City of Ukiah
ELECTRIC DEPARTMENT

Distributed Generation Interconnection Guidelines

Effective November 2026





DEFINITIONS

Distributed Generation (DG): Any type of electric generating and/or storage facility being operated in parallel with Ukiah Electric's distribution system. Examples include solar, battery, wind, fuel cells, and microturbines.

Distribution Service: All services required by or provided to a Customer through Ukiah Electric Utility's distribution system pursuant to Ukiah's current Rates, Rules, and Regulations.

Distribution System: All electrical wires, equipment, and other facilities owned or provided by Ukiah Electric Utility, by which Ukiah provides distribution service to a Customer.

Electric Utility Service Equipment Requirements Committee (EUSERC): Standards that guide the design and installation of equipment, enclosures, and metering equipment.

Customer Generator: The owner of the generating facility, who has met all interconnection requirements to operate in parallel with Ukiah Electric Utility.

Onsite Load: Electric power consumed by the Customer to which the generating facility is connected.

Export: The flow of electric energy from a customer-owned generating or storage facility through the utility meter onto the UEU distribution system.

Hosting Capacity: The amount of distributed generation and energy storage that can be interconnected to a portion of the electric distribution system without causing unacceptable impacts to safety, reliability, power quality, equipment operation, or compliance with utility operating requirements.

Inverter: A power electronic device that converts direct current (DC) power to alternating current (AC) by means of electronic switching.

Interconnection; Interconnected: The physical connection of a generating facility in accordance with the requirements under these Interconnection Guidelines so that operation with the Distribution System can occur (has occurred).

Interconnection Agreement: A written, signed agreement between Ukiah Electric Utility and the Customer Generator to interconnect and operate the Customer Generator's generating facility in parallel with Ukiah Electric Utility's Distribution System.

Interconnection Study: An engineering evaluation performed by or on behalf of UEU to assess the potential impacts of a proposed generating or storage facility on the electric system, including but not limited to hosting capacity, voltage regulation, power quality, thermal loading, protection coordination, fault currents, reverse power flow, and system reliability.

Metering: The measurement of electrical power flow in energy in kilowatt-hours (kWh), kilowatts (kW), and, if necessary, reactive power in kilovolt ampere reactive (kVAR).

Momentary Parallel Operation: The interconnection of a generating facility to the Distribution System for one second (60 cycles) or less.

Net Energy Metering 1.0 (NEM 1): Previously, the self-generation rules and rates were under NEM 1 in accordance with California Public Utility Code 2827. The Utility Code 2827 acknowledged that NEM 1 provided a subsidy between customers and set a NEM 1 cap at 5% of eligible customers. This cap has been met, and the NEM 1 rate is closed to new Self-Generation customers.

One-Line Diagram: A schematic drawing, showing the major electrical switchgear, protection devices, wires, generators, transformers, and other devices, providing sufficient detail to communicate to a qualified engineer the essential design and safety of the system being considered.

Parallel Operation: The simultaneous operation of a Customer Generator with power delivered or received by Ukiah Electric Utility while Interconnected. Under these Interconnection Guidelines, Parallel Operation includes only those generators that are so interconnected with the Distribution System for more than one second (60-cycles)

Site Plan: The drawing showing the physical location of the Generating Facility components in relation to the Ukiah Electric Utility Distribution System.

Service Entrance Equipment: Equipment located between the utility service connection and the customer's electrical distribution system, including meter sockets, service disconnects, service panels, transfer equipment, and associated enclosures and conductors.

Ukiah Electric Utility (UEU): The City of Ukiah's publicly owned and operated municipal utility.

INTRODUCTION

These guidelines explain the review, permitting, installation and operating requirements for customer-owned distributed generation (DG) and energy storage system (ESS) interconnected and operating in parallel to Ukiah Electric Utility (UEU). Approval depends on the ability of the distribution system to safely and reliably accommodate the proposed facility. Building permits and inspections do not replace UEU interconnection approval.

When considering installation of a Distributed Generation system, verify both current and anticipated future electric rates at https://cityofukiah.com/electric-utility/, under Rates and Fees. Please note that some electric charges on your bill are fixed and are charged regardless of your power generation source.

UEU does not permit power purchase agreements in which a third-party system owner sells generated electricity to a UEU customer within the service territory. Equipment leases structured as financing arrangements are permitted, subject to UEU review.

DG may not span property lines or aggregate generation between meters on different parcels. Separately metered accessory dwelling units may each interconnect a system to their respective meters.

APPLICATION AND PRE-APPROVAL

All residential and commercial DG and ESS installations, battery-only installations, and modifications to existing systems require UEU written pre-approval before application for a City building permit.

To obtain 12 months of billing usage, contact Ukiah's Customer Service team at 707-463-6228 or utilityservices@cityofukiah.com and send the usage and proposed plans to solar@cityofukiah.com. UEU generally anticipates up to two weeks for initial review of complete routine applications; additional technical review may require more time.

Applications must identify the service address, account and property owner; customer and installer contacts; existing DG/ESS equipment; proposed equipment ratings and specifications; site plan; one-line diagram; proposed export capacity; inverter and protection settings; and battery power (kW), capacity (kWh), charging sources and operating mode, including backup, self-consumption and export capabilities. UEU may request additional documentation or manufacturer information needed for review.

Systems exceeding 10 kW (Inverter rating or the sum of inverter ratings for AC-coupled DER and ESS) are subject to an Interconnection Screening to determine the feasibility of the installation. Screenings that fail any criteria may require a full Interconnection Study to evaluate potential mitigation that may be required. UEU may require a study for any system, regardless of size, when location, aggregate DG penetration, export characteristics, storage operation or other circumstances warrant additional evaluation. The applicant will receive the study scope and estimated costs before commencement; UEU begins the study after required payment is received. Studies may take up to six weeks after receipt of complete information and payment, depending on complexity.

Upon successful pre-approval from UEU, applicants may apply to the Building Division at 300 Seminary Ave, Ukiah, CA 95482. Contact the Building Division at (707) 463-6268 or buildingdivision@cityofukiah.com with any permitting questions. Final permission to operate is issued only after required inspections, agreements, and utility work are complete.

SYSTEM SIZING

Distributed generation systems may be sized so that the amount of electricity produced by the system meets but does not exceed the previous 12 months of electric energy usage at the site of installation. Customers may request their previous 12-month energy usage history from Utility Billing by calling (707) 463-6228 or emailing utilityservices@cityofukiah.com.

Based on photovoltaic (PV) equipment selection, the contractor will estimate the annual output (kWh) of the customer's system using the online **CSI-EPBB calculator(Opens in new window)**.

If the customer doesn't have 12 months of historical energy usage, the alternative PV system maximum is the square footage of conditioned space multiplied by 3 kWh. For example, a 2,000 square foot house multiplied by 3 kWh per square foot, equals a maximum allowable PV system size with an output of 6,000 kWh a year. Commercial installations without 12 months of usage will be evaluated by the UEU to determine the maximum size using all available data, including similar businesses, building types, and sizes.

Customers who believe their load will be increasing in the near future have the option of proceeding with their approval amount now, and then once their future load-growth materializes, they can return and apply to add additional panels to their system.

TECHNICAL REVIEW, HOSTING CAPACITY AND UTILITY AUTHORITY

UEU evaluates interconnection requests individually and in light of cumulative DG and ESS already connected or approved in the relevant area. Interconnection screening and study requirements apply regardless of whether a proposed distributed energy resource (DER) is intended to export power to the utility system. Even where a DER and ESS installation is configured for self-consumption only, the reduction in onsite load can materially change power flow, voltage conditions, and the relationship between local DER production and customer demand. Circuits with a high concentration of DER relative to local load may experience voltage regulation challenges, power quality concerns, reverse power flow conditions, protection coordination issues, and other operational impacts. Accordingly, UEU may require Interconnection Screening and, if warranted, a more detailed Impact Study to evaluate the cumulative effect of existing and proposed DER facilities and determine any operational limitations, control requirements, monitoring requirements, or system modifications necessary to maintain safe and reliable electric service. Studies may address feeder and transformer hosting capacity; voltage rise and regulation; flicker and other power-quality effects; thermal loading; protective-device coordination and fault behavior; anti-islanding; bidirectional feeder or substation power flow; and required equipment, controls or distribution upgrades.

Where UEU identifies a material safety, reliability, operational or capacity concern, it may require additional study, modify allowable size or export capacity, require certified export-limiting controls or protection, require system upgrades, defer processing or energization, temporarily suspend acceptance of affected applications, or deny an interconnection that cannot reasonably be accommodated. UEU will communicate the principal technical basis for its decision and, when practicable, available mitigation or resubmittal options. The applicant is responsible for the reasonable cost of studies, applicant-specific equipment, operational requirements, and system modifications or upgrades identified as necessary to accommodate the proposed interconnection. Approval of one installation does not guarantee approval of subsequent applications.

ENERGY STORAGE SYSTEMS

Solar-plus-storage, battery-only facilities and additions or replacements of batteries on existing installations require UEU review. The application must identify battery energy capacity (kWh), continuous and peak power (kW), inverter characteristics, backup/transfer configuration, grid-charging capability, export capability, control settings and any proposed changes to existing generation or service equipment. Battery storage systems shall be DC coupled, with limited exceptions that must be approved in writing by UEU.

Storage equipment shall not energize a de-energized UEU circuit. Systems capable of backup operation must provide approved isolation and anti-islanding protection. Reconnection to the utility shall occur only after UEU voltage is restored and applicable interconnection requirements are met. UEU may impose limits on export, discharge schedules, operating modes, or connection requirements where necessary to protect system operation. No time-of-use rate requirement or storage incentive is established by these guidelines; any such program requires separate rate or policy approval.

Energy storage systems may serve customer load during a utility outage only when equipped with transfer and protective equipment that automatically isolates the customer installation from the UEU distribution system. Customer-owned generation or storage facilities shall not energize, backfeed, or otherwise supply power to a de-energized UEU electrical facility. Systems shall comply with applicable versions of IEEE 1547, UL 1741, and other applicable codes and standards. Proposed microgrids or intentional islands extending beyond a single customer service require separate UEU review and approval and may be subject to additional technical, operational, and regulatory requirements.

METERING, AGREEMENTS, AND PERMISSION TO OPERATE

A single UEU-approved bi-directional meter will measure electricity delivered to and received from the customer. Commercial installations must also provide provisions for a generation meter to record total generation. UEU may require additional metering or monitoring where warranted. Metering, communications, service modifications and disconnect equipment must satisfy UEU and EUSERC requirements; obtain written UEU approval before purchasing or installing service-entrance equipment.

Meter Collars and Meter Socket Adapters. UEU does not accept or permit meter collars, meter socket adapters, inter-set devices, meter-mounted transfer devices, backup switches, or other customer-owned equipment installed between the UEU revenue meter and the meter socket. This prohibition applies to equipment associated with solar photovoltaic systems, energy storage systems, generators, backup power systems, or any combination of these systems. Product certification, listing, approval by another authority, or acceptance by another electric utility does not constitute UEU approval. Solar, storage, and generator installations shall use a UEU-approved interconnection and isolation or transfer configuration located outside the meter socket and on the customer side of the service equipment, as applicable. Applicants shall obtain all required approvals from the City Building Division and other applicable authorities having jurisdiction. Installation of prohibited meter-mounted equipment does not become acceptable through permitting, plan review, inspection approval, product listing, or approval by another utility.

All customers must complete the applicable interconnection agreement before energization. Applicants are responsible for permits, inspection charges, required metering and interconnection fees, studies and necessary customer-specific improvements. Metering and interconnection fees are posted on the City website and may be updated. UEU installation of a bi-directional meter, following completion of all approvals, constitutes permission to operate (PTO). Commercial installations larger than 50kW require a separate written PTO. Premature energization,

without UEU approval, may result in safety, metering or billing problems and will require immediate shutdown, inspection, and reasonable cost recovery for documented corrective work.

ELECTRICAL INTERCONNECTION REQUIREMENTS

All customers will be required to comply with all interconnection requirements up to and including signing an Electrical Interconnection Agreement with UEU prior to the system being energized. By signing the agreement, the customer acknowledges that connection and operation of the generating facility is subject to the terms and conditions set forth in the agreement and in City of Ukiah's rates, standards, rules, and regulations. The customer is responsible for all applications, permit inspection fees and all costs associated with the interconnection of their system and installation of a bi-directional meter. Modifications to the service entrance must be approved by UEU. All service entrance and disconnects must be Electric Utility Service Equipment Requirements Committee (EUSERC) approved and require written approval from UEU prior to installation. Don't buy any equipment until you have this approval!

G-1 RATE, ONSITE CONSUMPTION, AND EXPORTS

Ukiah Electric Utility does not currently offer or allow Net Energy Metering 1.0 (NEM 1); this includes aggregate and/or virtual NEM.

New eligible customer-owned generation interconnected on or after July 1, 2021 is subject to the applicable G-1 Self-Generation rate provisions rather than closed NEM1 enrollment. Electricity generated and consumed onsite reduces electricity purchased from UEU and therefore avoids the applicable retail energy charge on that consumption. This is distinct from exported energy: generation delivered to UEU through the bi-directional meter is credited at the Utility's adopted avoided-cost export rate, not at the retail rate. Energy imported when onsite generation is insufficient is billed under the applicable retail service schedule; fixed charges continue to apply.

G-1 customers must pay amounts due monthly; eligible export credits carry forward as specified in the adopted rate schedule. The adopted rate schedule governs the effective date and calculation of avoided-cost compensation; this guideline does not independently establish or amend that date or rate. See https://cityofukiah.com/electric-utility/ under Rates and Fees.

RENEWABLE ENERGY CREDITS

The existing G-1 Rate Schedule provides that renewable energy credits (RECs) associated with participating customer generation belong to UEU. The applicable adopted rate schedule and signed agreement govern any assignment of REC ownership. Customers should not assume that all system generation is automatically registered, metered or issued tradable RECs. Any registration, transfer, tracking, verification or compensation arrangement must be separately documented where applicable. UEU will clarify administrative requirements and any customer obligations before undertaking formal REC registration or transfer. The Utility's historical practice of not routinely administering customer-generated RECs does not itself amend the adopted rate language.

INSTALLER, EQUIPMENT, AND SAFETY REQUIREMENTS

Systems must be installed by appropriately licensed contractors and comply with applicable City building and electrical codes, manufacturer instructions, UEU standards and specifications, and required safety inspections. Equipment shall satisfy applicable CEC eligibility and certification requirements. Inverters must meet current, applicable UL 1741 and IEEE 1547 interconnection standards, including anti-islanding functionality. UEU may require documentation of certified operating modes and settings. Ground-mounted installations must meet applicable

clearances and disclose relevant easements; contact Underground Service Alert before excavation. UEU may refuse or disconnect unsafe or noncompliant installations.

EXISTING NEM1 CUSTOMERS, MODIFICATIONS, AND TRANSFERS

Existing eligible NEM1 customers remain subject to their adopted NEM1 schedule unless a modification or other event requires transfer to G-1. Expansion of an existing NEM1 system, including addition of an ESS, results in transfer of the entire system to G-1, except qualifying natural-disaster replacement. Portions of a single system cannot be billed/installed under both schedules. Like-for-like equipment replacements and repairs, additions of storage, changes in export capacity and other modifications must be disclosed for UEU determination of applicable requirements and rate treatment before work begins.

A change in property ownership, account holder, or tenancy must be reported to UEU. Existing DG equipment may remain physically connected subject to continued compliance with applicable agreements, metering and rates. A new owner or customer will be required to execute updated documents; rate eligibility is determined by adopted schedules, not by these guidelines alone. DG serving rental properties must have the property owner's authorization, and generation may not be credited across separately metered tenants or parcels unless an expressly adopted program allows it.

PLUG-IN SOLAR

California's Plug and Play Solar Act (SB 868), enacted in 2026, establishes a new pathway for qualifying plug-in solar systems beginning January 1, 2027. The legislation is intended to make solar more accessible to residential customers, including renters and residents of multifamily housing who may not have the ability to install traditional rooftop solar systems.

For eligible systems, the law allows small solar devices to connect to a dwelling's electrical system through a plug rather than requiring a traditionally hard-wired installation, provided the systems meet applicable safety requirements.

The information below is designed to help Ukiah Electric Utility customers make informed decisions when it comes to plug-in solar.

Description of Eligible Plug-In Solar

Plug-in solar refers to small photovoltaic systems designed to connect and disconnect from a building's electrical system through an electrical receptacle.

Under SB868, qualifying systems must meet all of the following requirements:

- Have a maximum combined alternating current (AC) output of 1200 watts (1.2 kW) per dwelling, including aggregate output from multiple devices.
- Be designed to connect to and disconnect from a building's electrical system through a receptacle.
- Be intended to offset electricity consumed at the premises.
- Comply with the applicable National Electric Code (NEC) and California Electric Code requirements.
- Be certified as a plug-in photovoltaic system by Underwriters Laboratories (UL) or an equivalent nationally recognized testing laboratory.

- Include certified safety features that automatically isolate the system from the building's electric system during a power outage to prevent electricity from backfeeding onto the electric grid.

Not all plug-in solar products qualify for exemptions established under SB 868. Customers should verify that the complete system meets the requirements before purchasing or installing equipment.

How Plug-In Solar Systems Work

Plug-in solar systems generate electricity from sunlight to help offset electricity used in the home. During daylight hours, the electricity produced can power appliances and other devices, potentially reducing the amount of electricity a customer needs to purchase from Ukiah Electric Utility. Unlike traditional rooftop solar systems, qualifying plug-in solar devices are designed for connection through an electrical receptacle.

If a system produces more electricity than the home is using at that moment, excess electricity may flow back onto the electric grid. This is known as exporting or backfeeding electricity.

Customers should not assume they will receive bill credits for excess electricity sent to the grid.

SB 868 does not establish an entitlement to export compensation, and installation of a qualifying plug-in solar system does not automatically enroll a customer in Ukiah Electric Utility's solar compensation programs.

Customers with existing rooftop solar, battery storage, or other distributed generation equipment are encouraged to contact Ukiah Electric Utility to better understand how adding a plug-in solar device may affect their existing arrangements.

Prioritize Safety When Selecting Plug-In Solar Products

Although plug-in solar products may appear similar to ordinary consumer electronics, they generate electricity and introduce power into a building's electrical system. Proper equipment selection and installation are essential to protecting residents, first responders, utility personnel, and the electric distribution system.

SB 868 established specific electric safety and certification requirements for qualifying devices.

Customers should look for products that clearly identify the complete plug-in photovoltaic system as certified under UL 3700, the safety standard developed for plug-in photovoltaic systems, or an applicable equivalent certification accepted under California law. Certification of individual components, such as solar panels or inverters, does not necessarily mean the complete plug-in solar system has been certified for this application.

Before installing a plug-in solar system, customers should:

- Ensure compliance with National Electrical Code and California Electrical Code requirements.
- Follow all manufacturer instructions regarding installation, operation, and connection
- Confirm that the intended electrical receptacle and building wiring are suitable for the equipment.
- Avoid using extension cords, power strips, adapters or other connection methods unless specifically permitted by the equipment's listing and manufacturer instructions.
- Ensure solar panels and associated equipment are securely mounted and do not obstruct exits, walkways, or emergency access.
- Consider potential hazards associated with outdoor exposure, weather, damaged wiring or improper mounting.

Customers living in rental properties, apartments, or other multifamily housing should also verify any applicable property-owner, lease, building, or homeowners' association requirements before installing equipment.

To learn more about the UL Solutions considerations surrounding plug-in solar, see https://www.ul.com/insights/safety-considerations-plug-photovoltaic-pipv-systems.

Bill Impacts of Plug-In Solar
Potential savings depend on several factors, including:

- The size and performance of the solar system.
- The amount of direct sunlight the system receives.
- The customer's electricity usage throughout the day.
- How much of the generated electricity is consumed in the home as it is produced.
- The customer's applicable electricity rates.

Savings will vary by household, and Ukiah Electric Utility does not guarantee a specific level of savings from plug-in solar. Customers should consider the equipment cost, expected energy production and their electricity usage patterns when evaluating whether a system is a good fit.

Ukiah Electric Utility Notification of a Plug-In Solar System
SB 868 exempts qualifying plug-in solar systems from the traditional utility interconnection process but allows utilities to request basic information about these installations.

Beginning January 1, 2027, customers installing qualifying plug-in solar systems shall notify Ukiah Electric Utility at solar@cityofukiah.com with the following:

- Service address where the system is installed
- Manufacturer of the device
- Model of the device
- Size of the device

An online notification form is being developed.

Notification does not constitute an application for interconnection approval, and Utility approval is not required prior to installing a qualifying device.

Interconnection and Plug-In Solar Systems
Interconnection is the process traditionally used to review and approve customer-owned electrical generation equipment connected to the utility's distribution system, including rooftop solar installations and certain battery storage systems.

Beginning January 1, 2027, qualifying plug-in solar systems meeting all requirements of SB 868 are exempt from the traditional utility interconnection process.

Systems that do not meet all of the requirements of SB 868 are not eligible for these exemptions and remain subject to applicable Utility interconnection requirements.

This includes systems exceeding the 1,200-watt aggregate AC output limit, equipment that does not meet the required safety certifications, and installations that otherwise fall outside the statutory definition of a qualifying portable solar generation device.

The statutory interconnection exemption remains in effect through December 31, 2029, unless extended or modified by subsequent legislation. Beginning January 1, 2030, SB 868 also prohibits the sale or offering for sale in California of certain plug-in photovoltaic devices that fail to meet the law's electrical code, certification, and outage protection requirements.

Customers are responsible for ensuring that their equipment meets applicable requirements and is installed and operated safely.

POLICY UPDATES

This Policy will be reviewed annually, and any substantive changes will be reported to Council.