INTERCONNECTION REQUIREMENTS, INT-REQ

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This document sets forth Glendale Water & Power's (GWP) Interconnection Requirements ("Interconnection Requirements") which shall apply to distributed generation connecting to GWP's Distribution System.

APPLICABILITY INT-REQ-101

These Interconnection Requirements describe the interconnection, operating, and metering requirements for Generating Facilities to be connected to GWP's Distribution System. Subject to the requirements of these and other applicable guidelines (e.g, American National Standards Institute, Institute of Electrical Electronic Engineers (ANSI/IEEE) 1547-2018 (Standards for Interconnecting Distributed Resources with Electrical Power Systems); Underwriters Laboratories (UL) 1741 (Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources), among others), and GWP Electric Service Requirements, GWP will allow the interconnection of Generating Facilities with its Distribution System.

Advanced Distribution Management System (ADMS)	A system of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the Distribution System and all distributed energy resources connected to the Distribution System.
Applicant	The entity submitting an Application requesting for Interconnection process. The Applicant is the Customer. The Customer may designate an agent, such as the Facility Owner or Developer to submit an Application and to act on behalf of the Customer with respect to the Application, but the Customer must sign such Application and is the ultimately responsible party. Similarly, the Customer is the counterparty on an Interconnection Agreement. Where Customer is a tenant or is otherwise not the owner of the property at the location of the Generating Facility (the "Property Owner"), then the Property Owner must also sign the Application, and is severally, jointly and/or collectively responsible for the duties and obligations of the Applicant through the Application Process.
Application	A GWP-approved standard form submitted to GWP for Interconnection of a Generating Facility.
Certification; Certified; Certificate	The documented results of a successful Certification Test.
Certification Test	A test that verifies conformance of certain equipment with EUSERC and UL standards to be classified as Certified Equipment. Certification Tests are performed by National Recognized Testing Laboratory(s) (NRTLs).
Certified Equipment	Equipment that has passed all required Certification Tests.
City Council	The publicly elected City Council of the City of Glendale.
Commercial Operation	The period of operation of the Facility following the Commercial Operation Date until the time the facility has shut down.
Commercial Operation Date	The date on which the Facility commences Commercial Operation.

Commissioning Test	A test performed during the commissioning of all or part of a Generating Facility to achieve one or more of the following: 1) verify specific aspects of its performance; 2) calibrate its instrumentation; 3) establish instrument or protective function set-points.
Continuous Operation	The Inverter operates indefinitely without tripping. Any functions that protect the Inverter from damage may operate as needed.
Curtailment	The instructed reduction or cessation of generation. Generators will be required to respond to GWP instructions to reduce generation from the Generating Facility below the forecast amount for the period of time set forth in such instructions.
Customer	The person/entity receiving retail electric service from GWP.
Dedicated Transformer; Dedicated Distribution Transformer	A transformer that provides Electric Service to a single Customer. The Customer may or may not have a Generating Facility.
Dispatchability	The ability of a generating unit to be shut down, or have decreased generation, at the request of a utility's system operator. "Dispatch" shall mean to cause the output from a generating unit to be curtailed (in whole or in part) or to terminate the curtailment (in whole or in part) of such generating unit.
Distributed Generation (DG)	Any type of electric generating and/or storage facility being operated in parallel with GWP's Distribution System.
Distribution Service	All services required by, or provided to, a Customer through GWP's Distribution System pursuant to GWP's current Rates, Rules, and Regulations.
Distribution System	All electrical wires, equipment, and other facilities owned or provided by GWP, including Interconnection Facilities, by which GWP provides Distribution Service to a Customer.
Electric Utility Service Equipment Requirements Committee (EUSERC)	Designation that metering equipment meets the requirements of the member utilities developed to promote safe and uniform electric service equipment requirements.
Emergency	An actual or imminent condition or situation which jeopardizes the Distribution System Integrity.

Energy Management System (EMS)	A system of computer-aided tools used by operators of electric utility grids to monitor, control, and optimize the performance of the generation and/or transmission system.
Generating Facility	All Generators, electrical wires, equipment, and other facilities, owned or provided by the Customer, for the purpose of producing electric power, including storage.
Facility Owner	The owner of the Generating Facility.
Generator	A device capable of converting mechanical, chemical, or solar energy into electrical energy, including all its protective and control functions and structural appurtenances. A Generating Facility is comprised of one or more generators.
Grid Networks	A secondary Network system that consists of multiple transformers and protectors, located at multiple vault locations, whose secondaries are tied together to serve multiple customers.
Gross AC Nameplate Rating	Also known as Gross Rating, Gross Capacity, and Gross Inverter AC Capacity if inverter based-distributed generation is the total gross generating capacity of a Generator or Generating Facility as designated by the manufacturer of the Generator(s).
GWP	Glendale Water & Power, a department of the City of Glendale and a publicly owned utility providing electric service within the territory of City of Glendale contained within its present boundaries as now established with the power and authority to change the same in the manner provided by law.
GWP Distribution System	The wires, transformers, and related equipment owned and operated by GWP, and used to deliver electric power to GWP's retail customers, typically at 12kV/69kV and below.
Initial Review	The review by GWP, following receipt of an Application, to determine one of the following: a) Whether the Generating Facility qualifies for the Standard Process Interconnection; or b) Whether the Generating Facility can be made to qualify for Interconnection with a Supplemental Review that determines any potential additional requirements; or c) Whether the Generating Facility requires an Interconnection Study.
In-rush Current	The maximum instantaneous input current drawn by an electrical device when first turned on as determined by the In-rush Current test.

Inverter	A power electronic device that converts Direct Current (DC) power to Alternating Current (AC) by means of electronic switching. When used this document GWP is generally referring to UL1741-SA compliant smart inverters. A Generating Facility's inverter that performs functions, that when activated, can autonomously contribute to grid support during excursions from normal operating voltage and frequency system conditions by providing dynamic reactive/real power support, voltage and frequency ride-through, ramp rate controls, communication systems with ability to accept external commands and other functions.
Interconnection; Interconnected	The physical connection of a Generating Facility in accordance with the requirements under these Interconnection Requirements so that operation with the Distribution System can occur (has occurred).
Interconnection Agreement	An agreement between GWP and the Customer, when the Generating Facility will displace all or part of a Customer's load, to interconnect and operate its Generating Facility in parallel with GWP's Distribution System. Interconnection Agreements are required for all Generating Facilities. In the case of any inconsistency or further specification in an Interconnection Agreement as compared with these Interconnection Requirements, the particular Interconnection Agreement shall govern. Where Customer is a tenant or is otherwise not the Property Owner, the Property Owner must also sign the Interconnection Agreement, and is severally, jointly and/or collectively responsible for the duties and obligations of Customer under the Interconnection Agreement.
Interconnection Facilities	The electrical wires, switches and related equipment that are required, in addition to the facilities required to provide Distribution Service to a Customer, including any required Telemetering, to allow the interconnection of a Generating Facility to the Distribution System. Interconnection Facilities may be integrated into a Generating Facility or provided separately. Interconnection Facilities may be connected to either side of the Point of Common Coupling, as appropriate to their purpose and design.

Interconnection Facilities Costs	GWP's cost to design, construct, operate and maintain the Interconnection Facilities, including anticipated replacement costs. The initial Interconnection Facilities Costs are charged through a one-time payment based on actual design and construction of the facility (Design and Construction Cost). Operation and maintenance costs (O&M Costs) are paid by Customer as incurred during the life of the Interconnection Facilities. Any fees or costs discussed in these Interconnection Requirements are for informational purposes only. Fees or costs will be charged as adopted through the City of Glendale fee process including but not limited to City Council amendment of GWP's Rates, Rules and Regulations ("Adopted Fees").
Interconnection Request	A Customer's request to interconnect a new Generating Facility, or to increase the capacity of, or change the operating characteristics of an existing Generating Facility that is interconnected with GWP's Distribution System.
Interconnection Study	A study to establish the requirements for Interconnection of a Generating Facility to GWP's Distribution System.
Island; Islanding	A condition on the Distribution System in which one or more Generating Facilities deliver power to Customers using a portion of the Distribution System that is electrically isolated from the remainder of the Distribution System.
Line Section	That portion of the Distribution System connected to a Customer bounded by sectionalizing devices or the end of the distribution line.
Mandatory Operation	The Inverter operates at maximum available current without tripping during GWP's Transmission or Distribution System excursions outside the region of continuous operation. Any functions that protect the Inverter from damage may operate as needed.
Metering	The measurement of electrical power flow in kilowatts (kW) and/or energy in kilowatt-hours (kWh), and, if necessary, kVAR at a point, and its display to GWP.
Metering Equipment	All equipment, hardware, and software including meter cabinets, conduit, etc. that is necessary for Metering.

Momentary Cessation	The Inverter momentarily reduces current output to the Distribution System to below 10% of the maximum continuous output current rating. The Inverter is allowed to increase current output to the GWP's Distribution System without any intentional reconnection delay once voltage exits the Momentary Cessation region and enters a Permissive Operation region or Continuous Operation region.
Momentary Parallel Operation	The interconnection of a Generating Facility to the Distribution System for one second (60 cycles) or less.
Nationally Recognized Testing Laboratory (NRTL)	A laboratory accredited to perform the certification testing requirements under these Interconnection Requirements.
Net Energy Metering (NEM)	Metering for the receipt and delivery of electricity between the Customer and GWP, pursuant to GWP's Net Energy Metering Rate Schedule.
Net Generation	Gross generation minus the energy consumed by the generating station.
Network Service	More than one electrical feeder providing Distribution Service at a Point of Common Coupling.
Networked Secondary	An AC distribution system where the secondaries of the distribution transformers are connected to a common bus for supplying electricity directly to consumers. There are two types of secondary networks: Grid Networks (also referred to as area networks or street networks) and Spot Networks. Synonyms: Secondary Network. Refer to IEEE 1547.6-2011 for additional details.
Non-Export; Non-Exporting	Designed to prevent the transfer of electrical energy from the Customer's Generating Facility to GWP.
Parallel Operation	The simultaneous operation of a Generator with power delivered or received by GWP while Interconnected. Under GWP Interconnection Requirements, Parallel Operation includes only those generators that are so interconnected with the Distribution System for more than one second (60 cycles).

Periodic Test	A test performed on part or all of a Generating Facility at pre-determined time or operational intervals to achieve one or more of the following: • Verify specific aspects of its performance; • Calibrate instrumentation; and • Verify and re-establish instrument or Protective Function set-points.
Point of Common Coupling (PCC)	The transfer point for electricity between the electrical conductors of GWP and the electrical conductors of the Generating Facility.
Point of Interconnection (POI)	The electrical transfer point between a Generator or a Generating Facility and the electrical system. This may or may not be coincident with the Point of Common Coupling.
Power Production Meter	The meter located at the Generator panel, or otherwise located to record generation output excluding other unrelated Customer loads. Loads ancillary to the generation (e.g. solar tracker motors, engine cooling fans, pumps, etc.) are to be connected, to the extent practicable, so that these are metered with the generation by the Power Production Meter. Metering must be connected such that no Western Renewable Energy Generation Information System (WREGIS) certificates for renewable generation will be issued for station service associated with a generating unit registered with WREGIS, regardless of the source of such station service.
Power Purchase Agreement (PPA)	A contract executed between the Customer and GWP, wherein the Customer exports and delivers to GWP energy generated from the Generating Facility, which GWP pays for under the terms of the PPA. In the case of an interconnection for a PPA, the PPA must be accepted by GWP for “formal review” as a condition for GWP starting any Interconnection Study efforts. Other than as may be specifically set forth in any law, rule or regulation, no Customer or counterparty to an executed Interconnection Agreement is guaranteed any expectation of a PPA with GWP. The process for an Interconnection Agreement and a PPA are separate and distinct.
Pre-Commercial Energy	Energy delivered to GWP from the Facility prior to the Commercial Operation Date. Sometimes referred to as test energy.

Protective Function(s)	The equipment, hardware and/or software in a Generating Facility (whether discrete or integrated with other functions) whose purpose is to protect against Unsafe Operating Conditions.
Prudent Electrical Practices	Those practices, methods, and equipment, as modified from time to time, that are commonly used in prudent electrical engineering and operations to design and operate electrical equipment lawfully, safely, dependably, efficiently, and economically.
Rates, Rules and Regulations	The Glendale Municipal Code, GWP Rate Resolutions, GWP Regulations, and GWP Electric Service Requirements, as the same may be amended from time to time.
Remote Terminal Unit (RTU)	The device that interfaces between the Generating Facility and GWP's system by transmitting telemetry data.
Scheduled Commercial Operation Date	The date when the Generating Facility is, by the Customer's estimate, expected to begin commercial operation.
Short Circuit Contribution Ratio (SCCR)	The ratio of the Generating Facility's short circuit contribution to GWP's short circuit contribution for a three-phase fault at the high voltage side of the distribution transformer connecting the Generating Facility to GWP's Distribution system.
Single Line Diagram; Single Line Drawing	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.
Site Aggregate	Generating Facility(ies) on one parcel or one contiguous property as defined under California Public Utilities Code section 2827(h)(4) and Glendale Municipal Code Section 13.44.250.
Site Layout	The drawing showing the physical location of the Generating Facility components in relation to the GWP Distribution System.
Small Commercial	Distributed Generation project with a gross site aggregate name plate AC rating less than 500kW.
Stabilization; Stability	The return to normalcy of GWP's Distribution System, following a disturbance. Stabilization is usually measured as a time period during which voltage and frequency are within acceptable ranges.

Standard Process Interconnection	Interconnection conforming to the minimum requirements under GWP's Interconnection Requirements.
Starting Voltage Drop	The percentage voltage drop at a specified point resulting from In- rush Current. The Starting Voltage Drop can also be expressed in percentage on a particular base voltage, (e.g., 6 volts on a 120-volt base, yielding a 5% drop).
Station Service Load	The electrical loads associated with operation and maintenance of the Generating Facility that may be supplied by the Generator or GWP.
Storage	Capturing and storing energy generated at one point in time to be used later. Energy storage qualifies for NEM only when paired with a NEM qualified generation source capable of fully charging the storage device over a typical day.
Substation Arrangement Drawing	The drawing showing the arrangement of components in the Customer's substation.
Supervisory Control and Data Acquisition (SCADA)	A system of remote control and Telemetry used to monitor and control GWP's Distribution System.
Supplemental Review	A process wherein GWP further reviews an Application that fails the Initial Review Process. The Supplemental Review may result in one of the following: approval of Interconnection with additional requirements; or cost and schedule for an Interconnection Study.

System Emergency	Any abnormal system condition that requires automatic or immediate manual action to prevent or limit the failure of transmission or distribution facilities or generation supply or that could adversely affect the reliability or integrity of the Bulk Electric System, GWP Electric System, or an Electric System owned or controlled by a non- GWP entity. As used in this definition of System Emergency, with respect to any action that may or must be taken, or judgment or determination of a Party, such action or judgment shall be exercised, or such determination shall be made, (i) in good faith, (ii) where applicable, in accordance with Prudent Utility Practice, and (iii) in a non-arbitrary and non-capricious. System Emergency includes: (a) That in GWP's or Customer's reasonable judgment will likely endanger life or property; (b) That in the reasonable judgement of GWP, is imminently likely to cause a material adverse effect on the security of, or damage to, GWP's Electric System, GWP's Interconnection Facilities or the Electric Systems of other entities to which the GWP Electric System is directly connected; (c) An imminent condition or situation, which jeopardizes GWP's Electric System reliability or integrity, or the reliability or integrity of other Electric Systems to which the GWP is connected, or (d) That in the reasonable judgment of Customer, is imminently likely to cause a material adverse effect on the security of, or damage to, the Facility or Customer's interconnection facilities. System restoration or black start shall be considered a System Emergency; provided, however, that the Facility shall not be obligated to possess black start capability.
System Integrity	The condition under which a Distribution System is deemed safe and can reliably perform its intended functions in accordance with the safety and reliability rules of GWP.
Telemetering	The transmittal of Metering data in real-time to GWP.
Telemetry	Equipment and other provisions to enable continuous streaming of generation data to GWP.
Transfer Trip	A Protective Function that trips a Generating Facility remotely by means of an automated communications link controlled by GWP.

Trip	The act of a Generating Facility to cease to energize or disconnect from GWP's Distribution System automatically due to a GWP Distribution System disturbance. Following a trip, the Generator must delay re-energization or reconnection for a preset period of time once the voltage and frequency of GWP's Distribution System are within normal ranges.
Unintended Island	The creation of an island, usually following a loss of a portion of the Distribution System, without the approval of GWP.
Unsafe Operating Conditions	Conditions that, if left uncorrected, could result in harm to personnel, damage to equipment, loss of System Integrity or operation outside pre-established parameters required by the Interconnection Agreement.
Utility Service Meter	The meter located in a Customer's main electrical panel. This meter is capable of separately recording power flow into, power flow out of, a Customer's facility or premise and provides data for utility billing purposes.
Visible Disconnect	An electrical switching device that can separate the Generating Facility from the Distribution System and is designed to allow visible verification that separation has been accomplished. This requirement can be met by opening the enclosure to observe the contact separation.
Western Renewable Energy Generation Information System (WREGIS)	Western Renewable Energy Generation Information System is the independent, renewable energy tracking system sponsored by the Western Electricity Coordinating Council (WECC) and utilized by the California Energy Commission for implementing California's Renewables Portfolio Standard (RPS). WREGIS tracks the generation and transfer of renewable energy credits (RECs) for the generation.

Authorization Required to Operate

A Customer must comply with these Interconnection Requirements, meet the requirements for Net Energy Metering interconnection (when applicable) as set forth in applicable law and the Rules, Regulations, and Guidelines, and must execute an Interconnection Agreement with GWP, and receive GWP's express written permission to operate its Generating Facility in parallel with GWP's Distribution System. GWP shall apply these Interconnection Requirements in a non-discriminatory manner and shall not unreasonably withhold its permission for a Customer's Generating Facility to operate in parallel with GWP's Distribution System. The Customer's authorization to operate remains in effect until the earliest date that one of the following occurs:

- the Parties agree in writing to terminate the Interconnection Agreement; or
- ten calendar days after GWP provides written notice to Customer of GWP's intent to terminate the Interconnection Agreement (Notice of Termination) in accordance with these Interconnection Requirements ; or
- ten calendar days after GWP provides written notice to Customer of GWP's intent to terminate the Interconnection Agreement (Notice of Termination) in accordance with these Interconnection Requirements; or
- at 12:01 a.m. on the day following the date that the Customer's electrical service account is closed or terminated.
- as otherwise provided in the Interconnection Agreement.
- unless otherwise agreed in writing by the Parties.

Separate Arrangement Required for Other Services

If a Customer requires other electric services in addition to an Interconnection Agreement, they must enter into separate appropriate agreements with GWP. Other than as may be specifically set forth in any law, rule or regulation, no Customer or counterparty to an executed Interconnection Agreement is guaranteed any expectation of any other agreement (including but not limited to a PPA) with GWP.

Service Limited to Interconnection

Interconnection with GWP's Distribution System under these Interconnection Requirements and an Interconnection Agreement does not provide a Customer rights to utilize GWP's Distribution System for the transmission, distribution, or wheeling of electric power, nor does it limit those rights.

Compliance with Rates, Rules, Regulations and Laws

A Customer shall ascertain and comply with applicable GWP's Rates, Rules, and Regulations, applicable Federal Energy Regulatory Commission-approved rules, tariffs, and regulations, and any local, state or federal law, statute or regulation which applies to the design, siting, construction, installation, operation, or any other aspect of the Customer's Generating Facility and Interconnection Facilities.

The Customer will comply with GWP's Electrical Service Requirements- Overhead Services OH (OH), Electrical Service Requirements-Underground Services UG (UG), Electrical Service Requirements-Metering Equipment MTR (MTR), Electrical Service Requirements-Switchboard SWBD (SWBD), Electrical Service Requirements- Primary Services PRI (PRI), and or Electrical Service Requirements- Distributed Energy Resources DER (DER), all as may be applicable.

Design Reviews and Inspections

GWP shall have the right to review the design of a Customer's Generating Facility and Interconnection Facilities and to inspect the Customer's Generating and/or Interconnection Facilities prior to the commencement of Parallel Operation with GWP's Distribution System. The Customer is responsible for all local building permits and final inspections with the City of Glendale Building & Safety Department and any other jurisdictional agency (collectively, "Permitting Agencies") before GWP performs its final inspection in accordance with OH, UG, MTR, SWBD, PRI, and/or DER. GWP may require the Customer to make modifications as necessary to comply with the requirements of these Interconnection Requirements. GWP may require proof that the Customer's protection system is performing to the level required in these Interconnection Requirements and the Interconnection Agreement. GWP's review and authorization for Parallel Operation shall not be construed as confirming or endorsing the Customer's design or as warranting the Generating and/or Interconnection Facilities' safety, durability or reliability. GWP shall not, by reason of such review or lack of review, be responsible for the strength, adequacy, or capacity of such equipment.

Right to Access

A Customer's Generating Facility and/or Interconnection Facilities shall be reasonably accessible to GWP personnel as necessary for GWP to perform its duties and exercise its rights under GWP tariffs, and under any Interconnection Agreement.

Confidentiality of Information

GWP shall treat Interconnection information provided to GWP by the Customer in a confidential manner, unless disclosure is otherwise required by applicable law (including but not limited to the California Public Records Act (Cal. Gov't Code Sec. 7920.000 *et seq.)* (CPRA)) or specified in GWP's Policy, Procedure, Rules, and Regulations. Notwithstanding the foregoing, GWP shall be entitled to disclose Generator information

to other regulatory bodies with authority over the construction, operation, or development of the Generating Facility, or as necessary to comply with reporting requirements imposed by applicable regulatory authorities. GWP shall not be liable or responsible to any party for disclosures required by applicable law, policies or regulations.

Prudent Operation and Maintenance Required

The Customer shall operate and maintain its Generating Facility and Interconnection Facilities in accordance with Prudent Electrical Practices and shall maintain compliance with these Interconnection Requirements.

Curtailment, Disconnection, or Termination

GWP may limit the operation, or disconnect or require the disconnection, of a Customer's Generating Facility from GWP's Distribution System at any time with or without notice in the event of a System Emergency, or to correct Unsafe Operating Conditions. However, GWP must provide the Customer a written notice as soon as possible following such disconnection.

GWP may also limit the operation, or disconnect, or require the disconnection, of the Generating Facility from GWP's Distribution System upon notice:

1) to allow for routine maintenance, repairs, or modifications to GWP's Distribution System;
2) upon GWP's determination that the Generating Facility is not in compliance with these Interconnection Requirements; or,
3) upon termination of the Interconnection Agreement.

GWP shall not be obligated to compensate Customer for any loss of use of generation of electricity during any and all periods of such disconnection. However, upon the written request of the Customer, GWP shall provide a written explanation of the reason(s) for such curtailment or disconnection.

GWP may terminate the Interconnection Agreement if the Customer violates any provision of these Interconnection Requirements or the Interconnection Agreement. In the event of violation, GWP will notify the Customer in writing that its Generating Facility is out of compliance with the terms of the Interconnection Agreement and/or these Interconnection Requirements, and if appropriate, request Customer to take remedial action to cure such violation. If the Customer fails to take all corrective actions specified in GWP's notice or has not otherwise submitted a cure plan acceptable to GWP within the thirty (30) day period, GWP may issue a Notice of Termination, or otherwise provided in the applicable Interconnection Agreement.

Transferability of Interconnection Request

With approval from GWP, a Customer may transfer its Interconnection Request to another entity only if such entity qualifies as a Customer. The Point of Interconnection shall not change. The Customer must notify GWPCustomerService@Glendaleca.gov prior to the time of any proposed transfer, documenting transfer of Customer status demonstrating the proposed transferee's qualifications as Customer.

Compliance with Established Timelines

GWP shall use reasonable efforts in meeting all the timelines. In the event GWP is not able to meet a particular timeline set forth in these Interconnection Requirements, GWP shall notify Customer as soon as practicable and provide an estimated completion date. Customer may request a modified timeline which shall be reasonably provided by GWP.

Additional Costs for Commercial Interconnection

Commercial Interconnection Only
Commercial customers (6 kW or greater) that add Distributed Generation (whether behind the utility service meter or interconnected directly to GWP's Distribution System) that cause voltage or frequency issues may be required to pay for any additional circuit upgrades as part of their interconnection costs. These costs will be assessed at the time of all interconnection costs.

Applicable Agreements

GWP shall provide the Customer with an executable version of the applicable agreements, which may include an Interconnection Agreement or other agreements, as appropriate for the Customer's Generating Facility and desired mode of operation. Where the Supplemental Review or Interconnection Study performed by GWP has determined that modifications or additions are required to be made to its Distribution System, or that additional metering, monitoring, or protection devices will be necessary to accommodate an Customer's Generating Facility, GWP shall notify the Customer of the estimated costs for the required work. Customer shall execute agreements for GWP to complete the required work. Such Agreements shall require the Customer to reimburse GWP for all actual costs incurred by GWP in performing the work unless applicable law prevents GWP from recovering such costs from Customer.

Upon Execution of Agreements

After executing the applicable agreements and receiving the estimated Interconnection Facilities Cost Payment, GWP will commence construction/installation of the modifications or metering and monitoring requirements identified in the agreements. The parties will use good faith efforts to meet the schedules and cost estimates.

Interconnection Facilities Cost Payment

The Customer will be required to pay GWP's estimated costs prior to GWP designing, procuring, or installing equipment or facilities (Interconnection Facilities) which allow the interconnection and operation of the Customer's Generator in parallel with GWP's system. All extensions of electric distribution lines or other distribution upgrades needed to make connection to Generators, as well as all required system upgrades, will be constructed at the Customer's expense. Payment is due prior to the start of construction activity by GWP. In addition, Customer shall be responsible for payment of costs related to ongoing operations and maintenance of the Interconnection Facilities over the useful life of such Interconnection Facilities. The Customer shall pay these costs as incurred during the operation of the Interconnection Facilities. The Customer must submit a separate application for any special facilities needed to accommodate the interconnection. Such costs shall be in accordance with the City of Glendale's Adopted Fees.

Ownership, O&M, Repair, and Replacement of Interconnection Facilities

While the Customer bears the cost of the Interconnection Facilities, ultimate ownership of GWP Interconnection Facilities (such GWP Interconnection Facilities being generally, any infrastructure on GWP's side of the PCC, or as otherwise specified in the relevant Interconnection Agreement) will reside with GWP. GWP shall be responsible for operation, maintenance, repair and replacement of the Interconnection Facilities in accordance with then-current GWP practices.

Testing of Generating Facilities

The Customer is responsible for all testing of Generating Facilities and associated Interconnection Facilities, according to these Interconnection Requirements and the Interconnection Agreement to ensure compliance with the safety and reliability provisions of these Interconnection Requirements prior to operation.

Operating Within GWP's Distribution System

The Customer's Generating Facility shall be authorized by GWP for Parallel Operation, Momentary Parallel Operation, or Islanding operation as applicable, with GWP's Distribution System following demonstration of compliance with the terms of all applicable agreements and express written permission. Compliance may include, but not be limited to, provision of any required documentation and satisfactorily completing any required inspections or tests as described herein or in the agreements formed between the Customer and GWP.

General Interconnection and Protection Requirements

Purpose of Protective Functions

The Protective Functions and requirements of these Interconnection Requirements are designed to protect GWP's Distribution System and not the Generating Facility. A Customer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. The Customer's protective equipment shall not impact the operation of other protective devices utilized on the Distribution System in a manner that would affect GWP's capability of providing reliable service to its customers.

Protective Functions Required

The Protective Functions for Generating Facilities operating in parallel with GWP's Distribution System shall include:

- Over and under voltage trip functions and over and under frequency trip functions.
- A means for disconnecting the Generating Facility from GWP's Distribution System when a protective function initiates a trip.
- An automatic means to prevent the Generating Facility from energizing a de-energized Distribution System circuit and to prevent the Generating Facility from reconnecting with the Distribution System unless the Distribution System service voltage and frequency is of specified settings and is stable for at least 60 seconds.
- A means to prevent the Generating Facility from contributing to the formation of an Unintended Island, and cease to energize GWP's Distribution System within two seconds of the formation of an Unintended Island.

Momentary Paralleling Generating Facilities. With GWP's approval, the transfer switch or system used to transfer the Customer's loads from GWP's Distribution System to Customer's Generating Facility may be used in lieu of the Protective Functions required for Parallel Operation. Momentary Paralleling to GWP's Distribution System shall be one second (60 cycles) or less.

Inverter Protective Functions Required

Inverters operating in parallel with GWP's Distribution System shall be equipped with the following Protective Functions to sense abnormal conditions on GWP's Distribution

System and cause the Inverter to be automatically disconnected from GWP's Distribution System or to prevent the Inverter from being connected to GWP's Distribution System inappropriately:

- Over and under voltage trip functions and over and under frequency trip functions.
- A voltage and frequency sensing and time-delay function to prevent the Inverter from energizing a de-energized Distribution System circuit and to prevent the Inverter from
  reconnecting with GWP's Distribution System unless GWP's Distribution System service voltage and frequency is within the ANSI C84.1-1995 Table 1 Range B voltage Range of 106 volts to 127 volts (on a 120-volt basis), inclusive, and a frequency range of
  59.1 Hz to 60.5 Hz, inclusive, and are stable for at least 15 seconds; and
- A function to prevent the Inverter from contributing to the formation of an Unintended Island and cease to energize GWP's Distribution System within two seconds of the formation of an Unintended Island.

The Inverter shall cease to energize GWP's Distribution System for faults on GWP's Distribution System circuit to which it is connected (IEEE 1547-4.2.1). The Inverter shall cease to energize GWP's Distribution circuit prior to re-closure by GWP's Distribution System equipment (IEEE 1547-4.2.2)

Suitable Equipment Required

Circuit breakers or other interrupting devices located at the Point of Common Coupling must be Certified or "Listed" (as defined in Article 100, the Definitions Section of the National Electrical Code) as suitable for their intended application. This includes being capable of interrupting the maximum available fault current expected at their location. Customer's Generating Facility and Interconnection Facilities shall be designed so that the failure of any one device shall not potentially compromise the safety and reliability of GWP's Distribution System.
The Inverter paralleling-device shall be capable of withstanding 220% of the Interconnection Facility rated voltage (IEEE 1547-4.1.8.3). The Interconnection Facility shall have the capability to withstand voltage and current surges in accordance with the environments defined in IEEE Std C62.41.2 or IEEE Std C37.90.1 as applicable and as described in L.3.e (IEEE 1547-4.1.8.2).

Visible Disconnect Required

Customer shall furnish and install a ganged, manually operated isolating switch (or a comparable device mutually agreed upon by GWP and Customer) near the Point of Interconnection to isolate the Generating Facility from GWP's Distribution System. When GWP permits a tap between the circuit breaker and the meter, Customer shall furnish a main fuse-able disconnect. The device does not have to be rated for load break nor provide over- current protection.

The device must:

1. allow visible verification that separation has been accomplished. (This requirement may be met by opening the enclosure to observe contact separation.)
2. include markings or signage that clearly indicates open and closed positions.
3. be capable of being reached:
    a. for Emergency purposes quickly and conveniently 24 hours a day by GWP personnel for construction, operation, maintenance, inspection, testing or to isolate the Generating Facility from GWP's Distribution System without obstacles or requiring those seeking access to obtain keys, special permission, or security clearances.
    b. for Non-Emergency purposes during normal business hours. GWP, where possible, will provide notice to Customer for gaining access to Customer's premises.
4. be capable of being locked in the open position.
5. be clearly marked on the submitted single line diagram and its type and location approved by GWP prior to installation. If the device is not adjacent to the PCC, permanent signage must be installed at a GWP approved location providing a clear description of the location of the device.
6. If the switch is not accessible outside the locked premises, signage with contact information and a GWP approved locking device for the premises shall be installed.

Single-Phase Generators

For single-phase Generators connected to a shared single-phase secondary system, the maximum Gross Nameplate Rating of the Generating Facilities shall be 20 kVA. Generators applied on a center-tapped neutral 240-volt service must be installed such that no more than 6 kVA of imbalance in capacity exists between the two sides of the 240-volt service. For Dedicated Distribution Transformer services, the maximum Gross Nameplate Rating of a single-phase Generating Facility shall be the transformer nameplate rating. GWP's Rates, Rules and Regulations may charge for power factors below .95 lagging.

Drawings Required

GWP, prior to Parallel Operation or Momentary Parallel Operation of the Generating Facility, shall approve the Customer's protection and control diagrams for the Generating Facility. Generating Facilities equipped with a protection and control scheme previously approved by GWP for system-wide application or only Certified Equipment may satisfy this requirement by reference.

Generating Facility Conditions Not Identified

In the events these Interconnection Requirements do not address the interconnection requirements for a particular Generating Facility, GWP and the Customer may agree upon other requirements.

Prevention of Interference

The Customer shall not operate equipment that superimposes a voltage or current upon GWP's Distribution System that interferes with GWP's service to GWP's customers or communication facilities. If such interference occurs, the Customer must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by GWP. If the Customer does not take corrective action in a timely manner or continues to operate the equipment causing interference without restriction or limit, GWP may, without liability, disconnect the Generating Facility from the Distribution System, in accordance with these Interconnection Requirements. To eliminate undesirable interference caused by its operation, each Inverter shall meet the following criteria:

Voltage Regulation

If approved by GWP, the Inverter may actively regulate the voltage at the PCC while in parallel with GWP's Distribution System. The Inverter shall not cause the service voltage at other customers to go outside the requirements of ANSI C84.1, Range A (IEEE 1547-4.1.1).

Voltage Trip and Ride-Through Settings

The voltage ranges in Table 3 - Inverter Voltage Trip Settings, define protective trip limits for the Protective Function and are not intended to define or imply a voltage regulation function. Generating Facilities shall cease to energize GWP's Distribution System within the prescribed trip time whenever the voltage at the PCC deviates from the allowable voltage operating range. The Protection Function shall detect and respond to voltage on all phases to which the Generating Facility is connected.

i) *Inverters:* Inverters shall be capable of operating within the voltage range normally experienced on GWP's Distribution System from plus to minus 5% of the nominal voltage (e.g., 114 volts to 126 volts, on a 120-volt base) at the service panel or PCC. The trip settings at the generator terminals may be selected in a manner that minimizes nuisance tripping in accordance with Table 4 - Inverter Frequency Trip Settings to compensate for voltage drop between the generator terminals and the PCC. Voltage may be detected at either the PCC or the Point of Interconnection. However, the voltage range at the PCC, with the generator on-line, shall stay within +/-5% of nominal.

ii) *Voltage Disturbances:* Whenever GWP's Distribution System voltage at the PCC varies from and remains outside near nominal voltage for the predetermined parameters set forth in Table 4, the Inverter's Protective Functions shall cause the Inverter(s) to become isolated from GWP's Distribution System:
   (1) The Inverter shall stay connected to GWP's Distribution System while the grid remains within the "Ride-Through Until" voltage-time range and must stay connected in the corresponding Operating Mode.
   (2) For voltage excursions beyond the near nominal (NN) magnitude range and within the range of the HV1 or LV3 regions, the Inverter shall momentarily cease to energize within 0.16 seconds.
   (3) In the HV1 region, the Inverter is permitted to reduce power output as a function of voltage under mutual agreement between the Customer and GWP.
   (4) If GWP's Distribution System voltage does not exit the ride- through region and recovers to normal system voltage, the Inverter shall restore continuous operation within 2 seconds.
   (5) If GWP's Distribution System voltage does not exit the ride- through region and returns from the LV3 region to the LV2 or LV1 region, the Inverter shall restore available current within 2 seconds.
   (6) Different voltage-time settings could be permitted by GWP.

Inverter Voltage Trip Settings

Region	**Voltage at PCC (% Nominal Voltage)**	**Ride-Through Until**	**Operating Mode**	**Maximum Trip time**
High Voltage 2 (HV2)	V ≥ 120%			0.16 sec
High Voltage 1 (HV1)	110% < V < 120%	12 sec	Momentary Cessation	13 sec
Near Nominal (NN)	88% ≤ V ≤ 110%	Indefinite	Continuous Operations	Not Applicable
Low Voltage 1 (LV1)	70% ≤ V < 88%	20 sec	Mandatory Operations	21 sec
Low Voltage 2 (LV2)	50% ≤ V < 70%	10 sec	Mandatory Operations	11 sec
Low Voltage 3	V < 50%	1 sec	Momentary	1.5 sec

(LV3)			Cessation	

Flicker

The Generating Facility shall parallel with GWP's Distribution System without causing a voltage fluctuation at the PCC greater than plus/minus 5% of the prevailing voltage level of GWP's Distribution System at the PCC, and meet GWP's flicker requirements, Certification and Testing Criteria, provides technology-specific tests for evaluating the paralleling Function. (IEEE 1547-4.1.3)

The Generating Facility shall not create objectionable flicker for other customers on GWP's Distribution System. To minimize the adverse voltage effects experienced by other GWP customers (IEEE 1547-4.3.2), any voltage flicker at the PCC caused by the Generating Facility should not exceed the limits defined by the "Maximum Borderline of Irritation Curve" identified in IEEE 519 (IEEE Recommended Practices and Requirements for Harmonic Control in Electric Power Systems, IEEE STD 519, Institute of Electrical and Electronic Engineers). This requirement is necessary to minimize the adverse voltage effects experienced by other customers on GWP's Distribution System. Induction Generators may be connected and brought up to synchronous speed (as an induction motor) provided these flicker limits are not exceeded.

Integration with GWP's Distribution System Grounding

The grounding scheme of the Generating Facility shall not cause over-voltages that exceed the rating of the equipment connected to GWP's Distribution System and shall not disrupt the coordination of the ground fault protection on GWP's Distribution System (IEEE 1547-4.1.2)

Frequency

GWP controls system frequency, and the Generating Facility shall operate in synchronism with the Distribution System. Whenever GWP's Distribution System frequency at the PCC varies from and remains outside normal (nominally 60 Hz) by predetermined amounts, the Generating Facility's Protective Functions shall cease to energize GWP's Distribution System in a maximum of ten cycles should Distribution System remain outside of the frequency limits or stated maximum trip time (see Table 4 - Inverter Frequency Trip Settings). The purpose of the time delay is to allow the Generating Facility to ride through short-term disturbances to avoid nuisance tripping.

Frequency Ride-Through Requirements for Inverters

Inverter based systems shall remain connected to GWP's Distribution System while the grid is within the frequency-time range indicated in Table 4 and shall disconnect from the electric grid during a high or low frequency event that is outside that frequency-time range. The frequency values are shown in Table 4 - Inverter Frequency Trip Settings. These values provide default interconnection system response to abnormal frequencies. The inverter shall disconnect by the default clearing times. In the high frequency range between 60.2 Hz and 61.5 Hz, or some other mutually agreed range, the Inverter is permitted to reduce real power output until it ceases to export power by 61.5 Hz, or other frequency value mutually agreed between the generating facility operator and GWP.

Inverter Frequency Trip Settings

System Frequency Default Settings (Hz)	Minimum Range of Adjustment (Hz)	Ride-Through Until	Ride-Through Operational Mode	Maximum Trip Time
f > 62	62 - 64	No Ride Through	Not Applicable	0.16 sec
60.5 < f ≤ 62	60.1 - 62	299 sec	Mandatory Operation	300 sec
59.1≤ f ≤ 60.5	Not Applicable	Indefinite	Continuous Operation	Not Applicable
f < 59.1	53- 59.9	No Ride Through	Not Applicable	0.16sec

Harmonics

Harmonic distortion shall be in compliance with IEEE 519. Exception: The harmonic distortion of a Generating Facility located at a Customer's site shall be evaluated using the same criteria as for the loads at that site.

When the Inverter is serving balanced linear loads, harmonic current injection into GWP's Distribution System at the PCC shall not exceed the limits stated in Table 5. The harmonic current injections shall be exclusive of any harmonic currents due to harmonic voltage distortion present in GWP's Distribution System without the Inverter connected (IEEE 1547-4.3.3.). The harmonic distortion of an Inverter shall be evaluated using the same criteria as for the Host Loads.

Maximum Harmonic Current Distortion in Percent of Current

Individual harmonic order, h						Total demand distortion
(odd harmonics) [3]	h < 11	11 ≤ h < 17	17 ≤ h < 23	23 ≤ h < 35	35 ≤ h	
Max Distortion (%)	4.0	2.0	1.5	0.6	0.3	5.0
[1] - IEEE 1547-4.3.3						
[2] - I = the greater of the maximum Host load current average demand over 15 or 30 minutes without the GF, or the GF rated current capacity (transformed to the PCC when a transformer exists between the GF and the PCC).						
[3] - Even harmonics are limited to 25% of the odd harmonic limits above.						

Direct Current Injection

Generating Facilities should not inject Direct Current greater than 0.5% of rated output current into GWP's Distribution System.

Power Factor

Each Generator in a Generating Facility shall be capable of operating at some point within a power factor range of 0.9 leading and 0.9 lagging. Operation outside this range is acceptable provided the reactive power of the Generating Facility is used to meet the reactive power needs of on-site loads or that reactive power is otherwise provided under applicable Rates, Rules and Regulations by GWP. The Customer shall notify GWP if it is using the Generating Facility for power factor correction.

Inverter Power Factor Requirements

Customer shall provide adequate reactive power compensation on site to maintain the Inverter power factor near unity at rated output or a GWP specified power factor in accordance with the following requirements:

- Default Power Factor setting: Absorbing reactive power at 0.95 lagging power factor.

- Aggregate generating facility is greater than 15 kW: 1.0 +/- 0.15 (0.85 Lagging to 0.85 Leading) down to 20% rated power based on available reactive power.
- Aggregate generating facility is less than or equal to 15 kW: 1.0 +/- 0.10 (0.90 Lagging to 0.90 Leading) down to 20% rated power based on available reactive power.

Dynamic Volt/VAR Operations

The Inverter shall be capable of operating dynamically within a power factor range of +/- 0.85 PF for larger (>15 kW) systems, down to 20% of rated power, and +/-
0.9 PF for smaller systems (≤15 kW), down to 20% of rated power, based on available reactive power. This dynamic Volt/VAR capability shall be able to be activated or deactivated in accordance with GWP requirements. GWP may permit or require the Inverter systems to operate in larger power factor ranges, including in 4- quadrant operations for storage systems with the implementation of additional anti-islanding protection as determined by GWP.
The Inverter shall be capable of providing dynamic reactive power compensation (dynamic Volt/VAR operation) within the following constraints:

- The Inverter shall not cause the line voltage at the point of common coupling to go outside the requirements of the latest version of ANSI C84.1, Range A.
- The Inverter shall be able to consume reactive power in response to an increase in line voltage and produce reactive power in response to a decrease in line voltage.
- The reactive power provided shall be based on available reactive power, but the maximum reactive power provided to the system shall be as directed by GWP.
- Reduction of real power production is allowed to meet the required reactive power ranges.

Ramp Rate Requirements

The Inverter is required to have the following ramp controls for at least the following two conditions. These functions can be established by multiple control functions or by one general ramp rate control function. Ramp rates are contingent upon sufficient energy available from the Inverter.

- Normal ramp-up rate: For transitions between energy output levels over the normal course of operation. The default value is 100% of maximum current output per second with a range of adjustment between 1% to 100%, with specific settings as mutually agreed by GWP and the Customer.

- Connect/Reconnect Ramp-up rate: Upon starting to inject power into the grid, following a period of inactivity or a disconnection, the inverter shall be able to control its rate of increase of power from 1 to 100% maximum current per second, with specific settings as mutually agreed upon by GWP and the Customer.

Default Activation States

Unless otherwise provided by GWP, the default features will be as follows:

- Anti-islanding – activated
- Low/High Voltage Ride-Through – activated
- Low/High Frequency Ride-Through – activated
- Ramp rates – activated
- Reconnect by “soft-start” methods – activated

Additional Activation States

Features that are not presently considered required are as follows:

- Fixed Power factor – standard
- Dynamic Volt/VAR – optional
- Dynamic Volt/Watt – optional
- Frequency/Watt – optional
- Set Active Power Function Mode – optional
- Dynamic Reactive Power Support Mode – optional

These activation states may be modified by mutual agreement between GWP and Customer.

Automatic Transfer (Load Shedding or Transfer)

The voltage and frequency ride-through requirements of 3.2 shall not apply if either: a) The real power across the Point of Common Coupling is continuously maintained at a value less than 10% of the aggregate rating of the Inverters connected to the Generation Facility prior to any voltage disturbance, and the Generation Facility disconnects from GWP’s Distribution system, along with Generation Facility load, such that the net change in real power flow from or to GWP is less than 10% of the aggregate Inverter capacity; or b) Generation Facility load real power demand equal to 90% to 120% of the pre-disturbance aggregate Inverter real power output is shed within 0.1 seconds of Inverter disconnection.

Control, Protection and Safety Equipment Requirements

Technology Specific Requirements

Three-Phase Synchronous Generators: For three-phase Generators, the circuit breakers shall be three-phase devices with electronic or electromechanical control. The Customer shall be responsible for properly synchronizing its Generating Facility with the Distribution System by means of either a manual or automatic synchronizing function. Automatic synchronizing is required for all synchronous generators, which have a Short Circuit Contribution Ratio (SCCR) exceeding 0.05. A Generating Facility whose SCCR exceeds 0.05 shall be equipped with Protective Functions suitable for detecting loss of synchronism and rapidly disconnecting the Generating Facility from the Distribution System. Unless otherwise agreed to between the Customer and GWP, synchronous generators shall automatically regulate power factor, not voltage, while operating in parallel with the Distribution System. Power system stabilization functions are specifically not required for Generating Facilities under 10 MW Gross Nameplate Rating. Synchronization means that at the time of connection, the frequency difference shall be less than 0.2 Hz, the voltage difference shall be less than 10%, and the phase angle difference shall be less than 10 degrees.
Induction Generators: Induction Generators do not require a synchronizing function. Starting or rapid load fluctuations on induction generators can adversely impact the Distribution System's voltage. Corrective step-switched capacitors or other techniques may be necessary and may cause undesirable ferro resonance. When these counter measures (e.g., additional capacitors) are installed on the Customer’s side of the Point of Common Coupling, GWP must review these measures. Additional equipment may be required as determined in a Supplemental Review or an Interconnection Study.
Inverter Systems: Grid-interactive inverters do not require separate synchronizing equipment. Non-grid-interactive or “stand-alone” inverters shall not be used for parallel operation with the Distribution System.

GWP may require a point of interconnection recloser for proper protection and coordination on the GWP Distribution System for Generation Facilities greater than 500 kW.

Limitations on Inverters Not Classified as Smart Inverters

As of the effective date of these Interconnection Requirements, GWP requires only Smart Inverters. Upon replacement of an existing inverter that is not a Smart Inverter, the existing inverter must be replaced with a Smart Inverter. Replacement of inverter-based technologies by mutual agreement of GWP and the Customer, with technologies equally able to protect the GWP system, may be allowed at GWP’s sole discretion. If a Customer replaces an existing inverter with an inverter of greater ability, the replacement inverter shall have all the required functionalities and be set according to current GWP requirements as of the date the new smart inverter is installed, unless the Customer can demonstrate that safety or operational needs necessitate otherwise.

Supplemental Generating Facility Requirements

Generating Facilities must mitigate their potential contribution to an Unintended Island. This can be accomplished by one of the following options: (1) incorporating certified Non-Islanding control functions into the Protective Functions, or (2) verifying that local loads sufficiently exceed the Gross Nameplate Rating of the Generating Facility, or (3) incorporating a transfer trip or an equivalent Protective Function.

Fault Detection: A Generating Facility with an SCCR exceeding 0.1 or one with Protective Functions that do not meet any one of the options for mitigating Unintended Islands shall be equipped with Protective Functions designed to detect Distribution System faults, both line-to-line and line-to-ground and cease to energize the Distribution System in the event within two seconds of the initiation of a fault. For a Generating Facility that cannot detect these faults within two seconds, GWP may require a transfer trip system or equivalent Protective Function. Reclose-blocking of GWP's affected recloser(s) may also be required by GWP for Generating Facilities that exceed 15% of the peak load on the Line Section. In such cases, GWP may require additional Protective Functions.
Transfer Trip: For a Generating Facility that cannot detect Distribution System faults (both line-to-line and line-to-ground) or the formation of an Unintended Island and cease to energize GWP's Distribution System within two seconds, GWP may require a Transfer Trip system or an equivalent Protective Function.
Reclose Blocking: Where the aggregate Generating Facility capacity exceeds 15% of the peak load on any automatic reclosing device, GWP may require additional Protective Functions, including, but not limited to reclose-blocking on some of the automatic reclosing devices.

Supplemental Inverter Requirements

Fault Detection

A Generating Facility with a SCCR exceeding 0.1 or one that does not cease to energize GWP's Distribution System within 2 seconds of the formation of an Unintended Island shall be equipped with Protective Functions designed to detect Distribution System faults, both line-to-line and line-to-ground and cease to energize GWP's Distribution System within two seconds of the initiation of a fault.

Transfer Trip

For a Generating Facility that cannot detect Distribution System faults (both line-to-line and line-to-ground) or the formation of an Unintended Island and cease to

energize GWP's Distribution System within two seconds, GWP may require a Transfer Trip system or an equivalent Protective Function.

Reclose Blocking

Where the aggregate Generating Facility, capacity exceeds 15% of the peak load on any automatic reclosing device, GWP may require additional Protective Functions, including, but not limited to reclose-blocking on some of the automatic reclosing devices.

Customer, at Customer's sole expense, shall obtain and possess all permits and authorizations for the Generating Facility in accordance with all applicable laws and regulations for the construction, installation, design, operation, and maintenance of the Generating Facility.

The Customer shall:

(a) maintain the Facility and Interconnection Facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, requirements of Section 3 above and

(b) to the extent that future requirements may dictate, obtain any government authorizations, or permits required for the operation of the Generator or Generating Facility.

The Customer shall reimburse GWP for any and all losses, damages, claims, penalties or liability GWP incurs as a result of the Customer's failure to obtain or maintain any government authorizations and permits required for construction and operation of the Generating Facility.

Customer shall grant to GWP (or obtain for GWP):

i) the right to install the GWP Interconnection Facilities and related equipment or materials on real property along the most practical route which is of sufficient width to provide legal and safe clearance from all structures now or hereafter erected on said real property ("Necessary Real Property"); and

ii) the right of ingress and egress from said Necessary Real Property as reasonably necessary for GWP to operate, maintain, and remove the Interconnection Facilities.

Where formal rights of way and /or easements are required on or over said Necessary Real Property or the property of some third party for the installation of the Interconnection Facilities, Customer agrees that GWP's obligation to install the Interconnection Facilities is expressly conditioned on the granting, without cost to GWP, of any and all necessary rights of way and/or easements to GWP. Customer's obligations to provide access rights as set forth herein are ongoing obligations.

GWP may enter the Customer's premises without prior notice

(a) to inspect at all reasonable hours the Generating Facility's protective devices and read or test any meter for the Generator or Generating Facility.

(b) to disconnect, at any time, without notice, the Generator or Generating Facility if, in GWP's sole opinion, a hazardous condition exists and that immediate action is necessary to protect persons, or GWP's facilities or property of others from damage or interference caused by

a. (1) the Generator or Generating Facility or
b. (2) the Customer and/or Customer's failure to comply with requirements of these provisions; and
c. (c) if applicable, monthly to read the digital meter for billing purposes.

Further, GWP must be able to access the facility as necessary under the Interconnection Agreement. Self-reads and reads from adjacent properties are not permitted.

The Customer, and not GWP, shall be solely responsible for all legal and financial obligations arising from the construction, installation, design, operation and maintenance including testing and Commissioning of the Generator or Generating Facility in accordance with all applicable laws and regulations for safe operation of the system.

The Customer, at the Customer's sole expense, shall obtain and possess all permits and authorizations in accordance with all applicable laws and regulations for the construction, installation, design, operation and maintenance of the Generator or Generating Facility. The generator equipment shall be designed, installed, constructed, operated, and maintained in compliance with NEC, IEEE 1547, General Order 95 & 128, and all GWP Electric Service Requirements, including without limitation, any photovoltaic interconnection design standards contained therein. Compliance is mandatory unless prior written GWP approval is provided for those specific items not in compliance and documented in the Interconnection Agreement or elsewhere.

The Customer shall not connect the Generator or Generating Facility, or any portion of it, to the GWP Distribution System, until the Generator or Generating Facility has passed GWP inspection and has passed inspections and obtained all applicable authorizations from any Permitting Agencies. GWP may not recognize any generation until inspections and tests are passed and accepted by GWP and where applicable, all Permitting Agencies. Such approval shall not be unreasonably withheld. GWP shall have the right to have representatives present at the initial testing of the Generator or Generating Facility.

The Customer may reconnect its Generator or Generating Facility to the GWP Distribution System following normal operational outages and interruptions without notifying GWP unless GWP has disconnected services, or GWP notifies customer that a reasonable possibility exists that reconnection would pose a safety hazard, or as otherwise provided in the Interconnection Agreement or other agreements.

If GWP has disconnected Service to the Generator or Generating Facility, or GWP has notified the Customer that a reasonable possibility exists that reconnection would pose a safety hazard, the Customer may call GWP at 855-550-4497 to request authorization to reconnect the Generator or Generating Facility.

Scope and Ownership of Interconnection Facilities

Scope

Parallel Operation of Generating Facilities may require Interconnection Facilities or improvements to be made to GWP's Distribution System. The type, extent and costs of Interconnection Facilities and Distribution System improvements shall be consistent with these Interconnection Requirements and determined through the Initial Review or Interconnection Study. Customer understands, accepts and agrees that connection and operation of the Generating Facility shall be subject to the terms and conditions set forth in these guidelines, as they may be amended from time to time. All costs set forth herein are for example purposes only. Any assessed costs will be according to the City of Glendale's Adopted Fees.

Ownership

Interconnection Facilities installed on Customer's side of the Point of Common Coupling may be owned, operated, and maintained by the Customer or GWP. GWP will inform Customer of GWP's judgment regarding whether Interconnection Facilities on the Customer's side of the PCC shall be best owned, operated and maintained by GWP or the Customer, depending upon the needs of the GWP system. Interconnection Facilities installed on GWP's side of the Point of Common Coupling and Distribution System improvements shall be owned, operated, and maintained only by GWP.

Responsibility for Costs of Interconnecting a Generating Facility

Study and Review Costs

The Customer shall be responsible for the reasonably incurred costs of the reviews and studies conducted pursuant of these Interconnection Requirements.

Facility Costs

The Customer shall be responsible for all costs associated with Interconnection Facilities owned by the Customer. The Customer shall also be responsible for

any costs reasonably incurred by GWP in providing, operating, or maintaining the Interconnection Facilities and Distribution System improvements or upgrades required solely for the interconnection of the Customer's Generating Facility with GWP's Distribution System, as further specified herein.

Separation of Costs

Should GWP combine the installation of Interconnection Facilities, or Distribution System improvements required for the interconnection of a Generating Facility with separate or incremental modifications or additions to GWP's Distribution System to serve other Customers or third parties, such modifications or additions not being necessary to serve the Customer and not otherwise needed to build out GWP's system consistent with GWP's standards, GWP shall not include the costs of such separate or incremental facilities in the amounts billed to the Customer.

Installation and Payment for Distribution System Improvements

Agreement Required

The Customer, pursuant to the provisions contained in the Interconnection Agreement or other agreements, shall pay the costs of Interconnection Facilities and Distribution System improvements as listed in the applicable Facility Interconnection Costs Table. Where the type and extent of the Interconnection Facilities or Distribution System improvements warrant additional detail, Customer and GWP may form a separate agreement to more fully describe and allocate the parties' responsibilities for installing, owning, operating, maintaining the Interconnection Facilities and Distribution System improvements. All the modification required for the smooth operation of the Interconnection Facilities shall be the responsibility of the Customer.

Attachments and Modifications to Distribution System

Except as otherwise specified in these Interconnection Requirements or in the Interconnection Agreement, Interconnection Facilities connected to GWP's side of the Point of Common Coupling and Distribution System improvements shall be provided, installed, owned, and maintained by GWP at Customer's expense.

Installation of Facilities

Interconnection Facilities and Distribution System improvements shall be installed in accordance with GWP's design and specifications. GWP will be the sole decisionmaker regarding whether a contractor is obtained by GWP or Customer, or whether work is performed by GWP itself, for Interconnection Facilities and Distribution System improvements to be owned by GWP. Any permitted contractors must be qualified in accordance with GWP's needs, inspection and acceptance. Upon final inspection and acceptance by GWP, the Customer shall transfer ownership of such Interconnection Facilities or Distribution System improvements to GWP and such facilities shall thereafter be owned and maintained by GWP at Customer's expense. The Customer shall pay GWP's reasonable cost of design, administration, and monitoring of the installation for such facilities to ensure compliance with GWP's requirements.

Customer shall also be responsible for all costs, including any income tax liability, associated with the transfer of Customer installed Interconnection Facilities and Distribution System improvements to GWP.

Reservation of Unused Facilities

When a Customer wishes to reserve GWP-owned Interconnection Facilities or Distribution System improvements installed and operated for the Customer at the Customer's expense but idled by a change in the operation of the Customer's Generating Facility or otherwise (Idled Facilities), Customer may elect to abandon or reserve such Idled Facilities consistent with the terms of the Interconnection Agreement or other agreement with GWP. If Customer elects to reserve Idled Facilities, GWP shall be entitled to continue to charge Customer for the costs related to the ongoing operation and maintenance of such Idled Facilities. Such Idled Facilities shall not thereafter be energized without permission of and coordination with GWP. GWP may utilize such Idled Facilities at GWP's discretion to serve other customers if such service will not impair GWP's ability to serve the Customer with the Idled Facilities when necessary.

Removal of Interconnection Facilities or Distribution System improvements

When a Customer elects to abandon the Interconnection Facilities or Distribution System improvements ("Improvements") for which it has either advanced the installed costs or constructed and transferred to GWP, the Customer shall pay for all costs of removal, provided GWP does not wish to keep such Improvements. Within 180 days, GWP shall have the right to remove any portion of the Interconnection Facilities located on the property where the Interconnection Facilities are installed, and Customer shall be responsible for the costs of such removal.

General Requirements

All Generating Facilities shall be metered in accordance with this section and shall meet all applicable standards of GWP contained in GWP's applicable Rates, Rules, and Regulations or Electric Service Requirements.

Power Production Metering

In order to determine applicable standby charges and other charges, and to provide for Distribution System planning and operations, consistent with these Interconnection Requirements, GWP shall have the right to require the installation, including technical specifications and location, of a Power Production Meter to monitor Customer's Generating Facility operations. GWP shall require the provision of generator output data to the extent reasonably necessary to provide information for GWP to administer its policies or to operate and plan its system. GWP may, at GWP's discretion, authorize non-utility entities the ownership, installation, operation, reading and testing of power production metering equipment for Facilities.

Costs of Metering

The Customer shall bear all costs of the Metering required by these Interconnection Requirements, including the incremental costs of operating and maintaining the Metering Equipment, unless otherwise provided by law or applicable GWP policy.

Telemetering

Telemetering equipment is required for a Generator or Generating Facility with an individual or site aggregate of 500 kW or greater (Gross AC Nameplate Rating). Notwithstanding the foregoing, GWP may require Customer to install Telemetering as necessary or appropriate to ensure reliable operations, as determined in GWP's sole discretion. Repairs or replacement of telemetering equipment should be limited to a time period designated by the GWP.

Cost of Telemetering

See ***Summary of NEM Customer Interconnection Costs*** Table.

Location

Customer shall provide, at no expense to GWP, a suitable location for all such Metering Equipment and Telemetering equipment. Customer switchgear installed to accommodate GWP meters shall be EUSERC-compliant. Customer shall receive GWP approval of the switchgear design for commercial projects over 200 Amps.

Introduction

This Section describes the test procedures and requirements for equipment used for the Interconnection of a Generating Facility to GWP's Distribution System. The procedures listed rely heavily on those described in applicable Underwriters Laboratory (UL), Institute of Electrical and Electronic Engineers (IEEE), and International Electrotechnical Commission (IEC) documents—most notably UL 1741 SA, IEEE 929, and IEEE 1547 as well as the testing described in May 1999 New York State Public Service Commission's Interconnection Requirements.

The tests described here, together with the technical requirements in these Interconnection Requirements, are intended to provide assurance that the Generating Facility's equipment will not adversely affect GWP's Distribution System and that a Generating Facility will cease providing power to GWP's Distribution System under abnormal conditions. The tests were developed assuming a low level of Generating Facility penetration. At high levels of Generating Facility penetration, additional requirements and corresponding test procedures may need to be defined by GWP.

Certification Criteria

Equipment tested and approved (e.g., listed) by a NRTL as having met the requirements of UL 1741 SA, IEEE 929 and IEEE 1547 is considered to be Certified Equipment for purposes of Interconnection with GWP's Distribution System when listed by the California Energy Commission: https://www.energy.ca.gov/programs-and-topics/programs/solar-equipment-lists

Commissioning Testing

When equipment is not Certified as listed above or certified equipment is being used in an application inconsistent with its Certification, commissioning testing, where required, will be performed on-site to verify protective settings and functionality. Upon initial Parallel Operation of a Generating Facility, or any time interface hardware or software is changed that may affect the functions listed below, a Commissioning Test must be performed. An individual qualified in testing protective equipment (professional engineer, factory-certified technician, or licensed electrician with experience in testing protective equipment) must perform commissioning testing in accordance with the manufacturer's recommended test procedure to prove the settings and requirements of these Interconnection Requirements.

GWP may require written Commissioning test procedure be submitted to GWP at least 10 working days prior to the performance of the Commissioning Test. GWP has the right to witness commissioning tests as described below, or to require written certification by the installer describing which tests were performed and their results. Functions to be tested during commissioning may consist of the following:

- Over- and under-voltage
- Over- and under-frequency
- Anti-Islanding (if applicable)
- Non-Export (if applicable)
- Inability to energize dead line
- Time delay restart after utility source is stable
- Utility system fault detection (if used)
- Synchronizing controls (if applicable)
- Other interconnection protective functions that may be required as part of the Interconnection Agreement

Other checks and tests that may need to be performed include:

- Verifying final protective settings
- Trip test
- In-service test

Verification of Settings

If the testing is part of the commissioning process, then, at the completion of such testing, the Customer shall confirm all devices are set to GWP-approved settings. This step shall be documented in the Commissioning Test Certification.

Trip Test

Interconnection protective devices (e.g., reverse power relay) that have not previously been tested as part of the interconnection system with their associated interrupting devices (e.g. contactor or circuit breaker) shall be trip tested during commissioning. The trip test shall be adequate to prove that the associated interrupting devices open when the protective devices operate.
Interlocking circuits between protective devices or between interrupting devices shall be similarly tested unless they are part of a system that has been tested and approved during manufacture.

In-Service Test

Interconnection protective devices that have not previously been tested as part of the interconnection system with their associated instrument transformers or that are wired in the field shall be given an in-service test during commissioning. This test will verify proper wiring, polarity, CT/PT ratios, and proper operation of the

measuring circuits. The in-service test shall be made with the power system energized and carrying a known level of current. A measurement shall be made of the magnitude and phase angle of each AC voltage and current connected to the protective device and the results compared to expected values.
For protective devices with built-in metering functions that indicate current and voltage magnitudes and phase angles, or magnitudes of current, voltage, and real and reactive power, the metered values may be used for in-service testing. Otherwise, portable ammeters, voltmeters, and phase-angle meters shall be used.

Periodic Testing

The Customer shall perform periodic Testing of Interconnection-related Protective Functions as specified by the manufacturer, or at least every four years. GWP may inspect Customer's periodic test report. All periodic tests prescribed by the manufacturer shall be performed. The Customer shall maintain periodic test reports or a log for inspection by GWP. Periodic Testing conforming to GWP test intervals for the particular Line Section may be specified by GWP under special circumstances, such as high fire hazard areas.

The following procedures will apply for disputes arising from these Interconnection Requirements that may arise during the Application process; however, any conflicting procedure in a relevant Interconnection Agreement shall take precedence:

Jurisdiction

The City of Glendale shall have jurisdiction to interpret, add, delete or modify any provision of these Interconnection Requirements or of any agreements entered into between GWP and the Customer to implement these Interconnection Requirements and to resolve disputes regarding GWP's performance of its obligations under its Rates, Rules, and Regulations, the applicable agreements, and requirements related to the interconnection of the Generator or Generating Facilities pursuant to these Interconnection Requirements.

Procedures

Any dispute arising between GWP and the Customer regarding the Customer's performance of its obligations under its Rates, Rules, and Regulations, the applicable agreements, and requirements related to the interconnection of the Generating or Interconnection Facilities pursuant to these Interconnection Requirements shall be resolved according to the following procedures, unless otherwise specified in an Interconnection Agreement, which procedures shall take precedence.

The dispute shall be reduced to writing by the aggrieved Party in a letter (a "Dispute Letter") to the other Party containing the relevant known facts pertaining to the dispute, the specific dispute and the relief sought, and express notice by the aggrieved Party that it is invoking the procedures under these Interconnection Requirements. The Dispute Letter shall be served on the other Party within thirty (30) days of the date the aggrieved Party either knew or should reasonably have known of the acts, active or passive, giving rise to the dispute. The recipient must review the dispute within 7 days. Within 30 calendar days of the date the Dispute Letter is served, the Party's authorized representative and the responsible GWP Manager shall meet and confer to try to resolve the dispute.

Protest Process

If the Parties do not resolve their dispute within 45 calendar days after the date the Dispute Letter was served, the Customer or the Customer's authorized representative may file a protest with the General Manager of GWP ("Protest"). Protests must be received by GWP within five (5) calendar days of the end of the above dispute resolution period. However, extension of 45 days may be made with mutual written

agreement of both Parties. Failure to file a Protest as set forth herein will result in the Protest being deemed untimely and the Protest will not be considered.

Filing a Protest

Filing and Delivery of Protest

A Protest must be received within the timeline set forth above. All Protests must be submitted to the General Manager by email, overnight courier, certified mail, or personal delivery:

Glendale Water & Power
141 N. Glendale Blvd, Level 4
Glendale, CA 91206

Or by email to GWPCustomerService@Glendaleca.gov

Specify Dispute

The Protest must specify the Dispute under GWP's Interconnection Requirements which is the object of the Protest and the grounds of the Protest. The Protest must include the relevant known facts pertaining to the dispute, the specific dispute, the relief sought and any reasons the Parties were unable to resolve the dispute during the dispute resolution period. The Protest must also include a detailed written statement of the Protest grounds and provide the documents or other information the protesting party believes is relevant to the Protest. Protests shall be limited in scope to the issues raised in the Dispute Letter.

GWP Acknowledgement

Upon receipt of a Protest GWP will:

i) notify the City Attorney's Office as needed,

ii) send the protesting party an acknowledgement letter within two (2) business days of the date the Protest as received (the acknowledgment may be by electronic mail, overnight courier, certified mail, or personal delivery), and

iii) analyze the Protest and the documentation provided by the protesting Party and any other documentation provided or information GWP deems relevant to the disposition of the Protest, including but not limited to, documents or information requested from or provided by third parties. A GWP manager may also meet informally with a protesting party to better understand the claim or attempt to resolve the Protest.

Communication of Decision

Following the review of a Protest, GWP is empowered to: i) deny the Protest on either procedural or substantive grounds, or ii) grant the Protest.
GWP's decision will be in writing, issued by an Assistant General Manager or other manager designated by GWP for this purpose, state the basis of the decision and be provided to the protesting Party and other interested Parties by electronic mail, overnight courier, certified mail, or personal delivery.

Appeals

GWP's decision to grant or deny a Protest may be appealed to GWP's General Manager.

Delivery of Appeal

An appealing Party must file its appeal ("Appeal") within three (3) business days after receipt of GWP's decision. The Appeal must be submitted in writing, referencing the Protest decision being appealed, to the General Manager, with a mandatory copy to the City Attorney's Office by electronic mail, overnight courier, certified mail, or personal delivery, to the following addresses:

Glendale Water and Power
Attn: General Manager
141 N. Glendale Ave, Level 4
Glendale, CA 91206

City of Glendale Attorney's Office
Re: Appeal of the Decision by GWP
613 E. Broadway, Suite 220
Glendale, CA 91206

The Appeal must set forth the grounds of the Appeal and is limited to those issues raised in the original protest.

Decision of Appeal

On receipt of the Appeal from the appealing Party, if any, the General Manager or delegate will analyze the GWP's decision, the documentation reviewed by GWP in rendering the decision, the Appeal and documentation provided by the appealing Party and any other documentation or information the General Manager or delegate deems relevant to the disposition of the Appeal, including

but not limited to documents or information requested from or provided by third parties.

Communication of Appeal Decision

Following the review of the Appeal, the General Manager, or delegate, is empowered to:

i) deny the Appeal on either procedural or substantive grounds, or
ii) grant the Appeal.

The General Manager's decision (Decision) will be in writing, will state the basis of the decision and will be provided to the appealing Party and other interested Parties by electronic mail, overnight courier, certified mail, or personal delivery. Any Decision shall be final. Customer is advised that the time within which judicial review must be sought of the Decision is governed by California Code of Civil Procedure Sec. 1094.6.

Performance During Dispute Process

Pending resolution of any Dispute under this section, the Parties shall proceed diligently with the performance of their respective obligations under these Interconnection Requirements and the applicable agreements, unless the applicable agreements have been terminated.

Indemnity and Liability by Customer INT-REQ-112

The Customer shall indemnify and hold GWP, its directors, officers, agents and employees harmless against all loss, damages, expense and liability to third parties for injury to, or death of persons, or injury to property caused by the Customer's or Customer's engineering, design, construction, installation, ownership, maintenance or operations of, or the making of replacements, additions or betterments to, or by failure of, the Generator or Generating Facility in connection with these provisions by reason or omission or negligence, whether active or passive. The Customer shall, on GWP's request, defend any suit asserting a claim covered by the indemnity. The Customer shall pay all costs that may be incurred by GWP in enforcing this indemnity.

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to, or arising from any act or omission in its performance of its obligations in these guidelines shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, consequential, or punitive damages of any kind whatsoever.

Nothing in these provisions shall be construed to create any duty to, any standard or care with reference to, or any liability to, any person not a Party to these provisions. Neither GWP, its officers, agents or employees shall be liable for any claims, demands, costs, losses, causes or action, or any other liability of any nature or kind, arising out of the engineering, design, construction, ownership, maintenance, or operation of, or making of replacements, additions, or betterment to, the Generator of Generating Facility except to the extent actually caused by the sole and gross negligence of GWP.

Neither GWP, its officers, agents or employees shall be liable for damages of any kind to the Generator or Generating Facility caused by any electrical disturbance of the GWP system or on the system of another, whether or not the electrical disturbance results from the negligence of GWP.

Special Provisions

1. Unless Net Generator Output Metering is required, Metering Equipment necessary to obtain service under NEM-1 or NEM-2 shall be installed and operational within the timeframe required to complete Interconnection.
2. For the purposes of establishing the interconnection requirements for NEM Generating Facilities with a capacity greater than one megawatt (1MW) qualifying for service under PUC Section 2827(b)(4)(B) (i.e., the California Department of Corrections and Rehabilitation), GWP shall be afforded a prudent but necessary time to study the impacts of the Interconnection Request. If the study reveals the need for upgrades to the Distribution System arising solely from the Interconnection Request, GWP shall be afforded the time necessary to complete those upgrades before the Generating Facility is interconnected. The costs of the Network and/or Distribution Upgrades shall be borne by the Customer, but an exemption from application fees and study costs applicable to Generating Facilities eligible for NEM under PUC Section 2827 shall apply. GWP shall consider the receipt date of the completed Interconnection Request when completing the study allowed for herein and for purposes of determining the appropriate cost responsibility for the necessary Network and/or Distribution Upgrades triggered solely by the Interconnection Request. All Generating Facilities interconnected pursuant to this section shall comply with applicable state and federal requirements, including requirements of the FERC.
3. The Customer generally shall deliver electricity from the Generating Facility to GWP at GWP's Utility Service Meter.

Application Process

The Customer shall complete the online **PV Interconnection Application** available on GWP's PowerClerk page. All Customers shall be required to complete and file an Application and supply any relevant additional information requested by GWP. The filing must include the completed Application and fee (if applicable) for processing the Application and performing the Initial Review to be completed by GWP as set forth herein. The Application fee will vary depending on how the Generating Facility will be interconnected as indicated in the Interconnection Application Fee Tables herein. The fees set forth herein are for informational purposes only; actual fees will be Adopted Fees by the City of Glendale.

All Net Energy Metering Customers, when approved, will sign the GWP Standard Form Interconnection Agreement for Net Metering From Eligible Renewable Electric Generating Facilities.

NEM Interconnection Application Fees

Generation Facility Type	Initial Review	Supplemental Review	Interconnection Study
NEM	$0	$0	$0

Study Path	Eligibility	Studies	Timelines
Standard Process (Small)	Residential PV and NEM CEC-AC Systems <15kW, Commercial Systems	Initial Review (IR)	IR—10 Business Days
Standard Process (Large)	Residential >15kW, Commercial >499kW Fuel cells	Initial Review (IR) Supplemental Review (SR)	Residential IR & SR—10 Business Days Commercial IR & SR--20 Business Days
Non-Standard Process	Rotating Machinery Non-NEM generation for export Some Energy Storage	I R S R Interconnection Study (IS) (determined by complexity of the project)	IR &SR—10 Business Days IS—60 Business Days

Typically, within ten (10) business days of receiving an Application, GWP shall normally acknowledge its receipt and state whether the Application has been completed adequately. If deficiencies are noted, the Customer shall, in a timely manner, correct the deficiencies needed to establish a satisfactory Application. GWP reserves the right to reject any Application that does not address identified deficiencies within 30 calendar days. Once the application has been reviewed and approved, construction is expected to begin within twelve months. If there is no progress on the project, GWP reserves the

right to cancel the application.

Initial Review

Upon receipt of a completed Application, applicable fees as outlined in the ***Summary of NEM Customer Interconnection Costs*** Table, and any additional information necessary to evaluate the Interconnection of a Generating Facility, GWP shall perform an Initial Review. The Initial Review determines if:

- the Generating Facility qualifies for the Standard Process Interconnection,
- the Generating Facility requires a Supplemental Review, or
- the Generating Facility will require an Interconnection Study to determine interconnection requirements.

Initial Review Timeframe

GWP shall complete its Initial Review, absent any extraordinary circumstances, typically within fifteen (15) business days, upon determination that the Application is complete and receipt of fee payment, if the Generating Facility qualifies for the Standard Process Interconnection. If the Initial Review determines that the proposed facility can be interconnected by means of a Standard Process Interconnection, GWP will provide the Customer with a written description of the requirements for Interconnection.

Standard Process

Standard Process evaluation allows for rapid review of the Interconnection of those Generating Facilities that do not require an Interconnection Study. Standard Process review consists of the Initial Review and, if required, a Supplemental Review. The need for Supplemental Review will be determined based on the results of the Initial Review Screens 1 through 12. Customers that successfully pass the Initial Review will be allowed to interconnect without Supplemental Review.

If Supplemental Review is required, GWP will notify the Customer and Customer must pay a nonrefundable Supplemental Review fee or withdraw its Interconnection Request.

If the Supplemental Review determines that the proposed Generating Facility cannot interconnect to GWP’s Distribution System by means of the Standard Process evaluation, GWP will notify the Customer that a detailed Interconnection Study will be required. The Standard Process, Supplemental Review and Interconnection Study may impose interconnection requirements, additional components, or additional testing. Regardless of the evaluation or study process, all Generating Facilities shall be designed to meet the applicable requirements in the Generating Facility Design and Operating Requirements Section.

Supplemental Review

If the Generating Facility does not qualify for the Standard Interconnection Review Process as proposed, GWP will notify the Customer and perform a Supplemental Review. The Supplemental Review will provide requirements for Interconnection beyond those for a Standard Interconnection Review Process.

Fees

The Customer is responsible for all fees and/or costs, including Interconnection Facilities Costs and Commissioning Testing, required to complete the interconnection process. The Customer is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution System. See ***Summary of NEM Customer Interconnection Costs*** Table below.

Note: NEM Currently not available for Facilities greater than 1MW. Table entries for greater than 1MW will be applicable provided NEM eligibility is expanded.

The Interconnection and Parallel Operation of the Customer's generation plant may trigger the need for Interconnection Facilities, added Facilities, upgrades, delivery network upgrades, and/or reliability network upgrades. Interconnection Facilities installed on Customer's side of the PCC shall be owned, operated, and maintained by the Customer. Customer is responsible for the cost associated with the Interconnection Facilities. The fees or cost indications in the table below are for informational purposes only. Fees are adopted through GWP's fee adoption process, separate from these Interconnection Requirements, and actual Adopted Fees shall apply.

Summary of NEM Customer Interconnection Costs

	Residential (single family and duplex)		**Commercial**			
Generation Facility Type (Site AC Aggregate)	**Under 15 kW**	**15+ kW**	**1≤ 499kW**	**500kW ≤ 1MW**	**> 1MW**	**Non-exporting standalone storage**
Initial Review	No	No	No	No	Yes	No

Supplemental Review	No	No	Yes	Yes	Yes	Yes
Interconnection Study	No	No	Yes	Yes	Yes	Yes
Interconnection Facility Costs (Customer side)	No	No	Yes	Yes	Yes	Yes
Telemetry Costs	No	No	N/A	Yes	Yes	If required
Distribution Upgrades Cost (Utility side)	Yes	Yes	Yes	Yes	Yes	If required
Distribution Operations and Maintenance Cost	No	No	If required	Yes	Yes	Yes

Interconnection Study

When the Supplemental Review reveals that the proposed facility requires an Interconnection Study due to the need for significant GWP Interconnection Facilities or Distribution System improvements to accommodate the interconnection of a Customer's Generating Facility, the GWP and the Customer shall enter into an agreement that provides for the GWP to perform additional studies, facility design, and engineering and to provide detailed cost estimates, to the Customer at the Customer's expense.

Upon completion of an Interconnection Study, GWP shall provide the Customer with the specific requirements, Facility Design, estimated costs, and schedule for interconnecting the Generating Facility to accommodate potential execution of additional agreements pursuant to particular Customer requirements.

Application Process

The Customer shall complete the Application available on GWP's website. All Customers shall be required to complete and file an Application and supply any relevant additional information requested by GWP. The filing must include the completed Application and fee (if applicable) for processing the Application and performing the Initial Review to be completed by GWP as set forth herein. The Application fee will vary depending on how the Generating Facility will be interconnected as indicated in the Interconnection Application Fee Tables herein. The fees set forth herein are for informational purposes only; actual fees will be Adopted Fees by the City of Glendale.

Non-NEM Interconnection Application Fees for Generating Facilities

Initial Review	**Supplemental Review**	**Interconnection Study**
Fixed fee per City Fee Schedule	Hourly Rate	Hourly Rate

Eligibility	**Studies**	**Timelines**
Any Commercial Generating Facilities	Initial Review (IR) Supplemental Review (SR) Interconnection Study (IS) (determined by complexity of the project)	IR – 10 Business Days IR & SR—20 Business Days IR, SR & IS – 60 Business Days or otherwise determined by GWP after IR and SR

Typically, within ten (10) business days of receiving an Application, GWP shall normally acknowledge its receipt and state whether the Application has been completed

adequately. If deficiencies are noted, the Customer shall, in a timely manner, correct the deficiencies needed to establish a satisfactory Application. GWP reserves the right to reject any Application that does not address identified deficiencies within 30 calendar days. Once the application has been reviewed and approved, construction is expected to begin within twelve months. If there is no progress on the project, GWP reserves the right to cancel the application.

Initial Review

Upon receipt of a completed Application, applicable fees as outlined below, and any additional information necessary to evaluate the Interconnection of a Generating Facility, GWP shall perform an Initial. If the Initial Review determines that the proposed facility can be interconnected by means of the Initial Review, GWP will provide the Customer with a written description of the requirements for Interconnection.

Supplemental Review

If the Generating Facility does not pass the Initial Review as proposed, GWP will notify the Customer and perform a Supplemental Review. The Supplemental Review will provide either (a) requirements for Interconnection beyond those for an Initial Review, and/or (b) a cost estimate and schedule for an Interconnection Study. Payment for the Supplemental Review shall be submitted upon notification to Customer by GWP that a Supplemental Review is required. GWP will estimate the amount necessary for the Supplemental Review. After the actual hourly costs are known, if the actual costs are higher, the Customer will receive a supplemental bill; if the actual costs are lower, the Customer will receive a refund.

Regardless of the evaluation or study process, all Generating Facilities shall be designed to meet the applicable requirements in Section 3 - Generating Facility Design and Operating Requirements

Fees

The Customer is responsible for all fees and/or costs, including Interconnection Facilities Costs and Commissioning Testing, required to complete the interconnection process. The Customer is responsible for all costs associated with Parallel Operation to support the safe and reliable operation of the Distribution System. ***Summary of Customer Interconnection Costs*** below.

The Interconnection and Parallel Operation of a Customer plant may trigger the need for Interconnection Facilities, added facilities, upgrades, delivery network upgrades, telemetry equipment, and/or reliability network upgrades, and all projected operation and maintenance associated therefor reduced to present value. Interconnection Facilities installed on Customer’s side of the PCC shall be owned, operated and

maintained by the Customer, unless otherwise specified by GWP. Customer is responsible for the cost associated with the Interconnection Facilities. The fees or cost indications in the table below are for informational purposes only. Fees are adopted through GWP's fee adoption process, separate from these Interconnection Requirements, and actual Adopted Fees shall apply.

Summary of Customer Interconnection Costs

Generation Facility Type	**Export with PPA**	**Storage PPA**	**CHP (non-renewable)**
Initial Review	Yes	Yes	Yes
Supplemental Review	Yes	Yes	Yes
Interconnection Study	Yes	Yes	Yes
Interconnection Facility Costs (Customer and Line Side)	Yes	Yes	Yes

Interconnection Study

When the Supplemental Review reveals that the proposed facility requires an Interconnection Study due to the need for significant GWP Interconnection Facilities or Distribution System improvements to accommodate the interconnection of an Customer's Generating Facility, the GWP and the Customer shall enter into an agreement that provides for the GWP to perform additional studies, facility design, and engineering and to provide detailed cost estimates, to the Customer at the Customer's expense.

Upon completion of an Interconnection Study, GWP shall provide the Customer with the specific requirements, Facility Design, estimated costs, and schedule for interconnecting the Generating Facility to accommodate potential execution of additional agreements pursuant to particular Customer requirements.

Microgrids Under the California Public Utilities Code

GWP encourages the study and use of microgrid technology. As set forth in Public Utilities Code Section 8370 (b), “Microgrid” means an interconnected system of loads and energy resources, including, but not limited to, distributed energy resources, energy storage, demand response tools, and other management, forecasting, and analytical tools, appropriately sized to meet customer needs, within a clearly defined electrical boundary.

Within a clearly defined electrical boundary, a Microgrid can act as a single, controllable entity, and connect to, disconnect from, or run in parallel with larger portions of the electrical grid, or can potentially be managed and isolated to withstand larger disturbances and maintain electrical supply to connected critical infrastructure.

Microgrid Compliance with Electric Service Requirements

Microgrids must generally meet the standards of GWP’s Electric Service Requirements, including these Interconnection Requirements (INT-REQ) and the Distributed Energy Resources (DER) Requirements. Exceptions may be made in writing by GWP personnel to accommodate new technologies or functions, provided all regulatory, safety and electrical standards are complied with.

Microgrids will follow the same interconnection process as outlined in these Interconnection Requirements for other types of generation, in compliance with Public Utilities Code 8372(a), and these procedures shall constitute a standardized process for interconnection of such customer-supported microgrids under the requirements of that law.

Microgrid Rates to Be Separately Adopted as Necessary

The fees and rates applicable for other types of interconnected generation will apply to Microgrids as well, unless specified otherwise in an Adopted Fee. Future Adopted Fees may include fees for future service or functions to be provided by GWP in support of particular advanced microgrid technology and capabilities. In the absence of additional Adopted Fees regarding Microgrids, the then-current fees for interconnected generation at the time of any application for a Microgrid shall constitute the required rates and tariffs under Public Utilities Code Section 8732.