

REQUEST FOR PROPOSAL

FOR

**TEXAS DEDICATED SOLAR PLUS PROGRAM
PROJECT**

EL PASO ELECTRIC COMPANY

P.O. Box 982
El Paso, Texas 79960

ISSUE DATE: March 11, 2020



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1.0 INTRODUCTION

El Paso Electric Company (“EPE” or the “Company”) is soliciting a turnkey proposal for the engineering, procurement and construction (“EPC”) of three utility-scale solar generating facilities coupled with Battery Energy Storage System (“BESS”), collectively, the (“Project”). The Project is to be built on land provided by EPE between Fabens and Tornillo, TX, and northeast El Paso, TX; project locations are shown in Attachment 8.2.

The proposal from Bidders responding to this RFP is for EPE’s ownership of the Project identified in this document. Bidders shall submit a proposal for EPE’s purchase of the Project with the ratings below. Note that EPE is considering two options for Site 1.

- Site 1: 15 MW_{AC} Solar, 7.5 MW 4-hr BESS (option 1)
 20 MW_{AC} Solar, 10 MW 4-hr BESS (option 2)
- Site 2: 15 MW_{AC} Solar, 7.5 MW 4-hr BESS
- Site 3: 5 MW_{AC} Solar, 2.5 MW 4-hr BESS

The objective of the Project is to supply renewable energy and storage for EPE Texas customers participating in the Texas Dedicated Solar Plus Program.

EPE will evaluate proposals taking into consideration overall Project cost and Bidder experience. EPE also requires that the proposal utilize local distributors and contractors where possible and requires that the Bidder provide details on how it will accomplish this requirement.

1.1 Purpose

EPE seeks a proposal (“Proposal”) for the complete design, procurement of all material and equipment, construction and startup of the Project, which will be located in El Paso County, Texas. The Project should target maximum energy output and minimum levelized cost of energy. The Project will be owned by EPE and EPE intends to take advantage of the price benefit provided by any applicable tax credits effective at the end of 2021. The BESS must be charged by the solar photovoltaic (“PV”) facility 100% of the time on an annual basis to claim the full value of the Federal Investment Tax Credit. The Project must be on-line and generating electricity as stated in the RFP Schedule. EPE will take into consideration the overall cost of the Project, Bidder’s experience (including megawatts of financed projects), partnerships with financial entities and Bidder’s use of local distributors/manufacturers and contractors.

Eligibility of Sites

For the purpose of this solicitation, EPE will NOT consider any proposal for the Project to be developed on site(s) different than the sites provided by EPE.

1.2 Communications

All communications from Bidders to EPE, including questions regarding this RFP, must be submitted via email. Based upon the nature and frequency of the questions EPE receives, EPE will choose to respond to Bidders either directly or address the question through a conference call.

All submittals, inquiries, and communications related to this RFP should be directed solely to the following EPE point of contact:

Louie Gonzalez
Contract Negotiator
P.O. Box 982
El Paso, Texas 79960
Fax: (915) 543-2209
E-mail: louie.gonzalez@epelectric.com
And E-mail: bids@epelectric.com

All communications between Bidder and EPE shall be conducted via email. Oral communications are discouraged and shall not be binding upon EPE.

1.3 Confidentiality of Responses

EPE will consider proposals and associated information submitted by Bidders to be confidential. It is the Bidders' responsibility to clearly indicate in its proposal what information it deems to be confidential. Bidders may not mark an entire proposal as confidential, but instead must mark specific information on individual pages to be confidential in order to receive confidential treatment. Except as required by regulatory reviews, subpoena or court order, EPE will use reasonable efforts to avoid disclosure of information designated as confidential to persons other than those involved with the evaluation, selection and any subsequent negotiations. To the extent that Bidders receive information from EPE, Bidders shall maintain the confidentiality of such information and such information shall not be available to any entity before, during or after this RFP process unless required by law or regulatory order.

Bidders should be aware that information received in response to this RFP will be subject to the review of applicable local, state and/or federal regulatory agencies, specifically including, but not limited to, the New Mexico Public Regulation

Commission (“NMPRC”) and Public Utilities Commission of Texas (“PUCT”). All Bidders shall cooperate with EPE in making technological descriptions, pricing and other contract terms available for review as part of any regulatory approval process as EPE deems necessary or appropriate. EPE will follow applicable orders and rules of the NMPRC, PUCT and/or other applicable agency, including any protective orders issued, such as disclosure of price, terms or other information as required; therefore, EPE cannot promise that information marked as confidential will not be publicly disclosed, and, as such, EPE cannot be held liable for any information that is ordered to be released or that is inadvertently released. EPE will endeavor to provide reasonable notice to a Bidder if a Bidder’s confidential information is requested through a regulatory proceeding, subpoena, court order or other such legal proceeding in order to provide the Bidder an opportunity to prevent or limit the disclosure of the requested information.

Information submitted in response to this RFP may become subject to federal or state laws pertaining to public access to information as a result of any reviews conducted by the aforementioned agencies. EPE shall not be liable for the release of any information subject to disclosure under any laws pertaining to public access to information.

2.0 EL PASO ELECTRIC COMPANY SYSTEM DESCRIPTION

2.1 Company Overview

EPE is a public utility engaged in the generation, transmission and distribution of electricity in an area of approximately 10,000 square miles in the Rio Grande Valley in West Texas and south-central New Mexico as illustrated in Figure 1. As of December 2019, EPE serves approximately 432,800 residential, commercial, industrial and wholesale customers. EPE distributes electricity to retail customers, principally in El Paso, Texas and Las Cruces, New Mexico, utilizing remote and local generating stations.

2.2 Existing Generation Resources

As of 2020, EPE owns approximately 2,062 MW of net dependable capacity. EPE owns 633 MW of generating capacity at the Palo Verde Nuclear Generating Station. Of EPE’s net total installed capacity, EPE owns local natural gas fired generating resources which include 63 MW at its Copper Generating Station, 278 MW at its Rio Grande Generating Station, 736 MW at its Newman Generating Station and 352 MW at Montana Power Station. EPE also receives a total of approximately 115 MW of solar capacity from several solar projects located in its service territory of which 8 MW are EPE owned.

2.3 El Paso Electric Property

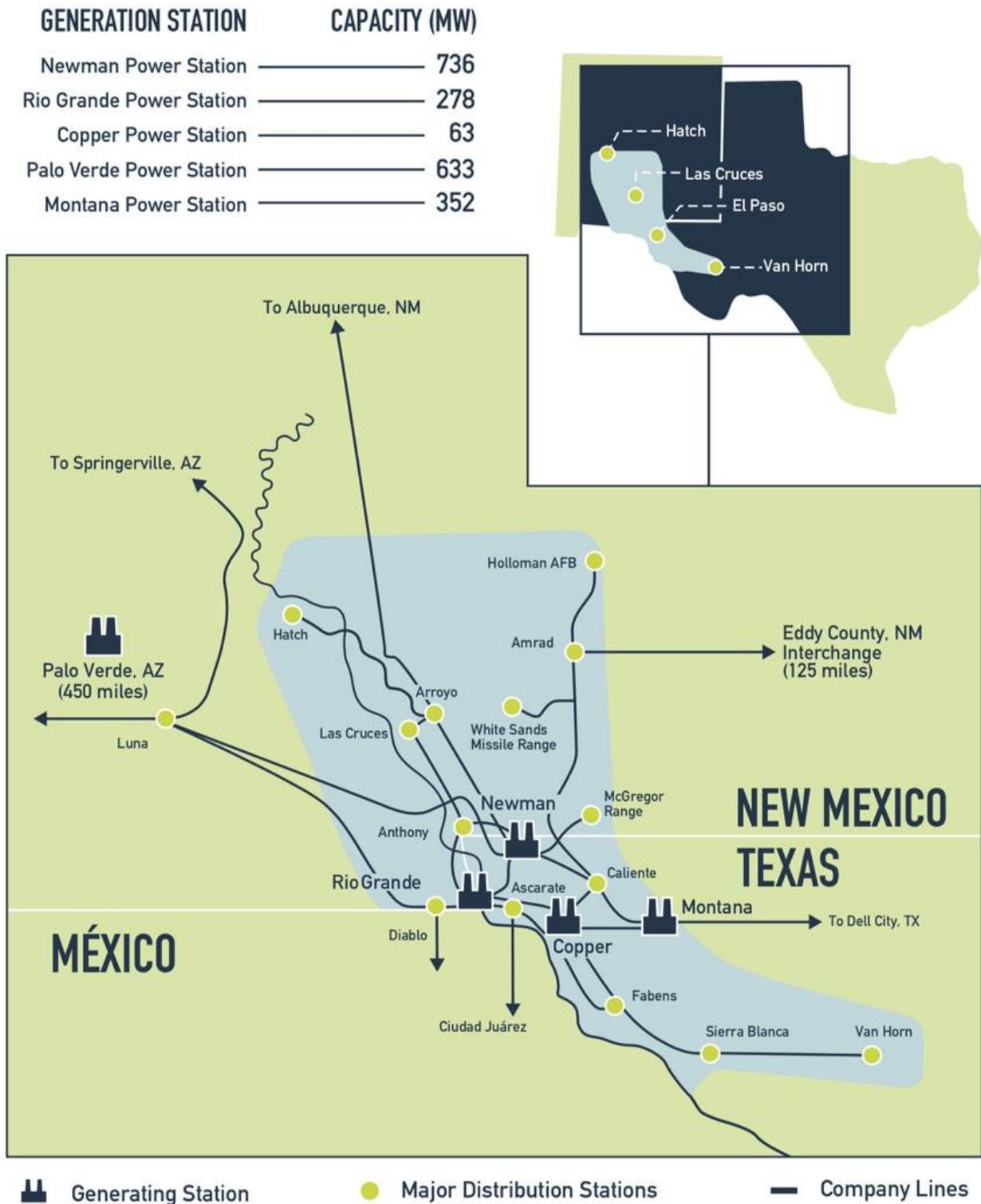


Figure 1 - EPE Service Territory and Electric System

3.0 ELIGIBLE PROJECT INFORMATION

3.1 Eligible Project Structures

EPE will own the Project contracted through this solicitation process. EPE is interested in selecting the project that meets all stated requirements and provides the best value for EPE including bidder experience in building similar types of utility-scale facilities, quality of major equipment and lowest total cost over the life of the Project for the expected energy output.

3.2 Eligible Generation Resources

Technology Requirements: The Project must utilize proven, reliable forms of solar photovoltaic ("PV") technologies and must utilize either crystalline or thin-film solar PV technology in a single axis tracking configuration. EPE is open to consider any proven reliable energy storage technology that meets the Project requirements. EPE is interested in peak shaving, solar shifting and curve smoothing. All major equipment and components must be tier-one rated. In order to be considered, the type of technology and key components proposed must have a minimum of twelve (12) months of established production and use at a single plant location at a scale greater than or equal to the capacity of the Project to be built.

EPE will consider Project proposals located at the Project site described in this RFP at Design Point Conditions (DPC). The solar net capacity must represent the expected capacity during the first year of operation, less any losses once the energy is delivered to the Project meter(s) on the project site. The DPC shall be 1000w/m² and 65° Celsius module cell temperature. The BESS shall be metered separately, coupled with the solar facility and demonstrate its intended use at the point of interconnection, e.g. peak shaving, solar shifting, curve shifting. Bidders should also identify the expected annual degradation factors.

3.3 Project Sites

The Project sites are described in Attachment 8.2. Any additional details will be provided by EPE, subject to any executed land easements and/or lease between EPE and the entity with site control, if applicable. The selected bidder will have access to applicable land agreement terms and will be expected to comply with the terms of such agreements as they become available. The proposal shall be predicated on the use of the specified project sites. The enclosed satellite images in Attachment 8.2 show the approximate acreage designated for the development of the Project. Bidder is responsible for complying with all the following items:

- Project Requirements and Technical Specifications (Attachment 8.3)
- Applicable zoning and code compliance requirements along with any required permitting at the local, state, or federal level for the construction and commissioning of the Project
- Lease and sublease agreements (to be provided to selected bidder)

The selected bidder will be responsible for producing and submitting the following documents to the Company and Authorities Having Jurisdiction (AHJ) as necessary:

- ALTA site survey
- Environmental Assessment
- Storm Water Pollution Prevention Plan (SWPPP)
- Geotechnical report
- Project drawings
- Final certificate of inspection from AHJ

4.0 BIDDER TERMS

4.1 Pricing

- a. Proposals shall include all costs necessary to deliver capacity and energy from the Project to the points of interconnection, but not limited to, construction of the Project in accordance with the negotiated EPC agreement. Pricing for solar and energy storage shall be kept separate. Bidders shall submit detailed price breakdown for each major component. All proposal terms, conditions and pricing are binding through the final selection notification and subsequent negotiations, as well as regulatory approvals.
- b. By submitting a proposal, Bidder agrees to make available to the Company at any point in the bid evaluation process any financial data associated with the Bidder and its proposed project so that the Company may independently verify the Bidder submitted information. Financial data may include, but shall not be limited to, data supporting the economic life of the Project, the fair market value of the Project, and any and all other costs (including debt specific to the asset being proposed) associated with the Bidder's proposal. The Company may also use financial data contained in the Bidder's financial statements (e.g. income statements, balance sheets, etc.) as necessary.

5.0 RFP SCHEDULE

The following schedule and deadlines apply to this solicitation:

RFP Issuance Date	March 11, 2020
Notice of Intent to Bid Due Date	March 19, 2020
Pre-Bid Meeting and Site Visit Date	April 3, 2020
Final Submission of Questions Date	April 10, 2020
Proposal Due Date	April 27, 2020
Selection of Project Tentative Date	May 8, 2020
Contract Negotiations and Execution of EPC Agreements Tentative Date	September 1, 2020
Target Commercial Operation Date	October 15, 2021

EPE reserves the right to modify, cancel or withdraw this RFP and to revise the schedule specified above if, at EPE's sole discretion, such changes are necessary. To the extent reasonably possible, EPE will inform Bidder of any schedule change.

5.1 RFP Issuance

EPE will post its Texas Dedicated Solar Plus Program RFP on EPE's website (<https://www.epelectric.com/company/request-for-proposals>) on the RFP issuance date.

Bidders who intend to bid must confirm receipt of the RFP invitation via e-mail to EPE's point of contact, Louie Gonzalez at the following email addresses:

louie.gonzalez@epelectric.com
bids@epelectric.com

5.2 Notice of Intent to Bid

Bidders must submit a Notice of Intent to Bid, included as Attachment 8.1, by 5:00 pm Mountain Time (MT) on March 19, 2020. The Notice of Intent to Bid may be submitted via email or facsimile to Louie Gonzalez at louie.gonzalez@epelectric.com and bids@epelectric.com or (915) 543-4073. Failure to submit a Notice of Intent to Bid will result in exclusion from participation in the bidding process.

It is the sole responsibility of the Bidder to ascertain that the Notice of Intent to Bid is received by EPE prior to the date and time specified.

Receipt of the Notice of Intent to Bid will be confirmed via e-mail response from EPE to the Bidder.

5.3 Final Submission of Bidder Questions

All questions related to the RFP must be submitted by April 10, 2020, via email to the following EPE representative to ensure a response prior to the proposal due date.

Louie Gonzalez
Contract Negotiator
100 North Stanton Street
El Paso, Texas 79901
Fax: (915) 543-4073
E-mail: louie.gonzalez@epelectric.com

EPE will prepare responses to questions received and distribute the questions and responses to Bidders that filed a timely Notice of Intent to Bid. Responses will be distributed to such Bidders with the question included but will not identify who originally submitted the question. Any questions related to the RFP must be submitted in writing via email.

5.4 Proposal Due Date

Proposal must be received at EPE's offices to the attention of Louie Gonzalez, Contract Negotiator, 100 North Stanton Street, Location #121, El Paso, Texas 79901 or by e-mail: louie.gonzalez@epelectric.com by 5:00 pm Mountain Time (MT) on **April 27, 2020**. Any proposal submitted after the due date will be excluded from consideration. The proposal should be as complete as possible.

Two hard copies of the proposal must be submitted. In addition, a soft copy of the proposal must be submitted on a USB. Facsimile submittals shall be excluded from consideration.

Bidder is solely responsible for ensuring the proposal is received by EPE in accordance with the RFP instructions prior to the date and time specified, and at the place specified. EPE shall not be responsible for any delays in mail, or by common carriers, by transmitting errors, delays or mislabeling.

5.5 Tentative Date for Selection of Project

Following a review of technical, economic and potential environmental factors, EPE will make a determination if the project best meets its objectives and may initiate negotiations with Bidder. EPE intends to select a project and notify selected bidder by **May 8, 2020**.

5.6 Tentative Date for Contract Discussions

Should EPE choose to initiate negotiations with Bidder, the tentative date for completion of contract negotiations with the Bidder is **September 1, 2020**. Any contract between EPE and Bidder will be conditioned upon approval by EPE's board of directors and prior regulatory approval by the PUCT. EPE, at its sole discretion, reserves the right to reject any proposed contract(s) that result from this RFP for any reason including if subsequently issued regulatory approvals or authorizations are subject to conditions, including ratemaking treatments, which are unacceptable to EPE.

5.7 Proposal Validity

Bidder must hold its proposal open and valid for a period of two hundred forty (240) days following the submittal and during the time necessary to complete state regulatory approvals.

5.8 Proposal Information Requirements

Flexibility is afforded to Bidder regarding the Project's characteristics, as may be necessary to meet the requirements of the RFP. The proposal for the Project whose production bid amounts would exceed EPE's required AC capacity will not be considered.

The proposal must also provide an available energy profile (MWh or kWh) on an hourly basis for an average day in each month using the template provided by

EPE as Attachment 8.4. EPE reserves the right to request additional information from the Bidder regarding limitations or any other details related to the proposal.

EPE is responsible for obtaining any required regulatory approvals, but Bidder agrees to provide necessary information and cooperation to facilitate such approval. Bidder is responsible for acquiring and maintaining all applicable present and future federal, state and local approvals, licenses, permits or variances, and meeting specific requirements to construct and/or operate any generation facility and any associated interconnection facilities.

5.9 Interconnection Requirements

A meeting will be scheduled with the selected Bidder to discuss the interconnection requirements and associated costs.

The Project must deliver capacity and energy by directly interconnecting to the specified location.

For interconnection inquiries relating to this RFP, Bidder must pose questions via email or facsimile to EPE's point of contact:

Louie Gonzalez
Contract Negotiator
Fax: (915) 543-4073
E-mail: louie.gonzalez@epelectric.com

6.0 SUBMITTAL PREPARATION INSTRUCTIONS

6.1 General Information

a. Currency

Prices and dollar figures must be clearly stated in nominal United States Dollars.

b. Schedule

Proposal shall be submitted in strict accordance with the RFP schedule.

c. Extensions

EPE will not grant any extensions to the RFP schedule and will not accept a late proposal. Any proposal received after the Proposal Due Date will not be considered and the Bidder will be notified of its elimination.

d. Reservation of Rights

EPE reserves the right to accept or reject, at its sole discretion, any proposal for any reason at any time after submittal. EPE also reserves the right to select an offer that is not the lowest price, if EPE determines that to do so would result in the best value to EPE’s customers.

e. Failure to Comply

Failure to comply with all requirements of this RFP may result in the rejection of the applicable proposal at EPE’s sole discretion.

f. No Liability

Bidders that submit a proposal do so without legal recourse against EPE or its directors, management, employees, agents, contractors or independent monitor based on EPE’s rejection of any proposal or for failure to execute any agreement. EPE shall not be liable to Bidder or to any other party in law or equity, for any reason whatsoever relating to EPE’s acts or omissions arising out of or in connection with this RFP. EPE further declares that it will incur no financial liability or obligation for Bidder’s costs in preparing proposals.

g. Return of Documents

None of the materials received by EPE from Bidder in response to this RFP will be returned. Proposal and exhibits will become the property of EPE, subject to the provisions for confidentiality described in this document.

6.2 Proposal Content

The proposal must be prepared in accordance with the guidelines set forth in this section. Failure to follow the preparation instructions may result in the exclusion of the proposal from consideration. EPE reserves the right to conduct any further due diligence it considers necessary to fully understand and evaluate the proposal.

The proposal should be organized by section as described below. Each page of the proposal shall have the following information in the top right-hand corner.

- 2020 Texas Dedicated Solar Plus Program Project RFP
- Bidder Name

All of the following sections shall be completed or identified as “Not Applicable”.

A complete proposal will include a thorough written discussion about the project, assembled in the following format:

Tab 1 - Executive Summary

- Tab 2 - Project Description and Technical Information
- Tab 3 - Project Costs
- Tab 4 - Experience and Qualifications
- Tab 5 - Distribution and Interconnection
- Tab 6 - Company Financial Information

Tab 1 - Executive Summary

The Executive Summary should provide an overall description of the proposal. The description should include details about the type of solar and BESS technologies proposed and key benefits to EPE. At a minimum, the summary should specify the technology, size of project, first year energy output, project costs and an explanation of how and to what extent the Bidder intends to use local distributors/manufacturers and contractors, where possible, to construct the Project.

Tab 2 - Project Description and Technical Information

The proposal must include a thorough description of the project including, but not limited to, the following:

Project Description

The proposal must provide a comprehensive description of the project, including project name, location, nameplate ratings, accredited capacity, in-service date, equipment and configuration, permitting, interconnection plan, milestones, meteorological studies/performance simulation data and any other pertinent information.

Project Team

The proposal must provide the project team information which includes an organizational structure describing members' titles and functions in the organization as well as their responsibilities in the project e.g. engineering, project management, construction management, commissioning, procurement. Provide copies of the project team resumes and list relevant licenses, industry certifications, and experience in projects completed.

Equipment Description

At a minimum, the proposal should indicate for all major equipment the: (1) manufacturer; (2) model name and number; (3) key metrics and characteristics of the equipment; (4) performance history of the equipment; (5) terms of product, workmanship, performance and any other warranties and/or guarantees; (6) contracting status; and, (7) availability of equipment and planned delivery dates. Bidder should highlight any smart inverter features that add operational and resilience value to the project.

The following technical information should be discussed in this section, as applicable for the project proposed:

- Equipment data sheets,
- Major equipment manufacturers' point of contact,
- Description of technology and configuration,
- Summary of the commercial operating experience of major equipment,
- Solar/BESS layout and characteristics,
- Levels of efficiency,
- Solar DC and AC ratings,
- BESS DC and AC ratings, charge/discharge ratings,
- Annual degradation rate, BESS life cycle,
- Performance guarantees and warranties,
- Communications, controls, instrumentation, and protection devices,
- Controls for dispatch and curtailment for load following, frequency response and voltage support
- Project limitations that may constrain operation,
- Hourly solar energy profile spreadsheet (Attachment 8.4),
- Installation period,
- Quality assurance plans,
- Start-up standard testing,
- Factory and performance tests, and
- Any other information that could impact the cost, construction schedule or output capability of the project.

Project Schedule

The proposal must provide a detailed schedule of project development activities and target completion dates for financing, engineering, permitting, equipment procurement, construction, startup and commissioning. Bidder should also describe the overall development strategy and work plan that will ensure that the project can be developed in time to meet the proposed commercial operation date.

Bidder must provide a high-level project development and completion schedule along with key milestone dates for the submitted proposal.

Risk Management and Insurance Program

Bidder shall provide a list of existing insurance contracts, listing policies by coverage, expiration date, insurer and limits per policy. Also, on a per coverage basis, provide current experience modifier and prior Loss History for the last three (3) years. Bidder shall also describe their Risk Management program if insurance coverage will derive from a parent company. Additional information may be requested based on information provided with the original proposal.

Permitting

The proposal must describe all federal, state and local permits that will be required for the project and state whether any permits have been secured, and if not, whether applications have been filed. The bidder is responsible for all permitting activities required to build and commission the Project within the project schedule.

Regulatory and Environmental Compliance

Bidder is exclusively responsible for meeting all required federal, state and local permits, licenses, approvals and/or variances, current or future. Bidder is required to demonstrate that all required permits have been attained or provide a specific timeline for future permit approval.

Provide information on the following as applicable:

- Regulatory permits,
- Environmental clearance for sensitive resources (such as cultural, protected species, etc.), and
- Other applicable permits.

Tab 3 –Project Cost

The proposal must clearly state the all-in turnkey installed project cost minus any interconnection costs. Bidder must provide a breakdown of the costs such as modules, inverters, tracking system, transformers, BESS, balance of plant, installation labor, engineering, credit support, etc. Bidder must offer project costs valid for at least two hundred forty (240) days following the proposal due date and during the time required for EPE to obtain regulatory approvals.

Tab 4 – Experience and Qualifications

The capability and experience of Bidder must be demonstrated to provide assurance that the Bidder, and any other party involved in the proposal, has adequate competence, resources and skill. Each proposal must include the following information as a minimum.

- Description of technical experience, specifically with respect to solar and energy storage facilities similar to those proposed and collaboration efforts with electric utilities, if any;
- Description of completed projects, total megawatts installed and customers with a specific identification of projects on which the Bidder has served as an EPC contractor or similar role;
- Years in business;
- Description of financial backing;

- Description of major components directly manufactured by bidder and those that will be procured from another company;
- Description of licenses applicable at project location; and
- References for similar projects.

Tab 5 – Transmission, Distribution and Interconnection

EPE will identify the interconnection points.

Tab 6 – Financial Information

The financial viability of any proposal must be demonstrated to provide assurance that the Bidder, and any other party involved in the proposal, has adequate financial capability. Each proposal must include the following information at a minimum:

- Most recent financial report for the Bidder and any other parties involved, or most recent copy of certified public accountant (“CPA”) audited (or Reviewed) income statement, balance sheet and cash flow statement;
- Provide Annual reports for the three most recent fiscal years that include CPA audited (or Reviewed) financial statements or CPA audited (or Reviewed) consolidated income statement and balance sheet for the three most recent fiscal years;
- Investment rating of Bidder or its parent company by Moody’s and/or Standard & Poor’s as applicable;
- Description of any current credit issues raised by rating agencies, banks, or accounting firms;
- Partnerships within the financial community;
- Description of construction financing for the project, include any financing commitments and available lines of credit;
- Megawatts of past financed projects; and
- Financial guarantees from affiliates or others, as appropriate.

EPE may request points of contact for financing partners/institutions and manufacturers providing lines of credit, a list of all lawsuits, regulatory proceedings or arbitration in which the Bidder or its affiliates or predecessors have been or are engaged in that could affect Bidder’s performance of its bid. Bidders should identify the parties involved in such lawsuits, proceedings or arbitration, and the final resolution or present status of such matters.

7.0 EVALUATION PROCESS

EPE will assess the proposal, pursuant to the requirements of the RFP and the evaluation criteria developed by EPE. EPE will evaluate the bid based on all-in turnkey installed cost, overall cost per MWh and life cycle cost on a net present

value basis, utilization of local inputs and other relevant factors. The assessment will consider economic and technical factors.

Proposal Review

EPE will use both quantitative and qualitative criteria to evaluate the proposal. EPE will first determine if the proposal satisfies the threshold requirements summarized below. If at any time during the evaluation process, EPE determines that the proposal does not meet its requirements, including timely submission of all documents pursuant to this RFP, such proposal will no longer be considered for this RFP and EPE will notify the Bidder accordingly during its notification process.

Favorable proposal characteristics include:

- Project – EPE seeks a project utilizing established solar and energy storage technologies;
- Low Cost – EPE seeks a proposal that will provide low-cost energy;
- High Efficiency and Performance – the proposal should provide high efficiency and performance and will provide additional value to EPE;
- Completeness and Responsiveness – The proposal must meet all criteria set forth in the RFP and include a thorough explanation of all aspects of the proposal should be included and provide Detailed Project Engineering should be provided;
- Financial Viability and Creditworthiness – Success of the project relies on the financial capabilities of all parties involved; Bidder should have a proven financial track record and be able to provide documentation that demonstrates access to financial resources required to complete the project;
- Experience – EPE seeks a proposal from Bidder that possess extensive engineering, construction, technical, operating and maintenance experience, and a history of successful projects of a similar nature; and
- Compliance with Texas and federal regulations.

Threshold Evaluation

Step 1 – Bid Eligibility Determination

The proposal will be reviewed to determine if it meets the requirements outlined in this RFP.

The Company reserves the right to reject any proposal received for failure to meet any criteria set forth in this RFP. The proposal must be submitted on time and comply with the submission instructions. The corresponding application fee must be submitted as instructed.

Step 2 – Initial Bid Screening Process

The Company will calculate the levelized cost in U.S. Dollars per megawatt hour (“\$/MWh”) for each bid based on information provided in the proposal. Bidder is advised that total life cycle cost will be a major factor in EPE’s evaluation, but EPE may consider other qualitative and quantitative factors.

Step 3 – Due Diligence

The Company will conduct due diligence as part of the overall bid evaluation process, including, but not limited to, consideration of the following proposal characteristics:

- Bidder or developer experience;
- Financial strength/credit worthiness of the bidder;
- Reasonableness of the solar generation profile proposed;
- Reasonableness of the energy storage output proposed;
- Financing plan;
- Development, construction and operation experience;
- Solar technology, availability, and warranties;
- Energy storage technology, availability, and warranties;
- Risk Management, coverages, loss histories, description of program;
- Environmental permitting and compliance;
- Safety record;
- QA/QC experience;
- Project operational characteristics;
- Supply-Chain risk;
- Counterparty viability;
- Construction and equipment supply plans and arrangements;
- Project execution planning;
- Bidders ability to complete multiple projects within the proposed schedule;
- Environmental impact and profile;
- Contract risk related to the development of the project;
- Bidder’s performance on previous projects with the Company.

7.1 EPE’s Selection of Bid and Discussions with Bidder

a. Meetings

EPE may conduct meetings to gain a greater understanding of the structure and components of each proposal. EPE may also require Bidder to submit project and/or Bidder-specific pro forma financial statements by year for the applicable facility development and construction period, including income statements, balance sheets and statements of cash flows. EPE will reevaluate any significant changes to the proposal based on new understanding of Bidder’s proposal resulting from the meetings.

b. Right to Terminate Negotiations

If EPE cannot reach acceptable EPC agreement terms with Bidder, EPE reserves the right to terminate negotiations with Bidder and begin a new solicitation or cancel this RFP. Furthermore, EPE at its sole discretion, reserves the right to not select any proposal for negotiation of an EPC agreement.

Notice of Disclaimer

EPE has prepared the information provided in this RFP to assist interested persons and entities in deciding whether to respond with a proposal. EPE reserves the right to modify, change, supplement or withdraw the RFP at its sole discretion. No part of this document or any other correspondence from EPE, its employees, officers or consultants shall be taken as legal, financial or other advice, nor as establishing a contract or any contractual obligations. All communication between Bidder and EPE shall be conducted in writing.

EPE makes no representations or warranties regarding the completeness of the information contained within the RFP and does not purport that this RFP contains all the information needed for Bidder to determine whether to submit a proposal. Neither EPE nor its employees, officers or consultants will make, or will be deemed to have made, any current or future representation, promise or warranty, expressed or implied, as to the accuracy, reliability or completeness of the information contained within the RFP or any other information provided to Bidder.

Bidders who submit a proposal do so without legal recourse against EPE, or EPE's directors, management, employees, agents or contractors, due to EPE's rejection, in whole or in part, of their proposal or for failure to execute any agreement with EPE. EPE shall not be liable to any Bidder or to any other party, in law or equity, for any reason whatsoever related to EPE's acts or omissions arising out of, or in connection with, the RFP process.

EPE reserves the right to reject, for any reason, any and/or all proposals. EPE further reserves the right to waive any irregularity or technicality in proposals received, or to consider alternatives outside of this solicitation, at its sole discretion, to satisfy the needs of the Project. In addition, EPE reserves the right, at its sole discretion, to modify or waive any of the criteria contained herein and/or the process described herein.

No Bidder will have any claim whatsoever against EPE, its employees, officers, or consultants arising from, in connection with, or in any way relating to this RFP. Without limiting the generality of the foregoing, each Bidder agrees, by and through its submission of a proposal, that rejection of a proposal will be without liability on the part of EPE, its employees, officers or consultants, nor shall a Bidder seek recourse of any kind against any of the foregoing on account of such rejection. The filing of a proposal shall constitute an agreement of the Bidder to each and all of these conditions. Each Bidder and recipient of this RFP is responsible for all costs incurred in evaluating, preparing and responding to this RFP. Any other costs incurred by any Bidder during negotiations are also the responsibility of the Bidder.

8.0 ATTACHMENTS

8.1 Notice of Intent to Bid

1. Company Name: _____

2. Company Address: _____

3. Contact Person Information:

Name	
Title/Position	
Mail Address	
Courier Address (if different)	
Telephone Number	
Fax Number	
E-mail Address	

4. Project Ratings:

a. Site 1 (option 1)

i. Solar: Technology _____ MW _____

ii. BESS: Technology _____ MW _____ MWh _____

b. Site 1 (option 2)

i. Solar: Technology _____ MW _____

ii. BESS: Technology _____ MW _____ MWh _____

c. Site 2

i. Solar: Technology _____ MW _____

ii. BESS: Technology _____ MW _____ MWh _____

d. Site 3

i. Solar: Technology _____ MW _____

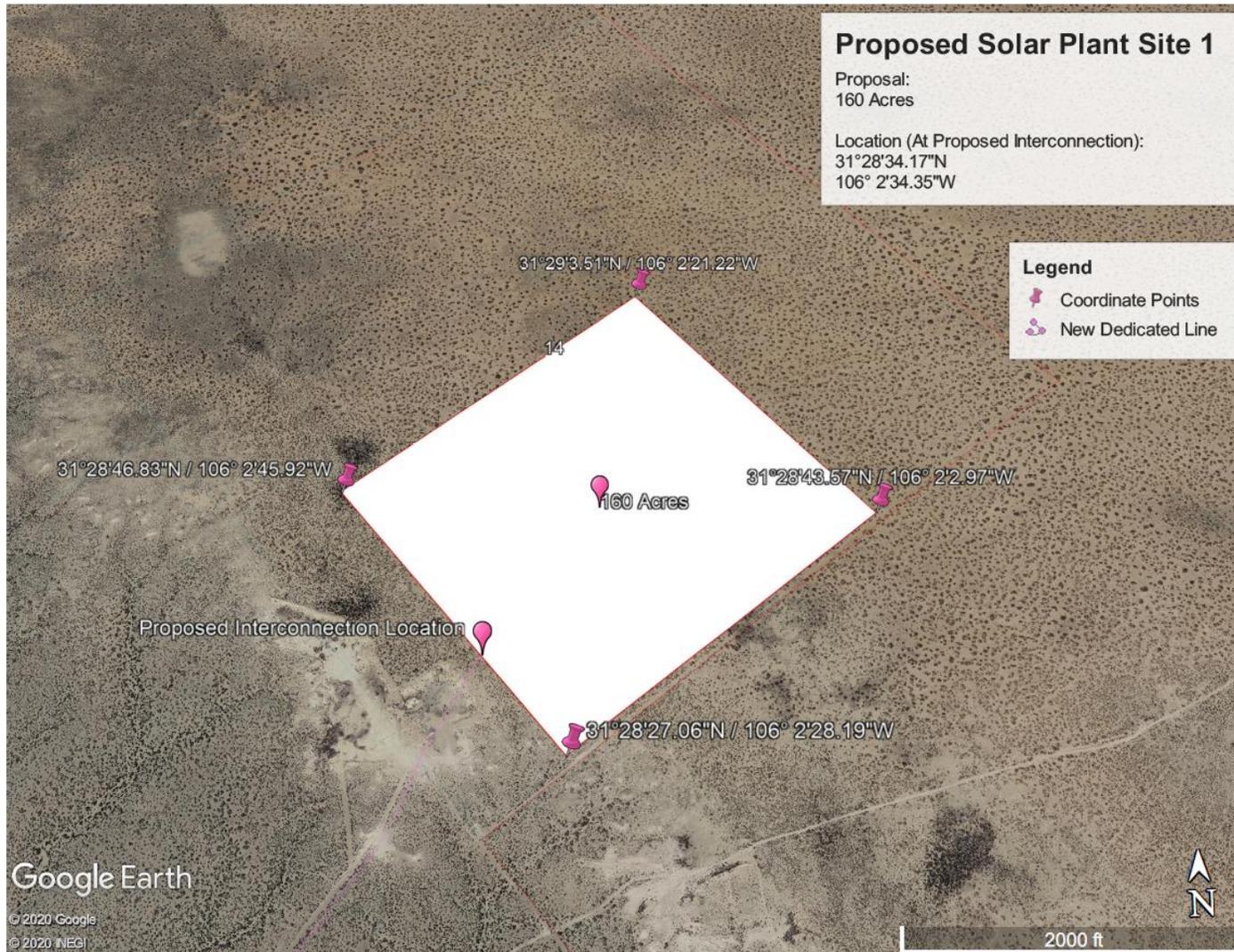
ii. BESS: Technology _____ MW _____ MWh _____

5. Authorized Signature: _____
Name: _____
Title: _____
Date: _____

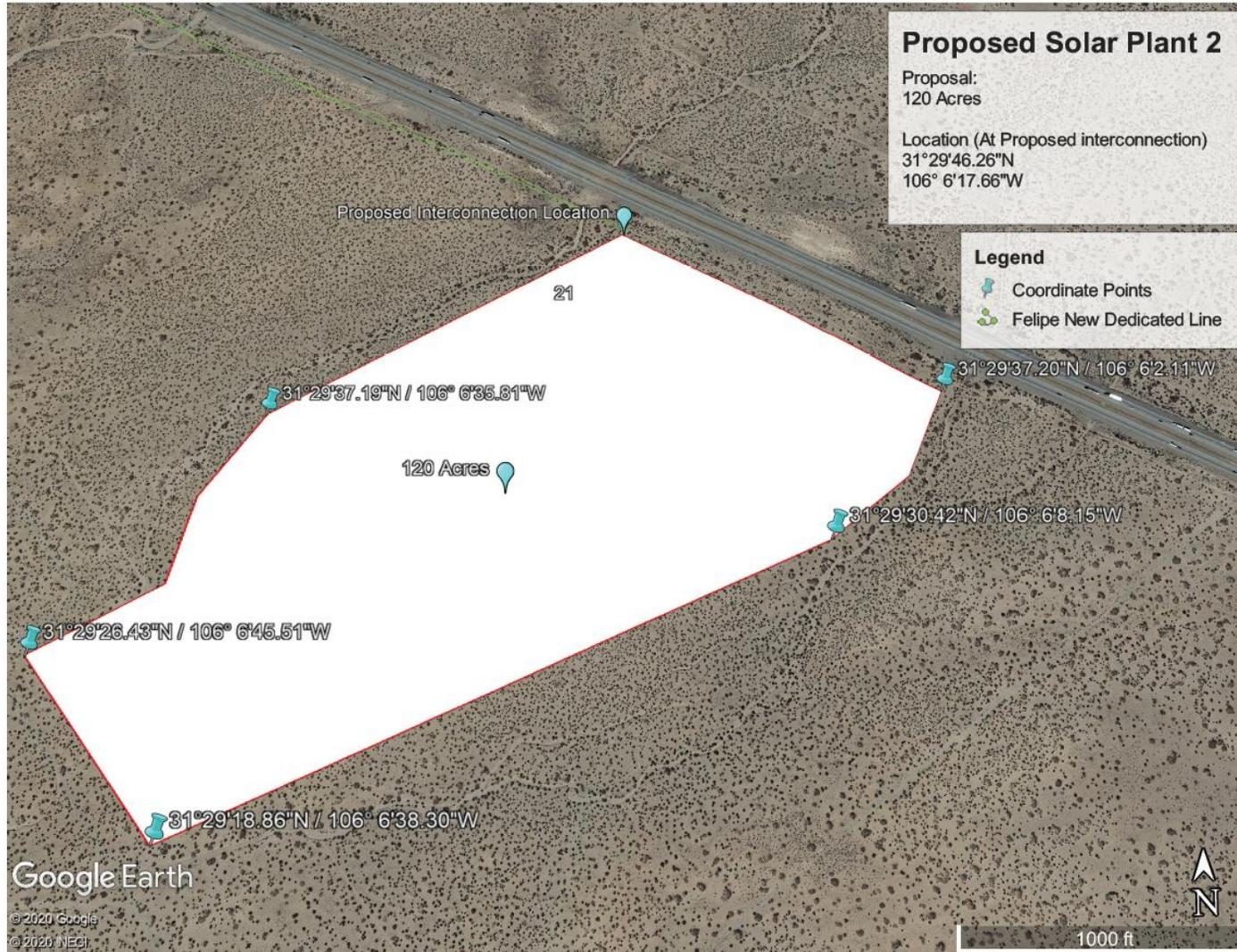
The Notice of Intent to Bid may be submitted via e-mail or facsimile to Louie Gonzalez at louie.gonzalez@epelectric.com or (915) 543-4073, or mailed to Louie Gonzalez, Contract Negotiator, at P.O. Box 982, Location 121, El Paso, Texas 79960. Receipt of the Notice of Intent to Bid will be confirmed in an e-mail from EPE to the Bidder. **This form should be delivered to the above address no later than 5pm Mountain Time (MT) on March 19, 2020.**

8.2 Project Locations

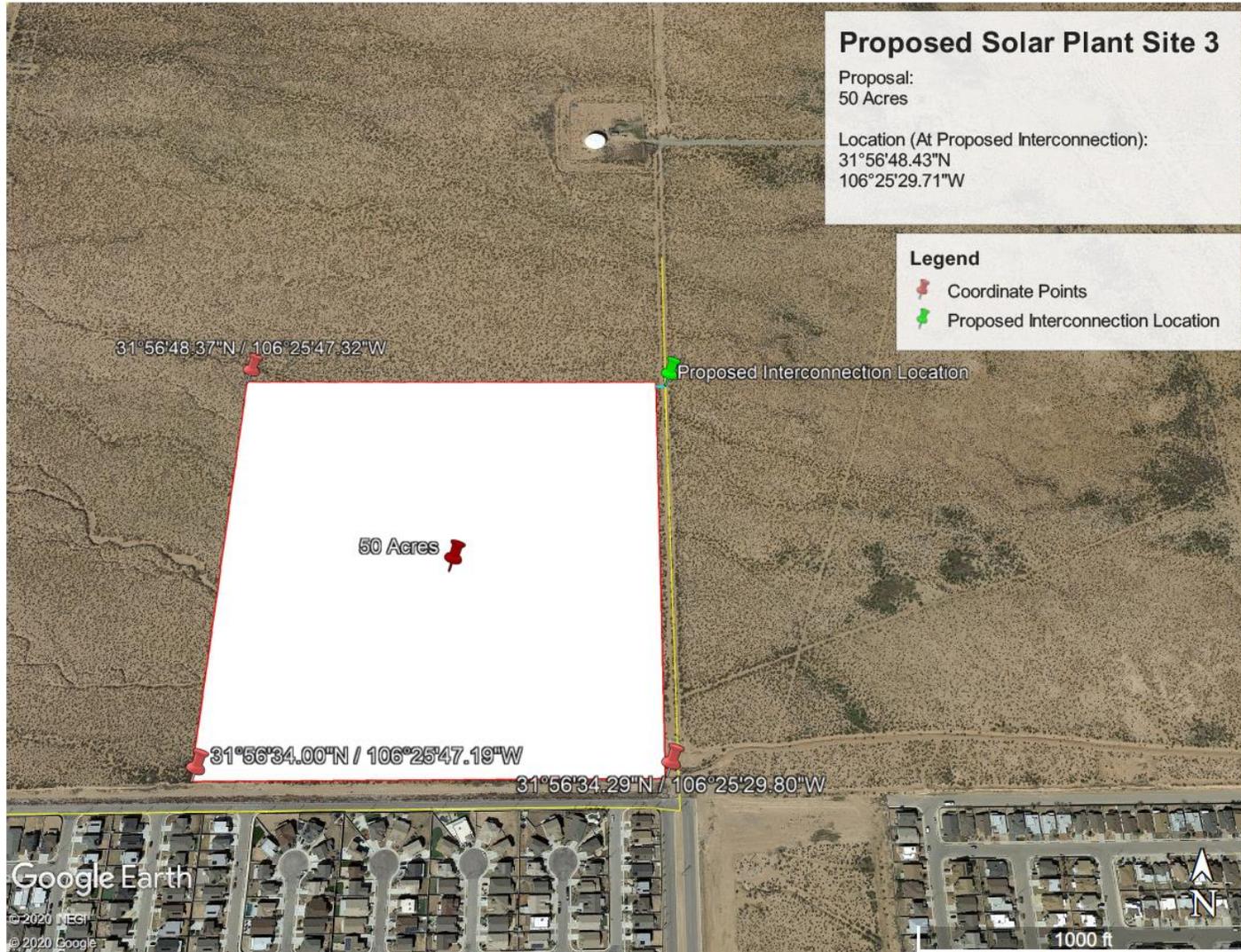
PROJECT SITE 1



PROJECT SITE 2



PROJECT SITE 3



8.3 Project Requirements and Technical Specifications

8.3.1 General:

- 8.3.1.1 System designed per latest NEC and referenced sections adopted in the state where the site is located.
- 8.3.1.2 Prior to equipment procurement and construction activities, Contractor shall submit to Owner the project drawings and design documents for approval. The design shall comply with state and local codes and have a 30-year system design life.
- 8.3.1.3 System must be ground mounted.
- 8.3.1.4 Facility DC capacity is defined as the sum of the DC nameplate capacities of the solar modules under Standard Test Conditions.
- 8.3.1.5 Facility AC capacity is defined as the sum of the nameplate AC capacities of the inverters.
- 8.3.1.6 Installation of all system components will be carried out in accordance with manufacturer warranty and recommendations as well as to the requirements listed in this document. All systems and components installed must be compatible.
- 8.3.1.7 Certified stamped electrical, mechanical, and civil drawings must be provided by professional engineer(s) who are licensed in the state where the site is located.
- 8.3.1.8 All referenced sections of EPE's specifications can be found in EPE's Blue Book with the link below.

<https://www.epelectric.com/business/customer-service/new-construction/electric-service-requirement-book>

8.3.2 Equipment:

- 8.3.2.1 Contractor shall provide all required equipment, materials, and services for the successful completion of the project.

8.3.3 Solar PV Modules:

- 8.3.3.1 PV modules compliant with UL1703.
- 8.3.3.2 Crystalline modules IEC 61215 certified.
- 8.3.3.3 Thin film modules IEC 61646 certified.

8.3.3.4 Latching or locking type connectors compliant with UL8703.

8.3.3.5 Manufacturer ISO9001 and ISO14001 certified.

8.3.3.6 Front glass shall include anti-reflective coating.

8.3.3.7 Acceptable vendors are the following:

8.3.3.7.1 Canadian Solar

8.3.3.7.2 First Solar

8.3.3.7.3 Hanwha

8.3.3.7.4 JA Solar

8.3.3.7.5 Jinko Solar

8.3.3.7.6 Kyocera

8.3.3.7.7 LG

8.3.3.7.8 Panasonic

8.3.3.7.9 REC Solar

8.3.3.7.10 Renesota

8.3.3.7.11 SolarWorld

8.3.3.7.12 SunPower

8.3.3.7.13 Trina

8.3.3.7.14 Yingli

8.3.3.7.15 Other equivalent

8.3.4 Tracking Systems:

8.3.4.1 The tracking system shall include the racking structure, mounting hardware, drive motors, controller system, and weather stations equipped with wind speed and irradiance sensors at minimum.

8.3.4.2 Tracking systems must be compliant with UL3703.

8.3.4.3 Racking structure, mounting hardware, grounding/bonding components and clamping and retention must be compliant with UL2703. EPC Contractor shall supply and manage the installation

of the mounting system for the solar modules sufficient to support all solar modules and meet all applicable licensing and Permit requirements. The system shall be composed of galvanized steel or aluminum. The racking manufacturer will supply a minimal 10 year warranty for the installed structure and the racking design will be certified by the racking manufacturer. The tracking system should have a 30-year design lifetime.

8.3.4.4 The tracking system must have the “stow” feature to meet wind loads design requirements. A backup energy source shall be installed for the trackers to stow during excess winds and grid power outage.

8.3.4.5 Tracking system vendor shall have installed a minimum of 50 MW of capacity in utility-scale projects. Acceptable tracking system vendors are the following:

8.3.4.5.1 Arctech Solar

8.3.4.5.2 Array Technologies

8.3.4.5.3 NexTracker

8.3.4.5.4 Soltec

8.3.4.5.5 SunPower

8.3.5 Combiner Boxes:

8.3.5.1 Combiner boxes shall be rated for maximum system voltage and maximum system continuous and short-circuit currents.

8.3.5.2 Combiner boxes must comply with the latest NEC adopted in the state the site is located.

8.3.5.3 Enclosures shall be NEMA 4 rated and have integral key lock or provisions for padlocking.

8.3.5.4 DC inputs shall be fused and fuses shall have a blown fuse indication.

8.3.5.5 Combiner box output shall have a means to be externally disconnected.

8.3.5.6 If the combiner box has a lightning protection device, the device should include a visual trip indicator.

8.3.6 Inverters:

- 8.3.6.1 Inverters shall be central inverters, utility grade, be specifically designed for PV installations, and meet the following minimum standards.
- 8.3.6.2 UL1741 - Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.
- 8.3.6.3 IEEE 929-2000 Recommended Practice for Utility Interface of Photovoltaic Systems.
- 8.3.6.4 Inverters and their functionality as distributed resources in planned electrical islands shall comply with applicable provisions described in IEEE 1547-2003 - IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems.
- 8.3.6.5 Inverters shall be multi-mode DC to AC capable of switching between grid-interactive mode and microgrid mode. Inverters shall have voltage and frequency ride-through functionalities, as well as be capable of actively regulating voltage levels by adjusting active and reactive power.
- 8.3.6.6 Have a maximum harmonic distortion of less than 3% of the total harmonic distortion at rated power output.
- 8.3.6.7 Have an efficiency greater than 97.5% without MV step-up transformer.
- 8.3.6.8 Be capable of reaching rated output at 50 degrees Celsius or higher.
- 8.3.6.9 Have a 30-year design life and carry a minimum 5-year standard warranty with options of at least 20-year extended warranty.
- 8.3.6.10 Inverters shall be equipped with data collection and communications to EPE's SCADA.
- 8.3.6.11 Inverter blocks shall be configured in identical MW increments, when applicable.
- 8.3.6.12 Skid mounted solutions containing inverters, step-up transformers, and other power conditioning equipment and systems are preferred.

8.3.6.13 Inverter vendor shall be certified to ISO 9001 and ISO 14001 standards and have supplied a minimum of 50 MW capacity in utility-scale projects.

8.3.6.14 Acceptable inverter vendors are the following:

8.3.6.14.1 ABB

8.3.6.14.2 Eaton

8.3.6.14.3 General Electric

8.3.6.14.4 Schneider Electric

8.3.6.14.5 SMA

8.3.7 Transformers:

8.3.7.1 Step-up transformers must comply with **EPE specification G&I 088-010 to 088-400** except for any variances noted in this section.

8.3.7.2 Interconnecting transformers shall step-up inverter output voltage to the Site nominal voltage.

8.3.7.3 The end of the transformer(s) series connection shall have surge arrestors on the high voltage side with a voltage rating suitable for the application.

8.3.7.4 Transformers shall meet C57.12.34 – IEEE Standard Requirements for Pad-Mounted, Compartmental-Type, Self-Cooled, Three-Phase Distribution Transformers.

8.3.7.5 Transformer warranty to be provided by Contractor once the transformer is selected, which shall be from El Paso Electric Co.'s list of approved transformers:

8.3.7.5.1.1 ABB

8.3.7.5.1.2 EATON – Cooper

8.3.7.5.1.3 ERMCO

8.3.7.5.1.4 Howard

8.3.7.6 Step-up transformer(s) configuration shall be: Primary wye-grounded, secondary delta.

- 8.3.7.7 Transformer(s) shall comply with the 2016 DOE standard efficiency or latest.
- 8.3.7.8 Transformer(s) color shall be Munsell 7GY3.29/1.5 pad-mount green.
- 8.3.7.9 Transformer(s) shall accommodate a padlock on top of the required pentahead security bolts.
- 8.3.7.10 Transformer(s) shall be compatible with EPE transformer pad (Pad B).
- 8.3.7.11 The high side bushings shall comply with IEEE C57.1234 Figure 16 (loop configuration).
- 8.3.7.12 The low-voltage terminal location and arrangement shall conform to Figure 8(a) of IEEE C57.12.34.
- 8.3.7.13 The transformer shall be supplied with a sticker stating the nature of the coolant.
- 8.3.7.14 Required warning stickers are shown in Figure 2 on page 14 of **EPE Specification G&I 088-010 to 088-400**.
- 8.3.7.15 The primary voltage, secondary voltage, and kVA rating shall be located on the outside of the transformer. These stenciled numbers shall be 1 ¾" in height. See page 14 of **EPE Specification G&I 088-010 to 088-400**.
- 8.3.7.16 The transformer shall include two nameplates (one inside, and one outside) with the following information: KVA, primary voltage, secondary voltage, serial number, date of manufacture, Impedance, X/R ratio, gallons of oil, weight, and shall state that the transformer oil contains less than 1 ppm PCB.
- 8.3.7.17 The transformer shall include the approved Non-PCB sticker. See section 7.8 on page 5 and figure 1A on page 14 of **EPE Specification G&I 088-010 to 088-400**.
- 8.3.7.18 A ground lug should be included in the ground provision on the high-voltage side of the tank.
- 8.3.7.19 The low voltage terminals shall be suitable for the application of bushing mounted current transformers. The transformer secondary compartment shall contain studs, to be used for mounting current transformers.

8.3.7.20 EPE minimum clearances shall be met regarding the LV and HV bushing distance with respect to the HV-LV barrier and the cabinet wall. Refer to Figure 3 in **EPE Specification G&I 088-010 to 088-400**.

8.3.7.21 EPE has a preference for non-load break 200 A bushings.

8.3.7.22 Tap changer shall be rated for operation under load.

8.3.7.23 Secondary terminations: 12-hole spades.

8.3.7.24 Only the last step-up (MV) transformer (going downstream) will be equipped with surge arrestors.

8.3.7.25 Envirotemp FR3 and Mineral Oil are both accepted.

8.3.7.26 S Taps - two 2.5% taps below nominal and two above nominal.

8.3.8 Metering:

8.3.8.1 EPE is responsible for providing metering equipment. The metering equipment is to be contained in a separate enclosure upstream of the switchgear enclosure. Metering equipment includes CTs, PTs, PQ and revenue meter.

8.3.9 Communications and Data Acquisition System:

8.3.9.1 Contractor shall design and specify all communications hardware and software required for system protection and remote monitoring and control.

8.3.9.1.1 Control signals include but are not limited to dispatch and curtailment capabilities.

8.3.9.1.2 Controls must be capable of output regulation/curtailment for load following, frequency response and voltage support in one-hour increments via EPE's SCADA controls.

8.3.9.2 The design shall include utility grade metering and monitoring provisions equipped with weather station(s) including remote "real time" monitoring of system performance and data collection over the internet via the Data Acquisition System ("DAS").

8.3.9.3 The monitoring system shall provide real time energy generation data, historical data and meteorological data. The contractor shall

provide meteorological station(s) that will provide real time weather data.

- 8.3.9.4 The data shall be collected at hardwired locations and transmitted wirelessly via a cellular modem to be provided and installed by the Contractor.
- 8.3.9.5 The monitoring system(s) shall include a web-based interface available for Owner to access remotely. The interface shall display site status and equipment status e.g. inverters, trackers. It shall also display alarms and send automatic e-mail notifications in cases of emergency i.e. system outages.
- 8.3.9.6 The Contractor shall test the installed communications systems to demonstrate its ability to meet the requirements. Testing shall be conducted when the final system connections have been made.
- 8.3.9.7 Communications must be NERC Critical Infrastructure Protection ("CIP") compliant as applicable.

8.3.10 Switchgear:

- 8.3.10.1 600-amp continuous and loadbreak.
- 8.3.10.2 12.5kA sym. maximum interrupting rating.
- 8.3.10.3 1000:1 internally mounted current transformers used for over current protection.
- 8.3.10.4 600-amp Deadbreak Apparatus Bushings per IEEE 386 figure 11.
- 8.3.10.5 600-amp Deadbreak interface to IEEE 386 200-amp (bushing extender combo).
- 8.3.10.6 Front Access to switch operators and bushings on front and back
- 8.3.10.7 Welded stainless steel mechanism cover painted light gray (ANSI 70).
- 8.3.10.8 Galvanized steel frame.
- 8.3.10.9 Parking stands for all bushings.
- 8.3.10.10 12-gauge galvanized steel padmount enclosure with 24" cable compartment. Meets ANSI C37.72 & C57.12.28 standards.
- 8.3.10.11 Enclosure painted Padmount Guardian Green, Munsell #7.0GY3.29/1.5.

- 8.3.10.12 36" minimum bushing height.
- 8.3.10.13 ½"-13 NC grounding provisions.
- 8.3.10.14 Padlockable operating mechanism.
- 8.3.10.15 Green/ OPEN - Red/ CLOSED labeling.
- 8.3.10.16 12-gauge galvanized steel low voltage enclosure.
- 8.3.10.17 The switch must fit EPE approved concrete pad.
- 8.3.10.18 Switch equipped with quantity one auxiliary Form C contacts wired to the control cabinet for use by the control.
- 8.3.10.19 NEMA 4X control cabinet, including: SEL751 feeder protection relay (751402BCBCBOX810621) to provide three phase overcurrent protection(50/51), under voltage protection(27), over voltage protection (59), frequency protection (81U, 81O), directional power, IEC cable/line thermal, vector shift, sensitive earth fault (SEF), and load encroachment elements; Provisions for mounting CISCO 2520 connected grid switch of dimensions 1.75 "H X 17.50 "W X 14.00 "D; 24 V DC Provisions for powering the CISCO 2520 connected grid switch; (2), Two-strain reliefs and necessary accessories for installing fiber based on diameter of fiber to be used.
- 8.3.10.20 Stationary motor control using SEL751 relay, the control shall be equipped with 120 VAC Power supply, PWR-IE170W-PC-AC and 55 AH batteries used for battery backup; the motor control shall have remote operation capability.
- 8.3.10.21 Applicable Industry Standards: Load Break Switch Ratings, IEEE C37.74; Fault Interrupter Ratings, IEEE C37.60; Bushings: IEEE 386; Padmount Enclosure: IEEE C57.12.28.
- 8.3.10.22 Solar Switch Termination must conform with **EPE Distribution Standard DSU-554.**
- 8.3.10.23 Switchgear Vault to be constructed in conformance with **EPE Distribution Standards UD300 and DSU 1235.**
- 8.3.10.24 Approved switchgear vendors:
 - 8.3.10.24.1 G&W Electric
 - 8.3.10.24.2 S&C Electric

8.3.10.24.3 Elastimold

8.3.11 Communication Field Switches:

- 8.3.11.1 Switch: CISCO IE-2000-16PTC-G-E
- 8.3.11.2 Software: (Lan Base License)
- 8.3.11.3 Power Supplies: 2 x PWR-IE170W-PC-DC=
- 8.3.11.4 Optics: SFP-GE-L=1000BASE-LX/LH

8.3.12 SCADA Points:

- 8.3.12.1 Switchgear status (Open/Closed) and local/remote control
- 8.3.12.2 Any MOD Status that would be used for isolation (Open/Closed)
- 8.3.12.3 Analogs – Revenue and PQ meter, Power Stations meters, and Energy Storage meter
 - 8.3.12.3.1 MW
 - 8.3.12.3.2 MVA
 - 8.3.12.3.3 MVAR
 - 8.3.12.3.4 Phase Currents
 - 8.3.12.3.5 Phase Voltages
- 8.3.12.4 Accumulators – Revenue and PQ meter, Power Stations meters, and Energy Storage meter
 - 8.3.12.4.1 MWh-In
 - 8.3.12.4.2 MWh-Out
 - 8.3.12.4.3 MVARh-In
 - 8.3.12.4.4 MVARh-Out
- 8.3.12.5 Weather Station Signals
 - 8.3.12.5.1 Ambient Temp
 - 8.3.12.5.2 Solar Irradiance

- 8.3.12.5.3 Back Panel Temp
- 8.3.12.5.4 Wind Speed
- 8.3.12.5.5 Wind Direction
- 8.3.12.6 Tracker Data Points
 - 8.3.12.6.1 Tilt Angle
 - 8.3.12.6.2 Tracker Status
- 8.3.12.7 Transformer
 - 8.3.12.7.1 Alarms/Status Indicators
 - 8.3.12.7.2 Oil temperature
- 8.3.12.8 Energy Storage
 - 8.3.12.8.1 Local/Remote control
 - 8.3.12.8.2 Mode of Operation
 - 8.3.12.8.3 Charge/Discharge and State of Charge
 - 8.3.12.8.4 kW/kVAR setpoints
 - 8.3.12.8.5 Alarms/Status
- 8.3.12.9 Two isolated networks will provide site data access
 - 8.3.12.9.1 Monitoring entity to have direct access to field data; transferred to EPE via DNP3
 - 8.3.12.9.2 Field data to be provided to monitoring entity via Modbus after being collected through an EPE secure data connection to site
- 8.3.12.10 UPS powering SCADA server and weather station(s) required
- 8.3.13 Battery Energy Storage System (BESS):
 - 8.3.13.1 The design and installation of the ESS shall be in accordance to UL 9540 Standard for Energy Storage Systems and Equipment.
 - 8.3.13.2 Shall be rated at one MW of power and either two or four MWh of energy, AC-coupled to a three MW solar generating facility.

- 8.3.13.3 Maximum 100 millisecond response time from 100% charge to 100% discharge output and vice versa.
- 8.3.13.4 Total Harmonic Distortion (THD) shall be less than three percent at rated output. Recommended practices and requirements as per IEEE 519 shall be followed.
- 8.3.13.5 Shall be able to retain at least 80% of Beginning of Life (BOL) capacity rating at 10 years.
- 8.3.13.6 Noise emissions shall be less than 60 decibels (dB) measured at the fence line of the project site.
- 8.3.13.7 Shall be capable of providing services including but not limited to peak shaving, solar shifting, and curve smoothing and expected to fully cycle once a day.
- 8.3.13.8 Shall be compatible with EPE's SCADA system for real time monitoring and system control. Communications shall be Modbus RTU, Modbus TCP, or DNP3.
- 8.3.13.9 The Energy Management System (EMS) shall be designed to provide automatic, unattended operation but also local manual operation, remote operation, and dispatch of the ESS from SCADA system.
- 8.3.13.10 The EMS shall provide the ability to manage system operation to include but not limited to:
 - 8.3.13.10.1 Interface with inverter controller
 - 8.3.13.10.2 Controls for charging, discharging, and state of charge
 - 8.3.13.10.3 Trigger alarms for conditions and malfunctions out of the specifications
 - 8.3.13.10.4 Data logging

8.3.14 Conduit:

- 8.3.14.1 Above ground conduit, in places where conduit could be subject to physical damage, the conduit shall be PVC schedule 80. Underground conduits are to be schedule 40 PVC with PVC sweeps direct buried rated or concrete encased rated. Underground conduits may be direct buried in areas that do not

require concrete encased duct banks for structural considerations.

- 8.3.14.2 All metal conduit must be hot dipped galvanized.
- 8.3.14.3 In no case shall conduit design be less than that called for by NEC 2014 or latest adopted in the state where the site is located.
- 8.3.14.4 EMT shall be manufactured to UL797 and ANSI C80.3.
- 8.3.14.5 Module-to-module interconnection wiring within a string and string home-run wiring to combiner boxes shall be neatly bundled and routed below modules such that it is protected from damage and decay. Exposed DC wire shall be compliant with UL4703.
- 8.3.14.6 For Power Cable Conduit up to 25kV refer to **EPE Distribution Standard DSU 1645 Duct Sizes For Use On Underground Cable Runs.**

8.3.15 Wire & Conductors:

- 8.3.15.1 Underground Power Cable for operation at 60Hz three phase in solidly grounded wye systems rated up to 25kV phase to phase must conform with EPE specification **GI013-306 to 013-313.**
- 8.3.15.2 Both DC Side and AC side underground conductors must be in conduit.
- 8.3.15.3 All conductors must be aluminum or copper rated XHHW-2 or greater as required.
- 8.3.15.4 Single conductor wire and cable shall be rated 600 V or 1000 V, 90°C for XLP and 90°C or 105°C for EPR insulation. Single conductor 600 V or 1000 V tray cable greater than #1/0 AWG shall have EPR insulation with a PVC, CPE or CSPE cable jacket. Non-jacketed FREP insulation with appropriate UL flame test may also be used for large single conductor cables.
- 8.3.15.5 Single pair instrument cable shall be rated 600 V or 1000 V, XLP or PVC insulation, twisted shielded pairs with drain wires and a PVC, CPE or CSPE cable jacket.
- 8.3.15.6 Multi-pair instrument cable shall be rated 600 V or 1000V, XLP or PVC insulation, twisted shielded pairs with drain wires, overall shield, and a PVC, CPE or CSPE cable jacket.

- 8.3.15.7 Wiring runs between major items of equipment and system modes (i.e., a string, combiner boxes, disconnects, inverters, utility interconnection, and energy monitoring system (EMS) devices shall be continuous, unless unavoidable. Pull boxes shall be used for long runs as per conductor technical specification.
 - 8.3.15.8 When in conduit, conductors shall be USE-2 or THWN-2 (Thermoplastic Heat and Water Resistant Nylon Coated wire is permitted) or of a higher standard.
 - 8.3.15.9 All conductors shall be sized per the most current NEC code.
 - 8.3.15.10 Conductors used for data communication will be a stranded copper #18-22 twisted pair shielded wire (Belden 1120A or approved equivalent).
 - 8.3.15.11 Plastic zip ties used for exposed wire management must be UV stabilized.
- 8.3.16 Fuses:
- 8.3.16.1 Fuses for disconnects to be current limiting UL class J, RK1 or RK5 and of the appropriate voltage, delay or non-delay characteristic, and current rating to provide complete short circuit and overload protection per NEC sections regarding component selection.
 - 8.3.16.2 Fuses located in the combiner boxes protecting PV string branch circuits shall be UL listed, DC voltage rated based on branch circuit voltage, be in “finger-safe” type fuse holders providing load break disconnect capabilities when changing fuses. Midget fuses and fuse holders used in these circuits must be fully DC rated and adequate DC short circuit withstands and let-through capability must be provided for all power situations including “back-fed” conditions.
- 8.3.17 Enclosures:
- 8.3.17.1 Indoor enclosures shall be NEMA 3R or better.
 - 8.3.17.2 Outdoor enclosures shall be rated NEMA 3R or better. A NEMA 4 rating is required for enclosures housing control equipment, fused DC combiners, data acquisition components, monitoring equipment, switchgear, and any sensitive equipment associated with the inverters.

8.3.17.3 Enclosures containing monitoring equipment such as dataloggers, meters, and network communications shall be located indoors if at all possible.

8.3.17.4 Switchgear, motor controls, inverters, battery and charger systems, DC and AC distribution panels shall be pad mounted and fenced.

8.3.18 Nameplates:

8.3.18.1 Engraved phenolic nameplates are required for all equipment, panels and enclosures. Proposed nameplates must be submitted for approval prior to installation and shall match drawing naming convention.

8.3.18.2 Signs shall be weather-proof, corrosion-proof, UV-stabilized and fade-resistant. Signs shall be attached using non-corrosive materials throughout. Any degrading signage, or failing attachment mechanisms, will be subject to warranty replacement.

8.3.18.3 Signs must be installed at appropriate locations warning that the Project is operational and that there are potentially multiple onsite power sources.

8.3.18.4 DC power circuits shall be identified on switches and individual module strings shall be identified in DC combiner boxes. Positive DC circuit wire should be color coded red and negative DC circuit wire should be color coded black.

8.3.18.5 Signage shall include that called out in NEC 2014 article 690 unless overridden by applicable local law or authorities having jurisdiction.

8.3.18.6 EPC Contractors or Subcontractor's brand or contact information is allowed only on temporary construction signage, or on equipment or components of the Project manufactured by Contractor, Subcontractor or its affiliates.

8.3.19 Site Access:

8.3.19.1 The site shall have access roads through the arrays to facilitate construction activities and accommodate emergency vehicles such as fire trucks. The roads shall be built to accommodate crane access and no equipment shall be installed along the roads' surface causing obstruction of vehicular access. Roads shall remain clear of any temporary or permanent obstruction

during construction activities and after commissioning to facilitate O&M services.

8.3.20 Fencing:

- 8.3.20.1 Contractor shall provide a permanent fencing structure around the perimeter of the project. The fencing shall include a 7-foot high chain link fence with a 1-foot top guard of three strands of nine-gage barbed wire.
- 8.3.20.2 The perimeter fence shall include two locked gates: one with a width of 24 feet for vehicles and one pedestrian entrance with a width of 4 feet. Fencing shall meet state and local codes.
- 8.3.20.3 Signage shall be installed along the fence every 65 feet and on all gates. Signage shall be installed five feet above ground level.

8.3.21 System Commissioning:

- 8.3.21.1 Commissioning tests, documentation, and inspection should comply with IEC 62446 at a minimum.
- 8.3.21.2 The solar system performance report shall include a PVSyst report, an 8760 output in Excel format, and a capacity test model based on ASTM E2848-13 (or later) Standard Test Method for Reporting Photovoltaic Non-Concentrator System Performance.
- 8.3.21.3 Once mechanical and electrical completion is achieved, and the system is energized and interconnected to Owner's grid, Contractor may start with test energy production (with Owner's consent). Once the system achieves rated capacity and all communications systems are complete, the 5-day capacity test may begin. The system must pass the capacity test to be commissioned and begin commercial operation.
- 8.3.21.4 The BESS performance report shall include testing data for 100% of the production cells to ensure compliance with design requirements. At a minimum, the following capacity tests shall be performed.
 - 8.3.21.4.1 Amp-hour
 - 8.3.21.4.2 Watt-hour

8.4 Energy Profile Spreadsheet (Editable Electronic Excel File to be provided to Bidders)