburdened	

Strategies	Timeframe	Source	Suggested Indicators to Measure Success	Priority topics
4.5 Fund work on state rural data layers to provide support for more equity mapping tools and guidance in HEAL Act and Climate Commitment Act Work. Support work to identify and advance use of geospatial data that can guide equitable funding and program delivery in rural Washington. This may include rural data overlays, new indicators relevant to rural communities, or future iterations of the EHD map to guide funding including for HEAL Act and Climate Commitment Act work.	2027-2030	Work group recommended strategy 4.C	New data, map layers, or other guidance that helps to identify vulnerable populations and communities in rural Washington	
4.6 Increase Commerce clean energy grant investments benefitting vulnerable populations in rural communities.	By 2027	Work group recommended strategy 4.C	At least 40% of investments in overburdened communities and/or benefitting vulnerable populations or Tribes	

Goals and Recommended Strategies

The following sections describe the overarching goals and related recommended strategies from the Rural Clean Energy Work Group. Many of these recommended strategies are highlighted in the strategic plan and are identified by the strategy number (such as 1.A, 2.B, etc.). The priority strategies recommend a combination of continued funding or enhancements to existing programs, investments and policies, as well as the creation of new programs, investments and policies to fill state and federal gaps.

Goal 1: Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants.

While many entities or small governments may be interested in obtaining state and federal funding for clean energy projects, significant barriers exist around applying due to limited human capacity, onerous applications or lack of knowledge around funding opportunities or requirements. Capacity constraints may include lack of staffing to write grant applications and lack funds to hire resources, even temporary ones, like grant writers, lawyers, planners or other staff to complete a grant application or contract requirements. "Some organizations have grant writers, but they are often over capacity with other obligations or may not have the technical knowledge required for certain grants," explained one work group member. As outlined in the Energy Climate Policy Advisory Committee's legislative report recommendations, the current capital budget guidelines, which have a cap on administrative costs, limit the ability for many state capital grants to provide technical assistance.[31] Although there are some federal programs that offer technical assistance, these opportunities may be specific and limited to the scope of the particular federal grant. Additionally, applicants may not know where to find relevant opportunities.

Rural communities need both a centralized source of information on available clean grants and more opportunities for technical assistance around grant applications, project development and grant reporting. Additionally, rural communities require programs that can support skill building around grant writing and management, and clean energy job training. Washington agencies should evaluate alternative methods for disseminating grant information, fostering connections between communities and technical experts, supporting the development of local cultural ambassadors to inform communities about opportunities, and provide strategic funding for technical assistance and capacity building within communities. In addition to the work group recommendations, there has also been research that corroborates the work group view that more capacity and technical expertise needs to be developed at the local and regional level. [32]

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[31] Washington State Department of Commerce (2020, November). *Energy and Climate Policy Advisory Committee.* Retrieved October 1, 2021, from Energy and Climate Policy Advisory Committee: https://www.commerce.wa.gov/wp-content/uploads/2020/12/ECPAC-Report_11-24-2020.pdf. (Pg. 9)

[32] Several recent studies align with barriers identified and assertions by the work group that that more capacity and technical expertise is needed to apply for and unlock investments in federal infrastructure and state energy grants.:
In their article on improving the scale of federal investments, "Modernizing Federal Investments for Rural Prosperity, Natalie Giesmar and Tony Pipa argue that it is critical to invest in a network of "national and regional intermediaries that can work with local communities and offer appropriate technical assistance, and help strengthen local capacity will be critical to maximizing the effectiveness of grants." Giesmar, Natalie. a. (2021, December). *Principle Ideas: How can we secure enduring capital for equitable rural prosperity.* Retrieved March 3, 2022, from Aspen Institute: Thrive Rural Framework: https://www.aspeninstitute.org/wp-content/uploads/2021/12/TR-FP-3-Rural-Capital-singles-FINAL.pdf; Headwater Economics created a capacity map to "help identify

1.A) Recommended strategy: Create an accessible, centralized hub for grants, resources and education on available technical assistance, state and federal opportunities, and assistance around grant requirements.

The Brookings Institute found that a maze of 400 federal programs focused on rural development span 10 independent federal agencies, and there is no comprehensive strategy.[33] Without a centralized hub for information, applicants are required to sift through an array of federal and state grant programs with different requirements and processes. This may not be feasible for applicants with small staff, limited capacity and small budgets. Furthermore, if an entity or community receives grant funding, they may not have the budget or knowledge to find qualified technical experts to implement the projects. The Legislature should provide funding to develop and maintain a centralized hub for information on grant applications, project management and monitoring. Additional funding should be provided to support communities to identify and select appropriate input and expertise of technical experts.

- ⭘ Addresses barriers:
  - Lack of technical expertise to develop clean energy projects
  - Small government and rural community staffing capacity
  - Lack of workforce in rural areas to build projects
- ⭘ Example strategies, programs and policy mechanisms:
  - Using a model, like the Infrastructure Assistance Coordinating Council, establish a consortium of government agencies and educational institutions, including Washington State University and community colleges, to create a clean energy grant resource hub. The consortium should maintain a centralized list of state and federal clean energy funding opportunities and resources that small governments and rural communities can leverage with state funding. The hub should cross-reference to existing "hubs" that already exist, such as the Conservation Program Explorer, and new ones as they come into existence.
  - Develop an interactive website that helps entities match themselves to federal and state grant programs based on eligibility and program relevance. The Legislature should provide a budget for full-

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communities where investments in staffing and expertise are needed to support infrastructure and climate resilience projects." Headwaters Economics. (2022, January 26). *A Rural Capacity Map*. Retrieved April 26, 2022, from https://headwaterseconomics.org/equity/rural-capacity-map/;

The Clean Energy Transition Institute (CETI) has been developing a program called Clean Energy and Northwest Rural Communities. This program includes two projects: Equitable Rural Building and Decarbonization and Claiming Power: Stories of Rural Communities and Clean Energy. The former program has conducted both quantitative research analyzing various characteristics of rural economic and energy burden, as well as qualitative research that involved interviews with over two dozen representatives of Washington's rural communities, including community action agencies, nonprofit organizations, Tribal members, and individuals from rural areas with the experience to know what is best for their communities when it comes to clean energy and decarbonization. The paper that compiles the results of this research will be released during the summer of 2022. Interview with Eileen Quigley, Executive Director, The Clean Energy Transition Institute. (2022, February);

The Aspen Institute Community Strategies has developed a series called Thrive Rural Open Field sessions focused on connecting rural and tribal communities. This blog summarizes an event that gathered community and economic development to discuss strategies to build rural capacity. The article emphasizes the need for capacity strengthening in "rural places, tribal communities, and Native nations", especially in order to "grow economies, health, and livelihoods," and lists relevant rural capacity resources. Deaton, C. D. (2022, May 19). *Better Results: What does it take to build capacity in rural and Native nations communities?* Retrieved May 25, 2022, from Aspen Institute: https://www.aspeninstitute.org/blog-posts/better-rural-capacity-building/

[33] Geismar, N., & Pipa, A. (2020, November 19). *Reimagining rural policy: Organizing federal assistance to maximize rural prosperity*. Retrieved March 3, 2022, from Brookings Institute: https://www.brookings.edu/research/reimagining-rural-policy-organizing-federal-assistance-to-maximize-rural-prosperity

time employees at Commerce or the host agency to answer questions, provide assistance and training opportunities.

- Provide ongoing, no-cost webinars, in-person trainings and other educational opportunities on grant writing, project management and grant reporting/monitoring. Trainings should also help applicants understand the differences between state and federal grant applications and program monitoring requirements. Training opportunities should consider accessibility guidelines including but not limited to reducing language, technical, literacy or other barriers to participation due to color, race, religion, education level, or income.[34]
- Use a model like the Small Business Playbook to develop a written guide for applying to and managing state and federal grants, including a glossary of terms and frequently asked questions.
- Commerce and/or other state agencies should provide funding to support the development of a certification system to verify the quality of technical experts who can help applicants with the grant application and reporting process or installation and maintenance of clean energy technologies. Once the system is established, develop an online directory of technical experts housed on the proposed grant resource hub website.

1.B) Recommended strategy: Support the development of local, cultural ambassadors — people who are known and trusted in communities and who can spread awareness of opportunities and resources.

> **"When funding is designated as 'rural,' don't ignore us for being 'too rural' ("not enough bang for the buck" scenarios). We need more program staff assigned to our areas to help educate, train and get initial implementation off the ground - we are unlikely to have all the needed experts already on the ground. Coordinate education campaigns statewide so that everyone has an equal opportunity to learn about programs and behaviors that will help them. Some of these barriers can be removed immediately - energy issues are more important than ever, and the more efficient and independent we can all become, the better it is for the world."** — Public comment form

Building trust with communities is a long-term process that requires partnerships between state agencies and community organizations. In addition to informing community members about opportunities and resources, a work group member said the state should "Also include them as decision makers (utilizing deliberative processes) for project implementation. Distribute decision making power, instead of public agencies holding the power." Bills like SB 5793 support this work by providing stipends to individuals with lived experience or who are low income to support participation in workshops or other engagement efforts.

Many state agencies, including Commerce, are developing a regional presence through units such as the Community Engagement and Outreach Team. These teams proactively partner with, support and advocate for Washington communities furthest from equitable distribution of funds. The units work with communities by listening and understanding their needs to help them navigate and connect with Commerce resources, experts and services. The Legislature should not only enhance these engagement team programs through additional funding — it should also provide additional opportunities to support frontline organizations that already have trust within communities.

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[34] Washington Healthy Environment for All Act, WA. SB 5141 (2022).
https://app.leg.wa.gov/billsummary?BillNumber=5141&Initiative=false&Year=2021

To address this issue, recommendations should enhance existing regional government agency community outreach programs. This can be done by augmenting staff capacity including hiring more full time employees and enhancing expertise to ensure that agency staff have the ability and time to raise awareness about upcoming opportunities, as well as the technical expertise to work with applicants through the grant process and during the reporting period if a grant is received. The state can help build technical expertise in communities by supporting staff with engineering and/or clean energy backgrounds capable of doing site evaluations, preliminary feasibility studies, and energy audits for the agriculture and clean energy sector. If there are capacity issues preventing this kind of engagement, agency staff could help organizations identify specific technical assistance.

O Addresses barriers:
- Lack of technical expertise to develop clean energy projects
- Small government and rural community staffing capacity
- Lack of workforce in rural areas to build projects

O Example strategies, programs and policy mechanisms:
- Continue to support and fund the Commerce Community Engagement and Outreach Team, which can support an understanding of historic needs in communities and foster participation from local trusted partners.
- Identify locations where the state needs to raise more awareness about grant programs and state resources through a gap analysis of applications and outreach and grant recipients, and build trust in those communities. Provide funding for capacity building and pre-application development for community organizations in these locations.
- Develop a funding source for capacity building specifically for Black, Indigenous, and people of color (BIPOC) communities. Conduct outreach to BIPOC organizations and rural communities through listening sessions and other engagement activities to ask what they need to build capacity and support around rural clean energy. Tailor the program to these needs.
- Provide funding to community organizations and stipends to cultural ambassadors who live in the community and can act as translators and outreach coordinators.
- Work group members had specific suggestions for partnering with community organizations to build trust and connections with communities that may not know about state resources, such as:

> **"Partner with frontline organizations that aren't necessarily working in the energy sector (in some cases, a few might be far outside of it in the services they offer), but are deeply embedded within these 'hard-to-reach' communities and have already cultivated a level of trust."** — said work group member

- Support the development of jurisdictional/regional partner "hubs" to pool human resources benefiting regional priorities.

1.C) Recommended strategy: Expand funding opportunities for technical assistance and capacity building for local governments and rural communities.

Although many communities and small governments are interested in receiving grants, strict

> **"Commerce grants are complicated and challenging to organizations without technical assistance. Many groups won't even attempt to apply."** — said work group member

eligibility requirements or other barriers may prevent prospective applicants from submitting proposals.

According to the work group, these barriers include limited staff resources, language barriers, and lack of knowledge around applications and reporting requirements. Additional capacity barriers may exist due to historic underinvestment and lack of time due to workload.[35] Such challenges are considerable for early stage businesses or farms that might not have enough staff to work on grant applications, but need capital to jump-start their enterprises. Having an "internal person able to do grants give that entity a leg up," explained a work group member. In addition, many state grant program staff do not have the capacity to provide application assistance guidance to applicants prior to a solicitation due to limited administrative funding. Furthermore, once applicants obtain grants or loans, they may have challenges completing the grant reports and/or finding qualified local contractors who have the expertise to install clean energy technologies. It is important for rural communities to obtain this expertise when needed through consultants and to build it within their communities and/or entities.

- Addresses barriers:
  - Lack of technical expertise to develop clean energy projects
  - Small government and rural community staffing capacity
  - Lack of workforce in rural areas to build projects
  - Lack of access to capital
- Example strategies, programs and policy mechanisms:
  - Develop a flexible strategic fund through the operating budget, with a board of advisors, that could be used for technical assistance and capacity building.
    - Funding should be available for entities seeking assistance around the pre-application process, navigating application and reporting requirements, preparing budgets and financial documents, and preparing technical documents or for internal training to build skills around these tasks. The strategic fund can also provide grants or loans for early stage companies, rural small businesses, small farms or other entities that need capital to help their business get off the ground or to fund other needs not covered by state capital or federal grants.
    - The strategic fund should also fill the gap between education and implementation and provide funding for energy audits for agriculture operations interested in deploying clean technologies.
  - Require all state grant program webpages and/or solicitation documents to link to the centralized grant resources hub referenced in Goal 1 Recommendation A, pointing to resources for technical assistance.
  - Expand the current administrative cap in current state capital grant programs to provide funding for technical assistance.

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[35] White House (2022, January). *c*. Retrieved April 2022, from https://www.whitehouse.gov/wp-content/uploads/2022/01/BIL-Factsheet-Local-Competitive-Funding.pdf

- Bolster staff capacity for state capital grant programs to provide a variety of support and technical assistance to grantees tailored to their needs.[36]

1.D) Recommended strategy: Incentivize clean energy startups and encourage young people to stay in rural areas through technical education programs, apprenticeships and living wage jobs focused on clean energy.

Both the clean energy sector and agriculture sector need to attract and retain workers and new businesses in rural areas. Research by the World Resources Institute has found that clean energy jobs are a core part of rural economies, and rural Washington experienced 24% job growth, with 1,039 new rural clean energy jobs created in the clean energy sector between 2017 and 2019.[37, 38] COVID-19 halted these gains; the first year of the pandemic resulted in a 19% decline in the state's rural clean energy jobs, with 1,034 jobs lost.[39] The agriculture sector also faces workforce challenges, including lack of support around succession planning. For example, for every one farmer under age 35, five are 65 or older.[40]

In addition, startups, which can create local benefits for rural communities, may gravitate towards urban areas due to the availability of resources needed to get their businesses off the ground.[41] Analysis by the Economic Innovation Group found that entrepreneurship in rural America is decreasing[42] and not enough startups have offset this decline. [43] For example, more enterprises have closed shop in rural America ever year than have started since 2008.[44] Small clean energy businesses not only need resources — they also need capital in the early stages of their enterprises.

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[36] A study by the GOA highlighted 10 federal grant programs in three agencies that provide technical assistance, and found that agencies enhance grant programs by providing technical assistance services based on "the requirements of the grant programs and the needs of grantees." United States Government Accountability Office. (2020, August 11). *GAO-20-58: Grants Management: Agencies Provided Many Types of Technical Assistance and Applied Recipients' Feedback*. Retrieved March 16, 2022, from Government Accountability Office: https://www.gao.gov/assets/gao-20-580.pdf. (Pgs. 5, 15, 19)

[37] See chart titled, " Prior to the COVID-19 Pandemic, Clean Energy Jobs Grew Rapidly in Rural Counties, Outpacing Job Growth in Urban Counties". Saha, Devashree, and Tom Cyrs. (2021, April 19). 5 Graphics that Explain Clean Energy Jobs in Rural America. Retrieved March 3, 2022, from World Resources Institute: https://www.wri.org/insights/clean-energy-jobs-rural-communities-us-5-graphics#:~:text=The%20sector%E2%80%94which%20includes%20jobs,or%20more%20in%20some%20counties.

[38] Note that WRI uses the Rural-Urban Continuum code definition of rural developed by the USDA Economic Research Service: USDA ERS - Rural-Urban Continuum Codes

[39] See chart titled, "COVID-19-related Clean Energy Job Losses Have Hit Rural Counties Hard." Saha, Devashree, and Tom Cyrs. Tom Cyrs. (2021, April 19*). 5 Graphics that Explain Clean Energy Jobs in Rural America*. Retrieved March 3, 2022, from World Resources Institute. https://www.wri.org/insights/clean-energy-jobs-rural-communities-us-5-graphics#:~:text=The%20sector%E2%80%94which%20includes%20jobs,or%20more%20in%20some%20counties.

[40] USDA. (2017). *2017 Census of Agriculture Washington State Profile*. Retrieved February 24, 2022, from US Department of Agriculture National Agricultural Statistics Service: https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Washington/cp99053.pdf.

[41] Sablik, T. (2022, First Quarter). *Growing Rural America Through Startups*. Retrieved May 12, 2022, from Federal Reserve Bank of Richmond: https://www.richmondfed.org/publications/research/econ_focus/2022/q1_feature_2

[42] Note that EIG defines "rural" as nonmetropolitan areas. Fikri, Kenan. (2021, November). *Restoring Well-Being and Entrepreneurship in Rural America, Chapter*. Investing in Rural Prosperity. Federal Reserve Bank of St Louis. Retrieved from Economic Innovation Group: https://eig.org/wp-content/uploads/2021/11/Investing-in-Rural-Prosperity_ONLINE-Version_508-Compliant_Chapter-06.pdf, pg. 96

[43] Fikri, Kenan. (2021, November). Restoring Well-Being and Entrepreneurship in Rural America, Chapter. *Investing in Rural Prosperity. Federal Reserve Bank* of St Louis. Retrieved from Economic Innovation Group: https://eig.org/wp-content/uploads/2021/11/Investing-in-Rural-Prosperity_ONLINE-Version_508-Compliant_Chapter-06.pdf, (Pg. 96)

[44] Fikri, Kenan. (2021, November). Restoring Well-Being and Entrepreneurship in Rural America, Chapter. *Investing in Rural Prosperity. Federal Reserve Bank* of St Louis. Retrieved from Economic Innovation Group: https://eig.org/wp-content/uploads/2021/11/Investing-in-Rural-Prosperity_ONLINE-Version_508-Compliant_Chapter-06.pdf, (Pg. 96)

Washington must develop policies and programs that complement federal funding, incentivize rural energy startups, help the clean energy sector recover and grow, and specifically benefit local economies by establishing local, long-term family wage jobs and affordable housing. Work group members and additional interviews noted a skills gap associated with some clean energy jobs. For example, some renewable energy jobs require years of experience and specific skills, education or certifications, which makes it challenging for prospective employees to find jobs and for employers to hire qualified workers.[45] Diverse education and training programs can help narrow this gap and encourage entrepreneurs and youth to stay in rural areas of the state.[46] State agencies should work with rural colleges, technical schools, utilities and the private sector to develop diverse training and apprenticeship programs to create clean energy programs that accommodate various needs to attract and retain young people.

- Addresses barriers:
  - Lack of technical expertise to develop clean energy projects
  - Small government and rural community staffing capacity
  - Lack of workforce in rural areas to build projects
- Example strategies, programs and policy mechanisms:
  - Support the development of a clean energy curriculum in elementary through high schools to encourage interest in clean energy careers. As one public comment suggested, the state could reduce educational and environmental literacy barriers by "enacting an environmental literacy mandate in K-12 curriculum similar to how the state of Maryland did and succeeded at in 2012."
  - Develop youth training programs that provide high school students with technical training on energy audits, weatherization and renewable installation in rural communities. Students can gain hands-on experience by providing services that many community members need. There are many models across the country, including the Rising Sun Center for Opportunity, which serves the Bay Area and San Joaquin County, California.[47]
  - Support the development of multi-lingual training and placement programs specific to clean energy through community and technical colleges. Recognize that some students may need shorter trainings that could lead to immediate job opportunities while others may need longer programs that result in certifications.[48] Design programs to support working professionals by offering students diverse program timelines including night and weekend programs or intensive workshops. Reduce barriers to participation in these programs by providing virtual options, childcare and stipends for transportation. Provide students with job placement assistance.
  - Award more points to grant applicants that develop training and apprenticeship programs in rural areas that recruit locally.
  - Increase jobs and encourage startups to stay in rural areas by:
    - Partnering with county/regional Workforce Development Councils for training/upskilling workers
    - Funding local organizations (like conservation districts or public utilities) to hire energy/carbon sequestration auditors/technical assistance staff
    - Creating urban and rural integrated entrepreneurial support centers
  - Continue to support funding for Washington's Innovation Cluster Accelerator Program.

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[45] National Association of State Energy Officials and Energy Future Initiatives. (2020, March). *Washington Energy and Employment - 2020.* US Energy + Employment Report. Retrieved March 22, 2022, from: https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5e7818da34a6bb7701b26883/1584928987056/Washington-2020.pdf.
[46] Washington State Department of Commerce. *Growing Rural Economies.* Retrieved May 12, 2022, from: http://mystartup365.com/programs/growing-rural-economies/
[47] Rising Sun Center for Opportunity. (2022). Retrieved March 14, 2022: Rising Sun Center for Opportunity (risingsunopp.org)
[48] Interview with Stephanie Bostwick, Ph.D, Department Chair and faculty member, Northwest Indian College, February 2022

Goal 1: Case Study

Northwest Indian College

A core focus of the engineering program at Northwest Indian College (NWIC) is encouraging Tribal members to support the needs of their communities and promote intergenerational learning and energy sovereignty. In 2020, NWIC partnered with Remote Energy (RE) to incorporate solar training into the engineering program to support this goal.

Stephanie Bostwick, department chair and faculty member, developed a hands-on curriculum with RE that enables students to gain first-hand experience on how solar can support Tribal needs. Students have been equipped with solar water pump kits to measure circuit properties and explore how solar works. NWIC and RE also introduced solar suitcase kits to the K-12 Lummi Nation School students. Once assembled, suitcases can be donated to a community member to use for cell phone charging and lighting during a power outage. On the main NWIC campus, a mock roof is under construction to train workforce students in solar installation and provide hands-on electrical experience to engineering students. The goal is for students to apply these skills in future jobs within their communities.

In order to expand its training program, the college partnered with RE to develop a mobile solar training facility. RE donated an enclosed trailer, which will be outfitted with equipment funded through grants and donations. The trailer will include a battery bank, charge controller and several solar panels. Once it is fully installed, the program plans to bring the mobile trailer to its five other campus locations, and eventually to interested Tribal communities. To date, the college has had initial discussions with the Confederated Tribes of the Colville Reservation around future solar workshops for grid tied and off-grid systems. In addition, the college has had initial conversations with the Swinomish and Nooksack about future training programs.

Image Courtesy of Remote Energy

Goal 2: Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience while providing co-benefits for economic and workforce development.
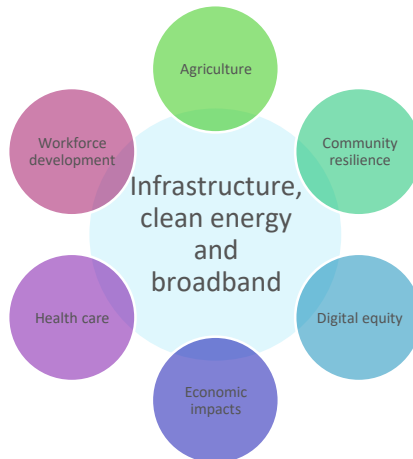
While no single technology can universally address the priorities of Washington's diverse rural communities, discussions from the work group and public comments indicate that infrastructure improvements and broadband are foundational for supporting multiple rural priorities and inequalities, which were amplified by the COVID-19 pandemic. As the COVID-19 pandemic laid bare, reliable, resilient infrastructure including electricity and broadband were paramount to supporting essential functions like remote work, education and telehealth. The 2021 SES, which was written during the first year of the COVID-19 pandemic, centered these ideas in a priority recommendation focused on enhancing resilience in rural Washington by strengthening the electric grid to deliver clean energy and using universal broadband access to support a smart grid.

The 2021 SES also identifies broadband access as a critical crosscutting theme: "The need for universal broadband access is outside the customary ambit of energy policy, but this need emerges across sectors. There are multiple examples where universal, reliable Internet access is required to capture energy efficiency improvements and increase access to fossil-free energy resources."[49] Lack of reliable broadband hindered vital communication in emergencies like wildfires. Opportunities for public participation moved to virtual forums during the pandemic, exacerbating inequality around participation. Without internet connectivity, "many communities cannot participate in statewide or broader level convening work," said one work group member. Commerce's Community Economic Revitalization Board's Rural Broadband program provides funding for construction and planning for broadband projects in rural counties and communities and the State Broadband Office provide broadband infrastructure funding. These programs must continue to be supported.

With extreme weather events and massive disruptions like forest fires and natural disasters, critical facilities and individuals with in-home medical equipment depend on reliable alternative power sources to keep machines running.[50] The upfront cost of enhancing resilience may be a deterrent, especially for rural jurisdictions or counties with fewer users to socialize the cost of upgrades. However, a 2018 report shows that

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[49] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021, from Washington State Department of Commerce: https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy.(Pg. 18)

[50] (Huff, 2021); Ericson, Sean and Dan Olis. (2019). *A Comparison of Fuel Choice for Backup Generators*. Golden, CO: National Renewable Energy Laboratory. NREL/ TP-6A50-72509. Retrieved April 24, 2022. https://www.nrel.gov/docs/fy19osti/72509.pdf. (Pg. 1)

federal programs deploying resilience solutions have huge benefits in terms of a cost benefit ratio (BCR).[51] For one Economic Development Administration grant for California projects, that result was 4:1 BCR.[52] Therefore, making upfront costs for resilience funding available to rural communities is both economic and the right thing to do to support these regions.

In Washington, Commerce has begun to support applications for Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) and Hazard Mitigation Assistance grants to provide some upfront funding for resilience work. If these grants are successful, the state will be able to provide planning tools and analysis to help rural communities plan for a resilient future. However, leaning on federal funding alone for planning is not enough. The state must also help communities with upfront costs for building and deploying resilient infrastructure. By developing state financing grants, local communities might have a potential funding match to better leverage federal infrastructure dollars that are aimed at building a more resilient grid.[53]

2.A) Recommended strategy: Expand state grant and loan programs to fill technology and use case gaps for rural communities and broaden eligibility for certain programs.

The work group indicated that state grant programs provide funding for a narrow set of eligible applicants, and that more opportunities for funding are critical to meeting diverse community clean energy needs. "People have different needs so it's difficult to translate the idea into the narrow box of a grant program," said one work group member.

Results from exercises and discussions within the work group indicated that both early stage projects like predevelopment, field trials, pilot projects and deploying commercialized technologies were important for addressing rural priorities. *(For full results of the exercise, see Appendix A, Homework #2)*. Additionally, the group ranked new and developing technologies like data dashboards or outage notification alerts, which are important for addressing rural priorities such as community resilience and wildfires, and other cross-cutting priorities like health care and broadband. Such projects would not typically be funded with state capital dollars due to the requirement that capital projects produce an asset with a "useful lifespan of more than 13 years."[54]

The work group also prioritized more established technologies with immediate benefits, including technologies to increase access to broadband, improvements to transmission and distribution, energy efficiency, battery technologies, advanced energy storage, solar, and projects to enhance resilience. Clean transportation (including public transportation, electric vehicles and electric or hybrid marine vessels) and infrastructure were mentioned more frequently in the public comment form than in work group discussions and exercises.[55] Some

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[51] Herz, Jonathan. (2019, July 18). *It's Payback Time*. Environmental and Energy Study Institute. Retrieved April 2022, from https://www.eesi.org/articles/view/its-payback-time

[52] Herz, Jonathan. (2019, July 18). *It's Payback Time*. Environmental and Energy Study Institute. Retrieved April 2022, from https://www.eesi.org/articles/view/its-payback-time

[53] Department of Energy (n.d). *Building a Better Grid Initiative*. Retrieved April 27, 2022. Building a Better Grid Initiative | Department of Energy

[54] *The 2021 Citizen's Guide to the Washington State Capital Budget.* (2021). Retrieved March 16, 2022, from Washington State Legislature: https://leg.wa.gov/Senate/Committees/WM/Documents/Citizen%27s%20guides/2021%20Citizens%20Guide%20to%20Capital%20Budget.pdf. (Pg. 5)

[55] Note that this difference may have been due to the way the questions were phrased and the assignment provided to the work group. The public comment form asked participants to describe clean energy needs and select from a list of technologies, while the work group completed an exercise in which they ranked a list of technologies derived from the 2021 SES and CEF5 Rural Innovation proviso by how the technology addressed the 12 rural priorities (agriculture, broadband, infrastructure, etc.) See Appendix A, Homework #2.

of the priority technologies are already funded by Commerce grants programs and federal grant opportunities, while others have gaps in state funding. As noted in previous sections, rural communities experience a shortage of qualified technicians to install and maintain these technologies.

A work group member said there is a high demand for residential programs for rural communities, but many state programs are oversubscribed and few federal programs exist that meet these needs. The USDA Rural Energy for America Program (REAP), for example, funds small rural business and agricultural producers but not residential programs. While this program provides a critical funding source to many small businesses and farms, similar programs should be developed for residential applicants.

Additionally, many state and federal programs have narrow eligibility for specific grants. For example, some grant programs, such as Rural Energy for America, may require that enterprises be operational for a certain period of time, own the property, or have a lease agreement of a specific duration to be eligible for certain types of state and federal funding in order to mitigate risk.[56] One work group member said, "… the applicant must own or control the site of the project for the 'useful life of the project.' For solar PV, usually warrantied at 25 years, that means that the applicant would need to either demonstrate property ownership or a lease of the property for at least 25 years after project installation."

Although renters could apply to REAP, securing a lease agreement of that length of time is uncommon. This poses significant challenges for early stage businesses, Black, Indigenous, and people of color (BIPOC) farmers, and new farmers who need start-up capital or may be leasing land.[57] [58] [59] Commerce should increase its portfolio to include more funding types encompassing more stages and types of technologies, and expand eligibility to more entities.

- Addresses barriers:
    - Lack of programs tailored for rural use cases
    - Lack of access to capital
- Example strategies, programs and policy mechanisms:
    - Expand state clean energy grant program eligibility to include residential customers seeking resilient clean energy technologies and energy efficiency. Opportunities could expand eligibility to churches, mobile homes, multifamily housing, farmworker housing, rental housing and farmers with leased land.
    - Provide low-cost loans for small wastewater and water utilities in rural communities, as well as small off-grid energy storage projects.
    - Design programs to prioritize locally owned or job creating projects.
    - Expand funding for pilot projects, predevelopment, data dashboards and field trials.
    - Provide a percentage of the project funding before the completion of key milestones or accrual of expenses.
    - Create financial or policy incentives for agricultural producers to pilot dual-use renewable projects, such as agrivoltaics, solar grazing, conservation dual-use, or other innovative clean energy solutions on

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[56] reap_rule_4_27_21.pdf (usda.gov) $4280.112 Applicant Eligibility. The REAP program requires that the "applicant must at the time of application and, if an award is made, for the useful life of the project as described in the Financial Assistance Agreement: (1) Own the project; and; (2) Own or control the site for the project. For many solar PV projects, the average useful life is ~25 years."
[57] Spark Northwest. (2021, July 13). *USDA Racial Equity SNW Comments 2021*. Retrieved April 27, 2022, from https://www.regulations.gov/comment/USDA-2021-0006-0192
[58] Commerce mentioned BIPOC farmers because of historic barriers to obtaining farmland and significantly lower rates of agriculture land ownership by BIPOC farmers than white farmers.
[59] Gazillo, C. (2021, February 25). *Active policy efforts to address the history of BIPOC land theft in America*. American Farmland Trust. Retrieved May 4, 2022, from https://farmland.org/active-policy-efforts-to-address-the-history-of-bipoc-land-theft-in-america/?msclkid=9dab0450ce5111ecab7c7f47f918c6dd.

agricultural land.[60] Agrivoltaics, for example, have potential benefits for farmers, including "providing passive income for farmers, conserving water, extending growing seasons, and protecting crops and livestock from extreme temperatures," as noted by the American Farmland Trust. However, more research and development is needed on agrivoltaics and other dual-use renewables as a potential solution for agriculture and renewables, "to coexist rather than compete for land."[61]

2.B) Recommended strategy: Prioritize reliable, high speed broadband and clean energy technologies that enhance resilience and increase mobility for rural communities.

- Rural communities need reliable, affordable infrastructure to support education, economic development and workforce training opportunities. As the 2021 SES mentions, broadband is the foundation for so many other infrastructure, social and clean energy needs.[62] Additionally, clean, affordable transportation is imperative in rural areas where people must travel long distances to reach critical facilities and services. Commerce should prioritize investments in broadband, clean energy systems that enhance resilience, and early warning systems like wildfire alerts for rural communities, as well as incentivize planning among key stakeholders.

- Addresses barriers:
  - Lack of programs tailored for rural use cases
  - Lack of access to capital
  - Small government and rural community staffing capacity

- Example strategies, programs and policy mechanisms:

  - Commerce's Energy Emergency Management Office should incentivize proactive planning and coordination among utilities, partners and communities around wildfire mitigation.
  - Continue to support programs that provide funding for rural grid modernization and resilience among remote customers, as well as clean transportation options to improve mobility for remote communities.
    - Expand on the success of Clean Energy Fund programs like Grid Modernization to allow funding for feasibility studies and pre-development. Such funding is imperative for applicants to do a cost benefit analysis on different backup systems and ensure that resilient clean energy projects are funded at the appropriate price point.
  - Build operating costs into project budgets to ensure that clean energy costs for technologies that increase resilience are funded at the appropriate price point. For example, budgets could offset the initial costs for replacing diesel generators and include the long term value of such an action in cost savings.[63]
  - In coordination with the Utilities and Transportation Commission, develop state cybersecurity standards for the energy sector to address increasing threats against energy critical infrastructure. It will be essential to provide support to Rural Electric CO-OPS/Rural Electric Associations and small

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[60] Marieb, D. (2019). *Dual-Use Solar in the Pacific Northwest*. Retrieved April 2022, from Renewable Northwest: https://renewablenw.org/sites/default/files/Reports-Fact%20Sheets/Dual-Use%20Solar%20Report_FINAL.pdf

[61] Interview with Dani Madrone, Pacific Northwest Policy Manager, American Farmland Trust, February 2022

[62] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021, from Washington State Department of Commerce: https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/. (Pg. 18)

[63] This recommendation was also informed by Commerce staff input.

municipal utilities to meet these state standards as many have limited staff capacity for a much needed enhanced cybersecurity posture.[64]

- Incentivize and prioritize investments in distributed clean energy technologies for critical facilities, including but not limited to drinking and waste water systems, communications infrastructure (such as radio and cellphone towers), health care facilities, emergency shelters, grocery stores and food banks.
- Reduce the regulatory and cost barriers around developing and expanding clean energy projects and infrastructure improvements with co-benefits for rural workforce development.

  - Using guidance developed in the Low Carbon Energy Facility Siting Legislative Report (due December 2022), support standardizing permitting across jurisdictions in order to minimize the administrative burden for project managers.
  - Focus on programs and policies that reduce the cost of manufacture/supply/permitting/installation of clean energy technologies so it makes economic sense for residents, farms and businesses to do it without direct subsidies or applying for a grant.

- After receiving grants, incentivize larger contractors to subcontract with rural or local businesses by developing an approved contractor list.

2.C) Recommended strategy: Reduce barriers to applying for and managing grants after they are received.

In addition to lack of awareness about specific grant opportunities, many rural communities face challenges around applying for and managing grants due to issues mentioned in previous sections. One work group member pointed out that some applicants will not apply to state grants at all due to high match requirements. Onerous or lengthy applications and limited access to broadband further compound these challenges. After grants are received, there may be additional challenges around managing the contract. There are "lots of new categories in the contract — the more complex those categories get the less expertise exists to interpret those requirement," said a work group member. As recommended in the ECPAC report, grant administrators should "streamline applications" to the extent possible to reduce complexity,[65] and similarly reduce unnecessary complexity in contracts.

- Addresses barriers:
  - Small government and rural community staffing capacity
  - Access to information
- Example strategies, programs and policy mechanisms:
  - Split grants into two phases, with the first phase covering planning, team building and capacity building. First phase grant recipients would be eligible to apply to the second phase, which would focus on project implementation.
  - Provide separate grant applications with reduced requirements for lower cost, lower risk clean energy projects compared to higher cost, higher risk clean energy projects.
  - Establish significantly longer timelines for application deadlines. For example, instead of the standard 30-60 days, the application deadlines could be extended to 90 days.
  - Consider providing paper applications with prepaid postage, distributed through community organizations, as an alternative to online applications.

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[64] This recommendation was also informed by Commerce staff input; U.S. Department of Energy. (2022, March 29). *Rural and Municipal Utility Advances Cybersecurity Grant and Technical Assistance Program*. Retrieved from Bipartisan Infrastructure Law: https://www.energy.gov/bil/rural-and-municipal-utility-advances-cybersecurity-grant-and-technical-assistance-program
[65] Washington State Department of Commerce. (2020, November). *Energy and Climate Policy Advisory Committee*. Retrieved October 1, 2021, from: https://www.commerce.wa.gov/wp-content/uploads/2020/12/ECPAC-Report_11-24-2020.pdf. (Pg. 10)

- To the extent possible, align state grant requirements and terminology with similar federal programs to guarantee consistency and ensure that applicants can use grant awards as state or federal match.
- Build on the success of some Clean Energy Fund and Energy Retrofits for Public Buildings programs by:
  - Using a two phase or pre-application process whenever possible with a simplified first phase or concept paper application.
  - Offering reduced match requirements for applicants who may have challenges securing match.
  - Prioritize projects that include partnerships or collaboration.
- Provide state grant recipients with longer contract timelines to account for increased shipping costs and shortage of building materials and other supplies, as well as staff capacity limits.
- Consider offering a percentage of grant payments to be made at the beginning of the grant period, instead of on a performance/reimbursement basis.[66]

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[66] Work group comments; Spark Northwest. (2021, July 13). *USDA Racial Equity SNW Comments 2021.* Retrieved April 27, 2022, from https://www.regulations.gov/comment/USDA-2021-0006-0192

Goal 3. Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sectors.

With climate change driving increased wildfires, extreme weather events and droughts, Washington's agriculture and forestry sectors will face continuous and unique challenges to their operations in the coming years.[67] [68] Furthermore, COVID-19 has compounded economic hardships for the agriculture sector due to labor shortages and other effects on agriculture inputs.[69] Washington's agriculture and forestry sectors need policies and programs that conserve the resources that drive these economies, support sustainable business models, and reduce risk around adopting new practices and technologies that will support climate change mitigation and adaptation.

3.A) Recommended strategy: Reduce financial and operational risk for farmers and foresters by encouraging and incentivizing the adoption of new and existing clean energy technologies and supporting translational R&D for clean energy technologies that are close to ready for deployment, with particular focus on the rural contexts in which these are used.

The upfront capital costs of obtaining equipment are often too high for farmers that may have low margins or for new farmers that need capital to get their enterprises off the ground. The Legislature should support new and existing models that allow farmers and agriculture communities to preserve economic development, adopt existing clean energy technologies, and expand options for relevant, useful clean energy technologies. Policies should balance the need for efficiency, novelty and economics, and ensure that new technologies are economical, reliable and support sustainable business models for the agriculture community.

- Addresses barriers:
  - Lack of technical expertise for developing clean energy projects
  - Lack of access to capital
  - Climate policy goals not considering forestry and agriculture industry needs
- Example strategies, programs and policy mechanisms:
  - Incentivize adoption of new and emerging agricultural, food processing and forestry, emission control, and clean technology upgrades through tax credits and grants.[70] Examples include but are not limited

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[67] Center for Sustaining Agriculture and Natural Resources. (2018). *Climate Impacts & Adaptation.* Retrieved March 24, 2022, from https://csanr.wsu.edu/publications-library/climate-change/climate-impacts-adaptation.

[68] Environmental Protection Agency. (2016, August). *What Climate Change Means for Washington*. Retrieved March 2022, from https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-wa.pdf.

[69] USDA Department of Agriculture Economic Research Services. (2022, February 9). *Farms and Farm Households During the COVID-19 Pandemic*. Retrieved March 12, 2022, from https://www.ers.usda.gov/covid-19/farms-and-farm-households/.

[70] Hasanbeigi, Ali, Lynn A. Kirshbaum, Blaine Collison, and David Gardiner. (2021, January). *Electrifying U.S. Industry: A Technology- and Process-Based*. Retrieved January 2022, from Renewable Thermal Collaborative: https://www.renewablethermal.org/wp-content/uploads/2018/06/Electrifying-U.S.-Industry-6.8.21.pdf. (Pgs. 87-88)

to light duty electrification, with particular attention to distributed energy needs (such as solar water pumps and hot wire fences), electric tractors, electric refrigerated delivery vehicles, and biodiesel for tractors (such as clean technologies for delivery of goods and on-farm fuel use).

- Incentivize equipment-sharing models and cost shares to enable the purchase and use of equipment.
- Provide funding to support the translational research needed to make electrification less expensive and more viable for specific medium-duty farm-related tasks.
- Provide targeted assistance to address financial needs and barriers of new farmers, small farmers and historically marginalized farmers, such as land ownership requirements and upfront capital equipment costs. Ensure that grant programs are designed to prioritize smaller, BIPOC or beginning farmers[71] through scoring criteria or funding set asides.

3.B) Recommended strategy: Expand education opportunities for small farmers, forest property owners and the public around proven and emerging technologies and methods for transitioning to clean energy practices, tools, equipment and technologies.

Farmers and large property owners may find it challenging to locate affordable, accessible technical expertise to inform them about emerging climate-smart practices, including carbon sequestration and renewable energy technologies. While emerging technologies are critical tools, it is also important that farmers and the forestry sector have opportunities to learn about proven practices, including energy efficiency and weatherization.

> "**Rural communities need visible renewable energy pilot projects that showcase the possibilities and benefits of clean energy innovation.**" — Public comment form

The Legislature should incentivize the expansion of diverse learning opportunities for the agriculture and forestry sector and the public on emerging and proven technologies relating to clean energy.

○ Addresses barriers:
- Lack of programs tailored for rural use cases
- Lack of technical expertise for developing clean energy projects
- Lack of access to capital
- Climate policy goals not considering forestry and agriculture industry needs
○ Example strategies, programs and policy mechanisms:
- Demo/pilot projects to allow community members to see small-scale changes and benefits provided by new technologies. Support farmers who may be concerned with the risks and capital costs around new technologies to better understand the benefits.

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[71] USDA defines a beginning farmer as one who "Has not operated a farm or ranch for more than 10 years; Does not own a farm or ranch greater than 30 percent of the average size farm in the county as determined by the most current Census for Agriculture at the time the loan application is submitted; Meets the loan eligibility requirements of the program to which he/she is applying - Farm Operating Loan, Farm Ownership Loan, or Microloan; Substantially participates in the operation." USDA. (n.d.). Farm Service Agency *Beginning Farmers and Ranchers Loans*. Retrieved May 3, 2022, from https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/beginning-farmers-and-ranchers-loans/index

- Create partnerships among community colleges, extension programs and other stakeholders to co-develop programs and curricula. Hold no-cost field days, podcasts or monthly webinars on new and emerging technologies, as well as proven practices. Establish low-cost programs to develop trainings for energy auditors across the state to specialize in auditing agriculture operations.
  - After students complete trainings, institutions could match them with farmers in need of agriculture audits. The audits could be subsidized by the state through a strategic fund or other mechanism.

> **"Education opportunities need to be followed up through one-on-one technical assistance"** — Work group member

- Increase knowledge around grant writing assistance and grant opportunities for technical assistance, including but not limited to the Department of Energy's Energy Auditor Training Grant Program or the USDA's Incentive Programs and Assistance for Producers | NRCS (usda.gov).
- Share potential opportunities for carbon sequestration in land practices and eligibility for earning credits under the Climate Commitment Act and other relevant policies.
- Increase availability of energy auditors for rural communities. The recently passed federal infrastructure package includes $40 million for the Energy Auditor Training Program (Section 40503).

3.C) Recommended strategy: Increase research and development in woody waste biomass products and carbon sequestration technologies, and support the development of wood energy opportunities and markets broadly.[72]

The forest and wood products sector has been an important part of Washington's economy for the last two centuries, providing jobs opportunities for timber-dependent rural communities and economic benefits to the entire state.[73] While the forest products sector is important economically, there is untapped potential to utilize low-grade woody biomass[74] for projects that reduce wildfire risk, increase resilience and contribute to local economies. Wood waste biomass in particular provides multiple benefits, in that it uses waste from dead trees, post-harvest slash or wood processing residues. Depending on the source, it can thereby divert materials from landfills or facilitate thinning that reduces forest fire risk and improves forest health.[75] There should be more state funding opportunities to support new and emerging wood technologies. Additional efforts should be made to incentivize efficiency improvements and markets for current wood energy technologies.

- Addresses barriers:

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[72] Part of this recommendation is in alignment with the USDA Climate-Smart Agriculture and Forestry Strategy: 90 Day Progress Report. U.S. Department of Agriculture. USDA. (2021). *Climate-Smart Agriculture and Forestry Strategy: 90-Day Progress Report*. Retrieved February 2022, from Climate-Smart Agriculture and Forestry Strategy: 90-Day Progress Report (usda.gov). (Pg. 11)

[73] Washington State Department of Commerce. *Stewardship and sustainability in a growing industry.* Retrieved February 8, 2022, from http://choosewashingtonstate.com/why-washington/our-key-sectors/forest-products/

[74] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021, from Washington State Department of Commerce: https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/. (Pg. 103)

[75] Department of Energy. (n.d.). *Biomass Resources*. Retrieved May 9, 2022, from: https://www.energy.gov/eere/bioenergy/biomass-resources.; USDA. (2021, July 29). *Wood Waste Helps Keep the Lights on in Rural Communities.* Retrieved May 9, 2022, from https://www.usda.gov/media/blog/2019/10/21/wood-waste-helps-keep-lights-rural-communities.; US Department of Energy. *Biomass Energy — Focus on Wood Waste.* (2004, July). Retrieved March 22, 2022, from US Department of Energy: Energy Efficiency and Renewable Energy: https://www.nrc.gov/docs/ML1409/ML14093A260.pdf

- Lack of programs tailored for rural use cases
- Lack of technical expertise for developing clean energy projects
- Lack of access to capital
- Climate policy goals not considering forestry and agriculture industry needs

○ Example strategies, programs and policy mechanisms:

- Expand funding opportunities for wood energy projects in all stages of development. Prioritize projects that have partnerships across sectors. Commerce has run two one-time programs focused on the use of woody biomass, resulting in diverse projects in all stages of development. More programs that enable the development of woody waste biomass projects with co-benefits such as "reducing forest fire hazards and supporting resiliency in rural timber-dependent communities"[76] should be offered.

  - These could be used as matching funds for federal programs like the U.S. Department of Agriculture and Forestry Wood Innovations Grant, which "expands and creates markets for wood products and wood energy that support long-term, sustainable management of national forest system lands and other forest lands."

- Incentivize funding for projects that focus on efficiency and switching fuel from fossil fuel boilers to wood biomass, and the conversion to more efficient certified wood stoves in rural areas. Incentivize efficiency upgrades and/or electrification of existing wood energy technologies like wood stoves and boilers, which may cause elevated levels of indoor air pollution, especially if they are not certified or used improperly.[77] Partner with other state agencies to develop or expand programs that complement existing state or local grant programs. There are several federal programs that can be used as matching funds for the development of a state grant program.[78]

- Support recommendations from "Biomass to Biochar: Maximizing the Carbon Value," including encouraging synergies in the forestry sector, agriculture producers, academia and the private sector and other stakeholders to address supply chain constraints and other challenges[79] and incentivize the production of wood products with field trials, education, and coordinated research clusters. Leverage these synergies to support research on the co-benefits of wood products and sequestration, including soil health and wildfire risk reduction.

- Expand awareness of potential collaborations through existing resources like the USDA Northwest Climate Hubs Atlas.

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[76] Washington State Department of Commerce. (2019) *Forest Financial Assistance Program.* Retrieved April 14, 2022, from https://www.commerce.wa.gov/growing-the-economy/energy/forest-products-financial-assistance/
[77] "Wood stoves & other home heating." *Washington State Department of Ecology Air & Climate.* Retrieved March 25, 2022, from https://ecology.wa.gov/Air-Climate/Air-quality/Smoke-fire/wood-stove-info.
[78] Weiss, J. (2014, September 17). *EPA's Guide to Financing Options for Wood-burning Appliance Changeouts.* Retrieved April 27, 2022, from Environmental Protection Agency: https://www.epa.gov/system/files/documents/2022-03/finance-optionsupdated2022links.pdf
[79] Amonette, J.E., J.G. Archuleta, M.R. Fuchs, K.M. Hills, G.G. Yorgey, G. Flora, J. Hunt, H.-S. Han, B.T. Jobson, T.R. Miles, D.S. Page-Dumroese, S. Thompson, K.M. Trippe, K. Wilson, R. Baltar, K. Carloni, C. Christoforou, D.P. Collins, J. Dooley, D. Drinkard, M. Garcia-Pérez, G. Glass, K. Hoffman-Krull, M. Kauffman, D.A. Laird, W. Lei, J. Miedema, J. O'Donnell, A. Kiser, B. Pecha, C. Rodriguez-Franco, G.E. Scheve, C. Sprenger, B. Springsteen, and E. Wheeler. (2021). *Biomass to Biochar: Maximizing the Carbon Value.* Report by Center for Sustaining Agriculture and Natural Resources, Washington State University, Pullman WA. csanr.wsu.edu/biomass2biochar (Pgs. 25-54)

3.D) Recommended strategy: Use a climate-smart agriculture and forestry framework for policy design, referenced in [President Biden's Executive Order 14008](#), [U.S. Department of Agriculture](#) and the [World Bank,](#) as outlined by "three principles: Increased productivity (sustainably intensifying agriculture); enhanced resilience (adapting to climate change); reduced emissions (mitigating greenhouse gas emissions)". [80]

Commerce should encourage the agriculture and forestry sector to incorporate a climate-smart agriculture and forestry framework especially focused on increased localized carbon sequestration, increased water smart and energy efficient practices, improved nutrient management, increased agroforestry, and other practices to reduce emissions and enhance resilience. Although climate-smart practices may not be considered within the scope of traditional clean energy, Commerce included a focus on carbon sequestration and other climate-smart practices due to the specific language around eligible grants technologies in the proviso and 2021 State Energy Strategy recommendations to develop "opportunities for various methods biological sequestration as informed by DNR's Carbon Sequestration Advisory Group,"[81] and alignment with broader state emissions reductions goals. [82]

- ⭕ Addresses barriers:
  - Climate policy goals do not adequately consider Washington forestry and agriculture industry needs[83]
- ⭕ Example, strategies, programs and policy mechanisms:
  - Continue to incentivize voluntary conservation stewardship for the agriculture sector (due to its low margins) and support the Sustainable Farms and Fields grant program, which provides increased technical and financial support to farmers, ranchers, and aquaculturists, including:
    - Cost sharing to implement climate-smart Best Management Practices (BMPs) and purchasing equipment
    - Financial assistance to help cover the cost of materials and supplies, including seeds for cover crops, soil amendments and other expenses for climate-smart practices
  - Support legislation such as [HB1631](#), which expands Sustainable Farms and Fields to help farmers and food processors reduce their carbon footprint by:
    - Providing consultations to increase energy efficiency and incorporate more green energy options.

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[80] World Bank. (2021, April 5). *Climate-Smart Agriculture*. Retrieved March 23, 2022, from The World Bank: https://www.worldbank.org/en/topic/climate-smart-agriculture; Buda, D. A. (n.d.). *USDA Northeast Climate Hubs*. Retrieved March 5, 2022, from https://www.climatehubs.usda.gov/hubs/northeast/topic/role-climate-smart-agriculture-climate-adaptation-and-mitigation-northeast

[81] Washington State Department of Commerce. (2020, December). *Washington State 2021 State Energy Strategy*. Retrieved April 2, 2021 from: https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/. (pg. 103)

[82] Please see the Introduction, "Approach to rural clean energy in this report," for an explanation on the broad definition of rural clean energy used for this report.

[83] This was one of the barriers identified and ranked by the work group but doesn't necessarily reflect Commerce's perspective. This barrier ranked as one of the lowest priority and least urgent to address, which is why the report does not dedicate any specific sections to the issue.

- "Informing conservation districts, farmers and food processors about local, state and federal funding opportunities to implement practices that help reduce the carbon footprint of farmers and food processors."[84]

- Commerce supports implementation of the Department of Ecology's [Use Food Well Washington Plan](#), including state grant funding for statewide food waste reduction and expansion of anaerobic digestion at Wastewater Treatment and Water Resource Reclamation Facilities (WRRF), compost facilities, farms and other locations. These actions also support Use Food Well Washington's recommendations 3, 5, 7, 14, 22, 24, 25, 27 and 29.[85] By prioritizing food waste and wasted food reduction strategies, including prevention, rescue and recovery, Washington can meet the 2030 food waste reduction goals while building a more resilient food system and reducing our climate impact.

  - Reduce food waste, address food insecurity and support farmer livelihoods by incentivizing partnerships among local producers and businesses, improving distribution channels, and expanding access to community supported agriculture (CSA), food rescue programs and markets for lower grade produce, particularly in food deserts.[86]

  - Increased use of small-scale anaerobic digesters in Washington could provide both cost savings and environmental benefits and result in food waste reductions. This suggestion is in alignment with recommendations increasing the use of small-scale anaerobic digesters, outlined in the Use Food Well report (recommendations 14, 27 and 29). For example, the report recommends supporting "feasibility studies and planning to identify opportunities for small-scale Anaerobic Digesters (AD) to provide viable food waste management options for small generators, rural residents, farms, schools and businesses, and island communities."[87] [88]

- Expand Clean Energy Fund dairy digester programs to include more eligible applicants, different types of digester feedstocks, and related technologies.[89] Dairy digester projects provide many benefits to farmers, including better nutrient management, reduction of greenhouse gases, generation of renewable energy, and additional economic opportunities. The program would benefit from expansion to additional types of digesters and related technologies, additional feedstocks such as food waste, wastewater and other organics, and opportunities for non-farm as well as farm applicants. This program should also provide funding for feasibility studies and research and development of nutrient recovery in conjunction with clean energy generation, as well as opportunities for farmers to create and market organic fertilizers and other revenue-generating products.

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[84] Supporting Washington's food production system by providing technical assistance in support of improved voluntary environmental stewardship, WA. HB 1631 (2022). https://app.leg.wa.gov/billsummary?billnumber=1631&year=2022

[85] Ecology, Washington State Department of. (2021, July 07). *Use Food Well Washington Plan*. Retrieved March 22, 2022, from https://apps.ecology.wa.gov/publications/documents/2107027.pdf (Pgs. 28-78)

[86] Defined by USDA's Economic Research Service as "areas with limited access to affordable and nutritious food." (Sources: Use Food Well Washington Plan Recommendations 3, 5, 7, 24, 25, 22 and 24), Food Policy Forum, WA Ecology, USDA and FRAC)

[87] Washington State Department of Ecology. (2021, July 07). *Use Food Well Washington Plan*. Retrieved March 22, 2022, from https://apps.ecology.wa.gov/publications/documents/2107027.pdf, (Pg. 78)

[88] Part of this recommendation is in alignment with the USDA Climate-Smart Agriculture and Forestry Strategy: 90 Day Progress Report. U.S. Department of Agriculture. USDA. (2021). *Climate-Smart Agriculture and Forestry Strategy: 90-Day Progress Report*. Retrieved February 2022, from Climate-Smart Agriculture and Forestry Strategy: 90-Day Progress Report (usda.gov). (Pg. 7)

[89] See also Recommendation 2A: Expand existing state grant programs

Goal 3: Case Study[90]

> **The Lands Council Biochar project through the Forest Products Financial Assistance Program**
> The high cost of disposing waste wood residuals deposited in slash piles is a challenge regarding active forest management and fuels reduction. Unmanaged post-harvest timber slash piles can also pose a risk of igniting wildfires. To address this issue, the Lands Council received a Washington State Department of Commerce grant in 2019 through the Forest Products Financial Assistance Program (FPFAP) to convert residual woody debris to biochar, which will be left onsite for forest health and carbon sequestration. Biochar, a solid carbon material, has multiple benefits including water retention and use as a soil amendment.
>
> The project uses a portable Oregon Kiln, reducing the high cost of material transport from a centralized facility. The kiln is easily transportable from site to site. Since the project initiated in 2019, the Lands Council has conducted two successful demonstration burns attended by various groups who are interested in using biochar on their landscape from the private sector, Tribes, private landowners and conservation districts.
>
> According to the Lands Council's FPFAP quarterly progress report from Q4 2021, "The Lands Council is continuing conversations with regional partners to utilize the biochar equipment for biochar creation. These partners are also looking at ways to monetize the creation of biochar in an effort to offset the cost of forest fuels reduction projects."

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[90] The write-up is based on the Lands Council FPFAP Grant Application (2019) and Quarterly grant reports between 2020-2022.

Goal 4: Ensure the equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding for clean energy projects in rural communities.

Washington's rural communities are not all alike, though many face similar challenges that are important to address as we consider pathways to a clean energy economy in our rural areas. These challenges may include higher poverty rates, higher energy burdens[91] and higher unemployment rates.[92] [93] Additional factors might include limited training and employment opportunities, limited transit systems and transportation options, lower percentage of health insurance, worse health outcomes,[94] buildings in need of weatherization and lack of access to services such as broadband.[95] [96] In some cases, they also have energy security challenges, which can be exacerbated by climate emergencies such as wildfire, drought and flooding.

Washington must ensure that all communities across the state — regardless of whether they are urban or rural, or the racial or income demographics — can participate in decisions around clean energy opportunities including siting and grants, and receive benefits from a transition to a clean energy economy. The HEAL Act (SB 5141), which passed in 2021, is a historic step towards achieving this goal by requiring seven state agencies to collectively address environmental health disparities in communities across Washington. This includes conducting community engagement that centers people most impacted by pollution, incorporating environmental justice in strategic planning, budgeting and funding decisions, developing a Tribal consultation framework, and conducting environmental justice assessments on programs and policies.

Additionally, the Clean Energy Fund 5 mandates that programs use an equity and environmental justice lens for program structure and participation, and prioritize projects that provide benefits to Tribes and communities with high energy and environmental burdens. These are initial steps around increasing equitable participation around program design and benefits, but more work is needed to understand and measure current gaps around programs and policies for rural communities. Additionally, Washington state agencies and the Legislature need to do more to identify and implement new policies and practices that improve equity and environmental justice outcomes across the state, including in rural communities.

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[91] Ma, Ookie, Krystal Laymon, Megan Day, Ricardo Oliveira, Jon Weers, and Aaron Vimont. (2019). *Low-Income Energy Affordability Data (LEAD) Tool Methodology.* Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-74249. https://www.nrel.gov/docs/fy19osti/74249.pdf

[92] USDA, Economic Research Service. (2022, February 4). *State Fact Sheets: Washington.* Retrieved March 31, 2022, from https://data.ers.usda.gov/reports.aspx?StateFIPS=53&StateName=Washington&ID=17854

[93] Note that this data set uses a definition of rural defined by the Office of Management and Budget.

[94] Hailu, Asnake PhD. Washington State Department of Health. (2016, October 27). *Guidelines for Using Rural-Urban Classification* Systems for Community Health Assessment. Retrieved May 1, 2022, from: Guidelines For Using Rural-Urban Classification Systems for Public Health Assessment (wa.gov). (Pg 26).

[95] Washington Broadband Office. *Washington Broadband Survey Results.* Retrieved February 24, 2022, from https://www.arcgis.com/apps/dashboards/4bcf7c77ecac475eb467e9df0028d05b

[96] Shapiro, N. (2021, December 19). *Vast numbers of people in Washington are shut out of the digital world; will massive government funding solve the problem?* Retrieved May 12, 2022, from: https://www.seattletimes.com/seattle-news/when-the-world-turned-digital-hundreds-of-thousands-of-washingtonians-were-shut-out-will-massive-government-funding-solve-the-problem/

4.A) Recommended strategy: Partner with Tribal nations to prioritize energy sovereignty.

Discussions from the work group and Tribal information session indicated that, despite differences, many Tribes want increased energy independence and capacity building around clean energy development. Commerce and other funding agencies should collaborate with Tribal nations to understand unique differences and incentivize energy independence and capacity building through grants and other programs. Funding agencies should complete formal consultations to ensure that programs are tailored to unique needs of Tribal nations and partner with Tribes to facilitate collaboration among grant recipients.

○ Addresses barriers:
- Lack of programs tailored for rural use cases
- Access to capital
- Access to information

○ Example strategies, programs and policy mechanisms:
- Partner with Tribes to provide the education necessary to present an energy sovereignty plan to Tribal elders and leaders. Encourage Tribal partners reach out to elected leadership and invite elders to meetings.
- Provide funding to develop a customizable blueprint for Tribes who are new to energy sovereignty goals. Recognizing that while Tribes are not monolithic, obtaining energy sovereignty may be unchartered territory and an adaptable roadmap could be beneficial.
- In grant programs, prioritize projects that will result in Tribal ownership of the asset.
- Provide funding for clean energy training programs.
- Partner with Tribes to:
  - Provide a forum or workshops where applicants and grantees can share information on projects and lessons learned. The workshops could be modeled on those hosted by the Department of Housing and Urban Development. [97]
  - Host or provide funding for a Tribal clean energy mentorship program, where Tribes seeking to develop clean energy projects are matched with other Tribes that have already developed or deployed that specific type of clean energy.

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[97] This recommendation came from the Information session that is referenced in Appendix B

4.B) Recommended strategy: Provide ample and diverse opportunities for community input around grant design and ensure accessibility around applying to funding opportunities

> **"In every size of community — lowest income residents, and least served residents don't come forward — either they don't know how or don't trust the process. They sometimes hear from community groups that don't work for them. Need better paths for low income residents to raise their voices where they welcome that, believe in that, and are encouraged."** — Work group member

State funding agencies recognize that BIPOC communities, migrant farmers, low-income communities and other historically marginalized groups have high barriers to participation in project siting and program design decisions. Although language translation of program materials should be an initial step toward equitable participation, efforts must be made to engage and build trust with underserved communities. A work group member suggested that community engagement should be "Up-front built into programs, beginning with a Community Needs Assessment, and finding a community champion."

This work could align with the recommended strategies in Goals 2 and 3. Efforts should be made to ensure that rural community members have ample and diverse opportunities to participate in discussions around local control of their energy future, grant program design and other opportunities before deadlines. Government agencies should also consider the unique perspectives of individual rural communities and the lifestyle of rural residents. An online public comment said, "These are personal and social differences that should be considered and respected, they are not things that are to be fixed."

State agencies should ensure that they reduce barriers to participation, including but not limited to literacy barriers, language barriers and internet access.

- Addresses barriers:
  - Access to information
  - Lack of programs tailored for rural use cases
  - Cultural and language barriers
- Example strategies programs and policy mechanisms:

> **"Trust takes a long time to build so it's important to start on microchanges."** — Work group member

- Funding agencies should ensure that comment opportunities and grant materials are translated into a variety of languages. Other barriers that might prevent participation from certain groups should also be considered.[98] State agencies should provide in-person meetings with access to translators and interpreters and opportunities to submit written comments through the mail, in addition to providing opportunities to comment through online portals.
- Create awareness through various communication channels, including internet, social media, radio, email, and printed materials/brochures in various languages posted in churches, post offices, libraries,

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[98] Rasmussen, E., Lopez, E., & Fernald, H. (2020). *Environmental Justice Task Force: Recommendations for Prioritizing EJ in Washington State Government.* Page 64. Retrieved May 25, 2022, from Environmental Justice Task Force Information Page: https://apps.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=EJTF%20Report_FINAL_39bdb601-508e-4711-b1ca-6e8c730d57bf.pdf

apartment buildings, high schools and supermarkets. Several public comments suggested alternatives to online notices such as local papers, mailed flyers and local chambers of commerce.

- Reduce barriers to in-person participation. Provide compensation to participate in program design and stakeholder meetings, provide childcare and food during meetings, allow more time for community liaisons to complete engagement and gather feedback, and ensure meeting locations are accessible and near public transportation. The recently passed bill SB 5793 will aid in this effort. It requires stipends for people whose lived experience provides a foundation for this work.
- Provide alternatives to online applications, which some rural communities may have trouble accessing due to broadband issues. In developing grants, require that the opportunity is advertised through a variety of media and translated in a variety of languages.
- Develop policies or laws that require utilities and other industries to partner or work with highly impacted communities for grant applications.

4.C) Recommended strategy: Develop a framework for measuring and tracking the equitable distribution and impact of state capital investments, and to guide future investments.

It is imperative to begin with a clear sense of how state investments are currently made, including which locations are receiving investments, which communities benefit, and what equity lessons can be drawn from those investments. The HEAL Act will require an environmental justice lens be applied to the creation of new grant programs, though work is needed to assess and improve existing programs. The Clean Energy Fund has completed preliminary analysis on select grant programs using the Government Alliance on Race and Equity (GARE) framework. However, a more comprehensive analysis is needed to assess the distribution of its investments and other state capital investments. Such assessments should examine the distribution of funds to rural and non-rural areas, as well as which communities benefit from the investments, including the extent to which vulnerable populations benefit.

Critically, this work will require establishing and using clear terminology and definitions. At present, there are inconsistencies in how the term "rural" is defined, which will lead to challenges in comparing data across programs and entities. Other important terms include "overburdened communities" and "vulnerable populations," both of which are defined in the HEAL Act, although awareness of these terms is still growing as is the sense of how they should be used.[99]

Commerce will identify ways tools, such as the Environmental Health Disparities (EHD) map, can be used to identify geographic areas where overburdened communities are located in Washington, as well as the vulnerable populations that must be at the table to define and shape clean energy and resilience plans and actions. Such populations may include but are not limited to Tribal members, immigrants, people with limited English proficiency, individuals with lower incomes or unemployed workers, communities experiencing climate impacts, lower water and air quality, hazards such as wildfire smoke and power reliability impacts, and other factors.

- Addresses barriers:
  - Lack of access to capital
  - Access to information
  - Lack of programs tailored for rural use cases

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[99] Washington Healthy Environment for All Act, WA. SB 5141 (2022).
https://app.leg.wa.gov/billsummary?BillNumber=5141&Initiative=false&Year=2021

- Example strategies, programs and policy mechanisms:
  - Leverage work from the HEAL Act to establish a methodology for measuring the equitable distribution of benefits from clean energy projects.
  - Collaborate with environmental justice organizations, community organizations, Tribes, academia, and state and federal agencies to collect and analyze relevant data around clean energy investments and crosscutting energy and environmental justice issues in rural communities.
  - Use data and indicators to measure the equitable distribution of clean energy projects in Washington. These include but are not limited to: Local grid resilience, frequency of extreme weather events and climate change impacts, pesticide exposure, proximity to concentrated animal feeding operations, water and air quality, distributed energy for lower income customers, local renewable energy generation and consumption, renewable project investments (private and public), environmental health disparities, number of BIPOC farmers and land owners, small farmers (determined by revenue), and new applicants receiving investments.[100] [101] [102] [103]
  - Conduct a gap analysis on the distribution of clean energy projects throughout rural communities in the state.
  - Ensure this framework is used to monitor the outcomes of state and federal grant contracts.
  - Update the Washington Environmental Health Disparities Map or other tools that help identify overburdened communities in rural areas or otherwise guide equitable investments in rural Washington. This could involve working with the Washington State Department of Health to identify and seek funding to increase access to additional data layers related to rural communities, which could be used as an overlay or contribution to use of the EHD map.
  - Develop a consortium of government, industry, academic and small private land stakeholders to track, analyze and monitor data relating key agreed-upon metrics. Evaluated metrics could include but are not limited to avoided costs related to fire suppression, supply chain efficiencies, carbon sequestration potential, local forestry ownership, local job creation potential and ecosystem services. Needed partners will vary depending on the metrics evaluated. For example, in the area of carbon sequestration for agriculture, institutions including but not limited to College of Agriculture, Human and Natural Resource Sciences at Washington State University; and Clean Energy Institute at University of Washington could lead this work with support from the Washington Department of Natural Resources, the Department of Agriculture and other state agencies and regional federal agencies.

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[100] EPA, Environmental Protection Agency. (2021, May 21). *White House Environmental Justice Advisory Council Final Report Executive Order 14008*. Retrieved 2022 29, 2022, from White House Environmental Justice Advisory Council: https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf

[101] Lindwall, C. (2019, July 31). *Industrial Agricultural Pollution 101*. Retrieved April 29, 2022, from NRDC: https://www.nrdc.org/stories/industrial-agricultural-pollution-101

[102] USDA National Agricultural Library. (n.d.) *Environmental Justice Resources*. Retrieved April 29, 2022, from: https://www.nal.usda.gov/legacy/ric/environmental-justice-resources.

[103] USDA Economic Research Service. (2019, September 09). Retrieved April 29, 2022, from https://www.ers.usda.gov/topics/natural-resources-environment/environmental-quality/

Goal 4: Case Study

Pierce County Rural Climate Dialogues

In order to involve rural communities as key decision makers in local planning and implementation of climate change strategies, the Pierce Conservation District commissioned the Rural Climate Dialogues in June 2021. The event was modeled on the citizens' jury method of deliberative democracy and facilitated through the [Center for New Democratic Processes](#).

During the five-day deliberative virtual event, participants were tasked with authoring a community action plan focused on responding to climate change and extreme weather events. Participants were randomly selected from a pool of nearly 200 applicants to reflect the demographic makeup of east and south Pierce County in terms of age, gender, ethnicity, education, political affiliation and region.

The event began with presentations by subject matter experts on climate change, public health and emergency preparedness, and the impacts of climate change and extreme weather events on public health and disaster management on rural communities. After the presentations, the citizen jurors were tasked with developing recommendations to mitigate the negative impacts of climate change and increase resiliency for rural communities. The [report](#) informed the Pierce Conservation District's Climate Resiliency 2021-2025 Strategic Goals and Targets and will be shared with decision makers to inform future planning.

Conclusion

The Rural Energy Work Group complemented work of the 2021 State Energy Strategy by providing recommended strategies for increasing clean energy investments in rural communities and leveraging state grants with federal funding developed based on the needs of rural communities. Through the convening of the work group and stakeholder outreach, Commerce found that clean energy can support many rural priorities regardless of emissions reductions. Washington's rural communities desire more opportunities for clean energy, but many have limited capacity to apply for and manage state and federal funding opportunities.

Commerce and the state of Washington need to do more to increase clean energy investments and reduce barriers around applying to funding. We recommend that the Legislature:

○ **Expand and support capacity and technical expertise both from the state and within rural communities to access and respond to clean energy needs, opportunities and grants.**

○ **Increase financing opportunities for clean energy projects and infrastructure improvements that support community energy resilience and while providing co-benefits for economic and workforce development.**

○ **Prioritize sustainable, economically viable and climate-smart business models for the agriculture and forestry sectors.**

○ **Ensure equitable participation in program design, equitable distribution of benefits and reduction of burdens, and equitable access to funding for clean energy projects in rural communities.**

More research and engagement is needed to understand and support the specific priorities of Washington's rural communities. Although this report begins this process through outreach and convening the work group, Commerce recognizes that not every rural community is the same. To understand those diverse experiences, it is critical to solicit more feedback and reduce barriers to participation for individuals with lived experience across these communities. Recently passed bills like SB 5793, which provides stipends for low-income and underrepresented community members of state boards, commissions, councils, committees and similar groups, may help in this process by providing the framework to compensate individuals who are low income or with lived experience to participate in activities including committees and work groups.

> **"Without technical assistance, most rural communities, can't move forward with projects at any scale (individual business owner, etc.) [and] need help from outside sources. Most technical assistance is provided by someone who has a financial gain around decisions (land owner looking for cheap lease on property), so 3rd party unbiased technical assistance [is] invaluable."** — Work group discussion comments.

Commerce has identified areas where more funding is needed to achieve the goals throughout this report. More funding should be dedicated to:

- New grant opportunities that support rural community and Tribal needs
- New programs related to carbon sequestration incentives for agriculture and forest owners
- Continued outreach to agriculture and forestry communities, rural communities and Tribes
- Increased technical assistance for communities to access funding and other opportunities

The technical assistance should include funding for government agencies to provide assistance around the grant applications, contract and project management, and to connect communities to resources. Additional funding should be provided to enable rural communities to build capacity and develop "boots on the ground" local technical experts to help with all stages of clean energy projects.

The strategic plan will also provide an actionable roadmap for short-, medium- and long-term steps to achieve each of the four goals, advance towards more equitable outcomes, and accomplish many of the recommended strategies. Throughout 2022, Commerce will partner with sister agencies and other stakeholders to determine key performance metrics for each of the indicators in the strategic plan. Commerce remains committed to continued engagement with rural communities and Tribes to develop programs that respond to their needs.

Appendix A: Work Group Exercises

Meeting #1: Breakout room discussion notes categorized by theme

Work group members were divided into breakout rooms and asked:

- **Question #1:** "What do rural communities need irrespective of rural energy?"
  - Follow up: "How have these needs changed from previous years with impacts from COVID-19 and economic repercussions?"
- **Question #2:** "What do you already know about your community partners and their priorities and needs? Whose voice is not in the room?"

Priority area	Discussion comments (comments are mostly unedited with revisions for clarity)
Agriculture/climate-smart agriculture, wood biomass and carbon sequestration	· Increased need to help the agriculture community. Explore localized, distributed, carbon sequestration and other climate-smart agriculture practices
	· Need to find opportunities and ways for agriculture communities in rural areas stay in business – water smart practices and energy efficient practice helps compliance for issues but also helps them stay in business! Famers are really struggling and COVID-19 was another blow for them
	· Use of woody waste and carbon sequestration technology. The results of forest fires can be effectively used for agriculture. There needs to be a better understanding of technology, business development, policy development
Broadband, digital equity	· Increase need for broadband. Broadband had impacts to educators and students in small communities
	· Many communities have no broadband internet, but are prolific smartphone users
	· Lack of broadband has made communication during wildfires or other emergencies a challenge
	· Without broadband many communities cannot participate in statewide or broader level in convening work
	· Lack of internet connectivity, increased dependency on remote devices (telehealth). Communities have creative ways to provide internet (Wi-Fi on school bus)
Clean Energy projects/ Infrastructure	· Rural communities need improvements in infrastructure to support education, economic development and workforce training opportunities
	· Missing knowledge of the process to get large-scale energy projects off the ground
	· RNG for local transportation
	· Challenges of getting small projects due to installers [labor], increased costs
	· General concerns with energy projects
	· Cost increases including shipping costs, building materials and other supplies have made it challenge to prioritize projects and meet timelines

Priority area	Discussion comments (comments are mostly unedited with revisions for clarity)
	· Need to increase EV charging within rural communities rather than near the highway. This will ensure that the benefits flow to the local economy
	· Renewable energy [including DERs] and utilities incorporating into their plans
	· Transmission and Distribution infrastructure insufficient
	· Communities need improvements in wastewater treatment and conversion infrastructure
	· Need for reliable, inexpensive energy and redundancy in systems
	· Siting of industrial scale solar. Some counties are struggling with how this impacts rural character and wildlife habitat
Communities	· COVID has made it more challenging for large families to gather as groups
	· Young people leaving rural areas
	· Technology improvements replacing labor and driving population decline
	· Challenges for families to gather in large group during the pandemic
	· Rural communities have unique needs despite commonalities
	· The COVID impact to Tribes has been different because the communities many live in isolated communities. When families gather together in larger groups (funeral or other activities) then [Covid] is a bigger impact
	· Connect with energy emergencies
Economic impacts	· Economic challenges for the dairy industry have been compounded by COVID. Most dairy producers are losing money and very few are building new biodigester projects
	· Economic challenge for agriculture. Technology replacing labor
	· Economic challenges – No economic development, small tax base, lots of Federal lands, not a lot of infrastructure
Food security	· Food security issues compounded by Covid. Lots of food deserts in rural areas, grocery stores have been unable to stay open and transportation of food (Getting food from the farms where it's needed) have been major issues
Health care	· Needs for ambulances in rural communities. Health care issues including shortage of local ambulances. Because hospitals and urgent care centers have filled up, ambulances have had to be dispatched very far
	· Health care infrastructure. Hospitals are over capacity especially urgent care centers/units
	· Covid has triggered increase of telehealth
Housing	· Housing has been a strain (during the pandemic) with urban vacation home renters fleeing to rural areas (especially where there is broadband access)

Priority area	Discussion comments (comments are mostly unedited with revisions for clarity)
	· Housing system as a whole is a challenge: there is a shortage of available housing and a lot of existing housing needs to be upgraded or weatherized
	· Few contractors want to convert buildings to all electric
Workforce development	· Technology improvements replacing labor and driving population decline
	· Skill gap in local workforce
	· Struggle to modernize municipal infrastructure due to staff limitations
	· Not enough energy auditors to meet increased demand for energy efficiency, ductless heat pumps and cooling
Wildfires	· Forest fires and increasing ignition risk around power lines
	· Forest fires have increased need to harvest wood
	· Wildfires and other emergencies impact cell phone reception, day to day communication

Gaps/barriers in grant programs and/or government benefits
Residential programs: High demand for residential grant programs. Many people are interested in Rural Energy for America Program (REAP) through USDA, though residential applicants are not eligible.
Narrow set of grant programs: • Grant applications narrowly target specific set of applicants. • People have different needs so it's difficult to translate the idea into the narrow box of a grant program.
Technical Assistance: • Some organizations have grant writers, but they are often over capacity with other obligations or may not have the technical knowledge required for certain grants. • Commerce grants complicated and challenging to organizations without technical assistance. Many groups won't even attempt to apply. • It is challenging to apply for upfront [state] grants, unlike federal grants. • Organic farmers and small communities need grant writers and technical support to apply to grants.
Small governments not well positioned to take advantage of investments.
Early stage businesses and farmers have challenges getting funding: Both have to be in business for a certain length of time to take advantage of some programs. Few businesses and farmers can take advantage of tax credits.
Low income residents: • Cannot apply for loans because of credit scores. • In every size of community—lowest income residents, and least served residents don't come forward—either they don't know how or don't trust the process.   They sometimes hear from community groups that don't work for them. Need better paths for low income residents to raise their voices where they welcome that, believe in that, and are encouraged.
Organizations don't want to apply for loans because they don't want to accumulate more debt.

Homework #2
Exercise #1

Work group members completed a homework exercise where they were asked to rank technologies by priority on how well it addresses the rural community priority along the top of the table (such as agriculture, broadband, etc.). Technologies are based on both the 2021 State Energy Strategy and the proviso language for the Rural Clean Energy Grants.

n=10

Category	Technology (State Energy Strategy and Clean Energy Innovation Grants Proviso)	AVERAGE	Agriculture	Broadband	Infrastructure	Community Resilience	Economic Impacts	Food Security	Healthcare	Housing	Workforce Development	Wildfires
Additional Technologies	Improve Early Warning Systems for Rural Communities, Wild Fires, Storm Alerts ect..	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Buildings	Technologies to address concern about outages with electric-only energy system	1.4	1.4	1.6	1.2	1.0	1.3	1.6	1.1	1.3	1.7	2.1
Electricity	Projects to Enhance Resilience	1.4	1.4	1.5	1.2	1.1	1.2	1.7	1.5	1.5	1.5	1.7
Broadband	Technologies to increase access to broadband	1.5	1.5	1.0	1.1	1.1	1.0	2.7	1.2	1.8	1.1	2.7
Buildings	Energy Efficiency	1.5	1.3	2.2	1.1	1.0	1.1	1.9	1.6	1.1	1.4	2.5
Electricity	Smart Grid and Grid Controls	1.5	1.8	1.3	1.1	1.1	1.3	1.9	1.8	1.7	1.5	1.7
Other	Pilot Projects	1.5	1.4	1.6	1.5	1.4	1.3	1.7	1.7	1.5	1.6	1.7
Other	Predevelopment	1.5	1.4	1.6	1.5	1.4	1.3	1.7	1.7	1.5	1.6	1.7
Other	Research and Development	1.6	1.5	1.7	1.4	1.4	1.3	1.9	1.9	1.5	1.4	1.7
Transportation	Battery Technologies	1.6	1.3	1.8	1.2	1.2	1.2	2.0	1.5	1.7	1.6	2.4
Other	Tools to Inform Rural Project Development	1.6	1.5	1.6	1.6	1.4	1.4	1.8	1.7	1.8	1.4	1.7
Electricity	Transmission and Distribution	1.6	2.0	1.8	1.0	1.1	1.3	2.0	1.9	1.7	1.5	1.8
Electricity	Advanced Energy Storage	1.6	1.6	2.2	1.2	1.1	1.1	2.0	1.9	1.5	1.3	2.3
Other	Data Dashboards	1.6	1.7	1.4	1.7	1.4	1.7	1.8	1.5	1.6	1.7	1.7
Electricity	Solar	1.6	1.3	2.5	1.0	1.2	1.1	2.0	2.1	1.5	1.1	2.4
Other	Field Trials	1.6	1.3	1.9	1.7	1.5	1.3	1.6	2.0	1.8	1.5	1.7
Electricity	Beneficial Electrification	1.7	1.7	1.8	1.5	1.5	1.5	2.1	2.1	1.8	1.5	1.9
Buildings	Grid-Connected and High-Efficiency Electric Heat Pumps and Water Heaters	1.8	1.9	2.7	1.2	1.2	1.5	2.1	1.8	1.3	1.4	2.5
Buildings	Building Electrification	1.8	1.8	2.2	1.3	1.2	1.4	2.4	2.1	1.3	1.4	2.6
Electricity	Wind	1.8	1.4	2.8	1.2	1.2	1.1	2.2	2.3	2.1	1.1	2.4
Industry/Agriculture	Organic Waste Management	1.8	1.1	2.6	1.6	1.5	1.5	1.6	2.0	2.1	1.5	2.3
Additional Technologies	Microgrids	1.8	2.0	2.0	2.0	1.0	2.0	1.0	1.0	2.0	2.0	3.0
Electricity	Bioenergy	1.8	1.2	2.9	1.3	1.6	1.4	2.0	2.2	2.1	1.4	2.0
Transportation	Efficient Freight Vehicles	1.9	1.1	2.6	1.3	1.7	1.4	1.7	2.3	2.7	1.5	2.4
Buildings	Heat pumps with lower GWP refrigerants	1.9	1.8	2.8	1.5	1.4	1.8	2.0	1.7	1.3	1.8	2.6
Buildings	Low-Carbon Building Materials	1.9	2.0	2.6	1.3	1.7	1.5	2.5	2.1	1.2	1.4	2.6
Transportation	Hydrogen Fuel Cells	1.9	1.6	2.4	1.3	1.6	1.5	2.2	2.2	2.3	1.5	2.4
Electricity	Hydrokinetic	1.9	2.0	2.5	1.6	1.5	1.4	2.3	2.3	2.1	1.3	2.3
Industry/Agriculture	Advanced Bioenergy and Biorefining	1.9	1.3	2.7	1.5	1.6	1.5	2.1	2.5	2.3	1.5	2.4
Industry/Agriculture	Development of New Earth Abundant and Lightweight Materials	1.9	1.9	2.4	1.8	1.6	1.4	2.4	2.0	1.9	1.5	2.5
Electricity	Hydrogen	1.9	2.2	2.6	1.3	1.5	1.4	2.4	2.2	2.2	1.3	2.3
Buildings	Low Emissions Refrigerants	2.0	1.5	2.9	1.7	1.8	1.9	1.6	1.7	1.6	2.2	2.7
Industry/Agriculture	Membrane separation technologies	2.0	1.7	2.4	2.0	1.7	1.5	2.2	2.0	2.2	1.5	2.4
Electricity	Geothermal	2.0	1.8	2.7	1.7	1.5	1.4	2.4	2.4	1.9	1.4	2.4
Industry/Agriculture	Carbon Capture, Use and Storage: Direct Air and Flue Gas Capture	2.0	1.7	2.8	1.3	1.6	1.8	2.4	2.3	2.2	1.7	2.0
Buildings	Demand Response	2.0	2.2	2.3	1.8	1.4	1.6	2.4	2.1	1.8	1.9	2.4
Industry/Agriculture	Hydrogen Produced from Renewable Resources	2.0	1.9	2.6	1.4	1.5	1.5	2.3	2.1	2.4	1.5	2.7
Transportation	Advanced Biofuels	2.0	1.2	2.6	1.6	1.8	1.2	1.9	2.4	2.7	1.8	2.7
Industry/Agriculture	Dairy digesters	2.0	1.0	2.9	1.8	1.5	1.4	1.8	2.4	2.6	1.7	2.8
Transportation	Electric Vehicles	2.0	1.7	2.4	1.1	1.6	1.5	2.6	2.5	2.0	1.7	2.9
Industry/Agriculture	Battery Recycling	2.0	2.1	2.7	1.5	1.4	1.5	2.2	2.0	2.3	1.6	2.7
Transportation	Hydrogen Produced from Renewable Resources	2.0	1.6	2.8	1.5	1.6	1.5	2.2	2.4	2.3	1.7	2.5
Industry/Agriculture	Nutrient recovery	2.0	1.1	2.8	2.2	1.5	1.6	1.7	2.3	2.5	1.7	2.7
Transportation	Renewable Hydrogen Storage and Distribution	2.0	1.7	2.8	1.5	1.5	1.5	2.2	2.4	2.3	1.6	2.6
Industry/Agriculture	Renewable Hydrogen Storage, Distribution and Dispensing	2.1	2.0	2.6	1.4	1.6	1.4	2.5	2.4	2.4	1.6	2.8
Industry/Agriculture	Carbon sequestration: Biological	2.1	1.1	2.8	2.2	1.7	1.7	2.3	2.6	2.7	1.8	1.9
Additional Technologies	Biochar	2.1	1.0	3.0	3.0	1.0	2.0	2.0	3.0	3.0	2.0	1.0
Transportation	Electric or Hybrid Short-Haul Aircraft	2.1	2.1	2.5	1.5	1.9	1.7	2.4	2.2	2.7	2.1	2.2
Transportation	Electric or Hybrid Marine Vessels	2.2	2.1	2.7	1.4	1.7	1.5	2.3	2.4	2.6	2.0	2.8
Industry/Agriculture	Carbon Capture, Use and Storage: Geological Storage	2.2	1.9	2.7	1.9	1.7	1.7	2.4	2.5	2.6	1.7	2.5
Additional Technologies	On farm efficiency projects	2.2	1.0	3.0	2.0	2.0	1.0	2.0	3.0	3.0	2.0	3.0
Additional Technologies	Conversion to efficient irrigation systems or dry farming techniques	2.3	1.0	3.0	3.0	1.0	2.0	1.0	3.0	3.0	3.0	3.0
Additional Technologies	Irrigation and other farm equipment energy efficiency projects (e.g. variable frequency pumps, dairy alle	2.3	1	3	3	1	2	1	3	3	3	3

Exercise #2

Work group members were asked: "What are barriers to meeting the needs of rural communities? What might rural communities need to address these issues?"

Work group members were asked to list recommendations on what rural communities need to address these issues. Commerce staff took the results and grouped similar barriers into categories.

Meeting #2

Work group members were asked to rank each of the barriers based on how significant the impact to rural communities would be from addressing that issue. They were then asked to rank the urgency in addressing that barrier.

Importance		Urgency	
1	High	1	Short term (< 1 year)
2	Medium	2	Medium term (5 years)
3	Low	3	Long term (10 + years)

If there were duplicates of the same broader barrier, we picked the most conservative (lower score/more green = more urgent/important). Note that the colors to rank the priorities under Barriers have been inversed for clarity (e.g. more urgent/important = red). We averaged the results of the survey and summed the importance and the urgency to get the total score.

Barrier	Detail (aggregated from all meetings and homework)	Score (importance x urgency)	Score (importance + urgency)	Average importance	Average urgency
Lack of technical expertise for developing clean energy (projects)	• Lack of technical assistance/expertise/contractors to advise farmers and large property landowners (e.g. timber and forest landowners) about advantageous opportunities for carbon storage/sequestration/energy audits and efficiency. • Technical assistance needs to be "boots on the ground." Small rural communities don't have the expertise or resources to access resources or support development • Fund available for staff, and know how • Need to offset technical and administrative costs • Can we commit the funding to technical assistance, in preparing the funding application but also the contractual obligations? • Historical district, emergency structural repair of historical building -- the pre-contract and contract document, and they do not have technical assistance on staff as a community organization it is hard/impossible to fill out those requirements	1.0	2.0	1.0	1.0
Aging or inadequate rural infrastructure	• Residential buildings in rural areas (homes +20-30 years or trailer/manufactured homes) may be old and in poor condition and need upgrades prior to installation of clean energy technology • Rural infrastructure may be old and in poor condition and need upgrades prior to installation of clean energy technology • Transportation infrastructure is increasingly a need (aging roads need to be fixed, rural areas need tourism to support) • Real estate market extremely hot. Inadequate housing supply to meet the demand	1.1	2.2	1.4	0.8
Lack of programs tailored for rural use cases	• Residential Programs: While residential properties aren't eligible for REAP… • Clean energy programs are not accessible to renters • Grant applications narrowly target specific set of applicants. People have different needs so it's difficult to translate the idea into the narrow box of a grant program. • High demand for residential grant programs. Many people are interested in Rural Energy for America Program (REAP) through USDA, though residential applicants are not eligible. • Do outside investments have the communities' best interests and encourage continued adoption? • Investment needed that has the communities' long-term best interest.	1.5	2.5	1.3	1.2
Small government and rural community staffing capacity	• Small governments are understaffed and do not have capacity for project development, leveraging outside sources of funding • Up-front money to support capacity, ex. City of Ritzville, here is the approach and availability of grants- instead of going in blind • Someone do to project management will often need to be brought on board • Lack of staff for contract and program applications- the ability for a small municipality/rural county to hire third party technical assistance is difficult- • An internal person able to do grants gives that entity a leg up	1.7	2.6	1.3	1.3

Cultural and language barriers	• Cultural/language barriers with immigrant/migrant communities. Translation services for language isolated communities in rural areas (e.g. Latino farmers in Yakima Valley). • Translation services are not widely available in rural communities • Language requirements • This should be seen more broadly than just translation services, but part of a broader effort to engage with and be accessible to groups who have a number of barriers to accessing Commerce and other state resources.	1.8	2.7	1.4	1.3
Lack of workforce in rural areas to build projects.	• Lack of contractors in rural areas who have the expertise to advise and install clean energy technologies (especially distributed wind, energy auditors, geothermal, ground source heat pumps, digesters) •Without technical assistance, most rural [communities], can't move forward with projects at any scale (individual business owner, etc.) need help from outside sources. Most technical assistance provided by someone who has a financial gain around decisions (land owner looking for cheap lease on property), so 3rd party unbiased technical assistance [is] invaluable.	2.1	2.9	1.5	1.4
Access to information	• Specific information not being communicated at the level where it's needed most • In every size of community—lowest income residents, and least served residents don't come forward—either they don't know how or don't trust the process. • They sometimes hear from community groups that don't work for them. Need better paths for low income residents to raise their voices where they welcome that, believe in that, and are encouraged.	2.6	3.4	1.2	2.2
Lack of access to capital	• Cash flow challenges • Startup companies gravitate to urban centers where more resources are available • Federal funding requirements are cumbersome • Match requirements preclude groups from applying (ex sliding scale) • Cannot apply for loans because of credit scores • Organizations don't want to apply for loans because they don't want to accumulate more debt.	2.9	3.4	1.7	1.7
Rural utility role, mission and capacity	• Many PUDs, Rural Co-ops and Munis incentivized to do nothing but avoid rate increases	3.1	3.5	1.8	1.7
Rural communities attitudes (perceived or otherwise)	• Mistrust of/frustration with government • Reluctance to change • Philosophical differences in the existence of climate change and the benefits of clean energy • Reluctance of conservative populations to take government handouts • As someone who spends quite a bit of time talking about climate change with rural audiences (focusing on ag and natural resource stakeholders), I don't think that this is as much of a barrier as you think. Clean energy provides other benefits beyond addressing climate change that tend to be supported in rural communities (e.g. energy independence, jobs, etc.). I would emphasize these. I think that this is one that is perhaps not a huge issue - but it takes some thoughtfulness and intention. I think that Commerce should be able to address this one in the short term. • Stark divide around attitudes to clean energy transition • Perceptions of renewable energy in more conservative counties and communities-- if there are more barriers, it will be easier to off ramp • Many progressive goals get lumped into Covid issues • Trust takes a long time to build so it's important to start on microchanges.	4.1	4.1	1.7	2.4
Global supply chain/COVID-19	• Increasing extreme events driven by climate change are driving heat pump sales. However, with global supply chain issues, can't meet the demand	4.9	4.4	2.1	2.3

| Climate policy goals not considering forestry and agriculture industry needs | • Carbon credit markets aren't in a place right now to incentivize trees to stay in the ground on working timber forestlands. | 6.0 | 4.9 | 2.3 | 2.7 |

Appendix B: Considerations for Tribes

This section incorporates feedback received from a meeting with the Northwest Indian College, an information and listening session on February 15 2022, and public comments. Commerce recognizes that this feedback does not universally reflect the considerations of all Tribal nations. Further Tribal engagement, as recommended by frameworks in the HEAL Act and other state and agency policy, should be employed in future studies in order to weave in the unique perspectives of Tribal voices and the unique beliefs of each Tribal nation. Themes that came out of the discussions were the desire for increased energy independence, the need for more technical assistance around grant applications and renewable project installation, more grant opportunities with diverse technologies, and a centralized source of information about grants and other opportunities.

Barriers to meeting clean energy goals

Theme	Comments
Grant programs	○ Complicated solicitation documents. ○ Not enough diverse technologies represented in grant programs. Solar tends to be prioritized but there are many other important renewable technologies. ○ Not enough residential program offerings. ○ Lack of programs for off-grid systems.
Technical Assistance	○ Not enough capacity or expertise to apply to grants. ○ Technical assistance is needed but there aren't a lot of opportunities for Tribal staff to participate in the planning process.
Policy and other	○ Net metering policies. ○ Lack of financing. ○ Not having enough trained people to install clean energy projects (e.g. shortage of wind technology installers in Washington).

Solutions to reducing barriers

- Provide technical assistance.
- Provide multiple types of grants for diverse technologies beyond solar.
- Support energy sovereignty by providing training programs around all kinds of renewable technologies, building expertise within communities rather than outsourcing renewable design and installation.
  - Offer diverse mobile training opportunities where the community develops expertise around technology installation. Such programs can also "incentivize Tribal members to return to their communities and support them in developing energy sovereignty," suggested Northwest Indian College.
- Connect communities with trained people to install clean energy technologies.
- Strategies for funding agencies to partner with Tribes to reduce these barriers:
  - Listen to diverse Tribal voices to understand needs.
  - Provide technical assistance and feedback on applications before submission.
  - Assemble a list of grants and investors. Provide guides or written materials on diverse funds (state and federal) and other opportunities.
  - "Reduce the need for renewable installation certifications that are too long," suggested the Northwest Indian College. Some community members may need shorter term training programs that result in immediate and/or local job opportunities.
  - Provide more information on qualified local installers for wind and other renewable technologies.
  - Communicate as far in advance as possible about upcoming grant or workshop opportunities.
  - Streamline application and solicitation documents.

- Provide more residential program offerings and funding and support for various technologies like geothermal.
- Partner with Tribes to provide a forum or workshops where applicants and grantees can share information on projects and lessons learned. The workshops could be modeled off of those hosted by [Housing Urban Development](#).
- Host or provide funding for a Tribal clean energy mentorship program, where Tribes seeking to develop clean energy projects are matched with other Tribes who have already developed/deployed that specific type of clean energy.

Clean Energy Technology Priorities

- Solar and solar storage
- Energy efficiency
- Heat pumps or other technologies to support heating and cooling needs
- Wave energy or Tidal energy, geothermal heat pumps
- Wind
- Bioenergy
- Microgrid
- Geothermal
- Organic soil and regenerative agriculture
- Solar/storage/microgrid combined with electric transportation and flexible (smart) building projects

# Appendix C: Collecting Input and Public Comment

- All staff presentations at work groups were recorded via Zoom and shared on the CEF [Rural Energy website](#) with the PowerPoint deck and any notes and resources that came out of the meeting.
- A public comment form was posted on the website from December 2021 through January 2022 to collect feedback simultaneously with work group meetings. Work group members were asked to spread the word about the comment form. Only one comment was received during this period.
- After the work group meetings concluded in January, Commerce provided an additional public comment period via a newly developed Rural Energy Newsletter. Commerce sent out three newsletters (Jan. 28, Feb. 17 and March 10). In order to extend the reach of the final newsletter sent on March 10, Commerce targeted a broader network of 28,002 recipients through seven subscription lists. The comment form stayed open until March 18. A total of 39 comments were received between January 20 and March 18.
- The public comments were reviewed by internal Commerce staff. To process the feedback, Commerce categorized responses into themes and recommendations, which were compared to those of the work group.

Questions and identified themes:

- "What are the top 3 concerns/priorities in your community irrespective of rural clean energy?"
- "What are the clean energy needs of your community?"
- "Which of the following technologies are important to addressing the needs of your community?"
- Advanced Energy Storage
- Anaerobic Dairy Digesters
- Beneficial Electrification
- Bioenergy
- Biological Carbon Sequestration
- Building Electrification
- Data Dashboards
- Demand Response
- Energy Efficiency
- Organic Waste Management
- Renewable Energy (Wind, Solar, Bioenergy, Hydrogen, Hydrokinetic, Geothermal)
- Smart Grid and Grid Controls
- Transmission and Distribution
- "Describe any barriers to meeting the needs of rural communities"
- "What do rural communities need to address these barriers? Please describe programs, investments, education, policies or other. How important and urgent is it to address these barriers?"

Overview:

Responses spanned 16 different industries, with the most respondents from the agriculture and food industry. Commerce grouped similar responses into 16 different industries. Responses spanned 17 counties, with the majority of responses from unknown counties, and the second highest response rate from Pierce County.

Responses by County
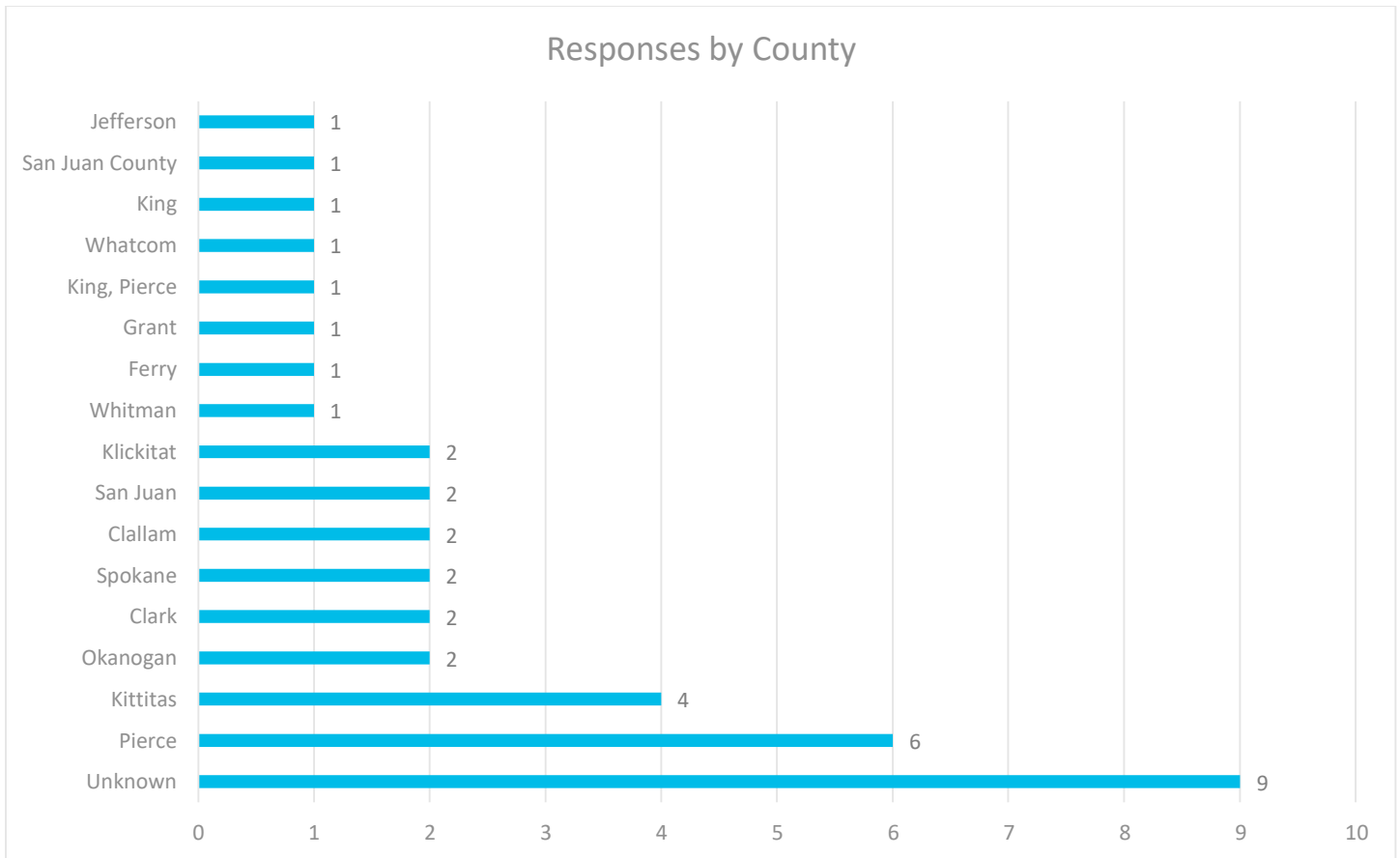
Comments that overlapped multiple themes were listed under each of those themes

Priorities:
Commerce compared 12 Priority Topics identified by the work group with common priorities/themes from the public comment form. Rural priorities from the public comment form had significant overlap with those identified by the work group with the exception of four new themes:

- Environmental health, clean air and water
- Land/water resources/siting concerns
- Recycling and other clean technologies
- Senior services

If there was less than one comment on the same theme, it was categorized as "Other." Compared to the work group, there were more comments around high energy costs and cost of living, which we attribute to the difference in timing around when the two groups were surveyed. For example, the first work group meeting was in October, while the public comment responses came through in January through March. Factors that may have influenced key differences include: Russian invasion of Ukraine impacting gas prices, supply chains and fertilizer input; inflation; interest rates; or demographics. Additionally, there was a slight difference in wording around the way the two questions were posed. For example, the work group was asked, "What are the top 3 needs in your community irrespective of rural energy?" while the comment form asked "What are the top 3 concerns/priorities in your community irrespective of rural clean energy?"

- The work group and public comment form had overlap in themes. The twelve priorities identified by the work group (see Priority Topics) were used to categorize themes identified in the public comment form. Commerce identified additional themes from the public comments that were not part of the original twelve Priority Topics. The Priority Topics from the work group are in bold text in the table below. The public comments prompted the themes that are not in bold text in the table below.

Priorities	Work group	Comment Form
Agriculture/Climate-smart agriculture	X	X
Broadband and digital equity	X	X
Clean Energy projects/Infrastructure	X	X
Communities	X	X
Economic impacts	X	X
Environmental Health, clean air and water		X
Equity	X	X
Food security	X	X
Health care	X	X
Housing	X	X
Land/water resources/siting concerns		X
Other		X
Recycling and other clean technologies		X
Senior services		X
Tribes	X	*
Workforce development	X	X
Wildfires	X	*

* The comment form didn't identify Tribal or wildfire issues as general priorities irrespective of clean energy but did identify them as clean energy priorities and wildfire risk as a barrier.

Barriers:

Respondents were also asked to describe barriers to meeting the needs of rural communities. Commerce categorized each of the barriers into themes, the majority of which aligned with barriers identified by the work group. The public comments prompted two new barriers: "inequities"(environmental and economic) and "permitting and regulations." The work group did mention permitting in a different context specifically as a barrier due to small government and community staffing capacity to managing permitting and zoning across jurisdictions. The barriers identified by the work group are in bold text in the table below. The barriers prompted by the public comments are not in bold text in the table below.

Question: "Describe any barriers to meeting the needs of rural communities?"

Question: "What do rural communities need to address these barriers? Please describe programs, investments, education, policies or other. How important and urgent is it to address these barriers?"

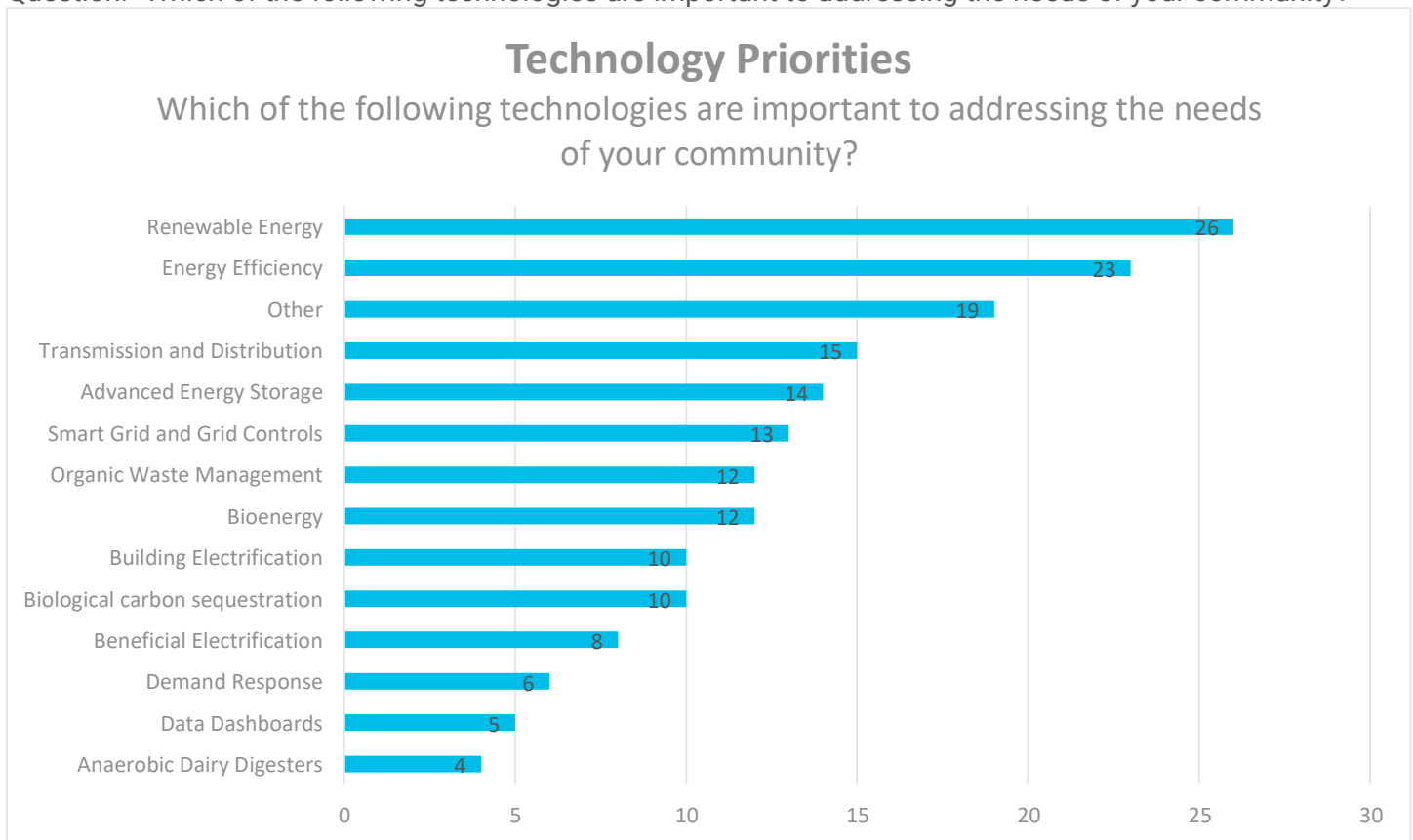| Broader Barrier	Workgroup	Comment form
Access to information	X	X
Aging or inadequate rural infrastructure	X	X
Climate policy goals not considering forestry and agriculture industry needs	X	X
Global supply chain/Covid impacts	X	
Cultural and language barriers	X	X
Inequities (environmental and economic)		X
Lack of access to capital	X	X
Lack of programs tailored for rural use cases	X	X
Lack of workforce in rural areas to build projects	X	
Lack of technical expertise for developing clean energy (projects)	X	
Permitting and regulations		X
Rural communities attitudes (perceived or otherwise)	X	X
Rural utility role, mission and capacity	X	X
Small government and rural community staffing capacity	X	X

Recommended solutions:

Respondents were also asked to identify recommendations to address the barriers. Many suggestions aligned with recommendations of the work group, including expanded education, training and technical assistance, job creation, increased community feedback, more types of clean energy technologies, and more financing and investments in clean energy. Additional suggestions aligned with Goals 2 and 3, "Rural communities need visible renewable energy pilot projects that showcase the possibilities and benefits of clean energy innovation; seed funding for programs and grant support for utility-sponsored landfill gas-to-electricity generation projects can help break down barriers and prove the feasibility of rural-based clean energy resources."

Clean energy priorities:

The public comment form asked respondents to identify the clean energy needs of their community in narrative form. Separately, there was a question prompting them to select from a list of technologies that were mentioned in the clean energy grants proviso and 2021 SES. In responding to "Which of the following technologies are important to addressing the needs of your community?" the most frequently checked technologies were "Renewable energy (including "wind, solar, bioenergy,[104] hydrogen, hydrokinetic, geothermal)," "Energy efficiency," "Other," "Transmission and distribution," and "Advanced energy storage," which received more than 14 responses each. In the "Other" category, technologies that were not addressed by the work group included "nuclear" and "sewage disposal and management."

Technologies

Question: "Which of the following technologies are important to addressing the needs of your community?"

Technology Priorities

Which of the following technologies are important to addressing the needs of your community?

Technology	Responses
Renewable Energy	26
Energy Efficiency	23
Other	19
Transmission and Distribution	15
Advanced Energy Storage	14
Smart Grid and Grid Controls	13
Organic Waste Management	12
Bioenergy	12
Building Electrification	10
Biological carbon sequestration	10
Beneficial Electrification	8
Demand Response	6
Data Dashboards	5
Anaerobic Dairy Digesters	4

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[104] There was some overlap in categories due to the way technologies were described in the proviso and the way the technologies were presented to the work group to align with the 2021 State Energy Strategy. Bioenergy was listed separately because it was referenced in the proviso and also under the "renewable energy" category in order to align with the way it was described in the work group exercise.

Other technologies written in the "Other" category
- Alternatives to 5G
- Alternatives to all electric
- Alternatives to net metering
- Alternatives to solar and batteries
- Bicycles, community education
- Biochar
- Clean transportation
- Hydrogen
- Hydrokinetic
- Landfill methane gas
- Nuclear
- Regenerative agriculture
- Resilient technologies
- Sewage disposal
- Wildfire risk reduction

Appendix D: Federal Awards Data Methodology

We utilized the USDA Rural Eligibility Map tool to search for recipient or place of performance addresses through data obtained from USAspending.gov. Commerce cannot guarantee the accuracy or completeness of the data obtained from USAspending.gov. Note that this is analysis by Commerce staff using USDA Rural Eligibility Map tool as a best estimate and any errors around urban and rural classifications are our own. The data for the USDA Rural Eligibility Map utilize 2010 census data and cities like Olympia and Lacey would be eligible under this definition. Some of the federal Department of Energy and U.S. Department of Agriculture funding programs analyzed may have used a different definition of rural than that of the Rural Eligibility Map.

Department of Energy (DOE) Prime Award Data:
Footnote 23: This data set include all Department of Energy (DOE) prime awards. We excluded awards from the following funding offices: Office of Fossil Energy, Nuclear Energy, NNSA-Defense Nuclear Nonpro Funds, NNSA Weapons Activities Funds. We excluded the following program activities: Hanford Site, River Protection-Tank Farm, Nuclear Physics, Fusion Energy Sciences, Natural Gas Technologies, Reactor Concepts R&D, Advanced Reactors Demonstration Program, Weapons Activities, Other Defense Activities. Some data did not identify the associated funding office or activity, so it is possible that there were still awards from the above-mentioned offices, other DOE offices or the above program activities. Prime Award data from DOE was obtained from Government Spending Open Data | USAspending. Accessed April 25, 2022.

Commerce analyzed prime award recipient data by recipient address between 2012-2021 from the Department of Energy (DOE). Some project address data was incomplete, so the rural/urban classifications were made using the recipient address. Analysis indicated that 33% of projects that received DOE awards during this period were for prime award recipients in rural areas and 67% were for prime award recipients in urban areas. Analysis indicated that only 2.3% of awards dollars in Washington between 2012 and 2021 went to rural recipients. After removing one outlier, an award in 2021, Commerce found that 45% of the total award funding in dollars between 2012-2021 was "rural" and 55% was "urban." Note that some of the prime award funding went to states or other funding agencies and was awarded to counties or cities.[105]

Department of Energy (DOE) Sub Award Data:
Footnote 23: Commerce analyzed sub-award grant data by place of performance between 2012-2021 from DOE. Some project address data was incomplete. In order to focus on clean energy grant awards, Commerce omitted the following award program activities from the results: Hanford Site, Nuclear Physics, Fusion Energy Sciences, Natural Gas Technologies, Unconventional FE Technologies, Reactor Concepts RD&D, Nuclear Energy Enabling Technologies R&D, Weapons Activities. Sub-award data from DOE was obtained from Government Spending Open Data | USAspending. Accessed April 25 and May 19, 2022.

Analysis indicated that 40% of projects that received DOE sub-awards during this period were in rural areas and 60% were in urban areas. 32% of the grant dollars were awarded to rural recipients and 68% of the grant dollars were awarded to urban recipients.

U.S. Department of Agriculture (USDA) Prime Award Data:
Footnote 24: Commerce analyzed US Department of Agriculture (USDA) prime award grant data from 2012-2021 for seven funding offices related to clean energy: Business Programs, Conservation Planning and Technical Assistance, Conservation Stewardship, Institute of Bioenergy, Climate and Environment, Technical Agriculture Assistance, Technical Assistance and Training Grants and USDA Forest Service. We attempted to omit program activities and spending categories that weren't related to goals of the CEF 5 proviso or the 2021 State Energy Strategy. We also attempted to omit state grant program spending categories in order to better

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[105] Congressional Research Service (2022). *Tracking Federal Awards: USAspending.gov and Other Data Sources.* Retrieved June 2022. R44027.pdf (fas.org), (Pg. 5)

identify which grants were going directly to cities or counties. Nevertheless, it is possible that state grant recipients were included in this estimate and that some awards unrelated to the proviso were inadvertently included. Some entries didn't identify funding office. Some of this funding might have been awarded to Washington state offices that was then awarded as grants to smaller communities. Sub-award data for some relevant programs was not available. Prime award data from USDA was obtained from [Government Spending Open Data | USAspending](). Accessed May 7, 2022.

Analysis found that 88% of the projects were in rural areas and 12% of the projects were in urban areas. 76% of the USDA grant dollars were awarded to rural recipients and 24% were awarded to urban recipients.

Appendix E: Resources

Federal Resources

Bipartisan Infrastructure Law

Bipartisan Infrastructure Law Grant Opportunities [(Program Information)](#)
Provides funding opportunities to state, local, Tribal and other partners in several categories: Transportation; Climate, Energy, and the Environment; Broadband and other programs including but not limited to water and wastewater infrastructure. The most comprehensive and up-to-date resources should be on the website, "Build.gov" linked in "Program Information", but there are additional resources that can direct rural communities to relevant opportunities.

- [Bipartisan Infrastructure Law Rural Playbook](#) outlines opportunities specific to rural communities including where to apply, whether the programs waive match requirements and/or prioritize rural recipients. Seven federal agencies including the [Department of Energy](#), the [Department of Agriculture](#) and the [Environmental Protection Agency](#) have published related resource sheets.
- [National Conference of State Legislatures](#) provides a timeline of key events and list of resources in six sectors.
- [National Association of State Energy Officials](#) (NASEO) hosts a resource hub for energy related funding opportunities. NASEO also provided a table of estimated Energy formula funding for Washington through the Department of Energy IIJA that has been reproduced below. [106]

Energy Related Formula Funding for Washington Under the Infrastructure Investment and Jobs Act		
Estimated for Washington*	Program	Notes
$9,342,500* (estimated for Washington)	State Energy Program	Estimated amount the Washington State Energy Office is expected to receive in SEP funds under the infrastructure bill. No state match required. A letter from the Governor on the status of the Washington Energy Emergency Plan is required as a condition of funding. NASEO estimate; exact allocation to be issued by DOE.
$1,868,500* (estimated for Washington)	Energy Efficiency Revolving Loan Fund Grant Program	The Washington State Energy Office is expected to receive of RLF funds. NASEO estimate; exact allocation to be issued by DOE. Additional funds will be available to the 15 states with the highest per-capita energy-related emissions or commercial/residential energy consumption as determined by DOE.
$2,136,171* (estimated for Washington)	Energy Efficiency and Conservation Block Grant Program	Amount the Washington State Energy Office is expected to receive via formula EECBG funds. Communities in Washington will be eligible for additional EECBG funding. NASEO estimate; exact allocation to be issued by DOE after bill passage.
$55,870,514* (estimated for Washington)	Weatherization Assistance Program	Amount Washington is expected to receive. NASEO estimate; exact allocation to be issued by DOE.

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[106] Table and related notes are reproduced from two-page summary of estimated state funding. NASEO sent a table to each State Energy Office Director in October 2021

$71,000,000* (estimated for Washington)	National EV Formula Program	Formula funds to State DOTs over five years. Estimate provided by Biden Administration
Pending*	Grid Resilience and Reliability.	The bill provides $2.5 billion to "states" via "a formula" determined by the U.S. Secretary of Energy. These funds are part of a set of grid resilience investments (billions) to be directed by DOE to utilities. States should consider what they would like to convey to DOE regarding a formula and state government receiving entity. NASEO recommends a unified message from states to maximize the value of the funds for states.
Energy-Related Competitive Program – Only State Energy Offices are Eligible		
$40 million (total for all states)	Energy Auditors Training Grants	Competitive program for State Energy Offices Only Maximum of $2 million per state

Other Competitive Programs – A Wide Range of Other Stakeholders are Eligible		
$300 million (total for all eligible entities)*	Carbon Capture and Utilization	Competitive program through U.S. DOE States and others eligible
$500 million (total for all eligible entities)*	Grants for energy efficiency and renewable energy improvements at public school facilities	Competitive program through U.S. DOE for EE, RE, and alt fuel vehicle upgrades School districts and schools are eligible. State Energy Offices may consider reaching out to schools
$225 million (total for all eligible entities)*	Building Energy Codes Technical Assistance and Training	Competitive program through U.S. DOE. States and others eligible
$2.5 billion (total for all eligible entities)*	Grants for Charging and Fueling Infrastructure	Competitive program through U.S. DOT. State Energy Offices potentially eligible (awaiting guidance from DOT)
$5 billion*	Energy Infrastructure Federal Financial Assistance Program	Competitive program through U.S. DOE. States eligible
$250 million*	Rural and Municipal Utility Advanced Cybersecurity Grant and TA	Competitive grant program through U.S. DOE. States, municipal governments, rural utilities, and others eligible
$110 million*	Battery Recycling Grants	Two competitive grant programs through U.S. DOE. $60 million for battery recycling research, development, and demonstration programs (states eligible); $50 million for state and local programs
$50 million*	Smart Manufacturing Technology Implementation	Competitive grant program through U.S. DOE. States eligible

* Important Note: The formula funding amounts indicated for your state are estimates based on past federal funding actions and federal program guidance. The actual amount a state receives or that the relevant federal agency will

make available for competitive funding will be determined by those agencies following passage of the Infrastructure Investment and Jobs Act.

Environmental Protection Agency (EPA)

Region 10 Healthy Resilient and Sustainable Communities Grants (Program Information)
Supports communities as they develop and implement pollution prevention and/or sustainable materials management systems that help make their communities safer, healthier and more resilient

- Projects: Reuse of construction waste, food waste reduction and food recovery.
- Eligibility: Region 10 states, local governments, city or township governments, independent school district governments, state-controlled institutions of higher education, nonprofit organizations (other than institutions of higher education), nonprofit private institutions of higher education, community-based grassroots organizations, and federally recognized tribes and intertribal consortia.

AgStar: Biogas Recovery in the Agriculture Sector
Promotes the use of biogas recovery systems to reduce methane emissions from livestock waste. AgSTAR assists those who enable, purchase or implement anaerobic digesters by identifying project benefits, risks, options and opportunities. AgSTAR provides information and participates in events to create a supporting environment for anaerobic digester implementation. Can provide information and tools including:

- Opportunities to network with other stakeholders and network with stakeholders.
- Technical and regulatory assistance, planning advice and guidance to help implement a project.
- Education about anaerobic digestion basics and others' experience.

Department of Interior Office of Indian Energy

Tribal Climate Resilience Program (Program Information)

Provides grants for several different climate resilience projects, including those that support renewable energy and energy resilience.

- Projects: Projects cover a wide range of issues, such as ocean and coastal management, adaptation planning, and relocation and managed retreat.
- Eligibility: Open to all federally recognized Tribes.
- Grant: Each category of grant has a different maximum.

Federal Emergency Management Agency

Building Resilient Infrastructure in Communities (BRIC) (Program Information)
- Supports states, local communities, Tribes and territories for hazard mitigation projects and reducing risks from disasters.
- Eligibility: Eligible states, territories, and Tribal governments can submit applications on behalf of subapplicants.

Department of Energy

Office of Indian Energy Policy and Programs (Program Information)
Provides financial assistance, technical assistance, education and capacity building to benefit American Indians and Alaska Natives. The mission of the office is to "maximize the development and deployment of energy solutions for the benefit of American Indians and Alaska Natives."

Energy Efficiency & Renewable Energy Funding Opportunity Exchange (Program Information)
Provides a variety of funding opportunities from the Department of Energy & Renewable Energy Office.

National Renewable Energy Lab (Program Information)
Technical assistance related to energy use and future scenarios for U.S. state, local, and tribal jurisdictions.

USDA Forest Service Wood Innovations (Program Information)

Wood Innovations Program
- Provides grants for projects that expand and accelerate wood products and wood energy markets throughout the United States to support forest management needs.
- Projects: Wide range of wood products projects including cross-laminated timber manufacturing, expanding markets for biochar and developing affordable housing using mass timber.
- Eligibility: Profit entities; state, local, and tribal governments; school districts; community, not-for-profit organizations; institutions of higher education; and special purpose districts.

Community Wood Grant Program
- Provides grants to build innovative wood product facilities or install thermally led community wood energy systems.
- Projects: Projects range from installing equipment to produce biofuels from forest residue to installing a community wood energy system that replaces fossil fuels.
- Eligibility: Profit entities; state, local, and tribal governments; school districts; community, not-for-profit organizations; institutions of higher education; and special purpose districts.

USDA Rural Development

Rural Energy for America Program (REAP)
- Provides loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems and energy efficiency improvements.
- Projects: Biomass, geothermal, hydropower below 30 MW, hydrogen, wind and solar generation, and ocean generation. Funds may also be used for purchase, installation, construction of energy efficiency improvements.
- Grants: Renewable Energy Systems Grant & Energy Efficiency Grant.

Rural Energy Savings Program (RESP)
- Provides rural electric cooperatives and utilities with loans to help rural families and small businesses reduce energy use or expenditures through energy efficiency investments.
- Projects: Lighting, building envelope upgrades, renewables, and energy storage.
- Eligibility: Loans to corporations, states, territories, and subdivisions and agencies; municipalities; utility districts; and cooperative, nonprofit, limited-dividend, or mutual associations.

Rural Energy Pilot Program (Program Information)
- Provides grants for rural communities to further develop renewable energy.
- Projects: "Community energy planning, capacity building, and technical assistance; Community efficiency and weatherization; installation of community-scale renewable energy technologies and systems."[107]

High Energy Cost Grant (Program Information)
Offsets high household energy costs through energy efficiency and conservation measures and energy systems upgrades in rural areas where energy costs exceed 275% of national average.

- Projects: Renewable energy facilities, energy storage, energy efficiency and conservation improvements, and installment of new and energy efficiency appliances.

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[107] USDA Rural Development. (2022). *Rural Energy Pilot Program Grant Fact Sheet*. Retrieved June 2022. https://www.rd.usda.gov/sites/default/files/508_rd_fs_rbs_reppgrant.pdf

- Eligibility: Retail or power supply providers serving rural areas such as state and local government entities, Tribes and Tribal entities, non-profits, and businesses.

U. S. Small Business Administration

Small Business Innovation Research Grants (Program Information)
Three phase competitive programs that encourage domestic small businesses to engage in federal research and development with the potential for commercialization. Eleven federal agencies participate in the SBIR program.

- Projects: Projects cover a wide range of issues from agriculture to energy.
- Eligibility: United States small businesses that meet the following criteria: organized for profit with place of business located in United States; more than 50% owned and controlled by one or more individuals who are citizens or permanent residents of US; no more than 500 employees, including affiliates.

Management and Technical Assistance Program (Program Information)
Provides assistance to eligible businesses to help them be competitive for federal, state, and local government contracts.

State opportunities

Washington State Department of Commerce

Clean Energy Grant Programs (Program Information)
- Provides grants to fund the development, demonstration and deployment of clean energy technologies, and grants for public entities to make energy updates to public buildings and facilities.
- Projects: Wide variety of clean energy projects ranging from dairy digester enhancement to electrification of transportation systems
- Eligibility: Eligibility varies by program. Check program websites for specific details.

Washington State Conservation Commission

Irrigation Efficiencies Grant Program (IEGP) (Program Information)
- The program provides a voluntary solution to "improve on-farm irrigation and help vulnerable salmonoid populations."
- Projects: Irrigation systems that conserve water.
- Eligibility: Participants must have water rights in one of 16 identified fish-critical basins.

NGO and other opportunities

SPARK Northwest
Rural Energy Assistance program: Works with partners in Oregon and Washington to support renewable energy and efficiency upgrades in rural communities.

Services offered:

- Provide rural communities insight into options for pursuing energy efficiency and renewables
- Evaluate costs and benefits of using energy efficiency and renewable energy for business and farming operations.
- Assist with grant applicants for state and federal programs to pay for installation
- Provides free technical assistance

Pierce Conservation District
Works with local landowners and public agencies to conserve natural resources. The Pierce Conservation District provides farm planning and agricultural assistance and other programs, such as water quality improvement, environmental education and climate resiliency.

GRID Alternatives
- Energy for All Program: GRID provides solar systems to low-income homeowners and affordable housing units. Also provides access to community solar.
- Tribal Program: Works with Tribes to install solar electric systems for tribal members and community facilities. Projects range from single rooftop solar installations to large-scale projects that meet energy needs of the whole community.
- GRID Alternatives Tribal Solar Accelerator Fund
- 3-year grant funding from Wells Fargo to pursue Tribal energy

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