Workgroup/Study on Small-Scale Renewable Energy Projects OUTLINE

Executive Summary (2 pages, Leg requirement)

To be completed after recommendations finalized – 2 pages

Table of Contents (with embedded links to sections)

Overview of study

HB 2021 + Purpose

The goal of the HB 2021 Study on Small-Scale Renewable Energy Projects was to convene a workgroup and examine opportunities to encourage development of **small-scale** and **community-based** renewable energy projects that can contribute to economic development and local energy resiliency to better understand the role of small-scale renewable energy projects and community-based renewable energy projects in Oregon's equitable clean energy transition. Furthermore, the purpose of the workgroup was to consider factors related to development of these projects from the perspectives of the diverse range of stakeholders in Oregon's energy future.

The legislature defined specific topics for the workgroup to explore:

- Opportunities and barriers to development of small-scale and community-based renewable energy projects
- Opportunities and potential models for diverse access and ownership of small scale and community-based renewable energy projects in Oregon.
- Economic, resilience, and other benefits and costs of small-scale and community-based renewable energy projects
- Potential rate impacts of development of small-scale and community-based renewable energy projects in Oregon

Definitions

HB 2021 Section 18 directed ODOE to "*convene a workgroup to examine opportunities to encourage development of **small-scale** and **community-based** renewable energy projects in this state that contribute to economic development and local energy resiliency.*" The Legislature

uses the terms "small-scale" and "community-based" separately in this direction, clearly recognizing a difference between them and directing the workgroup to examine both.

Oregon law provides definitions for both terms:

> Small Scale Renewable Energy Projects
>
> ORS 469A.210 defines small-scale renewable energy projects as projects "with a generating capacity of 20 megawatts or less that generate electricity utilizing a type of energy described in ORS 469A.025". PUC order 21-464 (adopted December 14th, 2022) further refines this definition requiring a small-scale renewable energy project to be an Oregon Renewable Portfolio Standard-approved generator and excludes net-metered projects.
>
> Community-Based Renewable Energy
>
> HB 2021 Section 1 defines community-based renewable energy as "one or more renewable energy systems that interconnect to utility distribution or transmission assets and may be combined with microgrids, storage systems or demand response measures, or energy-related infrastructure that promotes climate resiliency or other such measures, and that:
>
> (a) Provide a direct benefit to a particular community through a community-benefits agreement or direct ownership by a local government, nonprofit community organization or federally recognized Indian tribe; or
>
> (b) Result in increased resiliency or community stability, local jobs, economic development or direct energy cost savings to families and small businesses."

Based on the statutory definitions, the Study on Small-Scale Renewable Energy Projects examined project types in two categories:

> *Category 1)* ***Small-Scale Renewable Energy Projects****: Eligible projects to meet the ORS469A.210 small-scale renewable energy project capacity standard, specifically, renewable energy projects with a generating capacity of 20 megawatts or less that generate electricity utilizing a type of energy resource eligible under the Oregon Renewable Portfolio Standard and that are eligible to be certified as an RPS-approved generator. The study will not consider net metered projects under this definition.*
>
> *Category 2)* ***Community-Based Renewable Energy Projects****: Renewable energy projects not in Category 1 with a generating capacity of 20 megawatts or less that generate electricity utilizing a type of energy described in ORS 469A.025 that interconnect to utility distribution or transmission assets and that:*

(a) Provide a direct benefit to a particular community through a community-benefits agreement or direct ownership by a local government, nonprofit community organization or federally recognized Indian tribe; or

(b) Result in increased resiliency or community stability, local jobs, or economic development.

The study may consider net metered projects under this definition.

Project types considered in both categories may include microgrids, storage systems or demand response measures, or other energy-related infrastructure that promotes climate resiliency.

The study will only examine projects in Oregon as required in HB 2021, Section 18.

This Workgroup and Study examined the two categories of projects separately and maintain a clear distinction between categories of project types in analysis and reporting.

This definition is for the Study on Small-Scale Renewable Energy Projects only and is not a definition for any other proceedings or purposes.

Workgroup structure and members

HB 2021 Section 18 directed the Oregon Department of Energy to convene a diverse workgroup of Oregon stakeholders to examine opportunities to encourage development of small-scale and community-based renewable energy projects that can contribute to economic development and local energy resilience. Based on the workgroup's findings, ODOE produced this report describing the current status and trends for small-scale renewable energy development.

Workgroup Members:

- Senator Michael Dembrow
- Representative Mark Owens
- Allie Rosenbluth, Rogue Climate
- Angela Crowley-Koch, OSSIA
- Bob Jenks, Oregon Citizens' Utility Board
- Dan Orzech, Oregon Clean Power Cooperative
- Dave Moldal, Energy Trust of Oregon
- Diane Henkels, SBUA
- Erik Anderson, Pacificorp
- Heidi Hawkins, Exelon
- Jaimes Valdez, Portland Clean Energy Fund
- Jimmy Lindsay, PGE
- Jon Jinings, DLCD
- Julie Peacock, BPA
- Kacia Brockman, Oregon PUC
- Kyle Roadman, Emerald PUD
- Marc Patterson, Idaho Power
- Mark Nystrom, Lane County Public Works
- Mike McArthur, CREA
- Natalie Rogers, City of Milwaukie

- Nikita Daryanani, Coalition of Communities of Color
- Oriana Magnera, Verde
- Ranfis Giannettino-Villatoro, BlueGreen Alliance
- Ryan Davies, Central Electric Coop
- Steve Uffelman, Prineville City Council
- Tom McBartlett (City of Ashland), OMEU
- Will Van Vactor, Crook County
- Maggie Tallmadge, Navajo Power

Timeline

Based on the requirements of HB 2021 outlined above, ODOE hosted the following meetings on the following topics:

December 2021:	Form Workgroup and Hold Kick-Off Meeting
April 28, 2022:	Advisory Committee Workshop #1: Ownership & Access
June 3, 2022:	Advisory Committee Workshop #2: Opportunities & Barriers
June 28, 2022:	Advisory Committee Workshop #3: Economic, Resilience, Rate, & Other Impacts, Benefits, and Costs
July 28, 2022:	Advisory Committee Workshop #4: Project Recap & Possible Recommendations
Sept. 30, 2022:	Report due to the State Legislature

Topics of workshop / schedule / links to materials

For more information, including extensive background materials and full recordings of the workgroup meetings, visit https://www.oregon.gov/energy/Data-and-Reports/Pages/SSREP-Study.aspx

Current landscape and policies

Current renewable energy data in Oregon

Summary of existing policies

- HB 2021
- Oregon Renewable Portfolio Standard
- Small-Scale Renewable Energy Project Targets – ORS 469A.210
- The Public Utility Regulatory Policies Act of 1978 (PURPA)
- Net Metering

- Power Purchasing Agreements (PPAs)
- Community Solar
- Direct Access

Key findings from workshops

Access and ownership

There are a wide variety of options for community access and ownership of renewable energy. These options are dependent on various factors including energy regulations, how projects are structured, and how projects can access financial incentives. For example, commercial solar energy facilities are currently eligible for a federal tax credit equal to 26% of the capital cost of the project. Because it is a tax credit, this incentive favors owners, or ownership models, with federal tax liability. Some examples of ownership models discussed in the workshops include:

> ***Community Shared Renewables*:** Community shared programs typically enable participants to buy a subscription for output from a centrally located system. The subscription represents a portion of the generation from the community solar project and often translates to savings on the participant's electric bill.
>
> ***On-Site, Behind-the-Meter:*** A larger electricity customer (either a taxable business or a tax-exempt entity such as a school) installs a renewable project on the customer side of the meter to supply on-site power and thereby displace power purchased from the utility.
>
> ***Cooperative Local Ownership:*** Local landowners and investors, ideally with tax liability that can be offset by the federal tax credit, pool their resources into an LLC to own and operate the project while selling output to the local utility.
>
> ***Flip Structure:*** Local investors without tax liability bring in a tax-motivated corporate equity partner to own most of the project for the first ten years (i.e., the period of tax credits), and then "flip" project ownership to the local investor thereafter.
>
> ***Municipal-Owned:*** A municipality develops and owns an in-front-of-the-meter project, potentially financed with tax-exempt municipal bonds, and sells the power to the utility.

These models tend to be more common with small-scale projects than with larger-scale projects. In the case of large-scale renewable projects, the more common model is where a utility owns a project directly or signs a long-term contract to purchase the output from a third-party developer (also known as an independent power producer). With these ownership models, all customers of the utility benefit equally from these large-scale projects. For example, the clean energy and carbon benefits of such projects accrue to the power system and all those connected to it, rather than to specific customers as might be the case with certain small-scale ownership models. While specific customers do not own the resource in these scenarios, they

may have lower-cost access to these clean energy and carbon benefits that result from the economies of scale and ability to optimally site these large-scale resources on the power grid.

Opportunities and Barriers

Small-scale and community-based renewable energy projects can potentially present multiple opportunities in Oregon's clean energy transition. Opportunities discussed in the workshops include:

- Local economic development and employment
- Tapping underdeveloped resources like micro hydro, geothermal, or biomass
- Using renewable energy and storage or other technologies to provide backup power to critical infrastructure
- Making use of previously disturbed land and combining renewable power with other land uses
- Increased community energy resilience
- Deferred or avoided capital expenditures in transmission and distribution systems
- Potential for less local opposition in permitting with local/smaller projects, in certain circumstances

Small-scale and community-based renewable energy projects may also face barriers to development not encountered by large-scale projects, including:

- Land-use related permitting barriers
- Project financing and access to capital can be challenging
- Higher per MW cost relative to larger scale projects
- Local opposition / NIMBY
- Limited local staff capacity and lack of technical assistance to develop and manage projects
- Wheeling charges associated with moving power from one utility service territory to another
- Barriers related to Local and state permitting requirement
- Barriers related to lack of interconnection capacity on transmission and distribution lines
- Ability to get insurance for projects without guaranteed income stream
- Lack of skilled labor nearby to provide maintenance to projects over time

Benefits

Advancement in renewable energy technology and policy priorities have changed the energy landscape, introducing new technical, economic, and social benefits. Key question is how we identify and quantify these benefits, and how we identify which of these benefits are universal

to all clean energy projects (irrespective of size and ownership structure) and which are unique to small-scale and community-based projects. Through the course of the workshops, stakeholders articulated the following benefits:

- Resilience: The ability to provide local power when the grid goes down
  - Cooling/warming centers
  - Critical infrastructure
  - Vehicle charging
  - Phone availability / charging
  - Refrigeration of food / medications
  - Water Pumps
  - Different or greater impacts of outages on Tribal communities and Oregonians with lower incomes
- Climate
  - Decrease local reliance on fossil fuels
  - Phase out diesel generators
  - Reduction of greenhouse gas emissions
- Economic
  - Local job creation
  - Increased local human capital / investment in education
  - Continued reduction in solar costs – offset fossil fuel generation
  - Opportunity for businesses to use solar energy during the day – reduced electricity costs
  - Local economic development
  - Fully maximize existing infrastructure with small projects / take advantage of adjacent projects
  - Utilize refurbished turbines – only small developers able to do this
  - Diversify local economies
  - Increase local tax revenues
  - Support community benefits
  - May have less overhead than large operations
  - Deferred investment in grid infrastructure
- Health
  - Ability of rural hospitals to better serve as first responders (if on a microgrid)
  - Reductions of harmful toxins
  - Reduce diesel emissions
  - Improved water quality (such as through biodigesters)
- Other
  - Ability to capture odd waste streams
  - Potential for decreased local opposition in permitting with local / smaller projects

  - Spinoff benefits – use heat generated for heating
  - Rooftop solar can offset power demands
  - Energy sovereignty – need to clarify stakeholder understanding of this term for the report
  - Liquid fuels may be unavailable during crisis

Costs

- Expenses involved in smaller organizations/communities with siting
  - Specifically with the time required
  - Lack of coordination between different groups – lots of moving parts
  - General knowledge and skillsets lacking in smaller orgs
- Learning curve via lack of experience, such as for issues with interconnections
- Relationship between workforce development in large scale vs small scale
- Current union practices
- Transaction costs via contractual arrangements
- Investment risk – capital development is not risk free
  - Community investment can be a risk too
  - Production / performance risk
- Reimbursement schedules through PURPA – 20-year schedule in unpredictable future
- Restriction of community solar / PURPA to 3MW
- Tribes and other communities may not have credit ratings / access to credit limited
- COU territory siting – 100 percent contract requirement with BPA – no incentive to develop
  - Wheeling costs
- Rural areas – limitations of housing and workforce – increased costs
- Current regulations / rates don't recognize value of storage
- Difficult to take advantage of economies of scale
- Interconnection costs larger proportion of overall project
- Cost to island the project in case of grid outage
- Wheeling charges – large portion of attractive projects subject to wheeling charges
- Zoning costs – larger portion of overall project
- Infrastructure / grid costs
- Right-of-way costs
- Expertise / engineering costs – consulting, since not in-house
- Skilled labor – competing with larger projects
- No economies of scale
- Learning curve costs
- Capacity – large developers have in-house staff; small must hire consultants/outside staff

- To be added: Analysis of NPVs of various rates on hypothetical solar projects throughout Oregon (using PV Watts)

Rate Impacts

- Must consider the impacts any rate determination has on non-subscribers / participants of the project
  - Avoided cost rate assumed to be cost neutral to rate base
- Net metering, while likely yielding the largest incentive to add capacity, will increase rates for non-participants
- Anything above avoided cost rate has potential to create upward distortionary price pressures in the overall market

Recommendations of Workgroup Members

To be determined during Workshop #4.

The following are ideas raised by stakeholders during prior workshops:

- **Contracting and Rates:**
  - Expand standard PURPA contracts and rates to larger projects
  - Consider grant-based, taxpayer-funded subsidy instead of rate-based if rate to be above avoided cost rate
  - Create methodology to incorporate resilience benefits into project determination
  - Greater transparency from BPA as to allowable projects

- **Land Use:**
  - Simplify permitting / siting for small projects
    - Utilize NREL's free SolarAPP software (NREL Software Automates Residential Solar Permitting, Improving Process for Local Governments | News | NREL)
    - Use Oregon Renewable Energy Siting Assessment (ORESA)'s Online Mapping & Reporting Tool.
  - Expand dual-use and agrivoltaics
  - Establish exemption process for "greater good" of renewable energy projects

- **Interconnection and Transmission:**
  - Create better transparency for interconnection feasibility with existing infrastructure

- Suggest creating a map of excess capacity / existing resources
  - Standardized spreadsheet for IOUs/BPA to insert capacity at each existing / planned facility
- Standardize / formalize wheeling charges
  - Support formation of an RTO

In addition to discussing potential recommendations, ODOE Staff would like to use part of the July 28 workshop to have a discussion of guiding principles that could be used to inform the development of recommendations. Given the range of ideas listed above that were raised during workshops, it may not be possible to develop full consensus on the workshop ideas for recommendations among the diverse perspectives of workgroup members. What principles can the workgroup agree should be used to inform the state's policies in regard to small-scale renewables? For example, principle-level themes that have been raised in workshops are: any legislative or regulatory changes should reduce greenhouse gas emissions, ensure equity, provide more energy resilience, provide more transparency, support affordable energy, and support good jobs in Oregon communities.

Conclusion (1 page - Short wrap-up)