Exhibit W

Generation of Solid Waste and Wastewater

Carty Generating Station
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Prepared for

Portland General Electric Company

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Acronyms and Abbreviations

ASC	Application for Site Certificate
BCP	Boardman Coal Plant
BESS	battery energy storage system
BMP	best management practice
Certificate Holder / PGE	Portland General Electric Company
CGS / Facility	Carty Generating Station
Council	Oregon Energy Facility Siting Council
ESCP	Erosion and Sediment Control Plan
EPA	U.S. Environmental Protection Agency
gpd	gallons per day
Li-ion	lithium-ion
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODOE	Oregon Department of Energy
RCRA	Resource Conservation and Recovery Act
SPCC	Spill Prevention, Control, and Countermeasure

1.0 Introduction

The Portland General Electric Company (PGE or Certificate Holder) is submitting a Request for Amendment (RFA) 4 to the Site Certificate for the Carty Generating Station (CGS or Facility). The Facility is located approximately 13 miles southwest of Boardman, in Morrow County, Oregon. As currently approved, the Facility is capable of generating up to 450 megawatts (MW) from the natural gas-fueled combined-cycle unit (Unit 1).

In RFA 4, the Certificate Holder is proposing photovoltaic solar energy generation with approximately 200 MW alternating current (AC) of nominal and average generating capacity and BESS with the capability of storing up to 200 MW AC. The overall CGS additions proposed with RFA 4 (including the BESS) are referred to throughout this request as the Carty Solar Farm with proposed RFA 4 changes. The solar generation is proposed in two separate solar areas referred to as the Northern Solar Area, located north of the Carty Reservoir, and the Southern Solar Area, located south of the reservoir [see Figure 2 in RFA 4's Division 27 document (Request for Amendment 4 for the Carty Generating Station)].

Exhibit W provides the information required by Oregon Administrative Rules (OAR) 345-021-0010(1)(w) in support of RFA 4. Analysis in this exhibit incorporates and/or relies on reference information, analysis, and findings found in the Application for Site Certificate (ASC), previous RFAs, and Oregon Department of Energy (ODOE) Final Orders to demonstrate that the Facility, as modified by RFA 4, continues to comply with applicable Site Certificate Conditions and the approval standard in OAR 345-022-0120.

2.0 Description of Solid Waste and Wastewater Generation – OAR 345-021-0010(1)(w)(A)

> *OAR 345-021-0010(1)(w) Information about the applicant's plans to minimize the generation of solid waste and wastewater and to recycle or reuse solid waste and wastewater, providing evidence to support a finding by the Council as required by OAR 345-022-0120. The applicant must include:*
>
> > *OAR 345-021-0010(1)(w)(A) A description of the major types of solid waste and wastewater that construction, operation and retirement of the facility are likely to generate, including an estimate of the amount of solid waste and wastewater;*

As detailed in the following sections, although the proposed changes provide for additional solid waste and wastewater needs for the Facility, Portland General Electric Company (Certificate Holder) can still comply with all Site Certificate conditions for waste minimization previously adopted by the Oregon Energy Facility Siting Council (Council) for compliance with OAR 345-022-

0120. Site Certificate Conditions[1] applicable to solid waste and wastewater and that apply to the Carty Solar Farm with proposed RFA 4 changes include:

- Condition 6.2: Provide portable toilets during construction.
- Condition 6.3: Implement Construction Waste Management Plan.
- Condition 6.22: Compliance with sewage disposal installation setbacks.
- Condition 6.24: Compliance with Morrow County Solid Waste Management Ordinance.
- Condition 9.1: Work in compliance with a final Erosion and Sediment Control Plan (ESCP) as required under the National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Discharge General Permit 1200-C (see Exhibit I for further information).
- Condition 10.22: Implement Operations Waste Management Plan.
- Condition 10.24: Discharge sanitary wastewater in compliance county permit requirements.
- Condition 10.28: Compliance with Water Pollution Control Facilities Permit(s).
- Condition 10.32: Submit plans to ODEQ prior to constructing or modifying wastewater management treatment and disposal facilities.

2.1 Solid Waste

The following sections identify the types and quantities of solid waste anticipated to be generated throughout the Carty Solar Farm with proposed RFA 4 changes. Solid waste disposal for the Carty Solar Farm with proposed RFA 4 changes will be provided through a private contract with local commercial haulers in compliance with the Morrow County Solid Waste Management Ordinance (see Section 5.100).

2.1.1 Construction

Construction of the Carty Solar Farm with proposed RFA 4 changes will generate a small amount of non-hazardous solid waste, which are handled by a local solid waste hauler and are managed through the implementation of measures outlined in the Construction Waste Management Plan (Site Certificate Condition 6.3). Note that the natural gas-fueled combined-cycle unit (Unit 1) is already operating at the Facility; thus, the materials associated with the constructed portions of the Facility are not repeated for the purposes of this analysis.

Waste materials generated through construction of the solar modules, BESS, and associated infrastructure will primarily consist of scrap metal (e.g., wire and rebar scraps), dirt and rock spoils, wood, concrete, concrete waste and other packaging materials. It is estimated that construction will produce approximately 95,000 cubic yards of waste during active construction,

[1] Site Certificate Conditions 6.25 and 10.30 related to waste minimization are proposed for removal. See Section 6.0 of the Division 27 document, which addresses why these conditions are not applicable to the Carty Solar Farm modifications as proposed by RFA 4.

estimated to span approximately 24 months, which will be disposed of following the Construction Waste Management Plan consistent with Site Certificate Condition 6.3. Overall, the solid waste types and quantities from construction are typical of any large-scale construction project. To accommodate solid waste produced during construction, it has been conservatively estimated that 12 large dumpsters (8 tons each) will be required every other day during active solar module installation; otherwise, 9 dumpsters per week before and after solar module installation will be required.

Construction and grading of the access roads proposed inside the perimeter security fencing for the solar areas are expected to produce negligible amounts of dirt and rock spoils that will need disposal, because cut and fill measures are expected to balance the need for and use of soils. Foundation excavations for the solar inverter and transformer stations, BESS, and proposed collector substation are not expected to produce significant amounts of dirt and rock spoils. The majority of these materials will be spread over areas previously disturbed during construction. Materials will only be spread as appropriate, with adequate measures for soil conservation and erosion and sediment control, as required by the ESCP (Site Certificate Condition 9.1). A draft of the ESCP is included as Attachment I-1 to Exhibit I. When it is not appropriate to spread materials over previously disturbed areas, materials will be hauled to appropriate disposal sites within the Carty Solar Farm with proposed RFA 4 changes; the location of such sites will be determined on an as-needed basis during construction. If off-site soil disposal is necessary, the contractors disposing of the material will obtain a signed agreement with the party receiving the earth materials and will confirm that the disposal sites have been inspected as to not disturb sensitive environmental resources.

Construction will create some concrete waste from the construction of foundations for the solar inverter/transformer stations, BESS, and collector substation. Note that for the construction of foundations, the PGE will buy concrete directly from licensed suppliers (i.e., with a valid water use license) in the area; an on-site batch plant is not proposed at this time. Concrete truck chutes may need to be washed down at each foundation site to prevent the concrete from hardening within the chutes. In these cases, the concrete wastewater will be washed out into a dedicated concrete washout area located within each foundation excavation consistent with Site Certificate Condition 6.3. The soil used to construct the washout area berms (along with any concrete solids) will be buried as part of the foundation backfill. This method for concrete washout water management is a regularly utilized best management practice (BMP) for construction of solar generation facilities within the area and has been accepted by the ODEQ.

2.1.2 Operation

An insignificant amount of solid waste is expected to be generated during the operations and maintenance (O&M) of the Carty Solar Farm with proposed RFA 4 changes. This waste may include equipment and components that are replaced, packing materials for replacement components, and waste typical of a small office. It is estimated that no more than 8 cubic yards of waste will be produced monthly during operations, to be disposed of at the Finley Butte Landfill or Columbia

Ridge Landfill, as identified in the ASC. The waste will be handled consistent with the Morrow County Solid Waste Management Ordinance (Site Certificate Condition 6.24) and according to the Operations Waste Management Plan (Site Certificate Condition 10.22).

The battery energy storage system (BESS) may also generate incidental waste from repair or replacement of electrical equipment. The BESS will require augmentation to compensate for degradation. Augmentation will add additional batteries to maintain output; but degraded batteries would not be removed from service. For this analysis it is assumed that batteries are only removed due to needed repair or replacement during operations, and replacement of batteries for degradation would only happen at decommissioning.

For the replacement of lithium-ion (Li-ion) batteries during operation, the Certificate Holder will follow the handling guidelines of 49 Code of Federal Regulations 173.185 (Department of Transportation Pipeline and Hazardous Material Administration) related to the shipment of Li-ion batteries. Licensed third-party battery suppliers will be responsible for transporting batteries to and from the Carty Solar Farm with proposed RFA 4 changes in accordance with applicable regulations. Spent batteries will be disposed of at a facility permitted to handle them, in compliance with applicable Resource Conservation and Recovery Act (RCRA) and Toxic Substances Control Act regulations administered by the U.S. Environmental Protection Agency (EPA) or the ODEQ. Note that used Li-ion batteries may contain hazardous waste and will be handled and disposed of per the most up-to-date guidelines at the end of their life.

Repair or replacement of the solar modules and associated electrical equipment could generate incidental waste. However, a solar module typically lasts at least 25 years without significant degradation in function, and will be replaced infrequently, if at all. Operation of the solar modules and associated infrastructure will not result in a significant amount of solid waste.

2.1.3 Decommissioning

The anticipated working life span of the Carty Solar Farm with proposed RFA 4 changes is 25 years, after which time it may be extended, repowered, or decommissioned. Decommissioning is discussed in greater detail in Exhibit X. In the event it would be decommissioned, and the site restored to a useful, non-hazardous condition for other planned uses, the amount of solid waste can be inferred from the materials inventory provided in Exhibit G. Should the Carty Solar Farm with proposed RFA 4 changes be decommissioned, the components will be disassembled, and the materials will be recycled, sold for scrap, or taken to a landfill following the requirements that will be outlined in a retirement plan, per Site Certificate Condition 15.4. Such components and equipment include the solar modules, steel mounting racks, posts, and trackers; inverters, transformers, and battery energy storage modules; concrete and aggregate used for foundations and road construction; the proposed substation; and other associated structures. Ancillary components, such as concrete foundations and gravel, will be removed in a manner similar to the methodology approved in the ASC. Concrete foundations would be cut and removed to a minimum depth of 3 feet below ground. Underground cables would typically be left in place, as removing them would cause unnecessary habitat disturbance. Metals and electrical components are expected

to be recycled as scrap rather than disposed of in a landfill wherever possible. The portions of concrete foundations that are removed would be disposed of as construction waste or crushed and disposed of at an appropriate location onsite (e.g. areas that already contain crushed concrete from the demolition of the Boardman Coal Plant). Otherwise, excess concrete is planned for incorporation into the foundations as opposed to disposal. Transformers and other substation equipment would be removed to be reconditioned for use elsewhere or recycled as scrap metal.

The decommissioning of the BESS will involve disposing of battery components at an off-site facility designed and approved for disposal or recycling of batteries by licensed third-party battery suppliers, who will be responsible for transporting batteries to and from the Carty Solar Farm with proposed RFA 4 changes in accordance with applicable regulations. The batteries will be disposed of at the time of decommissioning in the same manner described above for operational replacement. Ancillary components of the BESS will also be removed in a manner similar to the methodology of the other concrete pads.

2.2 Wastewater

Wastewater generated during construction will be from the following construction activities: portable toilets, dust abatement, mixing of concrete, concrete equipment washwater, and concrete washout water. Wastewater generated during operation will be from the following activities: wastewater produced from the proposed O&M building and from periodic washing solar panels. This section discusses how each of these types of wastewaters will be handled throughout the life of the Carty Solar Farm with proposed RFA 4 changes. No industrial wastewater will be produced.

2.2.1 Sanitary Wastewater

Sanitation during construction activities will be addressed through the provision of portable toilets located throughout the construction area at locations that will be determined by the construction contractor prior to and during construction. Portable toilets will be provided by a licensed subcontractor, who will be responsible for servicing the toilets at regular intervals and disposing of wastewater in accordance with local jurisdictional regulations (Site Certificate Condition 6.2). The construction contractor will ensure that a sufficient number of toilets are provided, and that the licensed subcontractor complies with applicable regulations, including the use of holding tanks for biological waste that conform to OAR 340-071 and transportation of waste in accordance with Oregon Revised Statute 466.005.

The proposed O&M building will include toilets for use by maintenance staff during operations. The sanitary sewage will be collected and treated by the Facility's existing sanitary sewage system, which sends sewage the existing Carty septic system in compliance with county permit requirements (Site Certificate Conditions 6.22 and 10.24). The estimated 250 gallons per day (gpd) is estimated from the proposed O&M building. Once the number of additional employees is determined, if the existing system capacity is not sufficient a septic system alteration permit would be obtained from the Umatilla County Public Health Department, which issues alteration permits for septic systems in Morrow County, to increase the capacity of the existing septic system.

2.2.2 Construction

The Certificate Holder expects the volume of wastewater to be generated during construction to be approximately 81,040,000 gallons under worst-case conditions through all phases of construction. the majority used for dust control. Dust abatement and control will result in by far the most wastewater during construction (approximately 80,000,000 gallons). Other construction activities that will produce small amounts of wastewater include mixing of concrete, washing equipment and vehicles, and washing concrete trucks after delivery of concrete loads. No construction water will be discharged into wetlands, streams, and other waterways. Due to the dry conditions at the Facility and the relatively low rates of water use and application for the Carty Solar Farm with proposed RFA 4 changes, it is expected that any excess water used during construction will be lost within or near the Approved Site Boundary through evaporation and infiltration.

The disposition of construction wastewater and the disposal of solar panel washwater during operations are allowed under the terms and conditions of the Facility's Water Pollution Control Facility (WPCF) Permit (100189) and subsequent Addendums 1 and 2, described in more detail in the next section below.

Water for dust control will be sprayed onto disturbed areas during construction and result in water loss primarily through evaporation and infiltration (Site Certificate Condition 9.3). Water trucks will be used to control dust generation throughout the construction site, in all disturbed areas including but not limited to foundation installations and trenching for collector lines in compliance with Site Certificate Condition 9.3. Water for dust control and road compaction will be applied via tanker truck in a manner that avoids erosion and sediment discharge and is consistent with the best management practices presented in the NPDES 1200-C permit (Site Certificate Condition 9.1).

Wastewater will also be generated as concrete washout water produced during construction of foundations. Concrete truck chutes will be washed down at each foundation site to prevent the concrete from hardening within the chutes. Concrete wastewater will be handled as previously described, using BMPs for the construction, which have been accepted by ODEQ. Concrete wastewater will be washed out into a dedicated concrete washout area located within each foundation excavation and/or a dedicated concrete washout area centrally located (Site Certificate Condition 6.3). The soil used to construct the washout area berms (along with any concrete solids) will be buried as part of the foundation backfill (Site Certificate Condition 6.3).

Washing of vehicles and equipment to prevent the spread of weeds will also generate small amounts of wastewater. Vehicle and equipment washing will occur at the temporary construction areas, and wastewater from these activities will be covered by the general NPDES 1200-C stormwater permit (Site Certificate Condition 9.1). The estimated amount of wastewater for vehicle and equipment washing is expected to be minor compared to overall water use for the Carty Solar Farm with proposed RFA 4 changes. The amount of water used for vehicle and equipment washing will be sufficiently small that it will not create runoff but will instead infiltrate into the ground.

Stormwater is not considered to be wastewater. Stormwater will be managed in accordance with the terms of the NPDES 1200-C stormwater permit (Site Certificate Condition 9.1). Stormwater will

be diverted around construction sites as much as possible. Precipitation that falls on a construction site will be allowed to run back to natural drainages, with erosion and sedimentation control systems in place to maintain water quality.

2.2.3 Operation

Wastewater generated during operations will include sanitation at the proposed O&M building and solar panel washing. The disposition of sanitary sewer from the proposed O&M building is described above.

Operational wastewater sources will include periodic washing of the solar modules. Solar panel washing will continue to be in compliance with the existing Water Pollution Control Facilities Permit (Site Certificate Condition 10.28). The disposal of solar panel washwater is allowed under the terms and conditions of the Facility's Water Pollution Control Facility (WPCF) Permit (100189) issued May 2, 2013. ODEQ approved Addendum 1 to WPCF Permit 100189 on January 24, 2019, to allow construction and operation of a photovoltaic solar generating unit at the Facility. The issuance of Addendum 1 to WPCF Permit 100189 addressed Site Certificate Condition 10.28(ii) requiring PGE to demonstrate that ODEQ has issued a modified WPCF Permit 100189 that specifically addresses solar panel washwater.

The WPCF permit and Addendum 1 and Addendum 2 expired on April 30, 2023, but remain in effect until ODEQ acts on PGE's renewal application, which was submitted to ODEQ on February 28, 2023. The renewal application primarily requests that ODEQ remove permit conditions that were applicable only to the operation of the Boardman Coal Plant, which is now demolished. The renewed WPCF permit will retain Condition 21 in Schedule A and Condition 1(e) in Schedule B, which allows for management and disposal of solar panel washwater by evaporation or infiltration as long as no soaps, detergents, or chemicals are added and outlines required monitoring after panel washing events.

The WPCF authorizes wastewater disposal through evaporation and seepage of construction wastewater and the disposal of washwater for operational solar panel washwater. Under Site Certificate Condition 10.28(ii), solar panel washwater is permitted to be discharged through evaporation or infiltration into the ground at the point of application and the use of chemicals, soaps, detergents and heated water is prohibited. No soaps, detergents, or chemicals will be used in the washwater.

The Certificate Holder will ensure that there is no runoff of washwater from the site or discharges to surface waters, storm sewers, or dry wells. No new operational wastewater sources will result from BESS operations.

2.2.4 Decommissioning

During retirement, wastewater will result primarily from dust control while restoring the site, if grading is required. If required, the Certificate Holder expects the volume of water for dust suppression during retirement to be less than the volume used during construction. The number of

on-site workers, and generation and handling of sanitary wastewater, will be comparable to construction. The retirement of the Carty Solar Farm with proposed RFA 4 changes is discussed in greater detail in Exhibit X.

3.0 Description of Waste Management and Disposal Structures, Systems and Equipment – OAR 345-021-0010(1)(w)(B)

OAR 345-021-0010(1)(w)(B) A description of any structures, systems and equipment for management and disposal of solid waste, wastewater and storm water;

The Certificate Holder will comply with all applicable waste handling and disposal regulations on all lands associated with the Carty Solar Farm with proposed RFA 4 changes. Solid waste will be stored in a manner that does not constitute a fire, health, or safety hazard until such waste can be hauled off for recycling or disposal, as appropriate. The following sections describe the planned handling and disposal of waste.

3.1 Construction

Construction will not add any new types of waste not previously contemplated for the Facility by the Council, and as a result, no new structures, systems, or equipment will be needed to manage and dispose of construction wastes that were not previously considered. All waste will be disposed of following the Construction Waste Management Plan (Site Certificate Condition 6.3). Standard construction waste bins will be kept on-site to keep construction debris until it is hauled off-site. Separate containers for small quantities of hazardous materials, such as oily rags or contaminated soil from minor spills, will be provided according to the contractor's Spill Prevention, Control, and Countermeasure (SPCC) Plan. As noted earlier, materials will be recycled as feasible.

Areas around CGS will be kept in an orderly condition throughout the construction period. Waste generated during construction will be temporarily collected at each construction site and then consolidated into larger disposal containers at the temporary construction yard(s). Disposal and recycling containers will be labeled by waste type to segregate materials as appropriate for recycling or disposal.

Disposal and recycling containers will be of adequate size, design, and number to handle the amount of waste being generated. Containers approximately 8 tons in capacity will be used to collect scrap metal, wood, and paper products, and other recyclable materials.

Solid waste generated during construction will be hauled away for recycling or disposal, as appropriate. Paper products and other materials—such as batteries, glass, metals, and plastic—will be recycled when practicable. As disposal and recycling containers reach capacity, they will be removed to disposal facilities that can handle these materials, and the containers will be replaced with empty units. Removal of the waste to appropriate disposal facilities will be done by a licensed

waste hauler, under contract to the construction contractor (Site Certificate Condition 6.3). Licensed waste haulers must comply with OAR 340-093-0220 for transportation of wastes as well as the Morrow County Solid Waste Management Ordinance (Section 5.010).

Soil and rock materials from foundation excavations will be spread within the temporary disturbance areas during construction or removed from the excavation site as soon as practicable. Most excess spoils will be incorporated into grading activities as fill material. Excess spoils would be a very small amount, and any excess spoils from excavation of the foundations will be spread out around the foundations. Disturbed soil and rock materials will be contained using appropriate BMPs as part of the NPDES 1200-C permit to prevent sedimentation release to local habitat. The construction contractor will arrange off-site disposal of excess soils if this should be necessary.

The construction contractor will submit a plan for approval by the Certificate Holder on how solid waste materials during construction activities will be reused, recycled, or disposed of in accordance with Site Certificate Condition 6.3. That plan will specify the number and types of waste containers to be maintained at construction sites and the temporary construction areas, and how wastes are to be segregated for recycling or disposal. It will also specify the names and locations of appropriate recycling and waste disposal facilities, collection requirements, and hauling requirements.

Sanitation during construction activities will be addressed through the provision of portable toilets. Other types of wastewater generated during construction will be allowed to evaporate and infiltrate into the ground as allowed under the terms and conditions of the Facility's WPCF Permit. Stormwater will be managed using BMPs in accordance with the terms of the NPDES 1200-C stormwater permit (Site Certificate Condition 9.1)

3.2 Operation

Any solid waste generated by the operation of the solar modules, BESS, and associated infrastructure will be collected by the maintenance crews and transported to off-site to facilities such as Finley Butte Landfill or Columbia Ridge Landfill that handle the disposal or recycling of these items. Wastes generated at the proposed O&M building will be collected in appropriate waste or recycling containers, to be removed by a licensed waste hauler under contract to the Certificate Holder. All operational waste will be handled according to the Operations Waste Management Plan (Site Certificate Condition 10.22) which will be consistent with Morrow County Solid Waste Management Ordinance (Section 5.000) (Site Certificate Condition 6.24).

Self-contained battery components and spent batteries will be removed and disposed of or recycled by a licensed vendor in compliance with applicable RCRA and Toxic Substances Control Act regulations administered by the EPA or ODEQ. The batteries will be handled by a licensed third-party battery supplier in accordance with applicable regulations.

Batteries may require periodic replacement if a component is found to be faulty; otherwise, the batteries are not expected to be replaced during the life of the Carty Solar Farm with proposed RFA 4 changes. Modules lose their effectiveness through repeated charge/discharge cycles. To account for the degradation, additional batteries and associated equipment would be periodically

augmented as needed to maintain 200 MW. However, degraded batteries would not be removed and replaced; they would continue to operate at the degraded capacity. If batteries are replaced during operations, the operator will disconnect and de-energize the battery system prior to removal from the installed racks, and package the batteries for transport to an approved facility.

The solar panel wash water will evaporate or will infiltrate into the ground near the point of use as allowed under the terms and conditions of the Facility's WPCF Permit. No additional industrial wastewater streams will be generated during operation of the solar modules. No additional structures, systems, or equipment are required for stormwater resulting from the addition of the solar modules.

3.3 Decommissioning

Waste produced from retirement activities will be managed in a similar manner to the waste produced during construction. At the end of its useful life, the Carty Solar Farm with proposed RFA 4 changes will be dismantled, and components sold for reuse or scrap as practicable. Otherwise, components will be recycled or disposed at a solid waste facility.

Once it is determined that the solar facilities will be decommissioned, the solar array will be removed and disposed of or recycled at the expected life span of 25 years. Decommissioning is described in Exhibit X. If continued reuse is not practical, the array will be dismantled and recycled to reclaim constituent parts, such as glass, aluminum, silicon solar cells, and metals.

The BESS will require disposal of the container structures housing the batteries and their constituent parts. The batteries will be disposed of at decommissioning in the same manner described above for operational replacement. Electrical systems and associated equipment will be disposed of as incidental waste and will be collected and recycled, as feasible. Non-recyclable wastes will be collected and transported to the Finley Butte Landfill, Columbia Ridge Landfill, or other licensed facility identified at the time of decommissioning.

4.0 Actions or Restrictions to Reduce Consumptive Water Use – OAR 345-021-0010(1)(w)(C)

OAR 345-021-0010(1)(w)(C) A discussion of any actions or restrictions proposed by the applicant to reduce consumptive water use during construction and operation of the facility;

The Certificate Holder will use appropriate BMPs to reduce water use to the greatest extent feasible. Solar facility construction by nature does not afford the construction contractor significant opportunities for reducing water use. Water will be used on an as-needed basis to construct concrete foundations and pads, suppress dust on the roads (Site Certificate Condition 9.3) and other areas disturbed by grading, and wash out concrete truck chutes. Water will be used in areas of active construction or vehicle movement, only as needed for dust control. To reduce the water used for dust suppression, stabilization materials such as mulch, may be used to lengthen the

interval between necessary dust control water applications. Weather and soil conditions will be regularly monitored to minimize watering while maintaining regulatory compliance for fugitive dust issues. Water for dust control will not be applied if weather conditions are such that disturbed soils will remain sufficiently damp and fugitive dust will not be created.

Water used for solar panel washing will be limited to the minimum necessary for effective panel function. Operation will not require consumptive water use, except for minimal amounts at the proposed O&M building similar in nature to typical office use (see Exhibit O). The water used at the proposed O&M building will meet building code requirements for water conservation practices. No additional water use, and therefore no additional actions to limit water use, will result from installation of the BESS.

5.0 Minimization and Recycling Plans – OAR 345-021-0010(1)(w)(D)

OAR 345-021-0010(1)(w)(D) The applicant's plans to minimize, recycle or reuse the solid waste and wastewater described in (A);

The changes described in RFA 4 will result in additional solid waste in the form of potential solar modules, BESS, and associated part replacements during operation, and through decommissioning at the time of retirement. These materials will be recycled where practicable and disposed at an approved disposal location where necessary consistent with Site Certificate Conditions 6.3 and 10.22. When recycling is not feasible, the materials will be sorted and stored in dumpsters or other suitable containers and transported by a licensed waste hauler to an approved disposal location where necessary (Site Certificate Conditions 6.3 and 10.22). All operational waste will be handled according to the Operations Waste Management Plan (Site Certificate Condition 10.22).

6.0 Waste-Related Impacts

6.1 Description of Impacts – OAR 345-021-0010(1)(w)(E)

OAR 345-021-0010(1)(w)(E) A description of any adverse impact on surrounding and adjacent areas from the accumulation, storage, disposal and transportation of solid waste, wastewater and stormwater during construction and operation of the facility;

Solid waste, wastewater, and stormwater for the Carty Solar Farm with proposed RFA 4 changes will be generated and managed consistent with the methods and procedures that have been previously approved by the Council for the Facility, and through the Site Certificate conditions discussed throughout this exhibit. As a result, there will be no new, adverse impacts resulting from the changes proposed under RFA 4.

6.2 Evidence that Impacts are Minimal – OAR 345-021-0010(1)(w)(F)

OAR 345-021-0010(1)(w)(F) Evidence that adverse impacts described in (D) are likely to be minimal, taking into account any measures the applicant proposes to avoid, reduce or otherwise mitigate the impacts; and

As noted above, there will be no new, adverse impacts resulting from the changes proposed under RFA 4. Generation of wastes from construction will be minimized by estimating material needs and employing efficient construction practices. Waste generated during construction and operation will be recycled when feasible (Site Certificate Conditions 6.3 and 10.22).

Because waste generation will be minimal, there is little anticipated adverse impact on surrounding areas from solid waste or wastewater due to construction, operation, or retirement of the Carty Solar Farm with proposed RFA 4 changes. Waste will be reused or recycled; or when necessary, disposed at permitted disposal facilities. Any waste disposed on-site (e.g., excess spoils from foundations) will be inert, disposed of in a manner consistent with applicable regulations, and protective of human health and the environment.

Water will be used primarily for dust control, concrete mixing, and concrete washout. None of these activities will produce wastewater that will affect area streams, wetlands, or groundwater supplies. Sanitary waste during construction will be handled by a licensed contractor according to applicable regulations. Sanitary waste from the proposed O&M building during operation will be collected and treated by the Facility's existing septic system. The Carty Solar Farm with proposed RFA 4 changes will not generate industrial wastewater or effluent.

On-site disposal of materials that qualify as clean fill ODEQ's rules and guidance will be conducted in accordance with OAR 340-093 and other applicable regulations. To meet the clean fill definition, any inert construction debris to be disposed on-site as clean fill will be separated from other debris that is not inert or that otherwise does not satisfy ODEQ's definition of clean fill.

The Certificate Holder's proposed measures to avoid, reduce, and mitigate any impacts on-site or to adjacent land include storing all cleaning products, paints and finishes, solvents, pesticides and herbicides, and other hazardous materials in containers that meet all federal, state, and local requirements for storage and containment. There will be no substantial quantities of these chemicals on-site. Petroleum products, including vehicle and equipment fuels, lubricating oils, and hydraulic fluids, will not be stored in substantial quantities on-site (Site Certificate Condition 9.10), but will instead be delivered on an as-needed basis using a specialized vehicle by a licensed contractor. The Certificate Holder does propose the temporary storage of some diesel fuel on-site during construction, but this will be in aboveground storage tanks in the construction yard(s), within an area that provides for secondary containment. In addition, spill kits containing items such as absorbent pads will be located on equipment and in on-site temporary storage to ensure a quick response to spills (Site Certificate Condition 9.11). Waste disposal or recycling will be handled by a licensed contractor.

Transportation of wastes to landfills or recycling facilities will involve periodic truck trips over public and private roads between the Facility and the Finley Butte Landfill or Columbia Ridge

Landfill. Given the number and frequency of these trips, and the anticipated volume of waste materials, these trips are not anticipated to have adverse effects on the adjacent or surrounding areas (See Exhibit U for more detail on solid waste management).

6.3 Proposed Monitoring Plan – OAR 345-021-0010(1)(w)(G)

OAR 345-021-0010(1)(w)(G) The applicant's proposed monitoring program, if any, for minimization of solid waste and wastewater impacts.

The Certificate Holder will monitor construction stormwater impacts in accordance with a NPDES 1200-C construction stormwater permit issued by ODEQ, and an associated ESCP (Site Certificate Condition 9.1; see Exhibit I for further information). The ESCP describes BMPs for erosion and sediment control, spill prevention and response procedures, proper disposal procedures, regular maintenance for vehicles and equipment, and employee training on spill prevention.

No significant impacts from solid waste and wastewater are expected from construction and operation of the Carty Solar Farm with proposed RFA 4 changes. Schedule B, Condition 1.e of the WPCF permit requires inspections for runoff and erosion, and reporting of the volume of water used following each panel washing event. Waste management activities will be subject to periodic inspections to ensure compliance with applicable regulations and Site Certificate Conditions.