



New Member Generator Checklist

Preapproval for interconnection to the OPALCO grid is required.

Please review the entire Interconnect Packet before continuing.

1. Download the Interconnect Packet on the OPALCO website or pick one up at an OPALCO office.
2. The **Interconnect Packet** includes the following documents:
 - Interconnect Application
 - Agreement for Interconnection
 - Member Service Policy 14: Interconnection of Member Generators
 - OPALCO Interconnection Standards for Installation of Member Generators
 - List of local installers
3. Interview and select your installer.
4. With your installer, complete the Interconnect Application. Your installer should include a single one-line diagram and a photo of the site identifying the location of the disconnect switch and production meter.
5. Submit the signed Interconnect Application and Agreement for Interconnection forms along with a \$100 application fee to the OPALCO Energy Services team.
6. The Energy Services and Engineering staff will review your application and notify you and your installer of approval.
7. The Energy Services team may elect to conduct a pre-installation site inspection. Staff will contact you to schedule as needed.
8. Proceed with your installation.
9. The OPALCO team will send you an invoice for a production meter, if included in installation, and any other OPALCO related costs (referred to as a "Contribution in Aid of Construction"). Please plan to pay this invoice before requesting a final inspection of your installed system.
10. After your system is installed and approved by the Washington State Electrical Inspector (Labor & Industries), you or your installer will need to contact the Energy Services team with your permit number and approval date.
11. A final site inspection may be required. Staff will contact you as needed.

12. The Energy Services team will submit a service order for our meter technician to install two meters:

- A **bi-directional billing meter** to measure power consumed from the grid and power sent to the grid. This meter data is what you see on your monthly electric billing statement from OPALCO.
- A **production meter** to measure all power produced by your renewable system. This measurement is used to calculate any available production incentives. It does not appear on your monthly billing statement.

13. The Energy Services team will notify you when your meters have been installed.

If you have any additional questions, please contact the OPALCO Energy Services Staff:

Lindsay Gross

Energy Services Coordinator

360.376.3587 or lgross@opalco.com

OPALCO INTERCONNECT APPLICATION

Member Name:

Account Number:

Site Installation Address:

Mailing Address (if different):

Phone Number:

Email Address:

Energy Source:

Solar Wind Micro Hydro Other _____

Service Type:

Residential Commercial Industrial

DC Capacity:

AC Capacity:

Estimated Annual Generation:

Production Meter Included: Yes No

Manufacturer:

Model Number:

Number of units or modules:

Is it Made in Washington: Yes No

Inverter Manufacturer:

Model Number:

Quantity of Inverters:

Power Rating:

Voltage:

UL 1741 Listed: Yes No

Battery Storage System (if applicable) Manufacturer:

Model Number:

Quantity of Batteries:

Voltage:

Total Amp/hour Rating:

Operating Power Factor (if applicable):

Existing generation (if applicable):

SYSTEM DESIGNER & INSTALLATION CONTRACTOR INFORMATION

Design/Installation Contractor:

Company:

Contractor License Number:

Phone Number:

Email:

Mailing Address:

ELECTRICAL CONTRACTOR

| | |
|----------------------------|---------------|
| Electrical Contractor: | Company: |
| Contractor License Number: | Phone Number: |
| Email: | |
| Mailing Address: | |

Please include the following documents with this application:

- \$100 Interconnect Application Fee
- Signed Interconnect Agreement
- One-line Electrical Diagram Drawing
- Property Site Sketch or Drawing, Indicating the location of the electric meter and disconnect switch

Owner Acknowledgement (initial each line)

_____I certify that the above information is correct. I understand that interconnection is subject to the terms described in OPALCO Member Service Policy 13 and the Interconnection Standards and that OPALCO must pre-approve the installation of the member's parallel generation system prior to construction.

_____I will allow a representative of Orcas Power & Light Cooperative and/or a State Electrical Inspector to verify and approve system installation and capacity.

_____I understand that to participate in either the Washington State Renewable Energy Production Incentive and/or the OPALCO MORE Production Incentive, I must purchase from OPALCO and have installed an AMI production meter.

Signature of Member: _____ Date: _____



ORCAS POWER AND LIGHT COOPERATIVE AGREEMENT FOR INTERCONNECTION

Revised 12/1/2021

FOR INSTALLATION OF MEMBER OWNED DISTRIBUTED ENERGY RESOURCE FACILITY

_____, member, and Orcas Power and Light Cooperative (OPALCO), referred to collectively as “parties” and individually as “party”, agree as follows:

1. To meet all the terms of Member Service Policies and applicable tariff as amended from time to time.
2. The member shall be solely responsible for obtaining and complying with any and all necessary easements, licenses and permits, or exemptions, and may be required by any federal, state or local statutes, regulations, ordinances or other legal mandates. The member shall be liable for any damages that may occur out of the member’s actions or inactions of the operations of their facility.
3. The member shall submit documentation to OPALCO that the system has been inspected and approved by the local permitting agency regarding electrical code requirements.
4. The MG shall not commence parallel operation of generating system until receives approval to do so by OPALCO.
5. This agreement shall be interpreted, governed and construed under the laws of the State of Washington as if executed and to be performed wholly within the State of Washington. Venue for any action arising under or in connection with this agreement shall be in the Superior Court for San Juan County, Washington.
6. The member shall save harmless and indemnify OPALCO, its other members and its agents, from any loss, claim or expense arising out of member’s actions or inaction in implementing this Agreement. OPALCO shall save harmless and indemnify member for any loss, claim or expense arising out of the actions or inaction of OPALCO or its agents in implementing this Agreement. This section shall not relieve any insurer of its obligation to pay claims in accordance with the provisions of any valid insurance policy.
7. Any amendments or modifications to this agreement shall be in writing and agreed to by both parties. The failure of any party at any time or times to require performance of any provision hereof shall in no manner affect the right at a later time to enforce the same. No waiver by any party of the breach of any term or covenant contained in the agreement, whether by conduct or otherwise, shall be deemed to be construed as a further or continuing waiver of any such breach or a waiver of the breach of any other term or covenant unless such waiver is in writing.
8. All written notices shall be directed to Orcas Power and Light Cooperative, 183 Mt. Baker Road, Eastsound, WA 98245.

I agree to the terms outlined in this agreement.

I understand that interconnection is subject to the terms described in OPALCO’s Member Service Policy 13 and Interconnection Standards. I agree to allow a representative of Orcas Power & Light Cooperative to verify and approve system installation and capacity.

Member

Date

OPALCO Representative

Date

ORCAS POWER AND LIGHT COOPERATIVE

MEMBER SERVICE POLICY 13

Interconnection of Member-owned Distributed Energy Resource Facilities

This policy covers interconnection of any member owned generating facilities, storage facilities, or other facilities supplying energy to the distribution system of Orcas Power and Light Cooperative ("OPALCO" or "cooperative"), herein referred to as distributed energy resource (DER). This interconnection policy for DER facilities specifies the minimum requirements and conditions for non-utility-owned electric resources that will be interconnected for the purpose of parallel operation with the OPALCO electrical system. DER facilities will be permitted to interconnect to OPALCO's distribution system only after OPALCO determines that the operation of the member's DER facility will be safe and effective and will not interfere with normal operation of OPALCO's electrical systems.

13.1 AVAILABILITY

Available to qualifying facilities subject to the limitations below:

- 13.1.1 The DER must be supplying energy to the cooperative's distribution system with solar, wind, battery storage or other distributed energy resources.
- 13.1.2 Qualifying facilities must adhere to any of the OPALCO's power purchasing contract provisions for interconnection of generation or other qualifying facilities.

13.2 CHARACTER OF SERVICE

Service where the member has elected to interconnect DER facilities with OPALCO's distribution facilities. The DER facility may be used to offset the member's own electrical requirements or to generate power to sell to OPALCO. Single phase 120/240 or three phase 277/480 or 120/208 service, at 60 Hz are available. Any service upgrades necessary must comply with MS Policy 5 – *Line Extension*.

13.3 PRODUCED ENERGY

- 13.3.1 Members interconnecting DER facilities with an inverter nameplate rating of less than 25 kW shall be under the appropriate tariff.
- 13.3.2 Members interconnecting DER facilities with an inverter nameplate rating of 25 kW or greater shall execute a Power Purchase Agreement with the cooperative prior to operation of the DER system.

13.4 GENERAL PROVISIONS

13.4.1 Design Requirements

- 13.4.1.1 All equipment used to interconnect to OPALCO's system shall be UL listed for the intended use.
- 13.4.1.2 All systems shall comply with current state code, current national codes, and the cooperative's interconnection guidelines.
- 13.4.1.3 DER facilities shall have the ability to be monitored by OPALCO via communications protocols defined in the cooperative's interconnection guidelines.

13.4.2 Interruption or Reduction of Deliveries

- 13.4.2.1 OPALCO shall not be obligated to accept deliveries of excess energy and may require member to interrupt or reduce such deliveries:
 - 13.4.2.1.1 When necessary, to construct, install, maintain, repair, replace, remove, investigate, or inspect any of its equipment or part of its system; or

13.4.2.1.2 If it determines that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, or compliance with prudent electrical utility practices.

13.4.2.2 Whenever possible, OPALCO shall give the member reasonable notice of the possibility that interruption or reduction of deliveries may be required.

13.4.2.3 Notwithstanding any other provision of this policy, if, at any time OPALCO determines that either (1) the facility may endanger any of the cooperative's personnel or (2) the continued operation of member's facility may endanger the integrity of the cooperative's electric system, the cooperative shall have the right to disconnect member's generation facility from the cooperative's electric system. The member's facility shall remain disconnected until such time as OPALCO is satisfied that the condition which necessitated the disconnection has been corrected.

13.4.3 Interconnection

13.4.3.1 OPALCO reserves the right to require interconnection studies, additional or upgraded facilities, and the interconnection method. Technical provisions for interconnection shall be provided via the cooperative's interconnection guidelines.

13.4.3.2 Member shall pay for designing, installing, operating, maintaining and any other associated costs of the generating facility and system upgrades, per Member Service Policy 5 – *Line Extensions*, and shall be in accordance with all applicable laws, regulations and cooperative guidelines and policies.

13.4.3.3 Member shall not commence parallel operation of the DER facility until written approval of the interconnection facilities has been given by OPALCO.

13.4.4 Maintenance and Permits

13.4.4.1 Member shall maintain the DER facility and interconnection facilities in a safe and prudent manner and in conformance with all applicable laws and regulations.

13.4.4.2 Member shall obtain any governmental authorizations and permits required for the construction and operation of the DER facility and interconnection facilities. Member shall reimburse the cooperative for all losses, damages, claims, penalties, or liability it incurs because of member's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of member's generating facility or failure to properly maintain member's facility.

13.4.4.3 Member shall obtain appropriate insurance coverage before operation and provide evidence to OPALCO of such insurance, including liability coverage.

13.4.5 Indemnity and Liability

Member shall save harmless, release and indemnify OPALCO, its officers, directors, employees other members, and its agents, from any loss, claims or expenses, including but not limited to damages fines, and any other payments

arising out of member's actions or inaction in the development and operation, or failures thereof, of its DER facilities and implementing this policy.


Foster Hildreth, General Manager

December 1, 2021
Effective Date

ORCAS POWER & LIGHT COOPERATIVE
Interconnection Standards for Installation of Member Generators

“With nameplate rating no greater than 200 kW”

- 1) Member Generator, herein referred to as MG shall comply with all National Electric Code (NEC) requirements, and building codes, and shall obtain Washington State electrical permit(s) for the equipment installation.
- 2) MG shall provide space for metering equipment including a visibly-lockable disconnect- switch and meterbase as per OPALCO's requirements. The location of this equipment must be pre-approved by OPALCO and meet all code requirements. See figure 1 on page 8 for additional information on meterbase and disconnect switch specification and mounting and wiring requirements.
- 3) MG's over-current device at the service panel shall be marked to indicate power source and connection to OPALCO's distribution system.
- 4) MG's production meter and Utility disconnect shall be labeled with service voltage.
- 5) MG's power production control system shall comply with all NEC and Institute of Electrical and Electronics Engineers (IEEE) standards for parallel operation with OPALCO including: Power output control system shall automatically disconnect from OPALCO's power source upon loss of OPALCO voltage and not reconnect until OPALCO's voltage has been restored for a least five (5) minutes continuously; Power output control system shall automatically initiate a disconnect from OPALCO's system within ten (10) seconds if the voltage rises above 126 volts, rms phase to ground, or falls below 114 Volts, rms phase to ground, (nominal 120 V rms base) on any single phase.
- 6) MG shall pay all costs associated with the design, installation, operation and maintenance of the generation equipment. Including OPALCO supplied and required equipment and labor cost.
- 7) MG shall deliver the excess energy to OPALCO at the MG's premises. OPALCO will install and maintain, a single Utility owned revenue meter capable of registering the bi-directional flow of electricity at the MG's premises. At the MG's cost, a separate single production meter may be installed to measure production of the renewable generation source. MG is responsible for designing and wiring an MG system that's production can be metered with a single production meter. All costs associated with the production meter are the responsibility of the MG.
- 8) MG shall not start installation of any generation equipment, including foundations, supports, or roof top connections until a pre-approval application with wiring diagram has been submitted to OPALCO's Energy Services Department and a site visit has been completed. On ferry served islands, MG shall allow one (1) working week after pre-approval application has been submitted for an OPALCO's pre-inspection site visit to occur. On non-ferry served islands, MG shall allow two (2) working weeks after pre-

ORCAS POWER & LIGHT COOPERATIVE

approval application has been submitted for an OPALCO's pre-inspection site visit to occur. Site visit requires that the MG or MG's representative be present. MG is responsible for scheduling the pre-approval site visit with OPALCO's Energy Service Department.

9) MG shall not commence parallel operation of the generation equipment until a final inspection of the interconnection facilities has been completed by OPALCO. Slugging or by-passing of meterbase socket is not allowed. On ferry served islands, MG's shall allow one (1) working week after final State inspection has been passed and OPALCO's Energy Services Department has been notified of State inspection passage for OPALCO's final inspection to occur. On non-ferry served islands, MG shall allow two (2) working weeks after final State inspection has been passed and OPALCO notified of passage for an OPALCO's final inspection to occur.

10) MG shall allow one (1) working week after final OPALCO inspection has been passed for OPALCO's Metering Department to set a MG owned production meter. On non-ferry served islands, MG shall allow two (2) working weeks after final OPALCO inspection has been passed for OPALCO's Metering Department to set a MG owned production meter.

Final OPALCO inspection does not check if meterbase and disconnect have been wired correctly. If metering department determines that the system is not properly wired, no meter can be set and system cannot be brought on line.

11) Once generation facility is in operation, MG shall make no changes or modifications in the equipment, wiring or mode of operation without the prior approval of OPALCO.

12) Metering-

- a. OPALCO shall meter production at one location with a single production meter for each generation system installations. Solar, Wind, and Hydro generation facilities are considered separate generation installations. Large Solar installations with multiple inverters are considered one system. It is the responsibility of the MG to provide a system design and wiring connection that can be connected to an OPALCO approved meterbase which can measure system production at one point.
- b. OPALCO will provide an estimated invoice hereinafter called contribution in aide of construction, (CIAC), equal to the estimated cost of the production meter and/or any other OPALCO provided equipment and service. Contribution in aide of construction must be paid in full prior to installation of said MG owned production metering equipment.
- c. A utility owned distribution service meter, capable of measuring energy flow in two directions: the energy delivered by OPALCO to the MG and the energy received by OPALCO from the MG, will be required to be installed at this site.

ORCAS POWER & LIGHT COOPERATIVE

- d. The MG shall provide space and meter socket equipment as specified by OPALCO at a location approved by OPALCO for the purpose of measuring energy production. Approval for production meter location is required before any generation equipment can be installed including foundations, supports, and roof top attachments. This meter socket must be visible to OPALCO crews at all times and shall be mounted between 54 inches and 78 inches above level grade, and be labeled as a 240 volt meterbase or 120 volt meterbase. Production meterbase shall be a **Milbank U7490-0** and not be used as a junction box. Top terminals of the meterbase socket shall be connected to the inverter. The only wires allowed in the meterbase are those attached to an approved connection terminals inside meterbase. Slugging of meterbase socket by owner or installer is not allowed.

13) Utility Visibly-Lockable Disconnect Switch – A visibly accessible disconnect switch that can be visibly-locked in the open position is to be provided and installed by the MG. The location of this switch must be pre-approved by OPALCO before any generation equipment including: foundations; supports; and roof top attachments can be installed. This disconnect must be visible to OPALCO crews at all times and shall be mounted between 54 inches and 78 inches above level grade and be a **Square D Cat. No DU221RD or DU222RB** type disconnect. Disconnect shall not be used as a junction or splice box. The only wires allowed in the Utility disconnect are those attached to approved connection terminals inside this disconnect. The disconnect switch shall be used:

- a. If it is necessary for the protection of the line crew personnel when working on de-energized circuits during a system emergency.
- b. If inspection of the MG's reveals a hazardous condition or a lack of proper maintenance.
- c. If the MG interferes with other Members, or utilities, or with the operation of OPALCO's distribution system.

14) Any future modification or expansion of the MG will require an engineering review and approval by OPALCO before any modification can begin.

15) Protective Relaying –

- a. All generating units over 25 kW must be equipped with short circuit interruption devices consisting of thermal-magnetic over-current devices on each phase as well as under voltage release and solenoid tripping accessories.
- b. Over and under voltage and frequency protection shall be provided to effectively isolate the facility from OPALCO's system should the power output not be within OPALCO's normal operation tolerances. The normal tolerances for under- and over- voltage are 114 to 126 volts. Frequency must be within +/- 0.05% of 60 Hz.

ORCAS POWER & LIGHT COOPERATIVE

16) Power Factor – The power output of the generation facility must approach a unity power factor when operated in parallel with OPALCO's system. Equipment shall be installed to correct any deficiencies in power factor by the owner of the generation facility at the MG's expense. Under no condition will the power factor of the generation facility be permitted to drop below 0.94.

17) Power Quality – Generation equipment shall comply with the power quality requirements and harmonic limitations in IEEE 519 Recommended Practices and requirements of Harmonic Control in Electric Power Systems.

18) Safety – All safety and operation procedures for joint use equipment shall be in compliance with the Occupational Safety and Health Administration (OSHA standard 29 CFR 1910.269, the National Electrical Code (NEC), Washington Administrative Code (WAC) rules, the Washington Industrial Safety and Health Administration (WISHA) standard, OPALCO standards, and equipment manufactures safety and operation manuals.

19) Maintenance and Permits – MG shall:

- a. Maintain the electric generation system and interconnection facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, OPALCO's Interconnection Standards and MG Service Policy 14.
- b. Obtain any governmental authorizations and permits required for the construction and operation of the electric generating system and interconnection facilities, including electrical permit.
- c. Consult with and obtain pre-approval from OPALCO's Energy Services Department for all generating facilities to be operated in parallel with OPALCO before any construction activities starts.
- d. Reimburse OPALCO for any and all losses, damages, claims, penalties, or liability it incurs as a result of MG's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of MG's generation system or failure to maintain MG's facility.

20) Access to Premises – OPALCO may enter MG's premises or property under the following conditions:

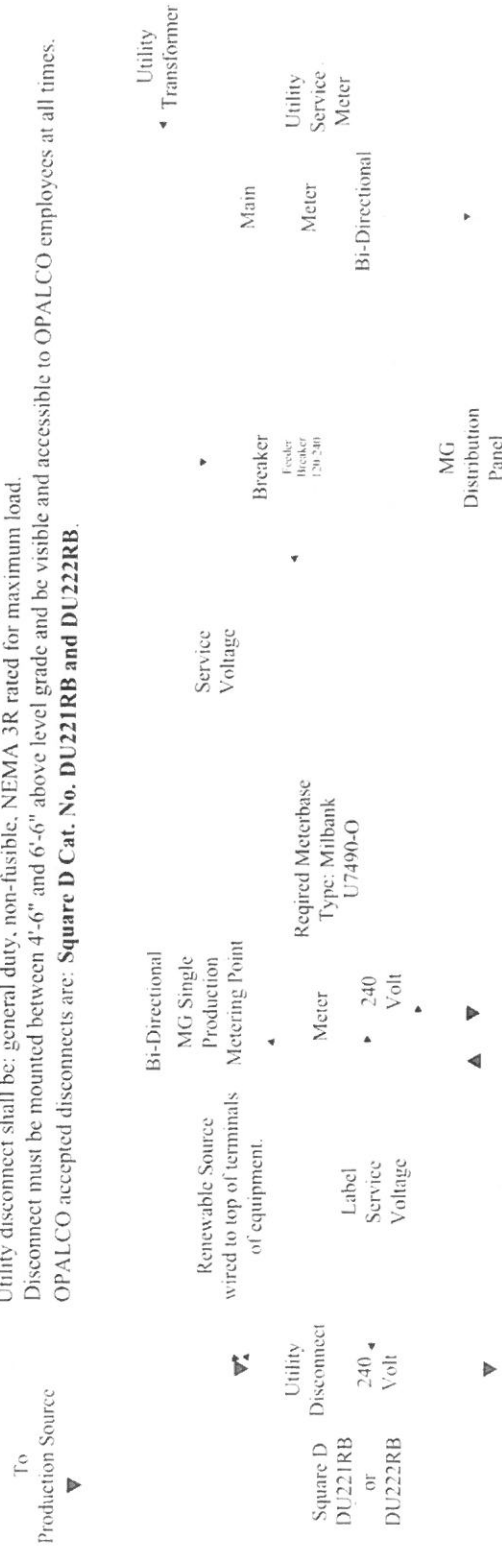
- a. To inspect, at all reasonable hours, MG's protective devices and to read and maintain meter(s).
- b. To disconnect the generation systems interconnection with OPALCO's, without notice if in OPALCO's judgment a hazardous condition exists and such immediate action is necessary to protect persons, OPALCO's facilities, or property of others from damage or interference caused by MG's generation system.

ORCAS POWER & LIGHT COOPERATIVE

All Member generation facilities (MG) must comply with all State and Federal laws as well as OPALCO Member Service Policy 14 and OPALCO Interconnect Standards. All required MG utility disconnect and meterbase locations shall be pre-approved through OPALCO's Energy Services Department and not be used as junction or splice boxes. It shall **always** be the responsibility of the installer to contact OPALCO in advance of any installation and arrange a pre-installation site meeting. OPALCO shall meter production of Solar or Wind or Hydro generation system from one metering point with a single OPALCO approved meter. MG is required to provide wiring for production metering to an OPALCO approved single location. Only wires connected to U.L. listed factory terminals shall be allowed in Utility disconnect and production meterbase.

MG Utility Disconnect

Utility disconnect must have a handle that can be visibly locked in the open position.
Utility disconnect shall be: general duty, non-fusible, NEMA 3R rated for maximum load.
Disconnect must be mounted between 4'-6" and 6'-6" above level grade and be visible and accessible to OPALCO employees at all times.
OPALCO accepted disconnects are: **Square D Cat. No. DU221RB and DU222RB.**



MG Production Meter

Production meterbase must be mounted between 4'-6" and 6'-6" above level grade and be visible and accessible to OPALCO.
Production meterbase shall not be used as a junction or splice box and shall be **MilBank type U7490-0**. Any exception must be pre-approved with OPALCO's Metering Department.
Production meterbase service voltage shall be labeled on meterbase front cover.
Production meterbase's top terminals shall be wired to the production source.
Production meters are not allowed to be inside or under any structures.
Production meters shall always be installed between Utility disconnect and MG distribution panel.

Figure 1- One-Line Example of Meterbase and Utility Disconnect

Local Solar Installers

Rainshadow Solar

Justin and Chris Wolfe

info@rainshadowsolar.com

360-376-5336

Western Solar

www.westrnsolarinc.com

360-312-4708

Whidbey Sun & Wind

Mark Anderson

info@whidbeysunandwind.com

360-678-7131

NOTE: This list is intended for contact reference only and not as a recommendation of the installers listed. Members should conduct their own research and select an installer that best meets their needs.