



Community Solar Project Interconnection
Community Solar Project Tier 2 Review

Completed for

("Applicant")
OCS042

Proposed Interconnection
On PacifiCorp's Existing
Circuit 5R237 out of Talent substation at 12.47 kV

November 3, 2020

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1.0 DESCRIPTION OF THE GENERATING FACILITY

(“Applicant”) proposed interconnecting 0.1296 MW of new generation to PacifiCorp’s (“Public Utility”) circuit 5R237 out of Talent substation located in Jackson County, Oregon. The project (“Project”) will consist of three (3) Solaredge SE 43.2 kV inverters for a total requested nameplate output of 0.1296 MW. The requested commercial operation date is first quarter 2021.

The Public Utility has assigned the Project “OCS042.”

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 5R237 out of Talent substation. The proposed Point of Interconnection will be located at approximately 408 Talent Ave, Talent, Oregon located in Jackson County, Oregon. This address is presently served by a pad-mounted transformer at map string 01338001.01, facility point 268781. Figure 1 below is a one line diagram that illustrates the interconnection of the proposed generating facility to the Public Utility’s system.

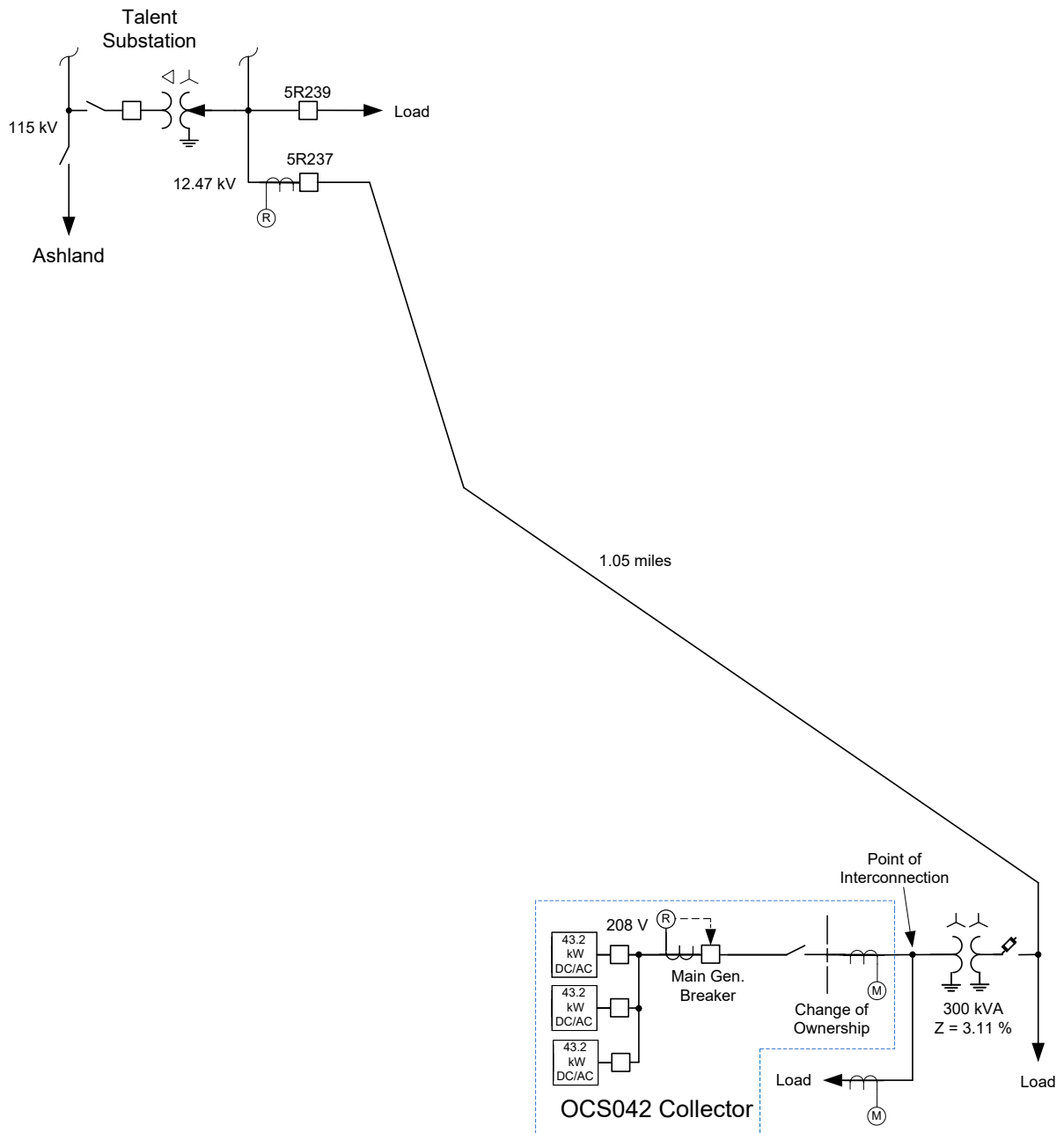


Figure 1: System One Line Diagram

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 ("POI").
- The Applicant will construct and own any facilities required between the POI 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 Applicant shall provide approval from the existing load customer, and all required entities and agencies for installation of multiple meters. National Electrical Code (NEC) Article 230.2 states "A building or other structure served shall be supplied by only one service unless permitted in 230.2(A) through (D). The inspecting authority shall confirm that the Applicant's design for installing more than one service is in compliance with the exceptions permitted in NEC 230. With this proposed design it is possible that the retail service at this point of interconnection could be interrupted if an outage of the generating facility is necessary.
- The generator is expected to operate during daylight hours. The 208 volt meter (POI) power factor range studied was unity (100%) prior to the proposed generation facility being installed.
- The existing PacifiCorp pad-mounted transformer at map string 01338001.01, facility point 268781 is assumed to be the starting location for PacifiCorp's line extension to the customer POI. The service length from this transformer to the POI is unspecified.
- 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>)

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

The 5R237 estimated peak load after permanent load reduction from the 2020 wildfire is 5822 kW. The existing customers on this circuit have a generation capacity of 371.6 kW. The aggregate nameplate capacity of the existing customers' and this applicant's generation is 501.2 kW. Thus, the aggregated nameplate capacity on the circuit is 501.2 kW divided by 5822 kW peak load, which equals 8.6%.

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

There is no indication that the applicant will interconnect to the load side of a spot network protections.

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 POI.

Result: Pass

A fault current contribution greater than 10% of the circuit's maximum fault current near the POI is not expected.

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 POI must not be located on a circuit that already exceeds 90 percent of the short circuit interrupting capability.

Result: Pass

90% of the short circuit interrupting capabilities of distribution protective devices is not expected.

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 POI).

Result: Pass

Talent Substation Transformer T-3813 serves circuits 5R237 and 5R239. The aggregated nameplate capacity of both circuits combined is 780.2 kW. This Applicant's nameplate capacity is 129.6 kW. The total of the aforementioned nameplate capacities is 0.91 MW. This value is under 10 MW.

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: N/A

The POI is on a 208 volt, three-phase system. This voltage is not provided by a primary system.

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: Pass

If constructed, the POI will not be connected to a shared service line.

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: N/A

The Applicant has requested three-phase service.

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: Pass

No system upgrades expected.

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

Talent substation transformer T-3813 and the transmission system supplying Talent substation has adequate capacity to serve OCS042.

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

The applicant does not have a synchronous machine.

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: Pass

The Public Utility will only require minor modifications to allow the Applicant's proposed generating facility to interconnect to the Public Utility's system. The Public Utility's good faith estimate is \$7,500 for the labor and material for this request. That assumes the Applicant will be responsible for procurement and installation of the conduit system from the Public Utility's transformer to the POI.

5.0 TIER 2 – NEXT STEPS

The Public Utility will tender the Applicant an interconnection agreement for this interconnection project request.

6.0 PARTICIPATION BY AFFECTED SYSTEMS

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

None

7.0 APPENDICES

Appendix 1: Higher Priority Requests

Appendix 2: Informational Network Resource Interconnection Service Assessment

APPENDIX 1:
HIGHER PRIORITY REQUESTS

All active higher priority transmission service and/or generator interconnection and Community Solar Project requests will be considered in this review 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 review could significantly change.

Transmission/Generation Interconnection/Community Solar Queue Requests considered:

Queue #	Size (MW)
721	55
741	40
849	100
905	50
971	2.7
1029	400
1031	80
1032	80
1033	80
1034	60
1087	50
1104	3
1120	3
1126	8
1133	80
1134	120
1135	80
1147	2.999
1160	70
1192	238.5
OCS003	0.8
OCS004	0.8
OCS019	0.882
OCS020	0.594
OCS025	2.8
OCS033	1.0
OCS034	0.978
OCS036	1.125
OCS037	1.5
OCS039	2.25
OCS040	1.64

**APPENDIX 2:
INFORMATIONAL NETWORK RESOURCE INTERCONNECTION SERVICE
ASSESSMENT**

The study results described above reflect an energy resource interconnection service (“ERIS”) evaluation, modified in the CSP program rules to examine only generation and load conditions local to the requested CSP project’s interconnection point (sometimes referred to as the “zoomed in view”). The “zoomed in view” functions to: (1) study the project’s proposed interconnection without considering certain existing or higher-queued requests outside of the local area; and (2) to inform whether the CSP facility must cap its project to mitigate, although not eliminate, the risk of potential deliverability-related network upgrades to accommodate the proposed CSP generator.

By contrast, the following informational section provides a network resource interconnection service (“NRIS”) evaluation performed with traditional assumptions, i.e., not modified to examine only local generation and load conditions, but rather one that assumes that all existing interconnections, higher-queued requests for interconnection service (in both the traditional and CSP queue), and generators with executed contracts beyond the local area are in-service. Depending on the severity of the conditions created when absorbing additional generation (capped or not capped) in that broader, “zoomed out” area, the local area-focused generator size cap developed in the “zoomed in” examination may not be sufficient to mitigate the need for deliverability-related network upgrades. Regardless of this report’s informational NRIS results, the deliverability-related network upgrades ultimately necessary to accommodate the proposed CSP generator will depend on conditions present when the future transmission service study is performed, as well as whether network upgrade alternatives are available at that time.

There are currently a significant number of higher-queued requests seeking interconnection in the southern Oregon area where the CSP generator proposes to interconnect. These interconnection studies must be completed before the transmission provider can determine what upgrades and associated cost estimates may be required for the aggregate of generation in the local area to be delivered to the aggregate of load on the transmission provider’s transmission system (the NRIS study scope).