Washington State Legislature

Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience

FINDINGS AND RECOMMENDATIONS PURSUANT TO ENGROSSED SECOND SUBSTITUTE HOUSE BILL 1216 (2023)

December 2024

TABLE OF CONTENTS

JOINT COMMITTEE MEMBERS

Representative Beth Doglio, Chair
Senator Matt Boehnke, Vice Chair
Senator John Braun
Representative Mark Klicker
Senator Liz Lovelett
Senator Joe Nguyen
Representative Vandana Slatter
Representative Alex Ybarra

December 11, 2024

To Members of the Washington State Legislature and the Energy Facility Site Evaluation Council:

As the current Chair and Vice Chair of the Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience, we are pleased to notify you the committee has held meetings and adopted recommendations in fulfillment of the obligations set forth in 2023 with Sec. 310 of Engrossed Second Substitute House Bill (E2SHB) 1216. The committee's activities and recommendations are described in the attached report.

Kind Regards,

Representative Beth Doglio
Chair

Senator Matt Boehnke
Vice Chair

COMMITTEE BACKGROUND

The Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience (Committee) has had several iterations over the years since 1969.[1] The Committee receives information related to energy supply, planning, and policies. The Committee also reviews energy-related plans regarding energy supply alerts and energy emergencies proposed by the Governor or otherwise submitted to the Committee and considers requests for energy emergency declarations and extensions from the Governor.

The Committee may meet at the following times:

- at least once per year or at any time upon the call of the Chair to receive information related to the state or regional energy supply situation;
- during a condition of energy supply alert or emergency; and
- upon the call of the Chair, in response to gubernatorial action to terminate such a condition.

The Committee consists of four Senators and four Representatives, including the chairs of the committees responsible for energy issues. The Committee is directed to elect a Chair and Vice Chair. The Chair must be a member of the House in even numbered years and a member of the Senate in odd-numbered years.[2]

COMMITTEE REQUIREMENTS UNDER E2SHB 1216[3]

In 2023 the Legislature directed the Department of Commerce (Commerce) to report on rural clean energy and resilience, which must include stakeholder consultation and include recommendations for how to more equitably distribute costs and benefits of clean energy projects to rural communities. Commerce must provide a final report to the Committee, as well as the appropriate policy and fiscal standing committees of the Legislature, by December 1, 2024.

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[1] Names changes include: Joint Committee on Nuclear Energy (1969), Joint Committee on Energy and Utilities (1977); Joint Committee on Energy Supply (2001); Joint Committee on Energy Supply and Energy Conservation (2005); and Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience (2023).

[2] Chapter 44.39 RCW

[3] E2SHB 1216 (2023)

The Legislature also directed the Committee to review Commerce's report and consider any policy or budget recommendations to reduce impacts and increase benefits of the clean energy transition for rural communities, including mechanisms to support local tax revenues and public services. The Committee must report its own findings and any recommendations to the Energy Facility Site Evaluation Council and the Legislature by December 1, 2024.

Recommendations may be made by a simple majority of Committee members. In the event that majority-supported recommendations are not reached, the Committee may report minority findings supported by at least two members.[4]

COMMITTEE MEETINGS RELATED TO THE E2SHB 1216 REQUIREMENTS

E2SHB 1216 required the Committee to hold at least two meetings: one of which had to take place in Eastern Washington. The Committee met on the following dates:

- September 21, 2023 (Virtual)
- June 4, 2024 (Moses Lake)
- November 18, 2024 (Virtual)
- December 11, 2024 (Olympia)

Meeting materials are available via the Web links and in Appendix B.

[4] See E2SHB 1216 (2023), section 310.

COMMITTEE FINDINGS AND RECOMMENDATIONS

1. Strengthen local and tribal involvement in clean energy siting/project development processes and establish norms for community engagement and tribal consultation to ensure that rural communities and tribes are informed and have a meaningful role in the decision-making process.

2. Make efforts to increase rural community benefits, including community benefit agreements, job creation and workforce training, and mitigate potential harms from clean energy projects.

3. Safeguard and enhance the quality of life in rural communities as clean energy projects are developed, including through wildfire mitigation and by considering the land use implications of a transition to net zero emissions. [5]

4. Improve transparency and agility in the planning, development, innovation, and operations of clean energy projects, including the use of mapping tools for future project development and integrating advanced technologies.

5. Explore alternative taxation approaches for large clean energy projects, including policy recommendations to address the instability of revenue from renewable energy projects.

6. Improve communication about sales taxes and clarify expectations about payback timelines for developer rebates.

7. Increase transparency of energy developers' economic and financial data reporting.

8. Improve documentation of federal and state incentives received by energy developers for each project.

9. Incorporate an awareness of significant changes to energy loads in future energy studies, especially with respect to high energy users.

[5] See Lesser, Johnathan, and Rolling Mitchell (September 2024). *The Crippling Costs of Electrification and Net Zero Energy Policies in the Pacific Northwest* (26). https://www.discovery.org/m/securepdfs/2024/09/Crippling-Costs-of-Electrification-20240918.pdf

APPENDIX A: DEPARTMENT OF COMMERCE REPORT ON RURAL CLEAN ENERGY AND RESILIENCE

To access the full report, please go here for the Department of Commerce's Rural Clean Energy Economics and Community Engagement Study and Report.

APPENDIX B: COMMITTEE MEETING MATERIALS

Meeting materials are included below or are available the Committee's website under each meeting date.

September 21, 2023, Meeting Presentations

- Senate Committee Services PowerPoint: Joint Committee on Energy Supply, Energy Conservation, & Energy Resilience: E2SHB 1216 (2023)
- Department of Commerce PowerPoint: Update on Rural Clean Energy & Resilience Report

June 4, 2024, Meeting Presentations

- Office of Program Research & Senate Committee Services PowerPoint: Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience reporting requirements in E2SHB 1216 (2023)
- Department of Commerce PowerPoint: Update – Rural Clean Energy and Resilience Report

November 18, 2024, Meeting Presentations

- Washington State Association of Counties PowerPoint: Clean Energy Property Tax Impacts
- Washington State Association of Counties: Report on Clean Energy Property Tax Impacts
- Washington State Association of Counties: Clean Energy Property Tax Impacts One Pager
- Department of Commerce PowerPoint: Rural Clean Energy Economics and Community Engagement Study

The additional final attached document is the Department of Commerce Emailed Responses to Member Questions Asked During the November 18th Meeting.

Joint Committee on Energy Supply, Energy Conservation, & Energy Resilience: E2SHB 1216 (2023)

Greg Vogel, Senate Committee Services

Brief summary of E2SHB 1216

- Establishes an interagency clean energy siting coordinating council
- Creates a designation for clean energy projects of statewide significance and a coordinated permitting process for clean energy projects
- Amends State Environmental Policy Act (SEPA) processes for clean energy projects
- Directs the Department of Ecology to prepare nonproject environmental impact statements for solar energy projects, onshore wind energy projects, green electrolytic or renewable hydrogen projects, and any co-located battery storage

Brief summary of E2SHB 1216 (cont.)

- Directs the Washington State University Energy Program to conduct a pumped storage siting process
- Directs the Department of Commerce to study and report on rural clean energy and resilience

E2SHB 1216 provisions related to Jt. Committee

- Changes the name of the committee to the Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience
- Directs the committee to review Commerce's report on rural clean energy and resilience and consider any policy or budget recommendations to reduce impacts and increase benefits of the clean energy transition for rural communities
- Requires the committee to hold at least two meetings:
  - At least one meeting must be in eastern Washington
  - The first meeting must occur by September 30, 2023

E2SHB 1216 provisions related to Jt. Committee (cont.)

- Directs the committee to report its findings and any recommendations to the Energy Facility Site Evaluation Council (EFSEC) and the Legislature by December 1, 2024
  - Recommendations may be made by a simple majority
  - In the event that majority-supported recommendations are not reached, the committee may report minority findings supported by at least 2 members

Report on Rural Clean Energy and Resilience

- Commerce must conduct stakeholder meetings to gain a better understanding of the benefits and impacts of anticipated changes in the state's energy system and identify risks and opportunities for rural communities
- Commerce must complete a report on rural clean energy and resilience, which must consider the stakeholder consultation and include recommendations for how to more equitably distribute costs and benefits to rural communities

Report on Rural Clean Energy and Resilience (cont.)

- The report must examine impacts of energy projects in rural areas to jobs, local tax revenue, agriculture, and tourism, and forecast what Washington's clean energy transition will require for energy projects in rural Washington
- The report must be completed by December 1, 2024

Update on rural clean energy and resilience report

Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience

Glenn Blackmon, Manager, Energy Policy Office

Aaron Peterson, Senior Energy Policy Specialist, Rural and Agriculture

SEPTEMBER 21, 2023

Washington State Department of Commerce

Rural clean energy and resilience report

House Bill 1216, Section 307

Gain better understanding of the benefits and impacts of anticipated changes in the state's energy system

- Consultation with diverse group of stakeholders, including low-income households, elected leaders, businesses, with input from Environmental Justice Council
- Economic analysis of rural energy economic impacts, including jobs, landowner revenue, local taxes, and more
- Provide a review and forecast of siting clean energy projects in rural Washington

Report due December 1, 2024, to JCESECER

Part A: Rural community engagement

Consult with stakeholders from rural communities, agriculture, natural resource management and conservation, forestry

- Collect best available information and learn from the lived experiences of people in rural communities

Include at least one stakeholder meeting in western WA and one in eastern WA

Opportunity to discuss multiple clean energy business activities

- Renewable generation, hydrogen and biofuels, electric vehicles and equipment, dual use solar, carbon capture, energy conservation, wood products, clean manufacturing

Part B: Economic impact analysis

Analyze economic and financial impact of renewable energy projects developed and operated in rural communities

- Direct, indirect, and induced jobs in construction and operations
- Financial returns to property owners, effects on local tax revenue, potential impact mitigation payments
- Effects on other rural land uses, such as agriculture, natural resource management, tourism

Review geographic distribution of existing and planned energy projects and results of least-conflict priority solar siting pilot

Include forecast of resource requirements for clean energy transition

RFP identifies existing policies and studies

Washington 2021 State Energy Strategy

Recent policies and studies to understand and address potential impacts on rural communities

- Least-conflict solar siting analysis for Columbia Basin
- Solar grant provision establishing preference for projects that avoid traditional agricultural lands
- Wind turbine lighting requirements to reduce visual impacts to communities
- Wind and solar tax provision that increases and stabilizes receipts for communities and tribes that host renewable facilities
- Grant program to demonstrate dual-use solar projects – traditional agriculture combined with solar electric generation

Request for proposals

Single RFP covering rural community engagement and economic impact analysis

RFP schedule

- Issued August 21
  - RFP - Rural Clean Energy Economics and Community Engagement Study and Report - Washington State Department of Commerce
- Preproposal conference September 8
- Proposals due September 28
- Earliest start date for contract October 27

Thank you!

Glenn Blackmon

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Dave Pringle

LEGISLATIVE DIRECTOR

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360.918.6033

Washington State Department of Commerce

www.commerce.wa.gov

Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience reporting requirements in E2SHB 1216 (2023)

- Directs the committee to review the Department of Commerce's report on rural clean energy and resilience and consider any policy or budget recommendations to reduce impacts and increase benefits of the clean energy transition for rural communities, including mechanisms to support local tax revenues and public services

- Directs the committee to report its findings and any recommendations to the Energy Facility Site Evaluation Council and the Legislature by December 1, 2024
  - Recommendations may be made by a simple majority
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Update: Rural clean energy and resilience report

Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience

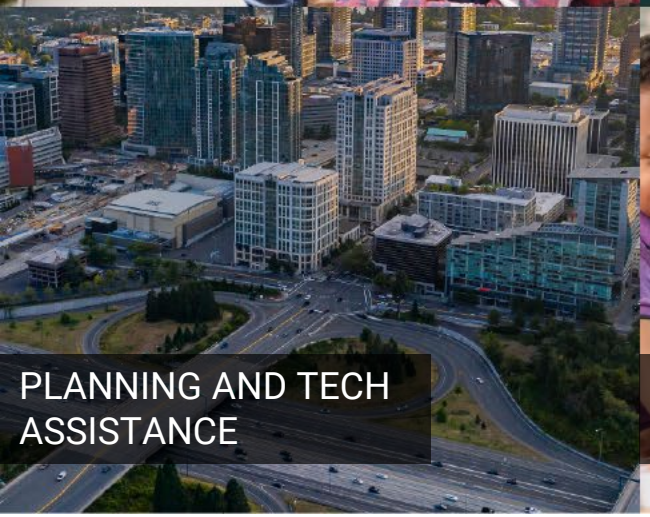
Glenn Blackmon, Director, Energy Policy Office

Aaron Peterson, Senior Energy Policy Specialist, Rural and Agriculture

JUNE 4, 2024

Washington State Department of Commerce

We strengthen communities



Rural clean energy and resilience report

House Bill 1216 (2023), Section 307

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Include forecast of resource requirements for clean energy transition

Builds on existing policies and studies

Washington 2021 State Energy Strategy

Recent policies and studies to understand and address potential impacts on rural communities

- Least-conflict solar siting analysis for Columbia Basin
- Solar grant provision establishing preference for projects that avoid traditional agricultural lands
- Wind turbine lighting requirements to reduce visual impacts to communities
- Wind and solar tax provision that increases and stabilizes receipts for communities and tribes that host renewable facilities
- Grant program to demonstrate dual-use solar projects – traditional agriculture combined with solar electric generation

Project team

Washington State Department of Commerce

ROSS STRATEGIC

Clean Energy Transition Institute

IEc

Project website

NEW **Are you a rural Washingtonian interested in how clean energy projects may affect your community, through either large-scale or community-scale solar, wind, and other types of energy development?**

If so, please join us on Wednesday, June 5 from 6:30–8:30 pm for a virtual public meeting that will help inform the Rural Clean Energy Economics and Community Engagement Study and Report, being prepared under the direction of the Washington State Department of Commerce. Click on the link below to register.

REGISTER

Online Comments

We are interested in hearing from you. **Please use this link** to share your thoughts with us.

This form was created by a consultant team at Ross Strategic under contract to the WA Department of Commerce. Any information shared in this form is subject to public information requests and can be

https://ruralcleanenergywashington.org/

Engagement & outreach

Public Meetings

- Dayton, Zillah, Mt. Vernon in mid-May
- 3 meetings total attendance = approx. 90
- Virtual statewide meeting on June 5 with TVW live coverage

Interviews and focus groups

- Individual interviews = 40 of 60 completed
- Focus groups = 2 of 5 completed

Engagement & outreach – initial impressions

- Challenges:
  - Lack of staff and technical capacity
  - Lack of direct community benefits
  - Siting optimization, better project potential elsewhere
  - Impacts on views and recreation
  - Transmission and distribution system capacity
  - Local involvement in decision-making
  - Skepticism around the need to decarbonize

Engagement & outreach – initial impressions

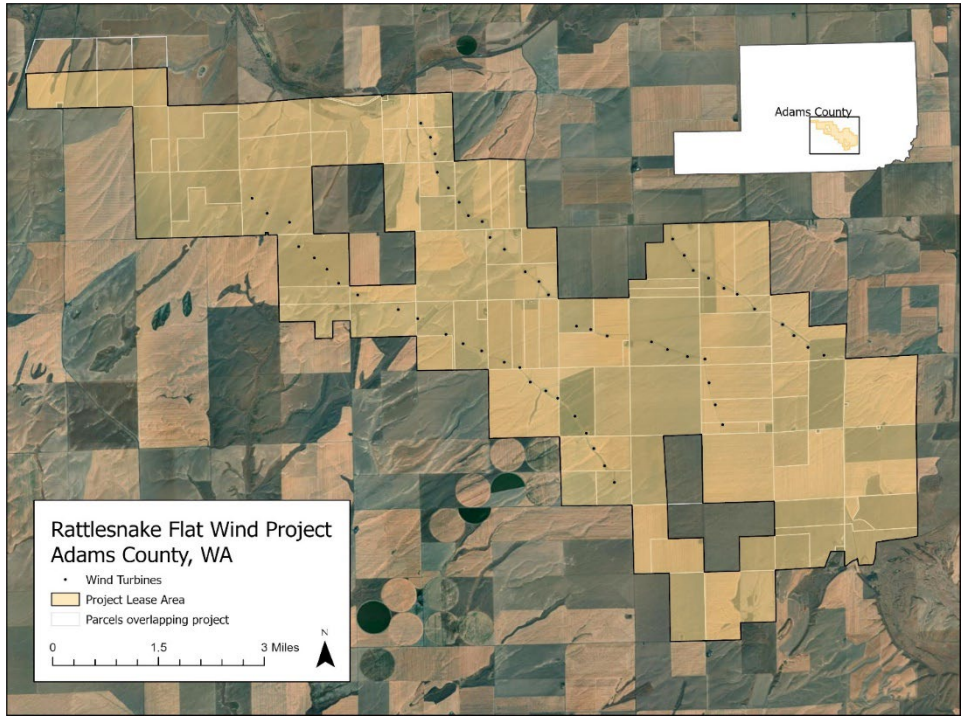
- Opportunities:
  - Energy independence
  - Increases resilience
  - Affordability of clean energy
  - Improves public health
  - Action on climate change
  - EV tourism

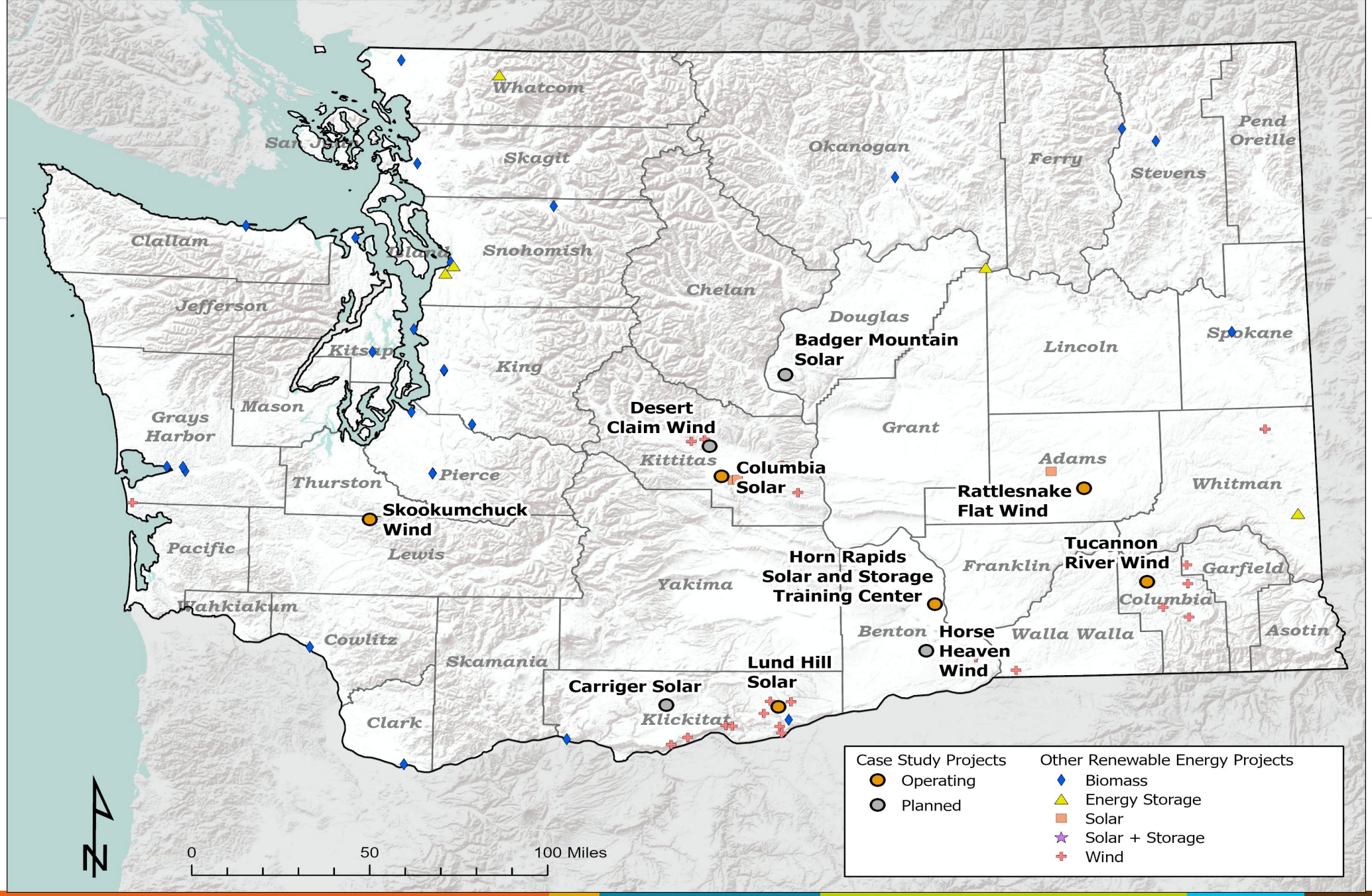
Project type opportunities mentioned:

Offshore wind
Hydrogen
Nuclear
Local energy
Energy storage

Economic and financial analysis

- Case study approach
  - 10 existing and proposed utility scale wind and solar projects
- Interviews with tax and assessor experts
- Developers and land owners
- Property records
- Economic impact modeling




Whatcom
Skagit
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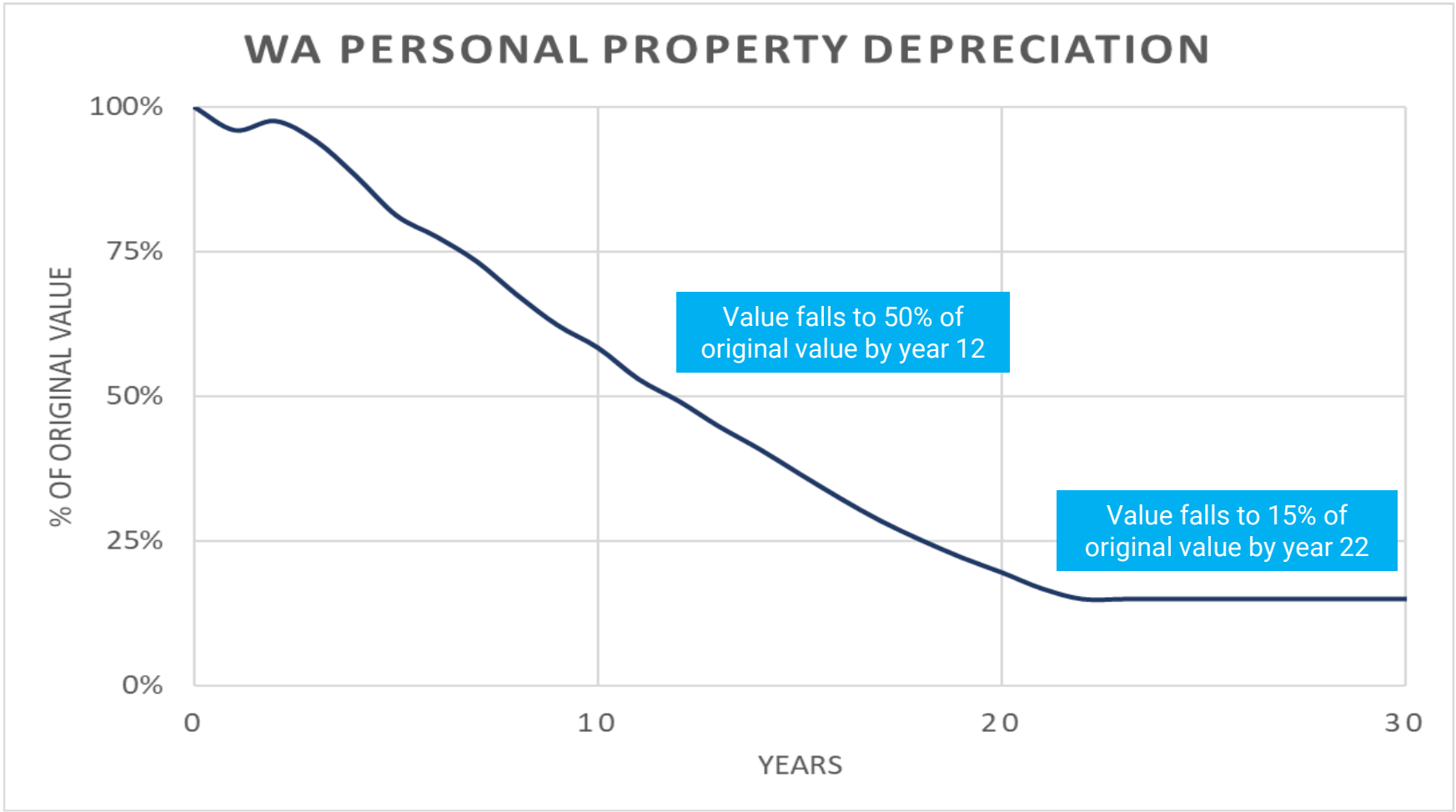
Clallam
Snohomish
Chelan
Douglas
Badger Mountain Solar
Lincoln
Spokane
Jefferson
King
Grant
Grays Harbor
Mason
Desert Claim Wind
Kittitas
Columbia Solar
Adams
Rattlesnake Flat Wind
Whitman
Thurston
Pierce
Skookumchuck Wind
Pacific
Lewis
Horn Rapids Solar and Storage Training Center
Franklin
Tucannon River Wind
Garfield
Yakima
Columbia
Wahkiakum
Benton
Horse Heaven Wind
Walla Walla
Asotin
Cowlitz
Skamania
Lund Hill Solar
Carriger Solar
Klickitat
Clark
0
50
100 Miles
Case Study Projects
Operating
Planned
Other Renewable Energy Projects
Biomass
Energy Storage
Solar
Solar + Storage
Wind

Equipment (“personal property”) taxes and value



Economic & financial feedback

Challenges:

- State vs local land use decision-making
- Front-loaded tax benefits (i.e., depreciation)
- Dispersed jobs and employment benefits
- Poor communications regarding sales tax rebates with counties
- Value of agricultural lands and land use designations in GMA counties
- Clean energy incentives may encourage lower value projects

Economic & financial feedback

- Opportunities:
  - Landowners benefit from project lease payments
  - Increased county sales and property tax revenue
  - Substantial short term construction jobs, some long term local jobs
  - Community contributions from project owners and developers
  - Additional community benefits agreements with project developers
  - Agrivoltaics interest
  - Wind projects allow agriculture to continue, 2% of land used

Next steps

- Statewide virtual workshop June 5
- Additional interviews and focus groups
- Additional economic analysis
- Draft final report
- Brief joint committee as requested
- Submit final report December 1

Public meeting June 5

Seeking input for a rural clean energy study

Do you live in a rural Washington community and have an interest in **how development of large or community-scale solar, wind and other types of clean energy projects may affect your community**?

If so, please join us for a virtual conversation that will help inform the Washington State Rural Clean Energy Economics and Community Engagement Study and Report being prepared under the direction of the Washington State Department of Commerce.

JOIN US ONLINE

Wednesday, June 5, 6:30 - 8:30 p.m. on Zoom

https://ruralcleanenergywashington.org/

Thank you!

Glenn Blackmon, PhD

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WASHINGTON STATE ASSOCIATION of COUNTIES

Clean Energy Property Tax Impacts

Joint Committee on Energy Supply, Energy Conservation, and Energy Resilience

November 18, 2024 | 10:00 AM – 12:00 PM

Report on the Impact of Clean Energy Generation Project on Property Taxpayers in Rural Counties

Problem

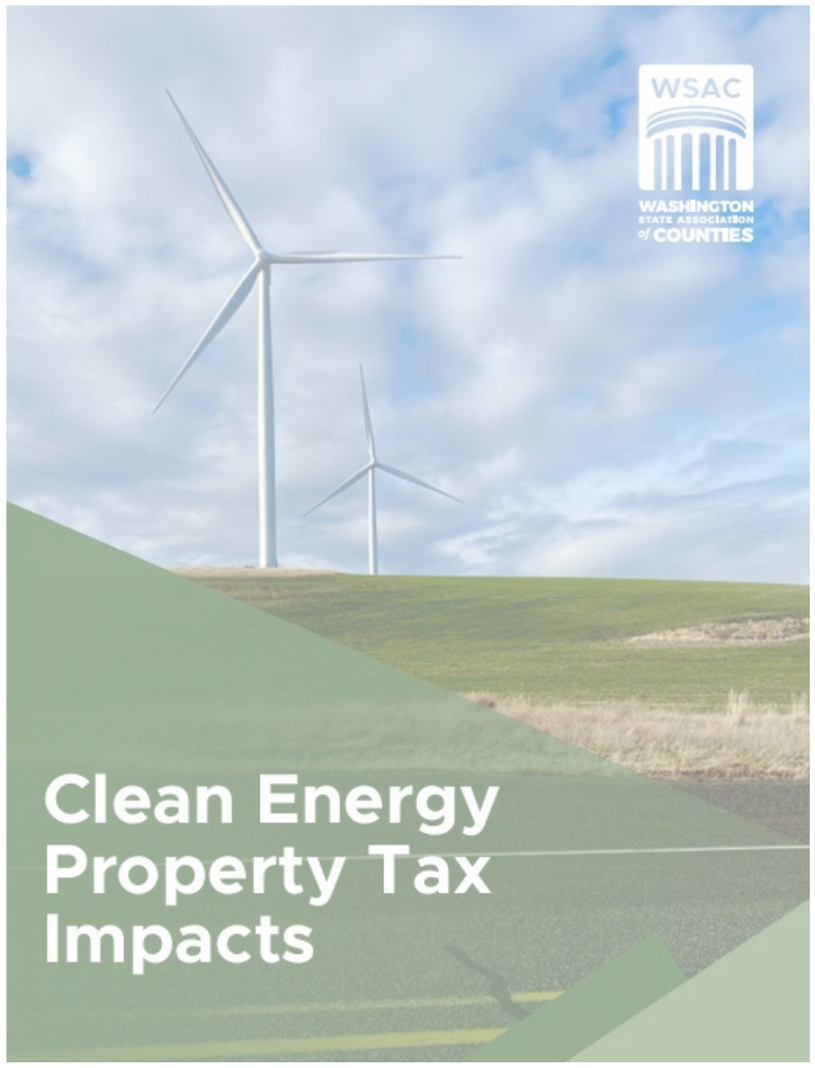
Fluctuating values result in tax shifts from clean energy projects to other taxpayers.

Causes

Washington's property tax system, including assessment methods.

Options

Our state isn't the only one to confront this issue.



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Key Finding: Increased Clean Energy Development

State Legislative Policy Creating Demand

State Legislative Policy Facilitating Development

Local Government Policies

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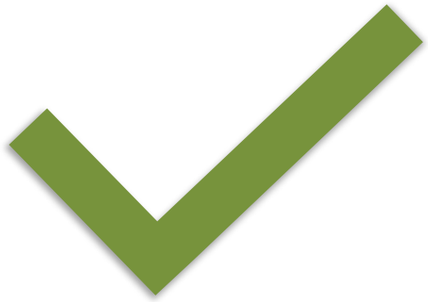
Key Finding: Inconsistent Property Tax Assessments



Central Assessment

Local Assessment

Real & Personal Property

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Key Finding: Tax Burden Shifts

Initial Increase in Value

Projects Value Comparatively High

Personal Property Depreciation

Community Benefits

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Key Finding: Tax Burden Shifts

PRE-PROJECT

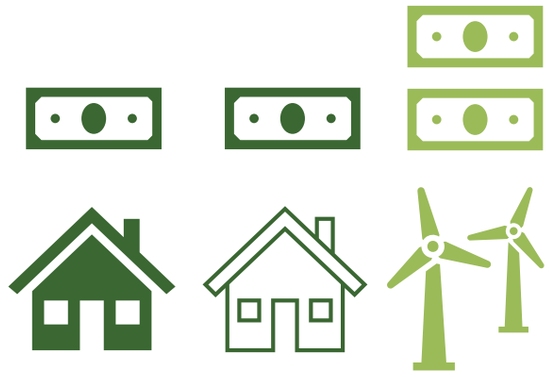
PROPERTY TAX REVENUE

TAXPAYERS

YEAR 1

PROPERTY TAX REVENUE

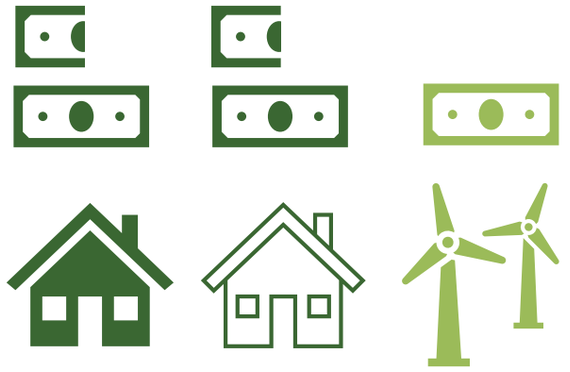
TAXPAYERS



YEAR 10

PROPERY TAX REVENUE

TAXPAYERS



Key Finding: Tax Burden Shifts

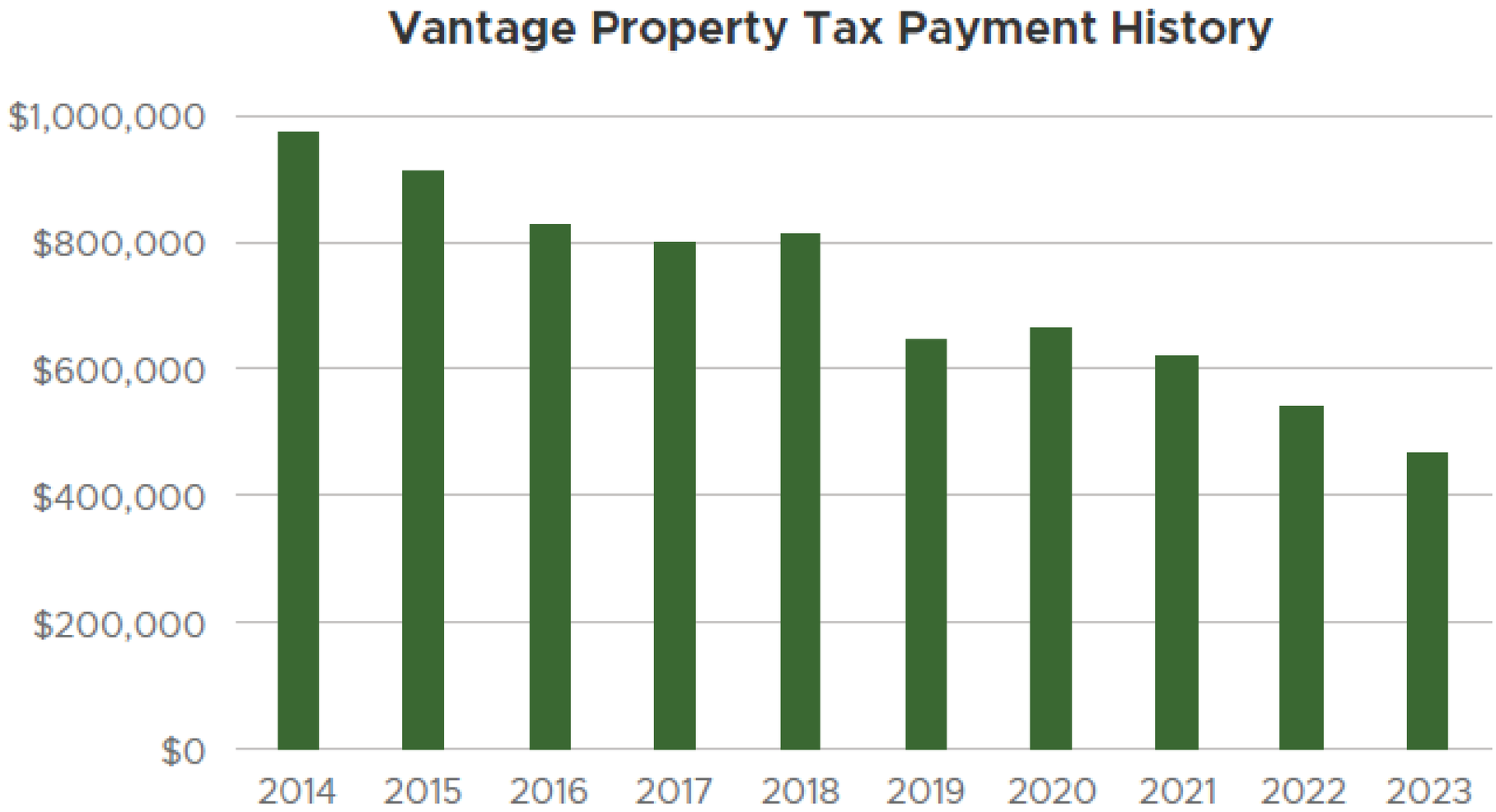


Table 1 – Vantage Wind Farm Property Tax Payments (Kittitas County)

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Key Finding: Tax Burden Shifts

Tax Appeals

Kittitas County

$350,000 Reduced Property Tax Payment

9.9% Levy Rate Increase

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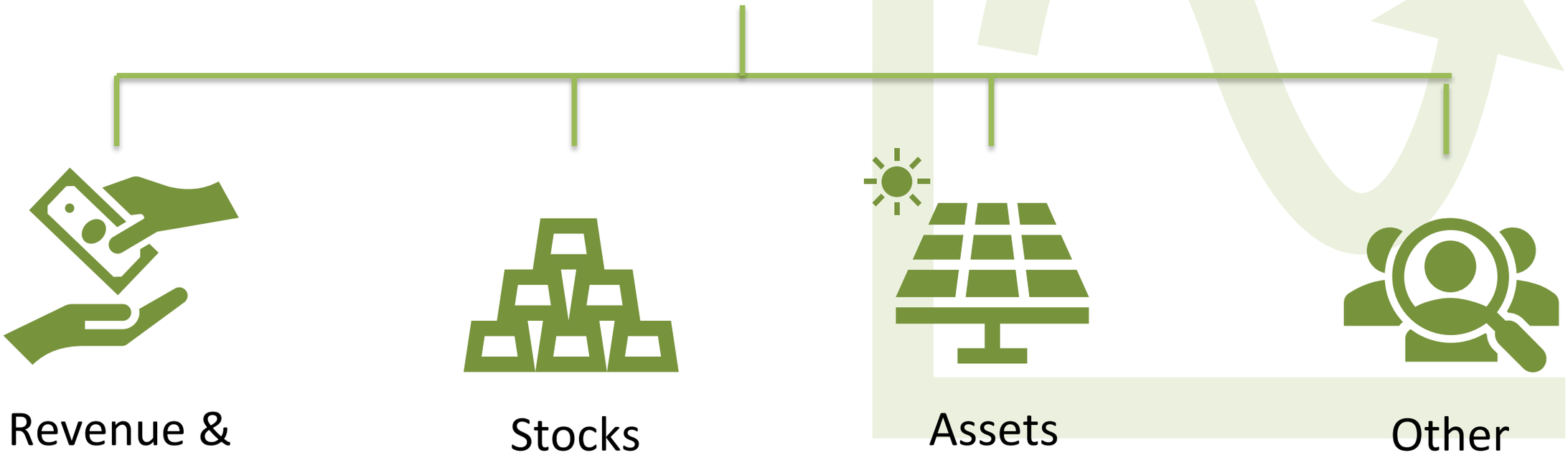
Key Finding: Fluctuating Assessed Values

Central Assessment

Market Approach



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Key Finding: Fluctuating Assessed Values

Marengo I & 2 Annual Tax Payments to Columbia County

YEAR	PROPERY TAX PAYMENT	ANNUAL CHANGE
2018	$1,893,256.46	N/A
2019	$1,867,416.79	- $25,839.67
2020	$1,754,311.63	- $113,105.16
2021	$2,383,383.47*	+ $629,071.84
2022	$1,351,603.28 **	- $1,031,780.19
2023	$1,234,851.47	- $116,751.81
2024	$1,315,567.17	+$80,715.70

*Repowering **COVID Restrictions

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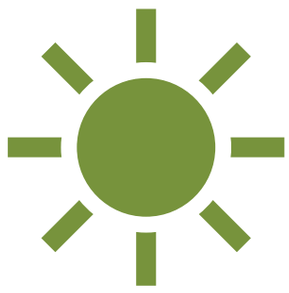
Key Finding: Escalating Problem

Home Affordability

Taxpayer Confidence

Local Services



100% Clean Energy by 2045

Policy Driving Greater Demand

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Key Finding: Alternative Models

ALTERNATIVES	EXAMPLES
Community Benefit Agreements	Oregon & New York
Production Tax	Minnesota & Washington State HB 1756 (2023)
Nameplate Capacity Tax	Nebraska & South Dakota
Special Valuation	Iowa
Payment In Lieu of Taxes	Washington State & New York
Build-Ready Siting	New York

WSAC WASHINGTON STATE ASSOCIATION of COUNTIES

CEPTI Project | Task Force

County Legislators

- Benton County
- Douglas County
- Garfield County
- Grant County
- Klickitat County
- Lewis County
- Lincoln County
- Pacific County
- Snohomish County
- Spokane County
- Whitman County
- Yakima County

County Officials

- Asotin County
- Columbia County
- Kittitas County
- Klickitat County
- Spokane County

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CEPTI Project| Goals

Develop a thorough understanding of the issue

Stability & Predictability

Eliminate tax burden shift

Propose supported solutions

WSAC WASHINGTON STATE ASSOCIATION of COUNTIES

CEPTI Project| Timeline

MEETING & DATE	TOPICS
Meeting 1 | July 24	• Project Plan Overview • Clean Energy Property Tax Issue Refresher
Meeting 2 | July 30	• Washington Property Tax Policy & Process • County Experiences
Meeting 3 | August 14	• Alternative Model Presentations & Discussion
Meeting 4 | August 28	• Alternative Model Presentations & Discussion
Meeting 5 | September 11	• Stakeholder Presentations
Meeting 6 | September 26	• Review Additional Alternatives
Meeting 7 | October 16	• Evaluate & Prioritize Solutions
Meeting 8 | December TBD	• Recommendation Workshop

CEPTI Project | Stakeholders

Commissioners & Councilmembers

Assessors & Treasurers

State Agencies & Legislators

Private Developers & Energy Companies

Clean Energy Orgs

Environmental Groups

WSAC WASHINGTON STATE ASSOCIATION of COUNTIES

WSAC WASHINGTON STATE ASSOCIATION of COUNTIES

Paul Jewell

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Travis Dutton

Policy Coordinator

360.999.3415 tduttonl@wsac.org

Washington State Rural Clean Energy Study

Rural Clean Energy Economics and Community Engagement Study

Prepared for the
Washington Department of Commerce by
Ross Strategic, Industrial Economics, Inc., and the Clean Energy Transition Institute

Washington State Department of Commerce

ROSS STRATEGIC

IEc INDUSTRIAL ECONOMICS, INCORPORATED

Clean Energy Transition Institute

Presentation Overview

Study Background, Purpose, Scope

Community Engagement

- Methodology and Findings

Economic and Financial Analysis

- Methodology and Findings

Recommendations

Study Background

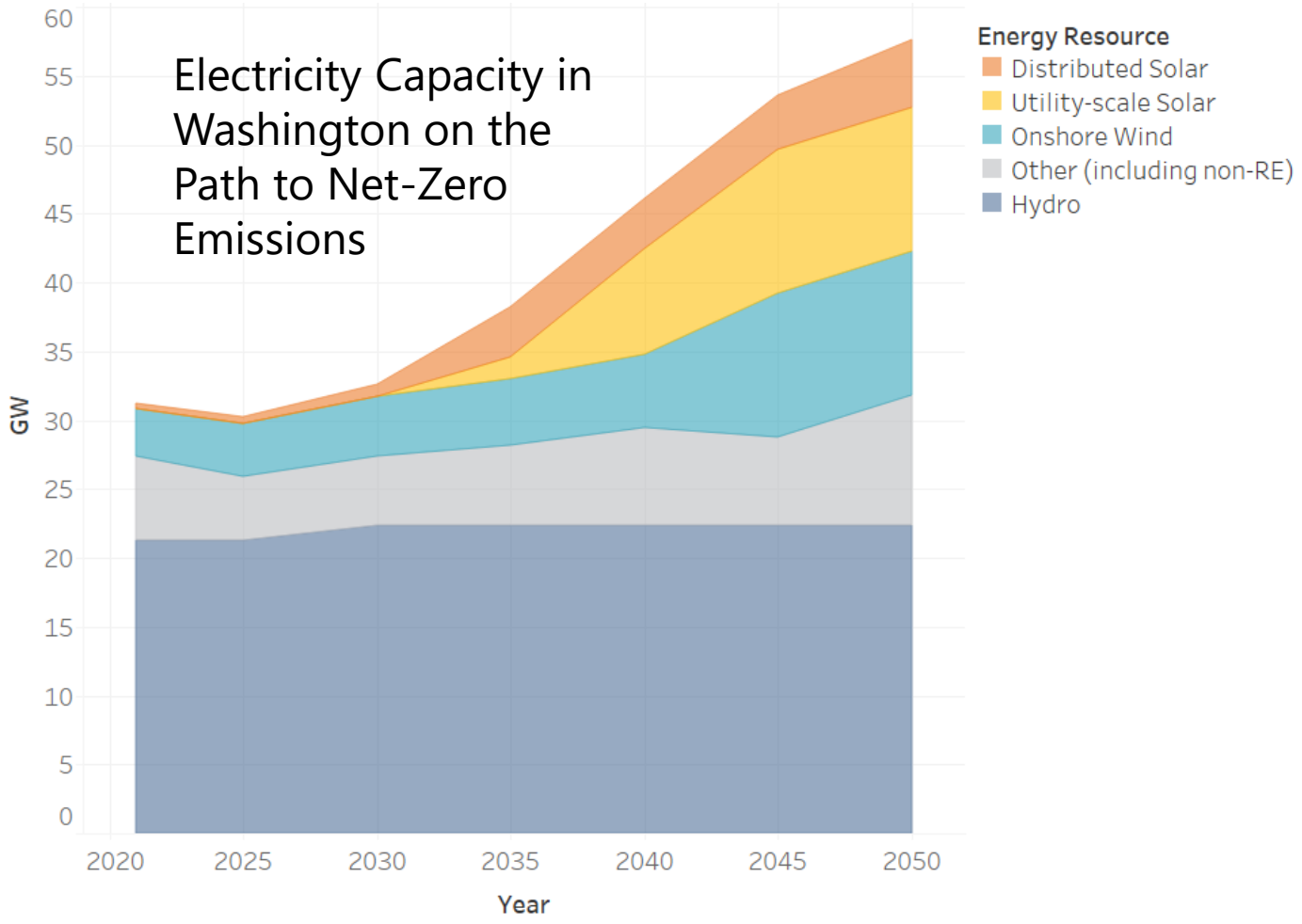
Clean Energy Project Siting Law in 2023: Directive for the Washington Department of Commerce to create and submit a study and legislative report addressing direct and related issues and concerns across rural Washington regarding renewable energy development

Study Purpose and Scope

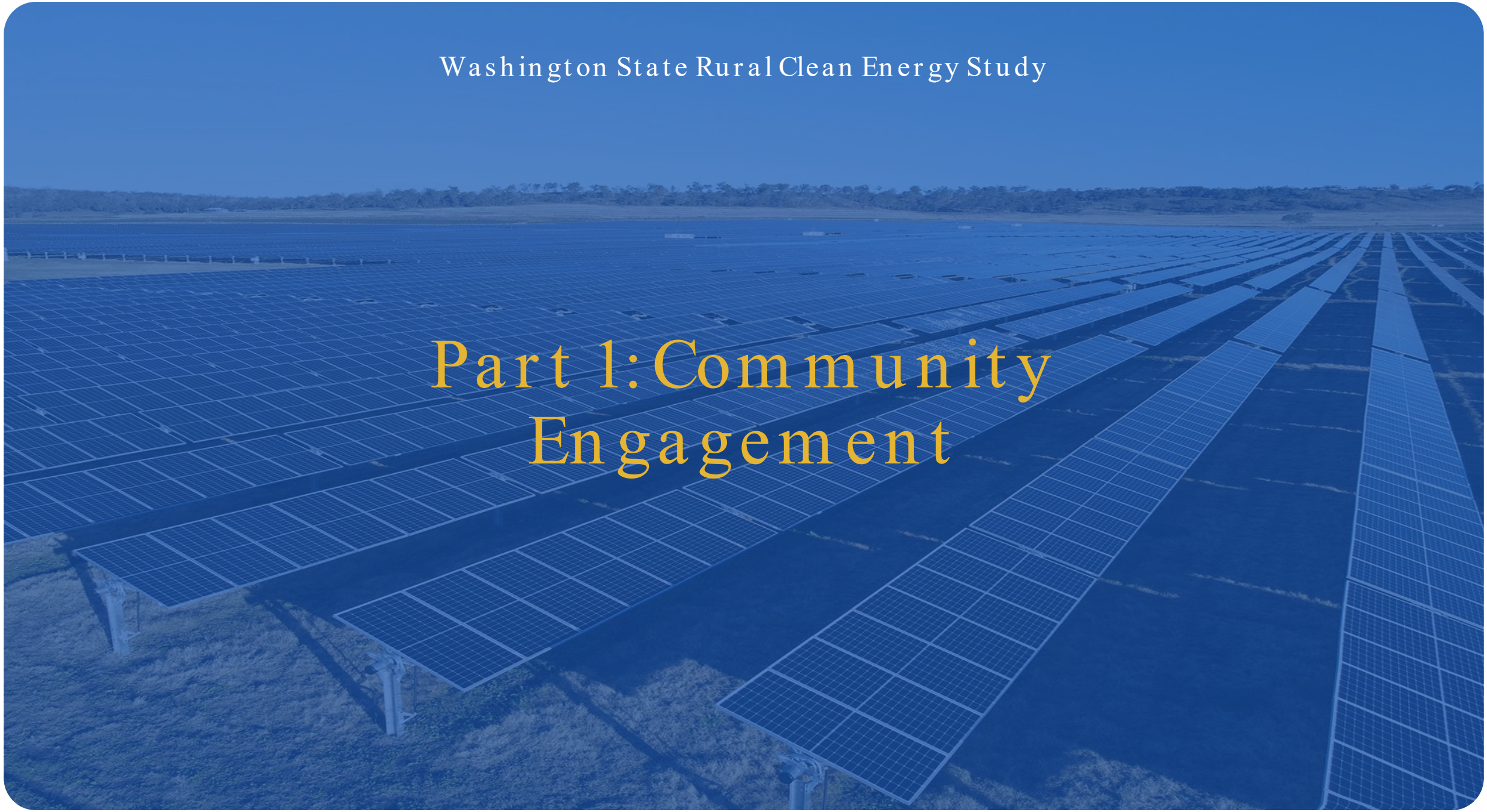
- To increase mutual understanding between rural communities, representative interests, and government agencies and policymakers regarding **potential opportunities and impacts of clean energy development in rural communities** throughout Washington
- The Study included two related parts:
  - Examine potential non-economic impacts to – and opportunities for – rural communities from clean energy development
  - Analyze direct and indirect economic and financial impacts of clean energy projects in rural Washington

Context: Clean Energy Forecast

By 2050 Washington would need to build approximately 15 GW of solar (10.4 of utility-scale and 4.4 of distributed renewable energy) and 7 GW of onshore wind to achieve net-zero emissions in the Northwest



Source: Clean Energy Transition Institute, Net-Zero Northwest: Technical and Economic Pathways to 2050. June 2023. https://www.nznw.org/



Part 1: Community Engagement

Community Engagement: Methodology

- Individual and small-group discussions
  - Interviews (44)
  - Focus groups (3)
- Community-based public meetings
  - May 14: Dayton (49 attendees)
  - May 15: Zillah (12 attendees)
  - May 16: Mount Vernon (20 attendees)
- Statewide virtual public meeting
  - June 5: Virtual (148 attendees)
- Opportunity to review draft report
- Online comments

Findings: Utility-Scale Clean Energy Development

Challenges:

- Lack of local control over project development
- Lack of transparency during project development
- Skepticism about state's decarbonization efforts
- Limited local benefits
- Impacts to quality of life, environment, and land use

Opportunities:

- Increased energy independence
- Leasing marginal agricultural lands can help farmers financially
- Improved air quality and public health from cleaner energy sources

Findings: Clean Energy Development

Solutions:

- Improved clean energy permitting and other processes – county and rural community assistance
- Improved siting to avoid visibility impacts and other issues
- Greater emphasis on community-scale projects
- Streamlined grant applications
- Overall increased collaboration with rural communities

Findings: Economic and Financial Impacts

Challenges:

- Taxes and revenue schedules and depreciation result in unstable local funding
- Employment is not always local
- Agricultural land conversion
- Energy costs and lack of local economic benefits

Opportunities:

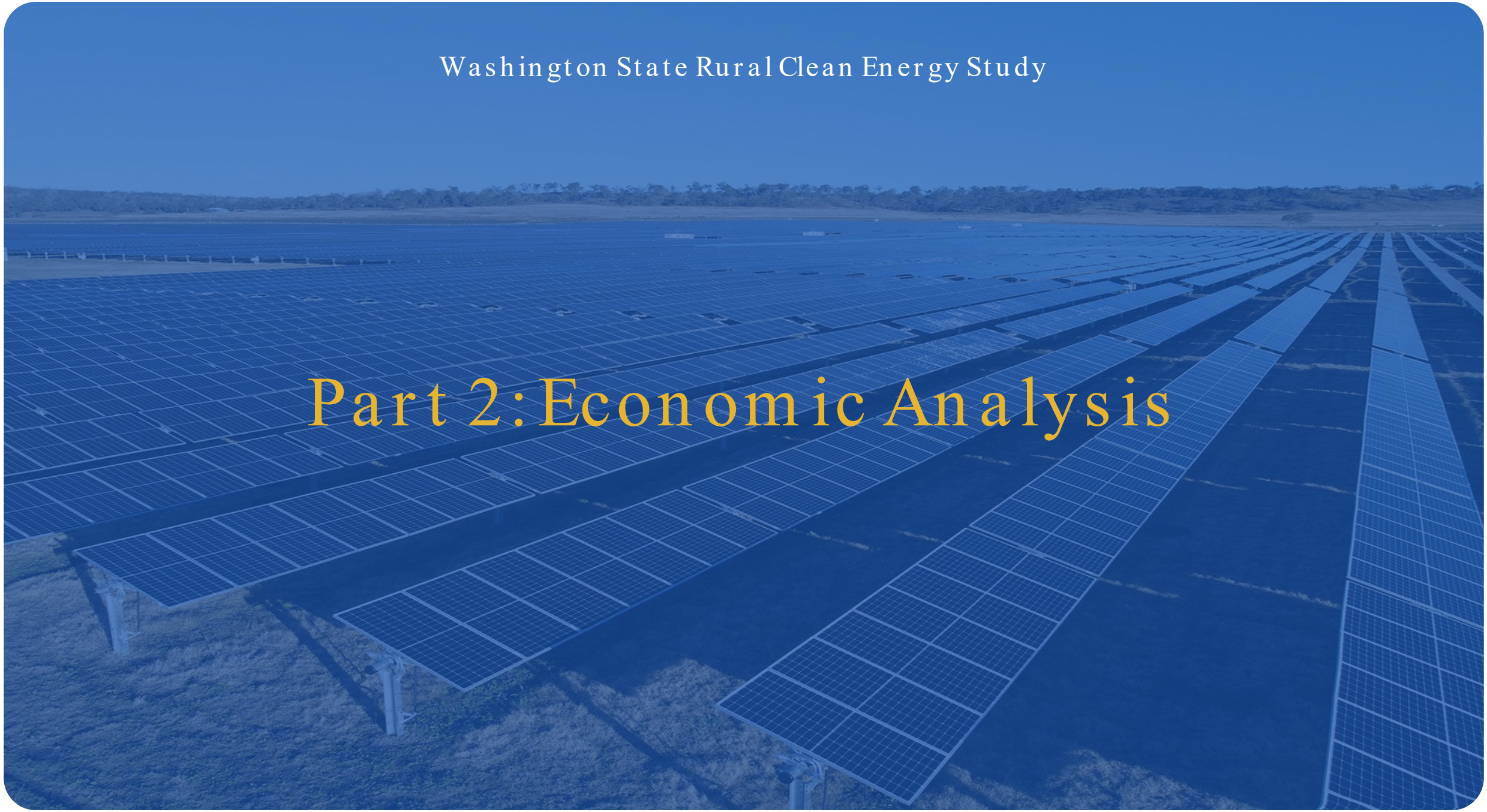
- Community benefits such as mitigation payments
- Clean energy industry development that provides jobs and revenue
- Individual and family benefits such as reduced energy costs, and lease payments for land

Findings: Economic and Financial Impacts

Solutions:

- Education, outreach, and deployment of community benefit agreements
- Support for local clean energy jobs through training and hiring local workforce
- Leveling the tax field to provide stable community benefits

Washington State Rural Clean Energy Study



Part 2: Economic Analysis

Economic Analysis: Charge

Scoping and Planning

Initial Project Inventory

Project Identification and Cataloguing
(EFSEC, EIA, BPA etc.)

Scoping Discussions

Refined Project Inventory

All Identified Projects in Scope
(20 projects)

Projects for Detailed Analysis
(9 projects)

Data Collection

Detailed Project Inventory

Technical Characteristics
(e.g., capacity in MW)

Financial Characteristics
(e.g., leasing rate)

Project Land Use
(e.g., acreage)

General Project Inventory

Community Characteristics
(e.g., population)

Geographic Characteristics
(e.g., location)

Additional Qualitative Research

Analysis and Outputs

Analysis	Outputs
Define Geographic Distribution and Community Characteristics	Map and spreadsheet database of projects
Estimate Land Use Impacts	Quantified changes in land use patterns
Evaluate Financial Returns	Estimated net return for property owners
Estimate Tax and Local Service Impacts	Estimated changes in tax revenues and impacts to local service functions
Discuss Land Use Impacts	Qualitative evaluation of land use changes
Estimate Job Effects	Job effects by characteristics and measures
Identify Economic Development and Mitigation	Review of potential mitigation and economic development plans
Consider and Evaluate Least Conflict Siting	Useful takeaways from LCS report

Report

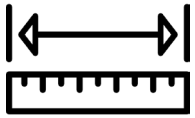
Draft Economic Analysis

Stakeholder Review

Integrate comments

Final Economic Analysis

Economic Analysis: Scope



Project Size

Utility-scale (greater than 1 MW) of installed capacity

Temporal Range

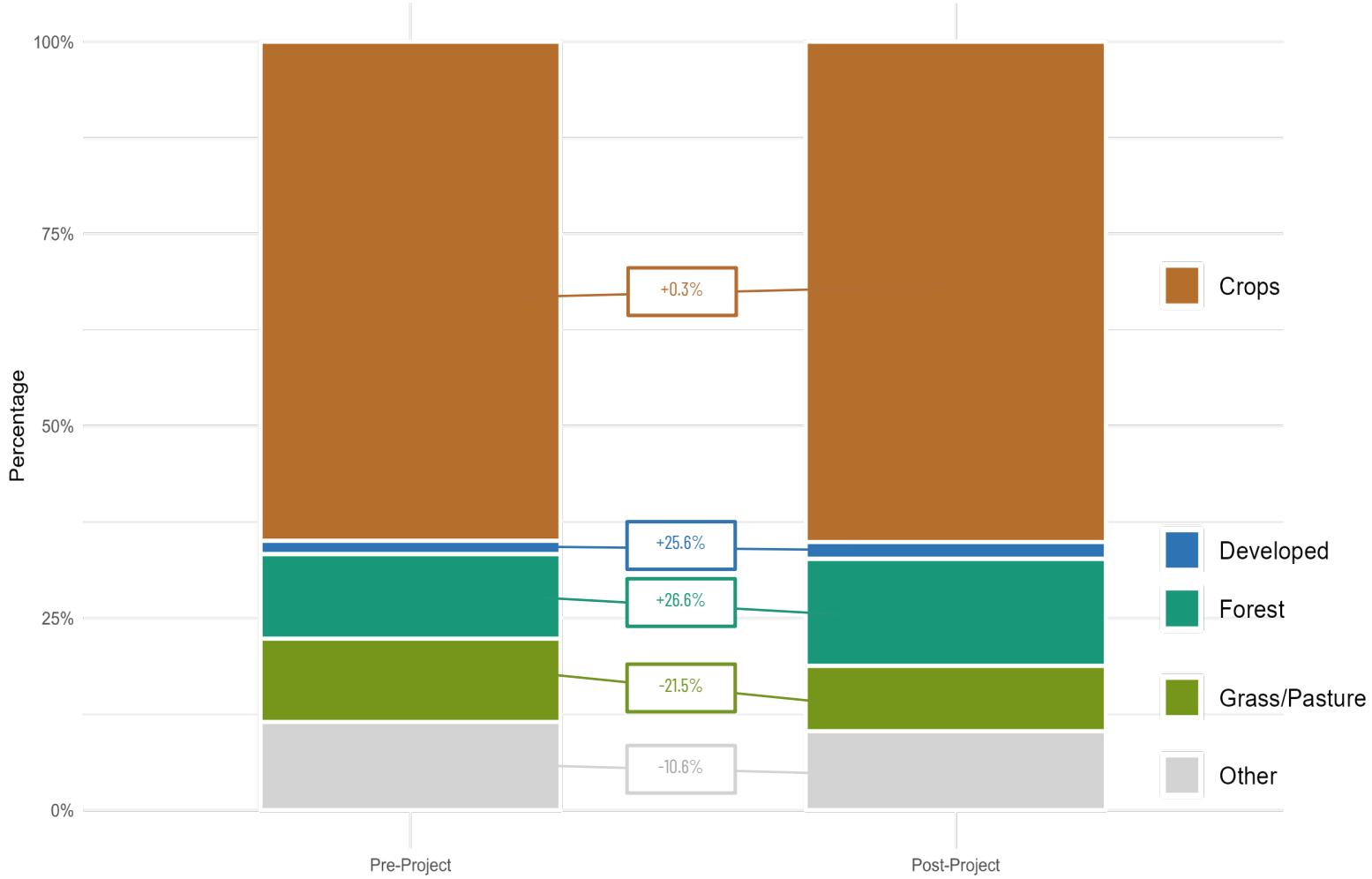
Projects currently operating, under development, or planned within 2019 – 2029

Geographic Area

Rural WA as defined by USDA 2010 Rural-Urban Commuting Area (RUCA) Codes as well as the Columbia Plateau

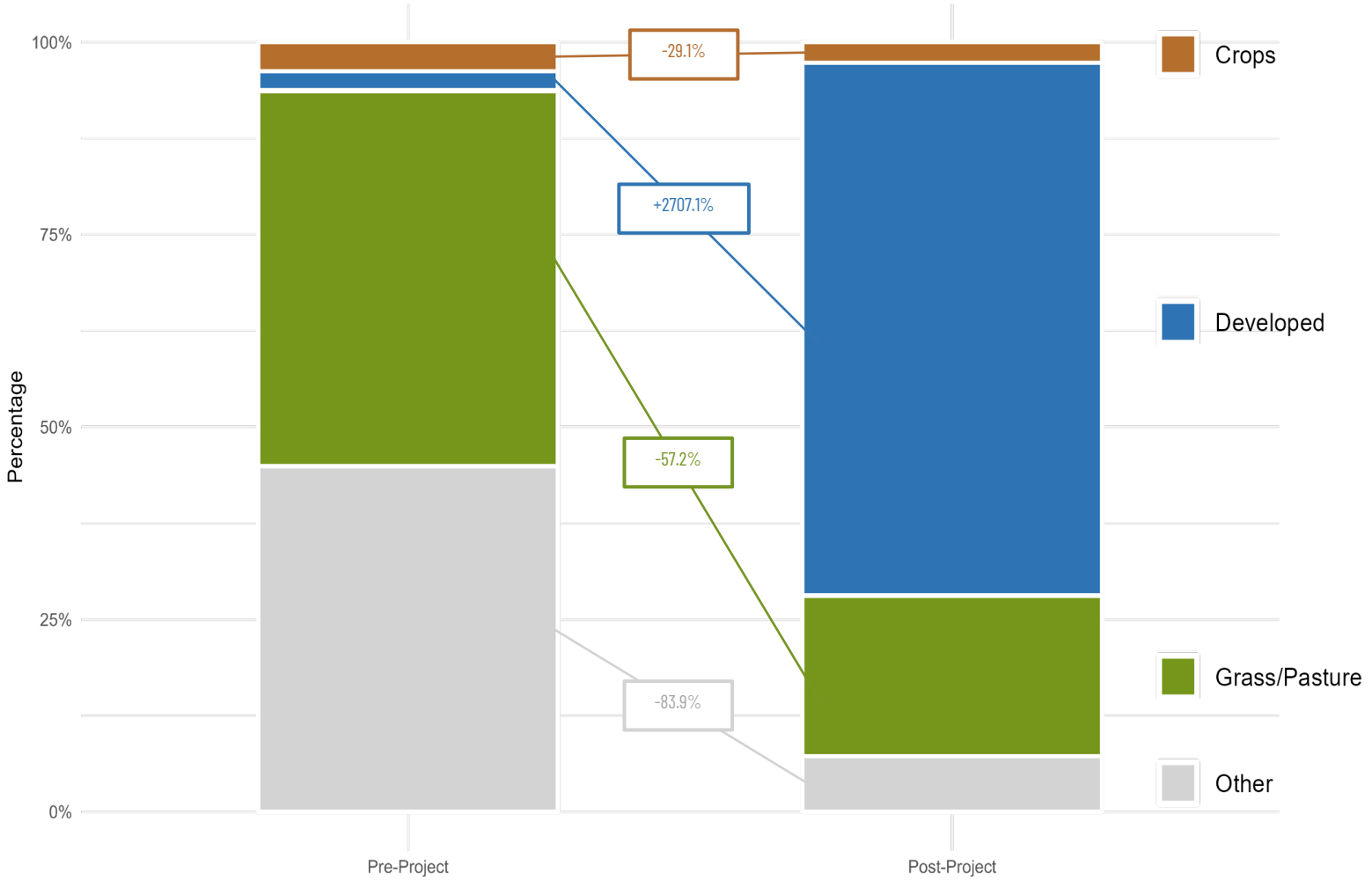
Land Use Changes: Wind Projects

Case studies suggest that onshore wind energy development projects in Washington have a relatively small footprint on surface lands, typically requiring approximately two percent of the total project area for project operations, with the remainder retaining its original land use.



Land Use Changes: Solar Projects

Due to the density of required infrastructure, solar energy projects required conversion of most pre-existing land uses in areas inside the established project fence lines for solar development. Other land uses are precluded by the presence of the solar panels as well as the fences that are typically put up around the panels.



Economic Analysis: Financial Returns to Property Owners

- Payments to landowners
  - Project lands are typically leased by project developers rather than purchased
  - Payments vary widely and may include:
    - Annual rent payments
    - Access payments (e.g., transmission lines)
    - Bonus payments (e.g., signing bonuses)
- Property values
    - Adverse effects on property values range from zero to 6 percent pre- versus post-construction, per literature review
    - Case studies showed average parcel values decreases in assessed property value not larger than 2.5 percent pre- versus post-construction, and some properties increased in value

Economic Analysis: Property and Sales Taxes

- Personal property tax, which includes turbines and panels, is significantly larger than real property tax for all projects reviewed
  - Estimated payments in year one of operations ranged from $140,000 to $2.1 million for personal property while real property payments ranged from $5,600 to $67,000.
  - Large wind and solar projects (i.e., over 100 MW) generate over $1 million in personal property tax payments annually
- Counties receive an initial increase in sales tax from projects during construction or maintenance stages
- Counties tend to see an increase in property tax revenues that starts high and depreciates over time
- County officials expressed several ideas and concerns regarding taxation of projects, including new forms of taxation and concerns about sales tax exemptions

State and local taxes are collected from clean energy projects in three primary methods:

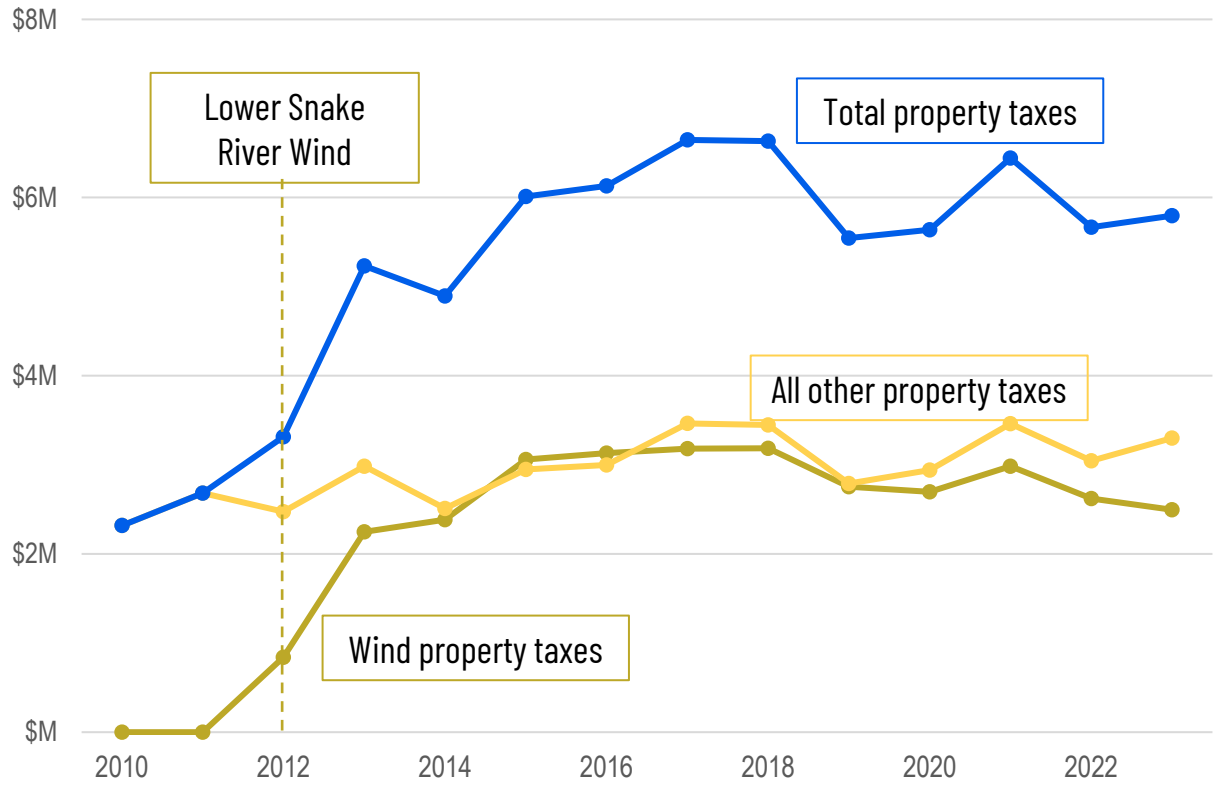
- Real property tax (land and buildings)
- Personal property tax (equipment and machinery)
- Sales tax

Property Taxes: Garfield County Example

In **Garfield County**, **total property taxes** jumped up to **$6M by 2015** with the addition of property taxes from the construction of the Lower Snake Wind project.

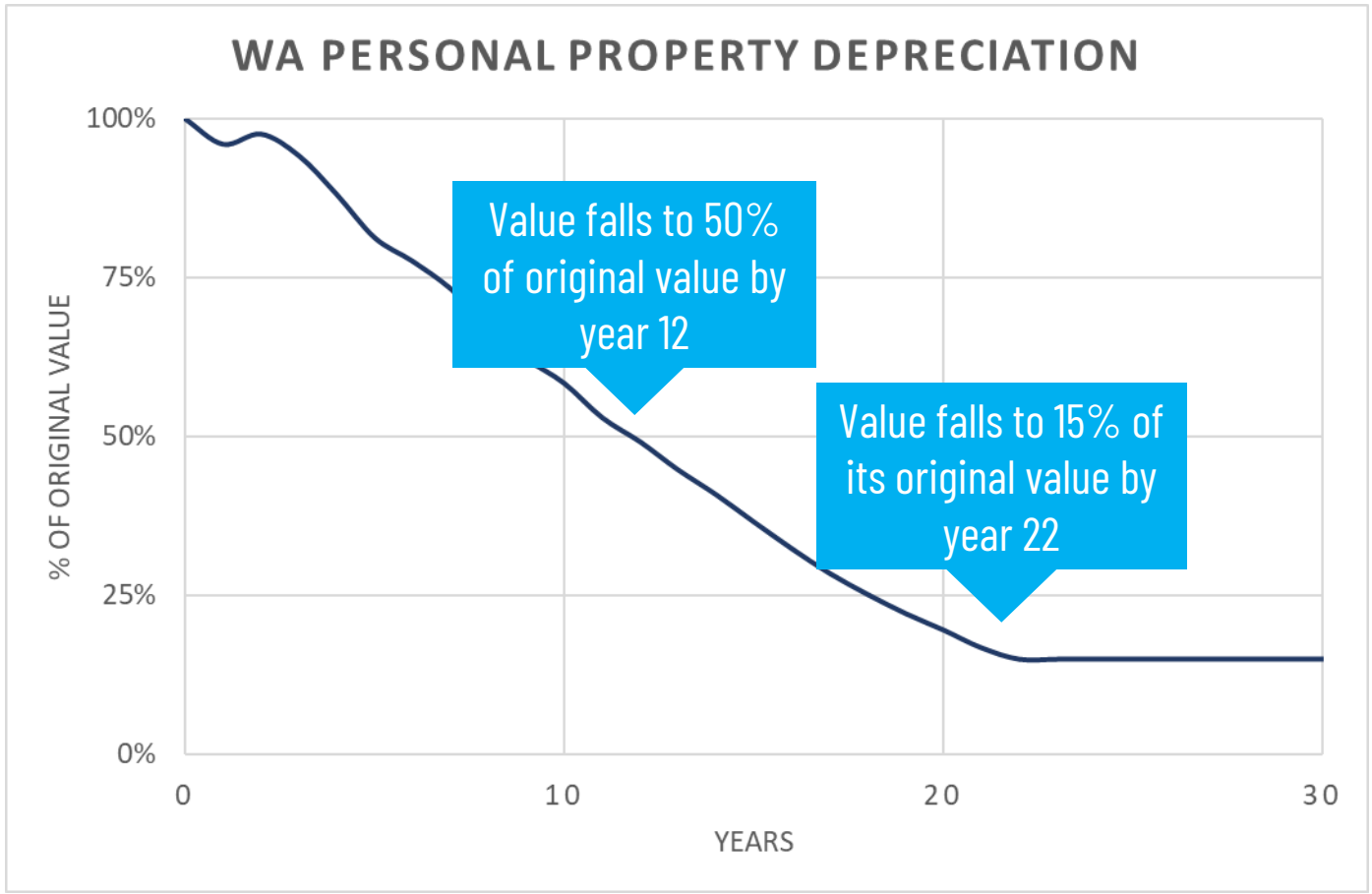
Wind property taxes increased following construction and **peaked in 2018 at $3M** and have slowly declined since.

Collections of other property taxes have remained relatively stable since 2010 with slight increases in recent years.



Personal Property Depreciation

The long-term depreciation of clean energy projects (consistent with their categorization as personal property) and the associated reduction in property taxes collected over time is a concern for county officials.



Source: WA Department of Revenue

Sales Tax: Case Study Projects

County sales taxes increase from the construction of projects; however, the size of the increase is affected by state exemptions.

Project	County	Overall Sales Tax Levy	Total Project Sales Taxes	Portion of Project Sales Taxes to County	County Sales Tax Exemption Back to State	County Sales Tax to County
Rattlesnake Flat	Adams	0.08	$14 million	$2.6 million	**$1.9 million**	$640,000
Lund Hill	Klickitat	0.075	$7.4 million	$990,000	**$740,000**	$250,000
Tucannon	Columbia	0.082	$26 million	$5.4 million	**$4.1 million**	$1.4 million
Skookumchuck	Lewis	0.078	$13 million	$2.1 million	**$1.6 million**	$530,000
Horn Rapids	Benton	0.087	$630,000	$160,000	**$120,000**	$40,000
Columbia	Kittitas	0.081	$800,000	$160,000	**$120,000**	$40,000
Planned Projects						
Carriger	Klickitat	0.075	$11 million	$1.5 million	**$1.1 million**	$370,000
Horse Heaven	Benton	0.087	$99–118 million	$25–30 million	**$19–22 million**	$6.3–7.4 million
Desert Claim	Kittitas	0.081	$8.5 million	$1.7 million	**$1.3 million**	$420,000

Without precise construction costs, these are estimated using modeled results and an assumed 75% exemption.

Economic Analysis: Local Services

Local Effort Assistance (LEA) and School Funding

- LEA is a state education funding program to ensure that school districts with smaller tax bases receive a set amount of funding per student
  - Recent changes to LEA rules at State level from EHB 2242
- Concern raised about school districts losing LEA funding
  - This would only occur due to increase in baseline property taxes from clean energy projects
  - These increases should offset reductions in LEA funding, resulting in a redistribution of funds rather than loss

Economic Analysis: Job Creation

Estimated Job Impacts across Case Studies

- Per project investments ranged from $11 million to $409 million leading to:
  - 40 to 744 FTE jobs
  - $7 million to $133 million in one-time economic contributions to Washington
- Per project operations costs ranging from $80,000 to $11 million
  - 1 to 38 FTE jobs
  - $110,000 to $7 million in annual in-state economic contributions to Washington

Technology	Total jobs per $M invested: Construction	Total jobs per MW capacity: Construction	Annual jobs per $M invested: Operations	Annual jobs per MW capacity: Operations
Onshore Wind	2.3	3.2	4.9	0.16
Solar PV	4.1	6.0	12.1	0.25

Economic Analysis: Development Assistance & Mitigation Payments

Mitigation and Economic Development Agreements:

- **Community Benefit Agreements**: legally binding, enforceable contracts signed by project developers and community groups. CBAs can provide funds for development, support affordable housing, environmental mitigation, infrastructure, priority projects identified by the community.
- **Payment in Lieu of Taxes**: payment in lieu of taxes (PILT) compensate a government for property tax revenue lost due to tax exempt ownership or use of real property. PILTs can replace irregular payments due to depreciation property with a standardized set of payments over time.
- **Other Community Benefits:** Any other direct or indirect support for the community provided by a project developer.

Mitigation in Case Study Projects

Case Study Project	Developer Economic Development/Mitigation Action
Horn Rapids Solar	Estimated $7.3m value in resident benefits over 25 years
Rattlesnake Flat Wind	Donations to local organizations
Skookumchuck Wind	Collaboration around EIS and development agreement, and mitigation for local fire services
Columbia Solar	Indirect investments to local organizations
Tucannon Wind	$20k annual fund for local conservation projects

Economic Analysis: Conclusions

1. Impacts on land use vary by technology. Wind projects typically having a smaller relative impact on their site footprint compared to solar projects.
2. Projects can provide significant financial benefits to landowners who lease their land to developers. Lease terms vary by project type and site – lease payments are typically per MW for wind and per acre for solar.
3. Projects bring substantial property tax revenues to counties. Across case study projects, clean energy projects contributed far more to total county personal property taxes than real property taxes due to the high values of equipment assessed at these sites. Sales tax payments are also large increases in tax revenue for counties, however state exemptions reduce the total amount received by counties.
4. Project can generate a substantial number of jobs during the construction phase and a modest number of permanent jobs during operations. Construction jobs are often not local workers, while operational jobs are local.

Recommendations

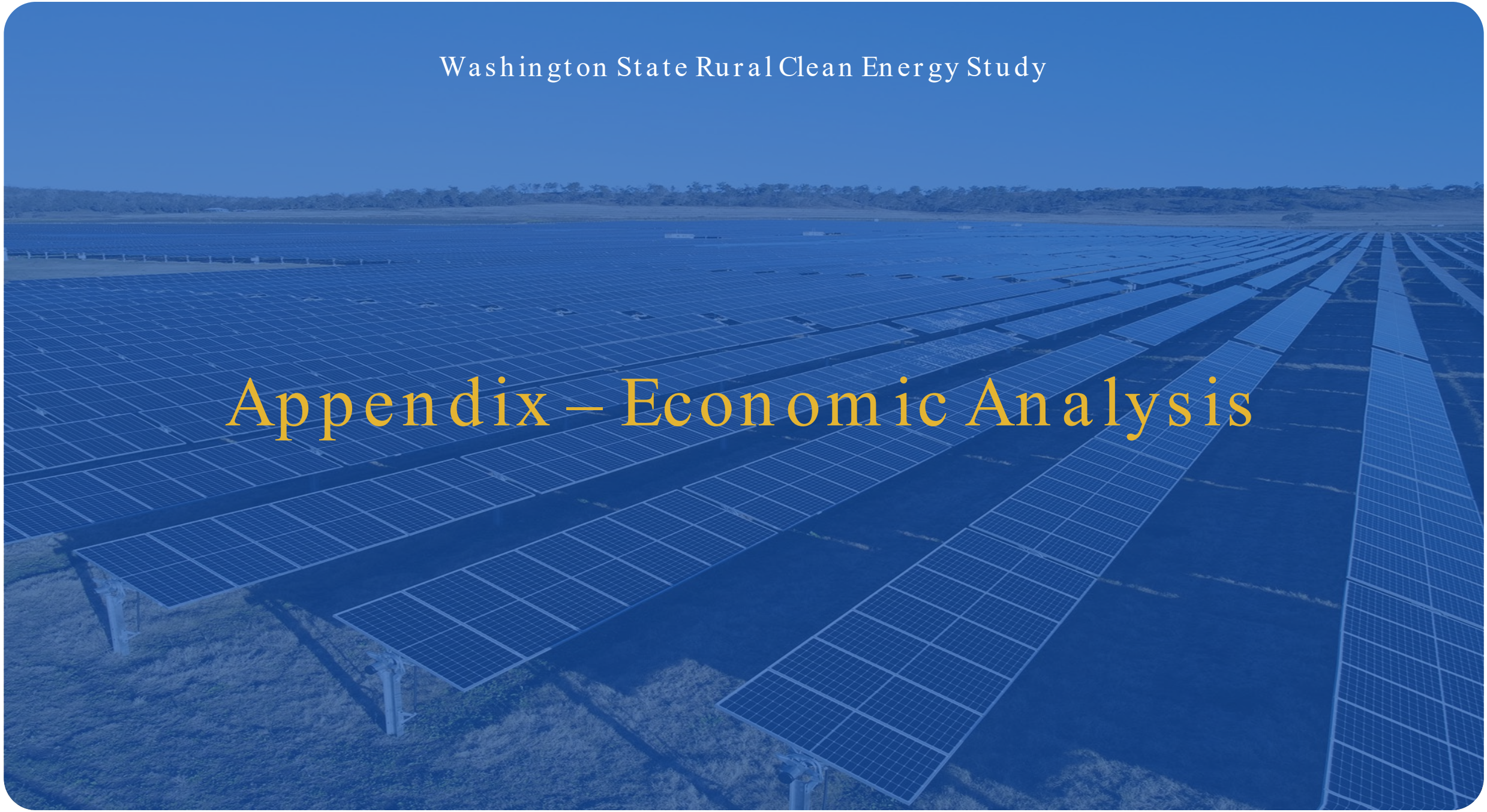
Overall Recommendations

1. Strengthen local involvement in clean energy siting/project development processes to ensure that rural communities are informed and have a meaningful role in the decision-making process
2. Make efforts to increase rural community benefits and mitigate potential harms from clean energy projects
3. Safeguard and enhance the quality of life in rural communities as clean energy projects are developed
4. Improve transparency in the planning, development, and operation of clean energy projects

Overall Recommendations

5. Explore an alternative taxation approach for large clean energy projects
6. Improve communication about sales taxes and clarify expectations about payback timelines for developer rebates
7. Increase transparency of economic and financial data reporting
8. Improve documentation of federal and state incentives

Washington State Rural Clean Energy Study



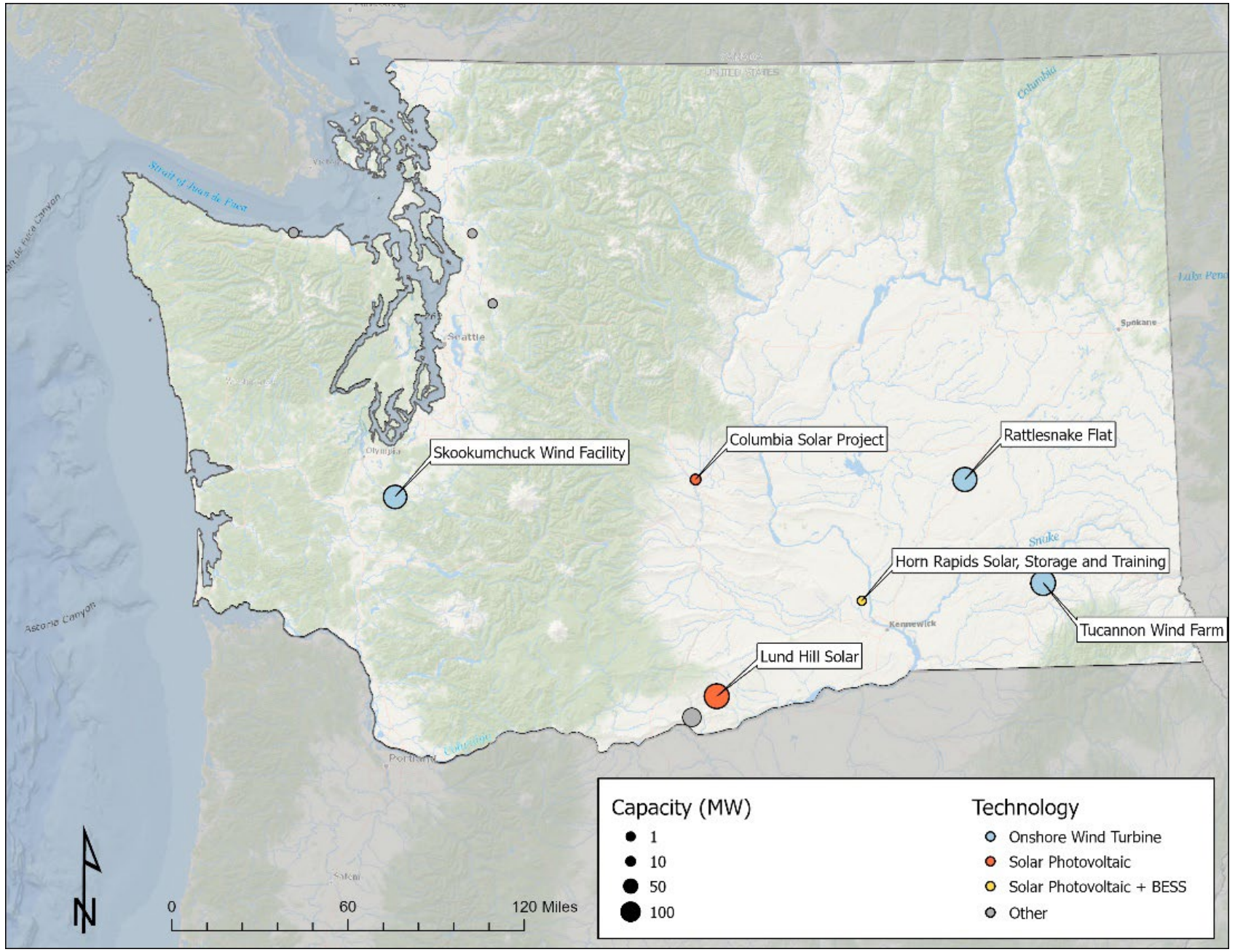
Appendix – Economic Analysis

Economic Analysis: Geography

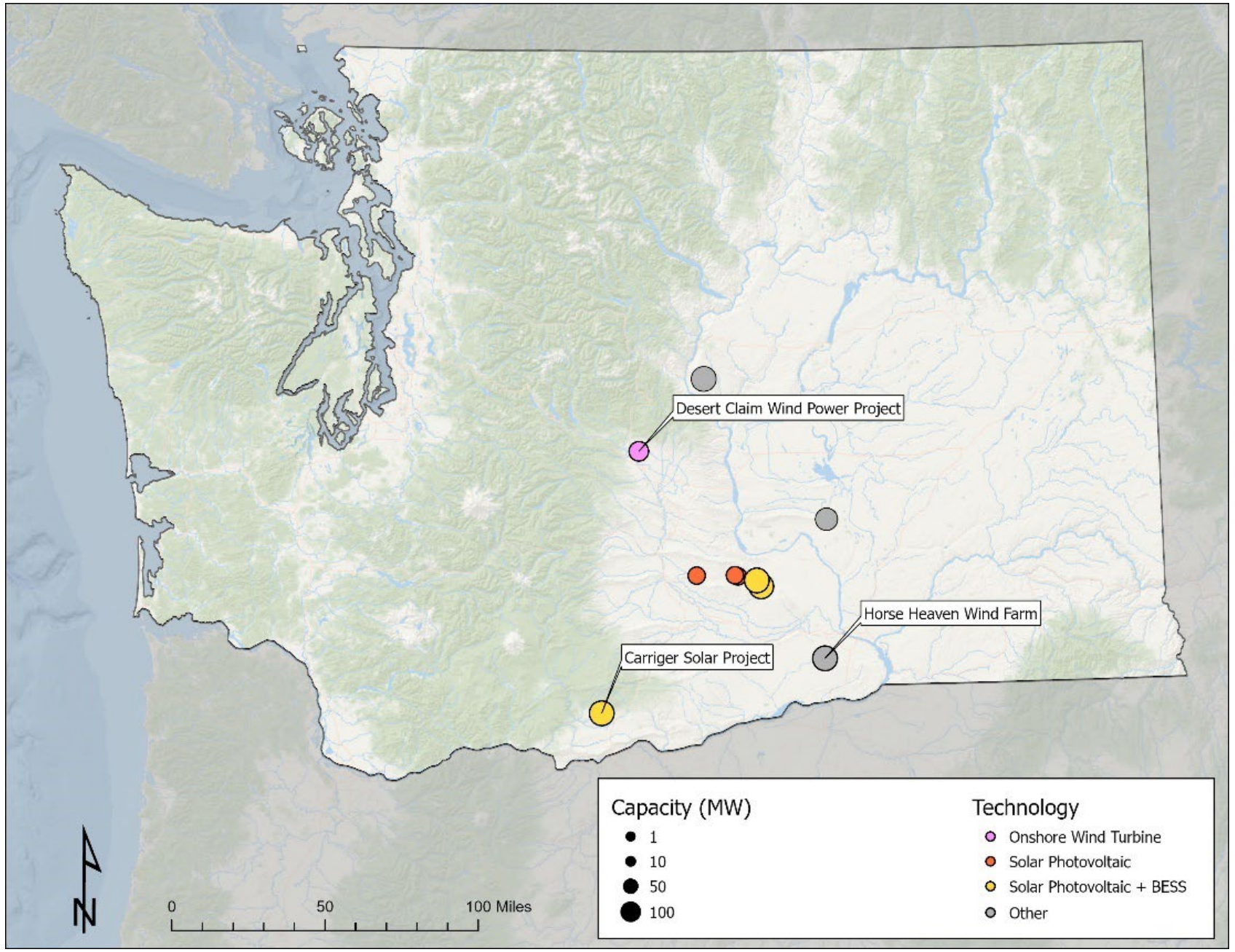
- **Since 2019, 20 utility-scale clean projects have been planned or developed in Washington**
  - 13 solar energy (65 percent)
  - 7 onshore wind energy (30 percent)

- **Of these, 10 utility-scale projects are currently operating**
  - 4 projects west of the Cascades; 6 east of the Cascades
  - 4 projects over 100 MW of capacity each
  - Total operating capacity of 10 projects is 823 MW
- **The analysis focuses on 9 case study projects across the state**

Economic Analysis: Case Studies– Operating Projects



Economic Analysis: Case Studies– Planned Projects



Economic Analysis: Financial Returns to Property Owners

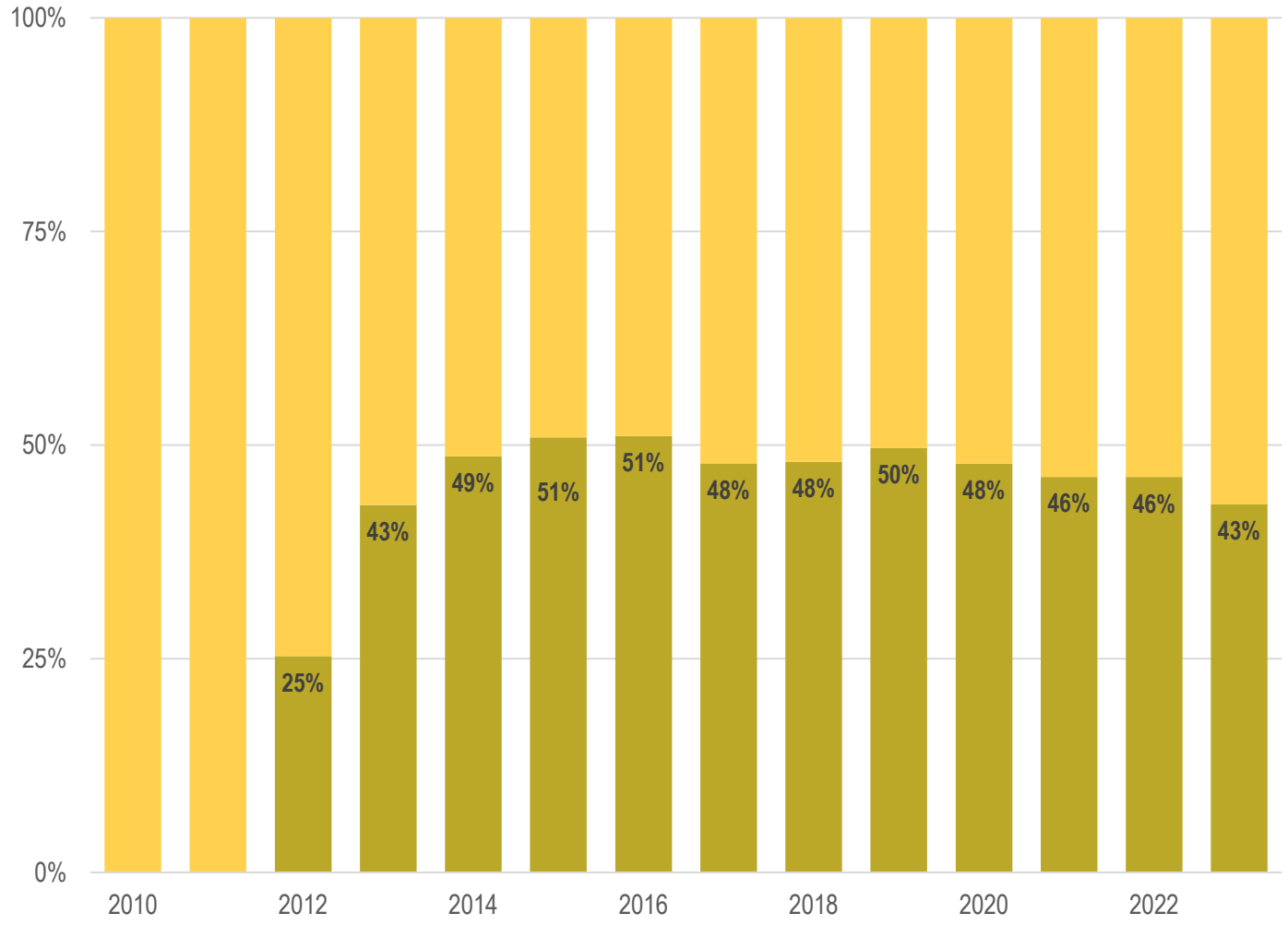
Payments to landowners vary widely based on case studies and published literature

Project/Source	Year	Geography	Annual Lease Payments (once operational)
Wind			
Rattlesnake Flat WA DNR Lease*	2019	Adams County, WA	5-7% of project revenues
Industry	2016	N/A	$3,000 to $4,000 per MW or 2-4% of revenues
American Wind Energy Association	2019	Western US	$7,841 per MW
USDA Forum	2023	United States	$10,000 per turbine
In-state wind developer	2024	Lincoln County, WA	$45 per acre + $6,000 per MW
Solar			
Lund Hill WA DNR Lease*	2019	Klickitat County, Washington	$300 per acre increasing to $400 per acre over time
BLM Solar Lease Rates in Washington State (2017-2025)	2023	Higher land value counties (e.g. King, Snohomish)	$1,013 - $3,112 per acre
		Moderate land value counties (e.g. Walla Walla, Lewis)	$146 – $410 per acre
		Lower land value counties (e.g. Klickitat, Douglas, Ferry)	$36 – $106 per acre
Moore et al.	2022	Michigan, Texas, Maine	$500 - $1,200 per acre
Strategic Solar Group	2018	United States	$300 - $2,000 per acre, depending on location and project size

* Case studies

Property Taxes: Garfield County Example

By percentages, taxes from wind projects rapidly increased to just over 50% of the county's property taxes by 2015. Since 2016 this has decreased, and they now represent 43%. All other property taxes have fluctuated from representing all property taxes down to 49% and are now just above half in recent years.



Department of Commerce Emailed Responses to Member Questions Asked During the November 18th Meeting.

Rural Clean Energy – Legislative Presentation / Q&A Responses

1. Compare land area requirements from Discovery Institute study to our results using NZNW/NREL sources. (Klicker)

The Discovery Institute study examined a scenario in which future electricity demand will be met only with renewable resources: wind, solar, and existing hydroelectric plants, plus battery storage and pumped storage (the "RO Scenario"). See summary on page 26 of the Discovery Institute report.

Comparing this scenario to results of CETI's Net-Zero Northwest (NZNW) study shows the following differences in projected wind and solar capacity and associated land requirements in 2050 for Washington and Oregon.

Methodology
MW requirement: Results from each study
Power density: The Discovery Institute cites a 2015 source: Vaclav Smil, Power Density (Cambridge, MA: MIT Press 2015), p. 67. The Smil study provides a rough "order of magnitude" estimate of power density (measure of capacity per unit of geographic area) for multiple generation technologies. There have been significant advances in power density since 2015. The power density from NZNW/NREL column comes from the National Renewable Energy Laboratory (NREL) supply curves (https://www.nrel.gov/gis/wind-supply-curves.html and https://www.nrel.gov/gis/solar-supply-curves.html) released in 2023. The research supporting these values is published here: https://www.nrel.gov/docs/fy24osti/85075.pdf

Land requirement: Calculated by dividing power density by MW requirement to produce sq km.

	Discovery	NZNW/NREL
Onshore wind requirement (MW)	66,000	23,292
Wind power density (MW/sq km)	1.0	8.0
Land requirement (sq km)	66,000	2,928
Land requirement (sq miles)	25,483	1,131
Utility-scale solar PV requirement (MW)	147,000	23,822
Solar power density (MW/sq km)	6.0	32.0
Land requirement (sq km)	24,500	744
Land requirement (sq miles)	9,459	287
Note: The Discovery Institute study covers Washington and Oregon. To provide consistent results, this table presents NZNW/NREL results for the two states combined. The Washington-only requirements are 10,442 MW for wind and 10,448 MW for utility-scale solar.		

2. Track down whether there is a tax on nameplate capacity of hydroelectric facilities (Ybarra)

- We believe that Representative Ybarra was referring to the hydropower license fee administered by the WA Department of Ecology. This is a fee described in law based on the nameplate capacity and a variety of rates for different tiers of capacity (e.g., $0.18 per unit of horsepower up to 1,000 horsepower). This fee does not apply to Federal dams.
- A summary of the fee can be found here with the next Biennial Report due soon. For 2020-2021 (see Appendix A here), total fees collected were $1.4M with fees for individual dams ranging from as low as $20/year up to over $200,000/year (Rocky Reach at 1,300 MW, one of the largest dams in the state by capacity).
- These hydropower fees are not in lieu of taxes and instead are a fee in addition to taxes.

3. Determine if population changes in areas with projects are notable or related to projects (Doglio)

The higher population growth rate reported in tracts with study projects [reported as 47.8% between 2012 and 2022 for census tracts intersecting a case study project] is not representative of actual population growth for two reasons:

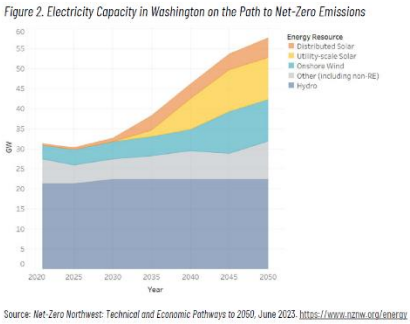
- Between 2012 and 2022, some census tract boundaries were revised (e.g., split up and/or combined), making them difficult to directly compare across this time period. This generates some "noise" in the population data presented.
- The 2022 population estimate includes several tracts associated with the Horse Heaven project that has not yet been built. The inclusion of these tracts in the 2022 data made the percent increase since 2012 appear to be artificially high. The population growth rate across affected census tracts that intersect just the operating case study projects is approximately 16%, which is close to the state average of 14%.

4. Innovative designs for solar PV (Slatter)

We believe this question had two parts. The first is how innovative/future designs for solar PV may improve its overall efficiency, thus either reducing the footprint needed to provide today's equivalent energy demand in the future or increasing the energy derived from a similar footprint today—and whether such potential efficiency gains were included in the ATB forecasts. CETI produced the Net-Zero Northwest (NZNW) study, with Evolved Energy Research, to model energy pathways that would meet net-zero emissions by 2050 in Idaho, Montana, Oregon, and Washington. Evolved Energy Research relies on the National Renewable Energy Laboratory (NREL) Annual Technology Baseline (ATB) for data about capacity factors. The ATB does take into account innovative technological improvements in solar PV that lead to greater capacity in its forecasts.

The second part to this question related to the potential to gain clean energy through the use of agrivoltaic solar arrays. Agrivoltaic applications may offer significant potential benefits for rural Washington. Agrivoltaic systems have been shown to be successful in regions as diverse and far reaching as Colorado and Maine (USDA Climate Hubs. 2023; Agrivoltaics: Coming Soon to a Farm Near You?). The potential of agrivoltaics in rural Washington holds similar potential, though there has been little implementation of such systems at this time. By implementing agricultural and/or grazing-friendly solar arrays, especially through co-location with linear structures such as ditches, agrivoltaic systems could help support the region's agricultural customs and culture while helping to reach the state's renewable energy goals.

5. Assumptions for the forecast graph + ability to add the demand for data centers, AI, etc. to the forecast graph (Doglio)



This figure comes from CETI's Net-Zero Northwest (NZNW) study, produced with Evolved Energy Research, which modeled energy pathways to meet net-zero emissions by 2050 in Idaho, Montana, Oregon, and Washington. The study incorporated state-specific policies, including Washington's interim 2030 emissions target (45 percent reduction by 2030 from 1990 levels), and CETA for the state's electricity sector (greenhouse gas emissions neutral by 2030 and 100 percent clean by 2045).

The NZNW study—as with other deep decarbonization studies—found that using clean electricity to power as many buildings, transportation, and industrial processes as possible is the most efficient and economical way to decarbonize. This is because electricity is inherently more efficient than fossil fuels in many applications in the economy, notably vehicle motors and heating in buildings. New loads from electrification and fuels production would drive large investments in clean energy resources to generate electricity, shown in the above figure.

Notably, the NZNW study – developed in 2022 and released in 2023 – included existing data center load but did not include specific assumptions about data center load growth and therefore it is not possible to add data center/AI demand to the above figure.

CETI and Evolved Energy Research are currently working on a project for Washington Department of Commerce to assist with their Comprehensive Climate Action Plan (CCAP), and that modeling does include data center load growth, using the Northwest Power and Conservation Council's data center load forecast from the Pacific Northwest Power Supply Adequacy Assessment for 2029, pg 15. Results from the Washington CCAP modeling will be available in 2025.

APPENDIX C: ADDITIONAL REPORTS UNDER E2SHB 1216

The following reports have been published as a result of requirements under E2SHB 1216:

- Interagency Clean Energy Siting Coordinating Council: Clean Energy Project Siting
- Department of Ecology: Considerations for Consolidating Clean Energy Permits and Applications
- Beverage & Diamond: Siting and Permitting Reform in Washington: A Report to the Washington Department of Commerce under RCW 43.394.020(3)(a)