



Community Solar Project Interconnection
Community Solar Project Tier 2 Review

Completed for
("Applicant")
OCS108

Proposed Interconnection
On PacifiCorp's Existing
Circuit 5P41 Killingsworth Substation

April 1, 2025

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1.0 DESCRIPTION OF THE GENERATING FACILITY

(“Applicant”) proposed interconnecting 150.93 kW of new generation to PacifiCorp’s (“Public Utility”) Circuit 5P41 out of Killingsworth substation located in Multnomah County, Oregon. The (“Project”) will consist of ten (10) Solaredge SE11400H-US inverters for a total requested output of 150.93 kW. The requested commercial operation date is December 15, 2027.

The Public Utility has assigned the Project “OCS108.”

2.0 APPROVAL CRITERIA FOR TIER 2 INTERCONNECTION REVIEW

Pursuant to Section H of the Public Utility’s CSP Interconnection Procedures, a Public Utility must use the Tier 2 interconnection review procedures for an application to interconnect a small generator facility that meets the following requirements:

- (a) The Community Solar Project must have a nameplate capacity of two (2) megawatts or less;
- (b) The Community Solar Project must be interconnected to either a radial distribution circuit or a spot network distribution circuit limited to serving one customer;
- (c) The Community Solar Project must use interconnection equipment that is either lab-tested equipment or field –tested equipment. For equipment to gain status as field-tested equipment, the applicant must provide all the documentation from the prior Tier 4 study, review, and approval, including any interconnection studies and the certificate of completion.

3.0 PROPOSED POINT OF INTERCONNECTION

The Applicant’s proposed Community Solar Project is to be interconnected to the Public Utility’s distribution circuit 5P41 out of Killingsworth substation. The proposed Point of Interconnection will be located at approximately 4927 NE 55th Avenue, Portland, Oregon 97218 located in Multnomah County, Oregon. Figures 1 and 2 below is a map and one line diagram that illustrates the interconnection of the proposed generating facility to the Public Utility’s system.

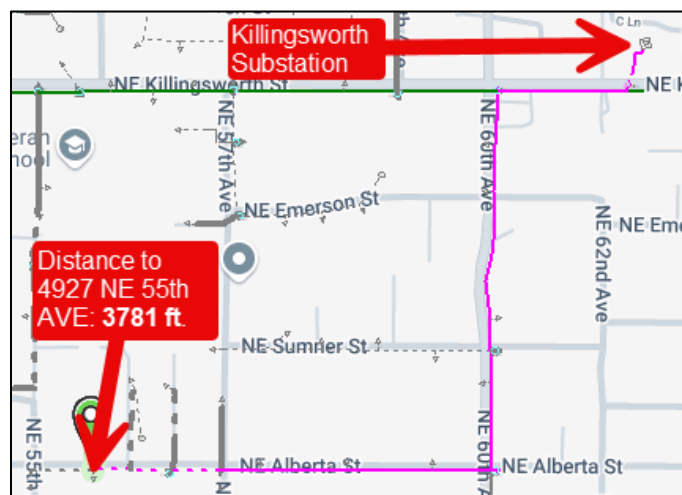


Figure 1: Map from substation to Point of Interconnection

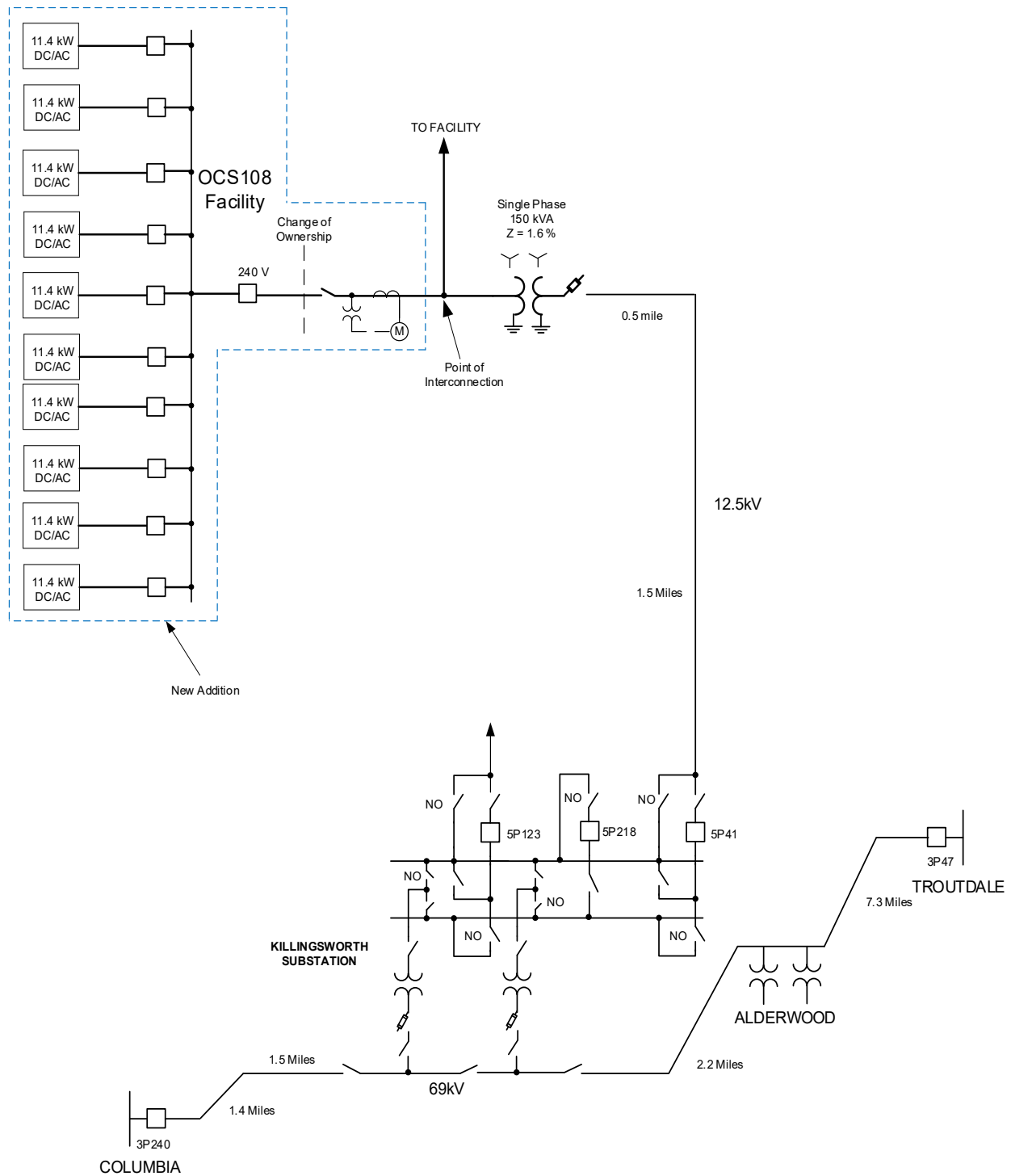


Figure 2: System One Line Diagram

3.1 Review Assumptions

- All active higher-priority requests for transmission service and/or generator interconnection service (including requests in the traditional interconnection queue and other requests in the Community Solar queue) in the local area of the requested POI 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.
- The Applicant's request for interconnection service in and of itself does not convey transmission service.
- This review assumes the Project will be integrated into Public Utility's system at the agreed upon and/or proposed Point of Interconnection.
- The Applicant will construct and own any facilities required between the point of interconnection and the Project.
- Generator tripping may be required for certain outages.
- All facilities will meet or exceed the minimum WECC, NERC, and Public Utility performance and design standards.
- The generator is expected to operate daylight hours, 7 days a week, 365 days a year. The primary meter (point of interconnection) power factor range studied was 0.95 leading/lagging prior to the proposed generation facility being installed.
- This report is based on information available at the time of the review. 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>). *The information contained in this study report is based on preliminary information and not to be used for construction.*

4.0 TIER 2 COMMUNITY SOLAR PROJECT RESULTS

4.1 Screen 1

For interconnection of a Community Solar Project to a radial distribution circuit, the aggregated nameplate capacity on the circuit must not exceed 15 percent of the line section annual peak load as most recently measured at the substation or calculated for the line section.

Result: Pass

5P31 Summer Peak Load in 2024 via PI Vision = 19600 kVA

$$275 \text{ kVA} < 0.15 * 19600 \text{ kVA}$$

$$\underline{275 \text{ kVA} < 2940 \text{ kVA}}$$

4.2 Screen 2

For interconnection of a Community Solar Project to the load side of spot network protectors, the aggregated nameplate capacity on the load side of the spot network protectors must not exceed the lesser of five percent of a spot network's maximum load or 50 kilowatts.

Result: N/A

5P41 is a Radial Distribution Circuit, not a Spot Network.

4.3 Screen 3

The aggregated nameplate capacity must not contribute more than 10 percent to the distribution circuit's maximum fault current at the point on the primary voltage distribution line nearest the point of interconnection.

Result: Pass

Load Short Circuit Current = 13.87 A

CYME Short Circuit Simulated Fault Current at FP0196700 = 3421 A

$$13.87 A / 3421 A = 0.40\% << 10\%$$

4.4 Screen 4

The aggregated nameplate capacity on the distribution circuit must not cause any distribution protective devices and equipment (including substation breakers, fuse cutouts, and line reclosers) or other public utility equipment on the transmission or distribution system to be exposed to fault currents exceeding 90 percent of the short circuit interrupting capability. The Community Solar Project's Point of Interconnection must not be located on a circuit that already exceeds 90 percent of the short circuit interrupting capability.

Result: Pass

Upstream Fusing Nominal Interrupting Rating Capacity = 7100 A

5P41 Breaker Nominal Interrupting Rating = 18000 A

Interrupting Rating Capacity * 90% > Sim Fault Current + Customer Fault Current

$$7100 A * 0.9 > 4200 A + 13.87 A$$
$$6390 A > 4213.87 A$$

4.5 Screen 5

The aggregated nameplate capacity on the distribution side of a substation transformer feeding the circuit where the small generator facility proposes to interconnect must not exceed 10 megawatts in an area where there are known or posted transient stability limitations to generating units located in the general electrical vicinity (for example, three or four distribution busses from the point of interconnection).

Result: Pass

No known or posted transient stability limitations.

Aggregated nameplate generating capacity on the Killingsworth distribution system does not exceed 10 megawatts.

4.6 Screen 6

If the Community Solar Project interconnection is to a primary line on the distribution system, then the interconnection must meet the following criteria:

- (A) If the Community Solar Project is three-phase or single-phase and will be connected to a three-phase, three-wire primary line, then the Community Solar Project must be connected phase-to-phase.
- (B) If the Community Solar Project is three-phase or single-phase and will be connected to a three-phase, four-wire primary line, then the Community Solar Project must be connected line-to-neutral and effectively grounded.

Result: Pass

Case (B): Primary ending at FP01101002.0197701 is Wye with Down Neutral.

4.7 Screen 7

For interconnection of a Community Solar Project to a single-phase shared service line on the distribution system, the aggregated nameplate capacity on the shared secondary line must not exceed 20 kilowatts.

Result: Fail

Proposed project is single-phase beyond 20 kW and with aggregated nameplate capacity of 150.93kW, will require a three-phase connection. The closest Three-Phase Point is 861 ft. upstream. See Figure 3 below in Screen 9.

4.8 Screen 8

For interconnection of a single-phase Community Solar Project to the center tap neutral of a 240-volt service line, the addition of the Community Solar Project must not create a current imbalance between the two sides of the 240-volt service line of more than 20 percent of the nameplate rating of the service transformer.

Result: Fail

Service will require three-phase connection for greater than 20 kW connection by Tier 2 Screen 7.

4.9 Screen 9

Except as provided in Screen 12, the interconnection of the Community Solar Project must not require system upgrades or interconnection facilities different from or in addition to the applicant's proposed interconnection equipment.

Result: Fail

Substantial upgrades, including three-phase extension by 861 ft. to Public Utility's distribution lines and three-phase DC-AC conversion hardware on the Applicant's end. Three phase is not limited to 20 kW by Tier 2 Screen 7.

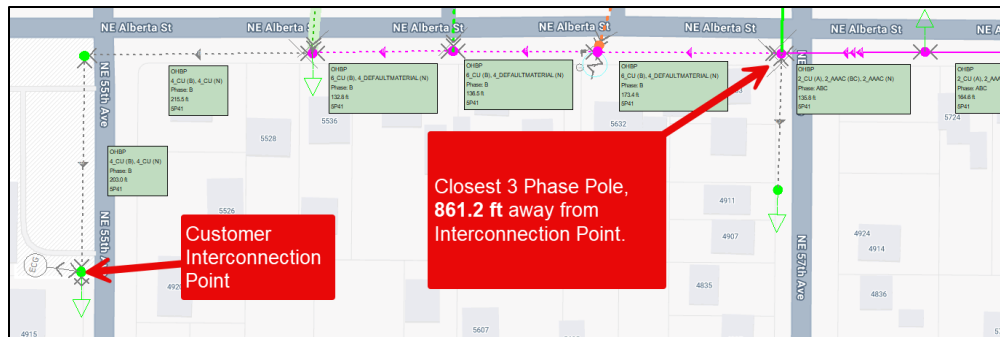


Figure 3: Distance from nearest Three-Phase Pole to Point of Interconnection

4.10 Screen 10

The aggregated nameplate capacity, in combination with exiting transmission loads, must not cause the transmission system circuit directly connected to the distribution circuit where the Community Solar Project interconnection is proposed to exceed its design capacity.

Result: Pass

No transmission upgrades required.

4.11 Screen 11

If the public utility's distribution circuit uses high speed reclosing with less than two seconds of interruption, then the Community Solar Project must not be a synchronous machine. If the small generator facility is a synchronous machine, then the applicant must submit a Tier 4 application.

Result: Pass

4.12 Screen 12

If the Community Solar Project fails to meet one or more of the criteria in Screens 1 - 11, but the Public Utility determines that the Community Solar Project could be interconnected safely if minor modifications to the transmission or distribution system were made (for example, changing meters, fuses, or relay settings), then the Public Utility must offer the applicant a good-faith, non-binding estimate of the costs of such proposed minor modifications. Modifications are not considered minor under this subsection if the total cost of the modifications exceeds \$10,000. If the Applicant authorizes the Public Utility to proceed with the minor modifications and agrees to pay the entire cost of the modifications, then the Public Utility must approve the application under Tier 2.

Result: Fail

5.0 TIER 2 – NEXT STEPS

As the Public Utility has determined that the OCS108 interconnection request cannot be safely interconnected without additional study and facilities construction, Applicant will be required to submit a new application under the Tier 4 of Oregon Community Solar Procedures.

6.0 PARTICIPATION BY AFFECTED SYSTEMS

The following have been determined to be potential Affected Systems for this Interconnection Request:

None