PACIFICORP

Community Solar Project Interconnection

Community Solar Project Facilities Study Report

Completed for

("Applicant")

OCS051

Proposed POI

Circuit 5U46 out of Canyonville Substation

July 19, 2024

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1.0 DESCRIPTION OF THE PROJECT

Canyonville Solar 2 LLC ("Applicant") proposed interconnecting 1.5 MW of new generation to PacifiCorp's ("Public Utility") circuit 5U46 out of Canyonville substation located in Douglas County, Oregon. The Canyonville Solar 2 project ("Project") will consist of six (6) 250 kW solar inverters for a total requested nameplate output of 1.5 MW. The requested commercial operation date is December 1, 2021.

The Public Utility has assigned the Project "OCS051."

2.0 APPROVAL CRITERIA FOR TIER 4 INTERCONNECTION REVIEW

Pursuant to Public Utility Commission of Oregon Order 19-392 approved Community Solar Project procedures, a Public Utility must use the Tier 4 review procedures for an application to interconnect a Community Solar Project that meets the following requirements:

(a) The Community Solar Project does not qualify for or failed to meet Tier 2 interconnection review requirements; and
(b) The Community Solar Project must have a nameplate capacity of three (3) megawatts or less.

3.0 SCOPE OF THE STUDY

This restudy is being performed based on a request by the Applicant to change specific Point of Interconnection for its Community Solar Project.

Pursuant to Public Utility Commission of Oregon Order 19-392 approved Community Solar Project procedures the Facilities Study Report shall consist of:

(a) A detailed scope identifying the interconnection facilities and system upgrades required to safely interconnect the Community Solar Project including the electrical switching configuration of the equipment, including the transformer, switchgear, meters, and other station equipment as applicable;
(b) A good-faith, non-binding estimate of the costs for the facilities and upgrades, including equipment, engineering, procurement, and construction costs, and;
(c) A detailed estimate of the time required to procure, construct, and install the required interconnection facilities and system upgrades.

4.0 PROPOSED POINT OF INTERCONNECTION

The Applicant's proposed Community Solar Project is to be interconnected to the Public Utility's distribution circuit 5U46 out of Canyonville substation via a 12.0 kV primary meter. The Applicant's proposed POI ("POI") will be located near the Public Utility's existing facility point 01330005.0140201 located in Douglas County, Oregon. Figure 1 below is a one-line diagram that illustrates the interconnection of the proposed Community Solar Project to the Public Utility's system.

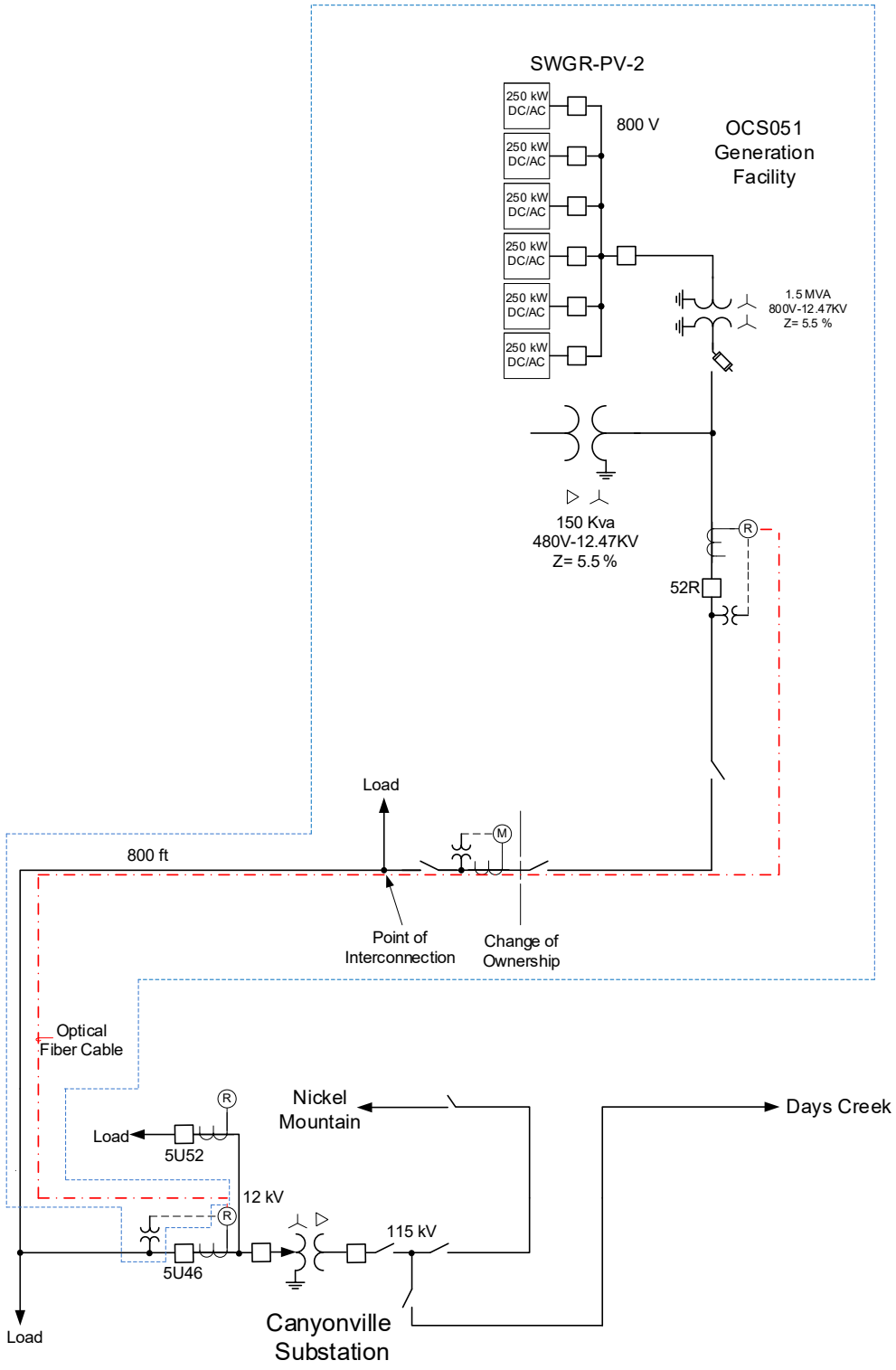

Figure 1: System One Line Diagram

5.0 STUDY ASSUMPTIONS

- All active higher priority transmission service and/or generator interconnection and Community Solar Project requests will be considered in this study and are listed in Appendix 1. If any of these requests are withdrawn, the Public Utility reserves the right to restudy this request, as the results and conclusions contained within this study could significantly change.
- For study purposes there are two separate queues:
  - Transmission Service Queue: to the extent practical, all System Upgrades that are required to accommodate active transmission service requests will be modeled in this study.
  - Generation Interconnection Queue and Community Solar Queue: all relevant higher queue interconnection requests will be modeled in this study.
- The Applicant's request for interconnection service in and of itself does not convey any other form or service.
- This study assumes the Project will be integrated into Public Utility's system at the agreed upon and/or proposed POI.
- Based on the limited space for the Public Utility's interconnection facilities and the Applicant's desire for both of its OCS050 and OCS051 projects to interconnect at the same location, the Public Utility will only install a single disconnect switch meaning both projects will be taken out of service when the switch is opened. Both projects will also be tripped offline for any required transfer trip requirements regardless of whether both projects are technically required to be tripped offline. The Applicant has provided consent to this design in writing to the Public Utility.
- The Applicant will construct and own the facilities required between the POI and the Project unless specifically identified by the Public Utility.
- Line reconductor or fiber underbuild required on existing poles will be assumed to follow the most direct path on the Public Utility's system. If during detailed design the path must be modified it may result in additional cost and timing delays for the Applicant's Project.
- Generator tripping may be required for certain outages.
- All facilities will meet or exceed the minimum Western Electricity Coordinating Council ("WECC"), North American Electric Reliability Corporation ("NERC"), and Public Utility performance and design standards.
- This report is based on information available at the time of the study. It is the Applicant's responsibility to check the Public Utility's web site regularly for transmission system updates (https://www.oasis.oati.com/ppw)

6.0 REQUIREMENTS

6.1 COMMUNITY SOLAR PROJECT MODIFICATIONS

The following outlines the design, procurement, construction, installation, and ownership of equipment at the Applicant's Community Solar Project.

6.1.1 APPLICANT TO BE RESPONSIBLE FOR

- Design, construct, own and maintain the Applicant's generating facility and associated collector system.

- Operate the Community Solar Project under constant power factor mode with a unity power factor setting unless specifically requested otherwise by the Public Utility. The Community Solar Project is expressly forbidden from actively participating in voltage regulation of the Public Utilities system without written request or authorization from the Public Utility. The Community Solar Project shall have sufficient reactive capacity to enable the delivery of 100 percent of the plant output to the POI at unity power factor measured at 1.0 per unit voltage under steady state conditions.
- Equip the Community Solar Project generators capable of operating under voltage reactive power mode, active power reactive power mode, and constant reactive power mode as per IEEE standard 1547-2018. This project shall be capable of activating each of these modes one at a time. The Public Utility reserves the right to specify any mode and settings within the limits of IEEE standard 1547-2018 needed before or after the Community Solar Project enters service. The Applicant shall be responsible for implementing settings modifications and mode selections as requested by the Public Utility within an acceptable timeframe.
- Operate the Community Solar Project so minimum power quality requirements in PacifiCorp's Engineering Handbook section 1C are met, the standards are available at https://www.pacificpower.net/about/power-quality-standards.html. Requirements specified in the System Impact Study that exceed requirements in the Engineering Handbook section 1C power quality standards shall apply.
- As per NERC standard VAR-001-1, the Public Utility is required to specify voltage or reactive power schedule at the Point of interconnection. Under normal conditions, the Public Utility's system should not supply reactive power to the Community Solar Project.
- Install a transformer that will hold the phase to neutral voltages within limits when the Community Solar Project is isolated with the Public Utility's local system until the generation disconnects.
- Design, procure, install, and own a Public Utility approved 12 kV recloser containing a Schweitzer Engineering Laboratories ("SEL") 651R relay/controller to perform the following functions:
  - Detect faults on the 12 kV equipment at the Community Solar Project
  - Detect faults on the 12 kV line to Canyonville substation
  - Monitor the voltage and react to under or over frequency, and /or magnitude of the voltage
  - Detect phase unbalance current on the 12 kV circuit that could cause damage to the grounding transformer.
  - Receive transfer trip from breaker 5U46 relay at Canyonville Substation.
- Procure and install instrument transformers on the Public Utility side of the recloser.
- Provide the Public Utility with a copy of all recloser relay settings.
- Provide the Public Utility Level 2 password control of the recloser relay.

- Provide Public Utility unfettered and maintained access to its interconnection facilities.
- Coordinate with the Public Utility to ensure the Applicant's underground line extension to the point of change of ownership is to the Public Utility's standard. Leave sufficient conductor to allow the Public Utility to connect to the Public Utility owned dip pole.
- Install conduit with Public Utility standard fiber optic cable from the Applicant's recloser relay to the point of change of ownership. Leave a sufficient quantity of fiber to allow it to be spliced to the Public Utility's fiber.
- Arrange for and provide permanent retail service for power that will flow from the Public Utility's system when the Project is not generating. Applicant shall coordinate with the Public Utility's customer service group establish a request number and account number.
- Provide any construction or backup retail service necessary for the Project.
- Provide the Public Utility a Professional Engineer ("PE") stamped maintenance plan for all Applicant facilities.

6.1.2 PUBLIC UTILITY TO BE RESPONSIBLE FOR

- Coordinate with the Applicant to establish request and account numbers.
- Review and provide acceptance of the relay settings in the Applicant recloser relay that are associated with the Public Utility's system.
- Coordinate with the Applicant on the Applicant's underground line to be installed with both conductor and fiber to the point of change of ownership. Confirm the Applicant's design meets Public Utility standards.
- Splice the fiber installed by the Applicant to the fiber at the Public Utility's dip pole.

6.2 POINT OF INTERCONNECTION

The following outlines the design, procurement, construction, installation, and ownership of equipment at the POI.

6.2.1 APPLICANT TO BE RESPONSIBLE FOR

- Provide the Public Utility the necessary easement to allow the Public Utility to construct its line extension between its existing facilities and the Point of Change of Ownership.
- Ensure the Public Utility has access to its new line extension. If necessary, construct an access road that meets the Public Utility's standards as outlined in the Public Utility's Electric Service Requirements Manual. The access road shall be constructed in a sufficient manner to allow heavy duty equipment (such as a bucket truck), to gain 24/7/365 access to the site during all typical weather conditions for both construction and ongoing maintenance. The access road shall be maintained by the Applicant throughout the life of the Oregon Community Solar facility.

6.2.2 PUBLIC UTILITY TO BE RESPONSIBLE FOR

- Procure and install an enclosure for a patch panels required to terminate the fiber optic cable to be installed on the distribution line.
- Design, procure and install 12 kV revenue metering equipment for the Project including a revenue quality meter and instrument transformers. The metering equipment is assumed to be installed in an enclose at the base of one of the new poles.
- Provide and install a cellular connection for retail sales and generation accounting via the MV-90 translation system.

6.3 OTHER

The following outlines the design, procurement, construction, installation, and ownership of equipment past the POI.

6.3.1 PUBLIC UTILITY TO BE RESPONSIBLE FOR

- Distribution Circuit
  - Install approximately 3,000 feet of fiber optic cable from Canyonville substation to the Point of Interconnection.
  - Replace the existing 65T fuses at facility point 0133005.0228863 with solid blade cutouts.

- Canyonville Substation
  - Install conduit with fiber from the substation control building to the fence line. Splice the fiber to be fiber installed on the distribution circuit at the substation fence line.
  - Install a communications panel and supportive communications equipment to terminate fiber into the control building.

- Transfer Trip Scheme
  - Design and implement a transfer trip scheme to trip the Applicant's generating facility offline for faults on the circuit.

7.0 COST ESTIMATE

The following estimate represents only scopes of work that will be performed by the Public Utility. Costs for any work being performed by the Applicant are not included.

Distribution System $20,000
Interconnection extension

Metering $13,000
Engineering, metering equipment

Protection and Control $21,000
Engineering, technician, settings development/review/modifications

Project Management *Project manager, control specialist*	$18,000
Communications *Install fiber and communications equipment*	$47,000
Other *Capital surcharge, contingency, administrative support*	$33,000
Total	**$150,000**

*Any distribution line modifications identified in this report will require a field visit analysis in order to obtain a more thorough understanding of the specific requirements. The estimate provided above for this work could change substantially based on the results of this analysis. Until this field analysis is performed the Public Utility must develop the project schedule using conservative assumptions. The Applicant may request that the Public Utility perform this field analysis, at the Applicant's expense, prior to the execution of an Interconnection Agreement in order to obtain more cost and schedule certainty.

Note: Costs for any excavation, duct installation and easements shall be borne by the Applicant and are not included in this estimate. This estimate approximates the costs incurred by the Public Utility to interconnect this Community Solar Project to the Public Utility's electrical distribution or transmission system based upon the level of study completed to-date. The Applicant will be responsible for all actual costs, regardless of the estimated costs communicated to or approved by the Applicant.

8.0 SCHEDULE

Execute Interconnection Agreement Amendment	September 2, 2024
Applicant and Public Utility Establish Retail Service Request	September 20, 2024
*Applicant Initial Design Package Provided	November 1, 2024
Public Utility Engineering & Procurement Commences	December 9, 2024
Applicant Property/Permits/ROW Procured	May 9, 2025
*Applicant Final Design Package Provided	June 20, 2025
Public Utility Property/Permits/ROW Procured	July 25, 2025
Public Utility Engineering Design Complete	August 15, 2025
Public Utility Construction Commences	October 20, 2025

Applicant Maintenance and Commissioning Plans Provided	January 9, 2026
Applicant and Public Utility Construction Complete	April 10, 2026
Public Utility Commissioning Activities Complete	May 8, 2026
Public Utility Commissioning Document Review Complete	May 15, 2026
Applicant's Facilities Receive Backfeed Power	May 18, 2026
Initial Synchronization/Generation Testing	May 20, 2026
Commercial Operation	May 22, 2026

*Applicant initial design package shall include final Community Solar Project location, inverter/turbine selection, basic protection package, tie line route and collector system locations and data as applicable. Applicant final design package shall include PE stamped issued for construction ("IFC") drawings for Community Solar Project, collector substation, and tie line.

9.0 PARTICIPATION BY AFFECTED SYSTEMS

Public Utility has identified the following Affected Systems: None

Copies of this report will be shared with each Affected System.

10.0 APPENDICES

Appendix 1: Higher Priority Requests
Appendix 2: Property Requirements

10.1 APPENDIX A: HIGHER PRIORITY REQUESTS

All active higher priority transmission service and/or generator interconnection requests will be considered in this study and are identified below. If any of these requests are withdrawn, the Public Utility reserves the right to restudy this request, as the results and conclusions contained within this study could significantly change.

Transmission/Generation Interconnection/Community Solar Queue Requests considered:

Queue #	Size (MW)
741	40
905	50
971	2.7
OCS034	0.978
OCS036	1.125
OCS039	2.25
OCS044	0.447
OCS046	2.25
OCS047	2.25
OCS048	1.5
OCS049	2.99
OCS050	1.0

10.2 APPENDIX B: PROPERTY REQUIREMENTS

Requirements for rights of way easements
Rights of way easements will be acquired by the Applicant in the Public Utility's name for the construction, reconstruction, operation, maintenance, repair, replacement and removal of Public Utility's Interconnection Facilities that will be owned and operated by PacifiCorp. Applicant will acquire all necessary permits for the project and will obtain rights of way easements for the project on Public Utility's easement form.

Real Property Requirements for POI Substation
Real property for a POI substation will be acquired by an Applicant to accommodate the Applicant's project. The real property must be acceptable to Public Utility. Applicant will acquire fee ownership for interconnection substation unless Public Utility determines that other than fee ownership is acceptable; however, the form and instrument of such rights will be at Public Utility's sole discretion. Any land rights that Applicant is planning to retain as part of a fee property conveyance will be identified in advance to Public Utility and are subject to the Public Utility's approval.

The Applicant must obtain all permits required by all relevant jurisdictions for the planned use including but not limited to conditional use permits, Certificates of Public Convenience and Necessity, California Environmental Quality Act, as well as all construction permits for the project.

Applicant will not be reimbursed through network upgrades for more than the market value of the property.

As a minimum, real property must be environmentally, physically, and operationally acceptable to Public Utility. The real property shall be a permitted or able to be permitted use in all zoning districts. The Applicant shall provide Public Utility with a title report and shall transfer property without any material defects of title or other encumbrances that are not acceptable to Public Utility. Property lines shall be surveyed and show all encumbrances, encroachments, and roads.

Examples of potentially unacceptable environmental, physical, or operational conditions could include but are not limited to:

- Environmental: known contamination of site; evidence of environmental contamination by any dangerous, hazardous or toxic materials as defined by any governmental agency; violation of building, health, safety, environmental, fire, land use, zoning or other such regulation; violation of ordinances or statutes of any governmental entities having jurisdiction over the property; underground or above ground storage tanks in area; known remediation sites on property; ongoing mitigation activities or monitoring activities; asbestos; lead-based paint, etc. A phase I environmental study is required for land being acquired in fee by the Public Utility unless waived by Public Utility.

- Physical: inadequate site drainage; proximity to flood zone; erosion issues; wetland overlays; threatened and endangered species; archeological or culturally sensitive areas; inadequate sub-surface elements, etc. Public Utility may require Applicant to procure various studies and surveys as determined necessary by Public Utility.

- Operational: inadequate access for Public Utility's equipment and vehicles; existing structures on land that require removal prior to building of substation; ongoing maintenance for landscaping or extensive landscape requirements; ongoing homeowner's or other requirements or restrictions (e.g., Covenants, Codes and Restrictions, deed restrictions, etc.) on property which are not acceptable to the Public Utility.