Proactive by Design

PROPOSED ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM FACILITY

Decommissioning and Reclamation Plan

February 7, 2025
File No. 04.0191807.00

PREPARED FOR:
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APPENDICES

1.0 INTRODUCTION

Longroad Energy, LLC (Longroad) is proposing the development of the Zeta Solar and Battery Energy Storage System Project (Zeta Project) on, privately-owned land in Merced County, California (i.e. the Site). The proposed Zeta Project includes the construction, operation, maintenance, and decommissioning of a photovoltaic (PV) solar power generation facility with associated battery energy storage system (BESS) and substation. The Zeta Project is proposed to generate up to 75 megawatts (MW) alternating current (AC) power and includes energy storage capacity of up to 8 hours of 75 MW of AC.

GZA has prepared this Decommissioning and Reclamation Plan (Plan) to outline the activities required to decommission the proposed facility and reclaim the land. This Plan also includes an opinion of probable costs (OPC) associated with the decommissioning and restoration work required. We understand this Plan and OPC will be used by Longroad to support financial assurance planning. As discussed herein, detailed plans for the construction are currently being developed and therefore this Plan and OPC is based on available conceptual Site development information and are subject to the Limitations in **Appendix A.**

2.0 BACKGROUND AND FACILITY DESCRIPTION

The Site is located in Los Banos, Merced County, California and is currently undeveloped. Site parcels are designated by the Merced County as Assessor Parcel Numbers 090-130-018, 090-130-044, and 090-130-060. The Site is bound to the south and west by Poleline Road and the California Aqueduct, to the north by the Mercy Springs Substation, and to the east by agricultural land. Existing Site topography generally slopes from approximately Elevation 300 feet at the southwest to Elevation 200 feet at the northeast. US Route 5 is located just west of and runs parallel to Poleline Road and the aqueduct.

The Zeta Project is currently in design phase. To date, conceptual facility plans have been developed. Based on review of a Preliminary Site Layout Plan, dated September 20, 2023, provided by Longroad and a Draft Environmental Impact Report, dated October 2024, prepared by Stantec, GZA understands that the Zeta Project is proposed to consist of the following key components within the proposed 622-acre fenced in facility. Refer to **Appendix B** for proposed project conceptual layout.

2.1 SITE FENCING AND LIGHTING

The Zeta Project area including array field, BESS area, substation, switchyard, Operation and maintenance area and laydown areas will be enclosed in chain-link fencing, up to 8 feet tall. Site access will be via controlled access gates. Facility lighting will be installed for normal and emergency conditions to illuminate the Site gate, substation, BESS, and O&M area at a minimum.

2.2 SITE ROAD AND LAYDOWN AREAS

Zeta Project Site access roads are anticipated to be gravel roads 20 to 24 feet in width and include an inner perimeter fence road and separate roadways from the two entrances to the O&M area, the BESS area, and the substation, along with roads to the solar arrays and electrical equipment pads, which would be 16 to 24 feet in width.

2.3 SOLAR ARRAY

An approximately 518-acre solar array area, is proposed to include 211,680 First Solar™ FS6 P BF PV modules mounted on driven steel posts in rows on single-axis Nextracker™ trackers (2,520 trackers total) with racking equipment. The panels are anticipated to be approximately 90 inches tall and 55 inches wide weighing approximately 75 pound per panel. DC electrical generation collection system collects power generated at each PV module and transmits the power to inverters, for conversion to AC power. Power will be stepped up in voltage to 34.5 kV at associated transformers and transmitted via belowground (up to 4 feet below grade) direct burial conductors to the on-Site substation.

2.4 BATTERY ENERGY STORAGE SYSTEM (BESS)

On the northwest side of the Site, an approximately 10-acre BESS area is proposed to be constructed. The BESS will include self-contained modular lithium-ion battery modules and associated control systems. The battery cubes will be mounted on concrete foundations. Heating, ventilation, and air conditioning (HVAC) systems will be incorporated into each battery cube which will be powered from the facility feed from the Mercy Springs Substation. A backup power generator (assumed fuel oil powered) will be installed to support HVAC systems in event of primary power source loss.

Seventy 20-foot-long by 8-foot-wide inverter and transformer equipment pads and associated below grade electrical conductor lines are proposed for the BESS area.

Thermal, smoke and gas detectors will be installed in the BESS area. A first responder staging area is proposed for the south end of the BESS area.

2.5 SUBSTATION AND SWITCHYARD

An approximately 2.6-acre substation and 1.8-acre switchyard are proposed for the northwest corner of the Site. The substation equipment will include one pad-mounted transformer for 34.5 kV to 70 kV volage increase, associated breakers and 70 kV switch, bus and bus supports, collection risers, three dynamic volt-amps reactives (D-VARs), and a 12-foot by 40-foot prefabricated metal-clad control enclosure. Support structures and risers are anticipated to be up to 65-feet tall.

2.6 GENERATION TIE-IN LINE

Generated power will be transmitted from the Zeta Project to the Mercy Springs Substation via a 1,700-foot-long single-circuit conductor from riser equipment at the Zeta substation to the Mercy Springs Substation. The conductors will be supported on approximately seven 65-foot tall direct-embedded wooden poles.

2.7 OPERATION AND MAINTENANCE FACILITIES AND SITE SERVICE UTILITIES

The Zeta facility's O&M area is proposed for 0.8-acres on the western side of the Site, south of the BESS area. The O&M area will include a 30-foot by 70-foot prefabricated modular office building containing office space, control room, restrooms, kitchen and communications. A 40-foot by 75-foot metal clad, barn style warehouse will be used for storage and maintenance work. The buildings are anticipated to be up to 25 feet tall.

A Supervisory Control and Data Acquisition (SCADA) system will be installed for the Zeta Project which will allow control of the equipment, remote monitoring, diagnostics and data collection. The SCADA will be located in the O&M office or substation control enclosure with both hardwire and wireless connections to the facility equipment.

A 5,000-gallon-capacity aboveground fire-suppression water holding tank and associated equipment is proposed to be installed adjacent to the O&M facility. It is anticipated that the fire-suppression water would be supplied via trucks from an off-Site source.

A 5,000-gallon-capacity aboveground potable water tank will be installed to provide water service to the O&M facility. Similarly, potable water would be provided to the Site via trucks from an off-site source

An on-Site septic system (tank and leach field), assumed to be 80-gallon per day, 2000-gallon total capacity, will be installed at the Site to manage sanitary waste from the O&M facility.

Power to the BESS HVAC, SCADA, and O&M will be provided via a feed from the Mercy Springs substation located 0.25 miles north of the Zeta project. The feed line is assumed to be above ground on wooden poles.

2.8 METEOROLOGICAL STATION

The Zeta facility will include at least one on-Site meteorological station to record site-specific weather information. We anticipate the station(s) will be constructed as a direct-embed monopole(s) or small tower(s) up to 15 feet in height with a concrete footing(s). The station(s) may be powered by a dedicated PV module or from the facilities auxiliary power system. Data from the station(s) will be relayed to the facilities SCADA system.

3.0 PROJECT DECOMMISSIONING

The decommissioning and reclamation activity details presented herein are provided as an outline of key activities required for removal of equipment on the Zeta facility and restoration of the Zeta Site. The reclamation approach assumes that land will be restored to pre-construction condition by removal of equipment, buildings, foundations, conductors and associated structures but that re-grading back to pre-construction existing grades will not be required.

The Plan is not intended to be a detailed specification or work plan for contractors or bidding purposes, but rather an outline of key activities required to support order of magnitude cost estimating of the decommissioning and Site reclamation.

3.1 DECOMMISSIONING PLANNING

The first step in the decommissioning process would be to assess existing Site conditions and prepare the Site for demolition and reclamation activities. In general, decommissioning activities can be completed in reverse of the construction using general construction methods for the removal of equipment and structures. Following establishment of access roads, preparation of laydown areas, establishment of Site controls, and utility disconnects removal of the equipment and structures can be systematically performed in a phased approach.

Site decommissioning and equipment removal is estimated to take approximately 10 months. Therefore, fencing and electrical power (if acceptable to contractor's sequencing) may temporarily remain in place for use by the decommissioning and restoration workers until no longer needed. Access road may be utilized by the Site owner for future use, so removal of access roads is not included in this decommissioning plan or associated OPC. A

detailed sequencing decommissioning plan should be prepared at the time of facility closure. The decommissioning plan should include identification of hazardous and petroleum-containing materials, identification of all electrified components and the electrical source, personnel training and supervision requirements, and environmental controls and should be prepared in consideration for current permit and regulatory requirements. For the purposes of GZA's OPC, we have assumed costs for engineering, design, and permitting based on a percentage of construction costs.

We note that revegetation of disturbed areas will likely require several years upon completion of active deconstruction and restoration construction activities. Long term vegetation maintenance or monitoring is excluded for this Plan and associated OPC.

Removal of the Zeta Project equipment and associated reclamation activities can largely be accomplished using traditional construction equipment including but not limited to fork-lifts, telehandlers, small crane, excavators with various attachments, man-lifts, front-end loaders, and skid steers and by torch cutting select steel materials. Specialty electrical construction equipment (including wire pulls) will be required to remove underground and overhead conductors and poles. Licensed powerline electricians will be required to disconnect the electrical sources. The remainder of the Zeta Project decommissioning work can be accomplished by experienced demolition contractor supervisors, equipment operators, and general labor.

3.2 SITE ACCESS, SITE PREPRATION, AND STAGING AREAS

Existing Site fencing and gates will be utilized for Site security during deconstruction and reclamation activities and can be removed upon completion of the deconstruction activities. Existing site access roads and laydown areas can be utilized for deconstruction activities however we anticipate installation gravel or crushed stone temporary work pads may be required in select areas (e.g., access to the gen-tie line) to facilitate construction equipment access.

As during deconstruction activities, the existing lay-down and staging area encompassing the southernmost 10 acres of the Site, with direct access to Poleline Road can be utilized. As construction progresses additional laydown and staging areas may be available in the previously developed BESS, O&M and substation areas.

Prior to initiating on-site deconstruction activities, site controls including erosion and sedimentation controls should be installed and dust suppression equipment should be provided. Water for dust suppression can be applied to the work areas via trucks. The existing potable water tank could be utilized for on-Site holding of dust suppression water. Exposed soils on access ways can be wetted and stabilized as necessary throughout decommissioning activities to suppress dust generation. Temporary construction entrances/exits should be used at access way entrances to public roadways to clean the tires of construction vehicles and minimize the migration of soils off-Site.

For purposes of this Plan, we have assumed the existing O&M building can be utilized as construction office space for the majority of the project and that additional office trailer mobilization will not be required.

3.3 GENERATION AND ELECTRICAL SERVICE DISCONNECTS

Disconnect of the generation power tie-in to the Mercy Spring Substation, and service power feed line from Mercy Spring Substation to the Zeta Site would require disconnects by a licensed power line installer in coordination with PG&E (or current substation operator).

3.4 HAZARDOUS AND UNIVERSAL WASTE REMOVAL

Prior to demolition activities, hazardous and universal wastes should be identified and removed. We anticipate these materials may include dielectric fluids, fuel oil or lubricating oils contained within equipment; light bulbs, containerized commercial materials such as oils, degreasers, herbicides, and pesticides. Hazardous and universal wastes should be removed and containerized in accordance with the accepting disposal facility's requirements and local, State, and federal shipping requirements.

We note that select substation and switchgear equipment may be removed and prepared for off-Site reuse at another facility however, for purposes of the OPC associated with this Plan, we have assumed disposal or recycling of these materials. Preparation of equipment proposed for re-use should review of local, State and federal spill prevention and transport protocols.

3.5 DISMANTLING SOLAR ARRAY EQUIPMENT

Photovoltaic Equipment Removal - A licensed electrician should review the PV modules systems and verify that electrical power to the controls is disconnected. Each of the PV panels can be removed intact from the tracker and metal racking system using fork-lift or telehander equipment. Following removal, the PV modules should be palletized and containerized into shipping containers for off-Site transport to a licensed recycling facility in accordance with local, State, and federal regulations at a licensed facility. Costs associated with off-Site transport would be borne by the recycler and are not included in this estimate. On-Site processing of PV modules for recycling is not recommended.

The steel pile mounts can be recovered in their entirety using a vibratory extractor to retract the piles. The steel piles should be prepared for off-Site transport for recycling.

Collector Systems - An underground DC and AC collector system is associated with the PV array and it is assumed the systems will be underground. The collector wires are assumed to be installed up to 4 feet below grade and the collector systems should be removed in their entirety. Collector system removal can be conducted by trench excavation using excavators and cable pullers. Collector wiring can be collected on to reels for transport for off-Site recycling/reuse.

PV Array Transformers and Inverters - Twenty electrical equipment pads containing the inverters, which convert the DC power to three-phase AC via conductors, and transformer to step up in voltage from the module output, will be located within the PV arrays. Inverters and transformers should be drained, the fluids containerized for offsite disposal, and the units removed and prepared for off-site recycling of the metal components.

The twenty 20-foot by 8-foot equipment concrete foundations can be removed using excavators with digging and hydraulic hammer attachments. The concrete can be sized and transported off-Site for reuse provided no evidence of petroleum contamination is suspected. For the purposes of this Plan and associated OPC it is assumed that the concrete pads are 2-foot-thick reinforced concrete construction. Backfill of the equipment support foundations should be in accordance with Section 3.11 below.

3.6 SUBSTATION AND SWITCHYARD

Complete removal of the substation and switch yard should be planned including removal of the transformer, breakers, bus work, underground and overhead conductors, control enclosure, supporting structures and foundations. As outlined in Section 3.3, prior to demolition a licensed powerline electrician should complete the

disconnects of the substation and switchyard from the Mercy Spring Substation and Zeta PV solar array. Additionally, prior to initiation of deconstruction activities, all equipment should be drained and the fluids containerized for off-site disposal/recycle. Gases (sulfur hexafluoride) within switchgears should be recovered for off-Site disposal/recycling. If select equipment is proposed for off-Site reuse the equipment should be prepared and removed prior to the commencement of demotion activities in accordance with local, State and federal spill prevention and transport regulations. Overhead and underground wiring should be disconnected and removed from the substation and switchyard equipment as part of the demolition activities. Specialty wire pulling equipment may be utilized to remove overhead and underground wiring and removed wiring can be collected onto spool for off-Site transport for recycling.

Steel supports and substation and switchgear equipment can be dismantled using excavators with shear and grapple attachments. Removed equipment and supports should processed to size for transport off-Site for recycling. Concrete foundations and equipment pads can be removed using excavators with digging buckets and hydraulic hammers. Provided no evidence of petroleum contamination is observed on the concrete, concrete debris can be transported off-site for recycling.

The control building can be removed by controlled dismantling with and excavator. Steel sections can be disassembled and processed to recyclable size by cutting or torching at the general material management/laydown area. Material processed to size for transport will be transported off-Site to a facility for recycling.

3.7 REMOVAL OF GENERATION-TIE LINE

The generation-tie (gen-tie) line will extend via overhead lines supported on approximately seven wooden poles approximately 1,700-feet from the Zeta substation north to the PG&E's Mercy Springs Substation. Removal of the gen-tie line will require removal of the conductors via temporary wire pull staging areas and crews working from bucket trucks. The wires can be collected on to reels for transport for off-Site recycling/reuse.

Following removal of the conductors, the poles and associated guy wires and anchors will be removed to 48 inches below existing grade. Poles should be processed and transported off-site for recycling or disposal depending on pole preservation treatment.

3.8 BATTERY ENERGY STORAGE SYSTEM

It is assumed that at the time of Zeta decommissioning the battery modules, will be removed intact for second-life reuse or recycling at an off-Site facility. For purposes of this Plan and the associated OPC, we have assumed that transport of the battery cubes from the Site to the recycling facility will be the responsibility of the recycler. Reuse and recycling options for lithium-ion batteries are evolving. The lithium-ion battery cubes can be removed from the BESS area using a small crane, large forklifts or telehandler. The batteries can be transported off-Site via truck in accordance with manufacturer shipping recommendations and local, State and federal requirements.

Below grade electrical conductor lines associated with the BESS area can be removed by a combination of excavation and wire pulls. Recovered wiring can transported off-site for recycling.

Inverters and transformers associated with the BESS area should be drained, the fluids containerized for off-Site disposal/recycle, and the units removed and prepared for off-site recycling of the metal components. The 70 20-foot by 8-foot inverter and transformer equipment pads can removed with excavator(s) with digging bucket

and hydraulic hammer attachments. Provided no indication of an oil release is suspected, concrete can be processed and transported off-Site for reuse.

3.9 OPERATIONS & MAINTENANCE BUILDING

The O&M structures including the office building, the warehouse and the two water tanks can be removed by traditional demolition. Long-reach excavators outfitted with grapples and shears can be utilized to dismantle the steel structures. Demotion debris should be segregated for recycling of metals and disposal of general construction and demolition (C&D) wastes at an approved facility.

The proposed Operation & Maintenance (O&M) portion of the Site will encompass 0.8-acres and include a modular office style building that will be 30 feet by 70 feet in length and width, and 25 feet in height. Additionally, a metal-clad warehouse style structure will be located within this area which will be 40 feet by 75 feet in length and width and 25 feet in height. For the purposes of this Plan and associated OPC it is assumed that the concrete pads are 2-foot-thick reinforced concrete construction.

Building and structure foundations can be removed by excavator(s) with digging bucket and hydraulic hammer attachments. Concrete debris can be processed for transport off Site for reuse.

The septic system (tank and leach field) associated with the O&M building will require removal. The tank and the leach field should be pumped down by a septic waste disposal contractor and soils and debris should be excavated and transported off-site for disposal at a facility approved to accept the waste.

3.10 FENCING AND SITE DRAINAGE STRUCTURES

It is anticipated that final site design may include drainage structures. Decommissioning of the Zeta facility should include removal of fencing and drainage structures (if present). If drainage structures are removed, Site regrading may be required to provide stormwater management. The existing facility chain-link fence and posts should be removed entirely for off-site recycling.

3.11 BACKFILL

Removal of foundations, equipment supports, and below grade conductors will create voids requiring backfill. Backfill material should consist of sand or gravel borrow free from contaminants or deleterious materials. Backfill should be placed in less than 8-inch-thick lifts and compacted to a minimum of 92% of the materials maximum density as determined by Modified Proctor testing. Localized regrading of the Site may be required to ensure backfilled areas are graded to promote drainage and prevent standing water.

3.12 SITE RESTORATION

Site restoration is assumed to include regrading of work platforms, swales to promote natural drainage patterns. We have assumed that a limited quantity of gravel (up to 12,000 cubic yards) will require removal from the O&M, BESS and substation areas and transport off-Site for re-use. Based on our understanding, abandonment in place of Site roads will be acceptable to the Site Owner and therefore, road removal is excluded from this Plan and associated OPC.

Site restoration should follow the Vegetation and Soil Management Plan for the project. For purposes of this Plan, we have assumed this will include limited replacement of loam in the O&M, BESS, and substation areas and seed

mix suitable to the soil conditions will be require for these areas only. Natural attenuation for vegetation regrowth is solar array area is assumed. A vegetation monitoring program and long-term maintenance, if required following the initial completion of restoration activities, is excluded from the OPC associated with this Plan. Full restoration of vegetation may take several years to be established.

4.0 WASTE DISPOSAL AND MATERIAL RECYCLING

This Decommissioning Plan and associated OPC assumes that materials will be segregated and recycled to the greatest extent possible.

4.1 RECYCLABLE MATERIALS

Metal materials including structural steel, conductors, bus work, inverters, transformers, and miscellaneous metal will be segregated, processed, and transported off-Site for recycling. The Plan assumes concrete removed from the foundations and equipment pads will be processed for off-Site re-use. PV modules will be recycled provided a local facility is available to accept this material.

Miscellaneous construction debris may be transported by construction equipment, truck, or roll-off container from the work areas to a central material staging location prior to off-Site disposal.

4.2 HAZARDOUS MATERIAL MANAGEMENT

Regulated and hazardous wastes including, but not limited to fuel oil, dielectric oil, lubricating oils, and universal wastes are anticipated to be removed during the decommissioning. Additionally, components of the PC modules may contain concentrations of heavy medals that as a waste material may be characterized as hazardous waste. Materials should be identified, characterized, removed and managed in accordance with local, State, and federal requirements in such a manner to prevent an accidental release or cross-contamination of materials.

4.3 WASTE DISPOSAL

A limited amount of general construction and demolition debris (C&D) is anticipated to be generated during decommissioning of the Zeta Project. These materials may include insulation, finish materials, and furniture from the O&M building and equipment components that cannot be recycled but are not a regulated waste.

5.0 OPINION OF PROBABLE COSTS

GZA's OPC for decommissioning of the Zeta Solar and Battery Energy Storage System Project and associated appurtenances is $2,150,000 to $3,850,000 and is detailed in Appendix C. GZA's OPC is based on review of the Preliminary Site Layout Plan and available public documents on the California Environmental Quality Act (CEQA) website, discussions with contractors familiar with this type of construction, local average cost data, industry cost averages, RSMeans 2024 Costworks Data, and our experience with oversight of construction related to similar projects. The OPC includes a -30% to +40% range to account for the conceptual design input.

A copy of the Preliminary Site Layout Plan reviewed as part of the development of this Decommissioning Plan and associated OPC is included in **Appendix B**.

In general, the decommissioning approach presented herein is designed to maximize the recycling of all components. A breakdown of estimated salvage values based on current market pricing is summarized in **Appendix C**.

6.0 GENERAL ASSUMPTIONS

This Decommissioning Plan and associated OPC are based on the following general assumptions:

- The access routes and Site conditions detailed in the provided Preliminary Site Layout drawing will be similar at the time of decommissioning;
- All costs presented in the OPC are in 2025 dollars and no provision for cost escalation or adjustment are included;
- Recycling options for PV modules are volatile and vary by the specific module technology used for the Site and commodity rates at the time of decommissioning. We have assumed that recycling options will be available for the proposed First Solar modules;
- GZA's OPC should be considered a Class 5 Estimate as defined by the American Association of Cost Engineers Cost Estimate Classification System and is subject to limitations included in **Appendix A**.

We trust this meets your current needs. If you have any questions, please call Ms. Rebecca Cox at 603-232-8762 or email at rebecca.cox@gza.com.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Amanda Makela
Construction Manager II

John C. Murphy, CCM, CHMM
Consultant/Reviewer

Rebecca Cox
Associate Principal

ASM/RBC/JCM:jlb
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Attachments: Appendix A- Limitations
Appendix B - Preliminary Site Layout Plan
Appendix C - Opinion of Probable Costs Estimate Worksheets

Appendix A - Limitations

USE OF REPORT

1. GeoEnvironmental, Inc. (GZA) prepared this Report on behalf of, and for the exclusive use of our Client at the stated time for the stated purpose(s) and location(s) identified in the Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work.

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services at the same time, under similar conditions, and at the same or a similar property. No warranty, expressed or implied, is made.

4. Basis of Opinion of Cost Unless otherwise stated, our opinions of cost are only for comparative and general planning purposes. These opinions are based on the limited data and the conditions and assumptions described in the Report. The cost estimates may involve approximate quantity evaluations and are not intended to be sufficiently accurate to develop construction bids, or to predict the actual cost of work addressed in the Report. Further, since we have no control over when the work will take place nor the labor and material costs required to plan and execute the anticipated work, our cost opinions were made by relying on our experience, the experience of others, and other sources of readily available information. Actual costs may vary over time and could be significantly more, or less, than stated in the Report.

5. Cost opinions presented in the Report are based on a combination of sources and may include published RS Means Cost Data; past bid documents; cost data from federal, state or local transportation agency web sites; discussions with local experienced contractors; and GZA's experience with costs for similar projects at similar locations. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation. Actual costs will likely vary depending on the quality of materials and installation; manufacturer of the materials or equipment; field conditions; geographic location; access restrictions; phasing of the work; subcontractors mark-ups; quality of the contractor(s); project management exercised; and the availability of time to thoroughly solicit competitive pricing. In view of these limitations, the costs presented in the Report should be considered "order of magnitude" and used for budgeting and comparison purposes only. Detailed quantity and cost estimating should be performed by experienced professional cost estimators to evaluate actual costs. The opinions of cost in the Report should not be interpreted as a bid or offer to perform the work. Unless stated otherwise, all costs are based on present value.

6. The opinion of costs are based only on the quantity and/or cost items identified in the Report, and should not be assumed to include other costs such as legal, administrative, permitting or others. The estimate also does not include any costs with respect to third-party claims, fines, penalties, or other charges which may be assessed against any responsible party because of either the existence of present conditions or the future existence or discovery of any such conditions.

ADDITIONAL SERVICES

7. It is recommended that GZA be retained to provide engineering services during any final design, construction and/or implementation of any measures recommended in this Report. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; and iii) provide modifications to our design.

Appendix B – Preliminary Site Layout Plan

GENERAL NOTES:

1. INSTALLATION AND METHODS SHALL COMPLY WITH THE MOST CURRENT VERSION OF THE NATIONAL ELECTRICAL SAFETY CODE (NESC), AND NATIONAL ELECTRICAL CODE (NEC), AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
2. UTILITY LOCATIONS SHOWN ARE APPROXIMATE.

SYSTEM INFORMATION	
MW-DC:	98.43
MW-AC @ POI:	75
DC:AC AT POI	1.31
COLLECTION SYSTEM VOLTAGE (KV)	34.5
SITE INFORMATION	
MAX. TEMPERATURE:	40.0°C
MIN. TEMPERATURE:	-3.°C
LATITUDE, LONGITUDE:	36.912, -120.810
FENCE ACREAGE (APPROX.):	622.2
MODULE	
MODULE MANUFACTURER:	FIRST SOLAR
MODULE MODEL #:	FS6 P BF
STC WATTAGE (W):	465
VOLTAGE RATING (V):	1500
MODULES PER STRING:	6
PV ARRAY	
MODULE QUANTITY (465W):	211,680
TOTAL STRINGS:	35,280
GROUNDING:	NEGATIVE
INVERTER	
INVERTER MANUFACTURER:	SUNGROW
INVERTER MODEL #:	SUNGROW SG4400UD-MV
INVERTER QUANTITY:	20
TRACKER	
MANUFACTURER	NEXTRACKER
AZIMUTH (DEG):	0°
CONFIGURATION:	1-HIGH PORTAIT
ROTATION ANGLE LIMITS:	60°±
84 MODULE (14-STRING) TRACKER QTY:	2,520
TOTAL TRACKER QTY:	2,520
GCR/PITCH (FT):	25.69%/25

LEGEND

- PROJECT BOUNDARY
- BUILDABLE AREA
- PROPOSED SITE FENCE
- ARRAY BOUNDARIES
- INVERTER AND TRANSFORMER PADS

PRELIMINARY
NOT FOR CONSTRUCTION
FOR CONCEPTUAL PURPOSES ONLY

longroad ENERGY

LEGEND:

N

PROJECT LOCATION:

VICINITY MAP:

REVISIONS:

NO.	DATE	DESCRIPTION
1	9/20/2023	PRELIMINARY PV PLANT
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

PROJECT TITLE:

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

PROJECT LOCATION:

LOS BANOS, MERCED COUNTY, CALIFORNIA

SHEET TITLE & DESCRIPTION:

PRELIMINARY SITE LAYOUT

PROJ NUM:

DES: JOOL

NOTES:

SCALE AT 24" x 36":
0 250' 500' 750' 1,000'
1" = 500'

SHEET NO: 1-1

REV: A

Appendix C - Opinion of Probable Costs Estimate Worksheets

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

Summary Opinion of Probable Costs	
Task Description	**Estimated Cost**
Project Administration	$65,000
Pre-Mobilization and Coordination	$185,000
Mobilization, Site Preparation, and Site Controls	$388,100
Disconnect Generation and Feed Lines From Mercy Springs Substation (Disconnects only)	$38,100
Remove Universal Wastes and Drain Equipment	$125,500
Dismantling Solar Array System Equipment and Collector Lines	$1,598,600
Substation and Switchyard Removal (Remove and process for disposal/recycle, above and below ground conductors, equipment, supports, foundations, control enclosure)	$325,400
Generation Tie-In Line Removal (Conductors and Poles)	$135,100
Battery Energy Storage System Removal (disconnect and staging of battery modules, inverter, transformer, conductor, and foundation removal)	$250,800
Operations and Maintenance Building Removal (Buildings, foundation, water tanks, septic system removal, debris segregation and on-site management)	$370,400
Fencing and Drainage Structure Removal	$96,800
Backfill (trenches, footings, slabs)	$206,100
Restoration (Assumes roads to remain. Regrade laydown area gravels, grading to promote natural drainage patterns)	$412,200
Waste Disposal	$259,017
Estimated Decommissioning Costs	**$4,456,117**
Estimated Salvage and Recycling Value	**-$1,695,700**
Opinion of Probable Decommissioning and Reclamation Costs	
$2,150,000 to $3,850,000	

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

OPC Worksheets

Project Administration								**$ 65,000**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Total	
Project Administration and Permitting	1	lump sum	$ 65,000				$ 65,000	
Pre-Mobilization and Coordination								**$ 185,000**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Contractor Work Plans, Permits and Notifications	1	lump sum	$ 25,000					$ 25,000
Contractor Project Management	1	lump sum	$ 160,000					$ 160,000
Mobilization, Site Preparation, and Site Controls								**$ 388,100**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Mobilization / Demobilization								$ 108,840
Office (n/a, use O&M)	1	lump sum					$ -	
Portable Toilets	24	week				$ 85	$ 2,040	
Crane (mob/demob)	20	days				$ 750	$ 15,000	
Heavy Equipment (mob/demob)	1	lump sum				$ 50,000	$ 50,000	
Small Equipment/Tools	1	lump sum				$ 25,000	$ 25,000	
Conex Containers (mob/demob)	8	each				$ 250	$ 2,000	
Roll-off Containers (mob)	12	each				$ 400	$ 4,800	
Sign Package/Traffic Control	1	lump sum	$ 10,000				$ 10,000	
Stabilized Entrance, Temporary Access Road, Laydown Area Prep								$ 32,460
Filter Fabric	8	roll		$ 120			$ 960	
Crushed Stone	100	ton		$ 35			$ 3,500	
Front-End Loader	5	day				$ 1,200	$ 6,000	
Excavator	5	day				$ 2,000	$ 10,000	
Operator and Laborers(2)	5	day				$ 2,400	$ 12,000	
Traffic Control and Sign Package	9	month	$ 1,500				$ 13,500	$ 13,500
Temporary Facilities								$ 37,000
Temporary Power Connection	1	lump sum	$ 10,000				$ 10,000	
Generator and Fuel	9	month		$ 3,000			$ 27,000	
Erosion and Sediment Controls								$ 73,200
Filtrexx Soxx	11500	LF		$ 2	$ 3		$ 46,000	
Skid Steer	2	week				$ 1,600	$ 3,200	
Laborers (2)	3	week			$ 8,000		$ 24,000	
Dust Control (assumes application by task laborers)								$ 85,000
Site Water Truck	40	week				$ 1,500	$ 60,000	
Water Delivery	500000	gallons				$ 0.05	$ 25,000	

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

Disconnect Generation and Feed Lines From Mercy Springs Substation (Disconnects only)								**$ 38,100**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Total	
Bucket Lift	4	day				$ 1,500	$ 6,000	
Operator and Laborer	4	day			$ 2,400		$ 9,600	
Electrician Crew (3)	1	week			$ 22,500		$ 22,500	
Remove Universal Wastes and Drain Equipment								**$ 125,500**
Item Description	Qty	Unit	Lump Rum Rate	Material	Labor	Equipment	Total	
Supervisor and Laborers (5)	5	weeks			$ 15,800		$ 79,000	
Storage Container	2	months				$ 2,500	$ 5,000	
Skid Steer (2)	1	month				$ 10,000	$ 10,000	
Yard Truck with Tote	1	month				$ 2,500	$ 2,500	
Vacuum Truck and Operator	5	days				$ 1,800	$ 9,000	
Clean Vacuum Truck		event	$ 1,800				$ -	
Misc. Equipment (oil containments, hot washer, drums, poly, pads, PPE)	1	lump sum	$ 20,000				$ 20,000	
Dismantling Solar Array System Equipment and Collector Lines								**$ 1,598,600**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
PV Panel and Tracker Dismantling and Removal								$ 971,800
Electrician (2)	18	weeks			$ 7,600		$ 136,800	
Forklift/Lull (2)	18	weeks				$ 3,600	$ 64,800	
Front End Loader	18	weeks				$ 4,600	$ 82,800	
Yard Truck	18	weeks				$ 2,500	$ 45,000	
Crew: Operator (2) and laborers (8)	18	weeks			$ 26,800		$ 482,400	
Pallets, wrap, banding	1	lump sum	$ 160,000				$ 160,000	
PV Panel and Tracker Support Pile Removal								$ 261,000
Front End Loader	10	weeks				$ 4,600	$ 46,000	
Yard Truck	10	weeks				$ 2,500	$ 25,000	
Vibratory Pile Extractor	10	weeks				$ 8,000	$ 80,000	
Crew: Operator and laborers (3)	10	weeks			$ 11,000		$ 110,000	
Array Electrical Support Equipment and Conductors								$ 365,800
Electrician (2)	4	weeks			$ 7,600		$ 30,400	
Excavator (2)	6	weeks				$ 20,000	$ 120,000	
Forklift/Lull (2)	6	weeks				$ 3,600	$ 21,600	
Front End Loader	6	weeks				$ 6,600	$ 39,600	
Yard Truck	6	weeks				$ 2,500	$ 15,000	
Wire Pull	6	weeks				$ 1,200	$ 7,200	
Crew: Operator (2) and laborers (6)	6	weeks			$ 22,000		$ 132,000	

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

Substation and Switchyard Removal (Remove and process for disposal/recycle, above and below ground conductors, equipment, supports, foundations, control enclosure)								**$ 325,400**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
55 ton Crane with Operator	1	weeks				$ 28,000	$ 28,000	
Electrician	2	weeks			$ 3,800		$ 7,600	
Bucket Truck	3	weeks				$ 20,000		
Yard Truck	6	weeks				$ 2,500	$ 15,000	
Excavator (2) with hydraulic hammer	6	weeks				$ 22,000	$ 132,000	
Crew: Operator (2) and laborers (4)	6	weeks			$ 17,200		$ 103,200	
Front End Loader	6	weeks				$ 6,600	$ 39,600	
Generation Tie-In Line Removal (Conductors and Poles)								**$ 135,100**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Wire Pull	1	weeks				$ 1,000	$ 1,000	
Electrician	1	weeks			$ 3,800		$ 3,800	
Bucket Truck	2	weeks				$ 20,000	$ 40,000	
Yard Truck	3	weeks				$ 2,500	$ 7,500	
Excavator	3	weeks				$ 10,000	$ 30,000	
Crew: Operator and laborers (3)	3	weeks			$ 11,000		$ 33,000	
Front End Loader	3	weeks				$ 6,600	$ 19,800	
Battery Energy Storage System Removal (disconnect and staging of battery modules, inverter, transformer, conductor, and foundation removal)								**$ 250,800**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Electrician	3	weeks			$ 3,800		$ 11,400	
Forklift/Lull (2)	6	weeks				$ 3,600	$ 21,600	
Yard Truck	6	weeks				$ 2,500	$ 15,000	
Excavator	6	weeks				$ 10,000	$ 60,000	
Crew: Operator (2) and laborers (4)	6	weeks			$ 17,200		$ 103,200	
Front End Loader	6	weeks				$ 6,600	$ 39,600	
Operations and Maintenance Building Removal (Buildings, foundation, water tanks, septic system removal, debris segregation and on-site management)								**$ 370,400**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Crew: Operator (2) and laborers (4)	8	weeks			$ 17,200		$ 137,600	
Front End Loader	8	weeks				$ 6,600	$ 52,800	
Excavators (2)	8	weeks				$ 20,000	$ 160,000	
Yard Truck	8	weeks				$ 2,500	$ 20,000	

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

Fencing and Drainage Structure Removal								**$ 96,800**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Crew: Operator (2) and laborers (4)	4	weeks			$ 17,200		$ 68,800	
Backhoe (2)	4	weeks				$ 4,500	$ 18,000	
Yard Truck	4	weeks				$ 2,500	$ 10,000	
Backfill (trenches, footings, slabs)								**$ 206,100**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Crew: Operator (2) and laborer (2)	6	weeks			$ 12,400		$ 74,400	
Backfill Material (assume reuse of road and laydown gravels)	0	cubic yards						
Excavator	6	weeks				$ 12,000	$ 72,000	
Front End Loader	6	weeks				$ 6,600	$ 39,600	
Yard Truck	6	weeks				$ 2,500	$ 15,000	
Plate Compactor	6	weeks				850	$ 5,100	
Restoration (Assumes roads to remain. Regrade laydown area gravels, grading to promote natural drainage patterns)								**$ 412,200**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
Crew: Operator (1) and laborer (2)	4	weeks			$ 17,200		$ 68,800	
Bulldozer	4	weeks				$ 16,000	$ 64,000	
Front End Loader	3	weeks				$ 6,600	$ 19,800	
Loam Borrow	10000	cubic yard		$ 24			$ 240,000	
Hydroseed (applied)	12000	square yard		$ 0.80			$ 9,600	
Yard Truck	4	weeks				$ 2,500	$ 10,000	
Waste Disposal								**$ 259,017**
Item Description	Qty	Unit	Lump Sum Rate	Material	Labor	Equipment	Subtotal	Total
PV Modules	N/A assumes recycling at cost							
Battery Modules	N/A assumes recycling at cost							
Universal Wastes	1	lump sum			$ 17,200		$ 17,200	
Switch Gas	1	lump sum	$ 3,500				$ 3,500	
Petroleum and Dielectric Fluid	3500	gallons		$ 3			$ 10,500	
C&D	40	tons		$ 135			$ 5,400	
Concrete	2828	tons		$ 15			$ 42,417	
Gravel (transport only)	18000	tons		$ 10			$ 180,000	

ZETA SOLAR AND BATTERY ENERGY STORAGE SYSTEM PROJECT

DECOMMISSIONING OPINION OF PROBABLE COSTS

Longroad Energy, LLC

Merced County, California

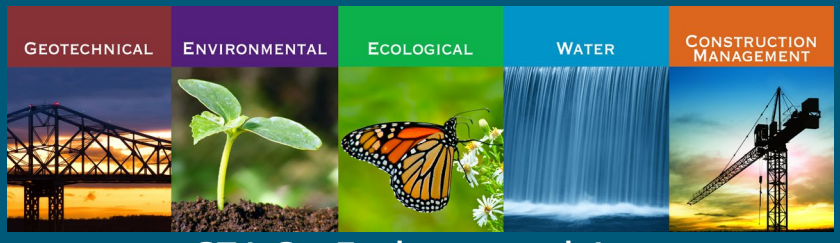
Salvage and Recycling Value Estimate				**$ 1,695,700**
Item Description	Qty	Unit	Salvage Estimate Rate	Subtotal
Battery Module Second-life Reuse	38	units	$ 30,000	$ 1,140,000
#1 HMS Steel	300	tons	$ 100	$ 30,000
#2 HMS Steel	5200	tons	$ 70	$ 364,000
Aluminim	75	tons	$ 600	$ 45,000
AC Wire	140	tons	$ 400	$ 56,000
DC Wire	36	tons	$ 1,200	$ 43,200
Uncoated Copper	3.5	tons	$ 5,000	$ 17,500

Notes:

1. Typical wire weights and estimated quantity based on available data and prorated from information available for similar facilities.

2. Salvage and commodity markets are variable and actual values will vary at the time of decommissioning.

3. Battery second-life reuse value is based on an assumed secondary use market at the time of decommissioning.



GZA GeoEnvironmental, Inc.