



Community Solar Project Interconnection
Tier 2 Community Solar Project Report

Completed for

("Applicant")
CSPQ005

Proposed Interconnection
On PacifiCorp's Existing
Circuit 5W26 out of the Enterprise substation
Map String 01402044.0, Facility Point #030606

May 18, 2020

TABLE OF CONTENTS

1.0 DESCRIPTION OF THE GENERATING FACILITY	2
2.0 APPROVAL CRITERIA FOR TIER 2 INTERCONNECTION REVIEW	2
3.0 PROPOSED POINT OF INTERCONNECTION	2
3.1 ASSUMPTIONS	2
4.0 TIER 2 COMMUNITY SOLAR PROJECT RESULTS.....	3
4.1 SCREEN 1.....	3
4.2 SCREEN 2.....	3
4.3 SCREEN 3.....	4
4.4 SCREEN 4.....	4
4.5 SCREEN 5.....	4
4.6 SCREEN 6.....	4
4.7 SCREEN 7.....	5
4.8 SCREEN 8.....	5
4.9 SCREEN 9.....	5
4.10 SCREEN 10.....	5
4.11 SCREEN 11.....	5
4.12 SCREEN 12.....	5
5.0 TIER 2 – NEXT STEPS	6
6.0 PARTICIPATION BY AFFECTED SYSTEMS	6
7.0 APPENDICES.....	6

1.0 DESCRIPTION OF THE GENERATING FACILITY

(“Applicant”) proposed interconnecting 0.36 MW of new generation to PacifiCorp’s (“Public Utility”) facilities at Map String 01402044.0, Facility Point #030606 located West of Fish Hatchery Ln in Wallowa County, Oregon. The project (“Project”) will consist of six (6) Solectria Solar PVI60TL inverters for a total requested output of 0.36 MW. The requested commercial operation date is December 2020.

The Public Utility has assigned the Project “OCS005”.

2.0 APPROVAL CRITERIA FOR TIER 2 INTERCONNECTION REVIEW

Pursuant to Public Utility Commission of Oregon Order 19-392 approved Community Solar Project 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:

- The Community Solar Project must have a nameplate capacity of two (2) megawatts or less;
- The Community Solar Project must be interconnected to either a radial distribution circuit or a spot network distribution circuit limited to serving one customer;
- 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 proposed Community Solar Project is to be interconnected to the 12.5 kV circuit out of Enterprise Substation.

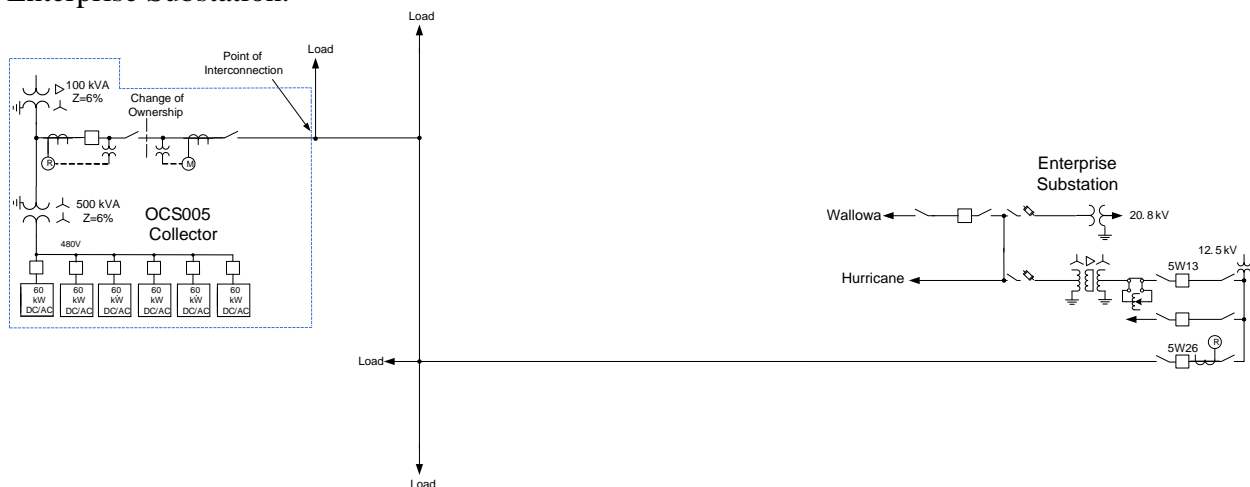


Figure 1: System One Line Diagram

3.1 Assumptions

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

- Transmission Service Queue: to the extent practical, all network upgrades that are required to accommodate active transmission service requests and are expected to be in-service on or after the Applicant's requested in-service date for the Project will be modeled in this review.
- Generation Interconnection and Community Solar Project Queues: Interconnection Facilities associated with higher queue requests will be modeled in this review
- The Applicant's request for interconnection service in and of itself does not convey any other form of 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 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.
- 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

Substation peak load on CB 5W26 has been measured at 3.25MW, 15% is 487kW. This 360 kW project is less than 487 kW.

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

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

The solar electric facility will contribute only 4.7% of the total fault current for a fault on the 12.5 kV circuit.

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

The existing fault currents level is low compared to the interrupting rating of the existing equipment.

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: N/A

This project is less than 10 MW, and there are no stability concerns in this area.

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

The existing distribution system is a 12.5 kV three phase, four wire primary line. The project one line indicates a line to neutral grounded Wye primary on the medium voltage transformer, effective grounding will occur with an adequately sized grounding

transformer.

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: N/A

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

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

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 concerns on the transmission system

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

Required system upgrades and interconnection facilities are estimated to exceed \$10,000.

- A three phase line extension from the POI to a new pole with a gang operated switch will need to be installed.
- Cutouts, fuses, and jumpers at map string 01402044.0, facility point 032605 to energize the line to the proposed POI will need to be installed.
- Metering equipment will need to be installed.

5.0 TIER 2 – NEXT STEPS

Although the Applicant's interconnection request fails Screen 12 the Public Utility does not require additional studies in order to approve the interconnection request.

6.0 PARTICIPATION BY AFFECTED SYSTEMS

No Affected Systems were identified in relation to this Interconnection Request.

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:

Q#	Size (MW)
650	10.000
651	10.000
652	10.000
653	10.000
1190	200.000

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.

Enterprise is part of the Walla Walla transmission bubble, which currently has insufficient network load (at peak) to absorb any additional generation. Therefore, to deliver the aggregate of generation in the local system to the aggregate of load (the NRIS study scope), construction of a new 230 kV transmission line from the Enterprise area system to the Yakima area system (where the generation could be absorbed) may be required, at a minimum. The new 230 kV line would interconnect Hurricane substation with Wine Country substation in the vicinity of Grandview, Washington. The new 230 kV line would be approximately 160 to 185 miles, depending on the line route. Upgrades at both Hurricane and Wine Country substations would be required to tie in the new line. The transmission provider’s high level estimate for this transmission line is \$185,000,000.