Infinigen Oriana Solar Park

Environmental Assessment and Finding of No Significant Impact – YFN Yabucoa Solar, LLC

Department of Energy Loan Programs Office – Title XVII Program

EA-2262

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Acronyms and Abbreviations

ABFE Maps	Puerto Rico Advisory Base Flood Elevations Maps
AC	alternating current
Act 17	Puerto Rico Energy Public Policy Act of 2019
Applicant	YFN Yabucoa Solar LLC
AVE	Area of Visual Effect
BESS	Battery Energy Storage System
BMP	best management practice
CEQ	Council on Environmental Quality
CES Plan	Erosion and Sediment Control Plan (*Spanish acronym*)
CFR	Code of Federal Regulations
CO_2	carbon dioxide
CUB	Land Use Consultation (*Spanish acronym*)
CZIB	Coastal Zone Inland Boundary
dBA	A-weighted sound pressure level
DC	direct current
DEA	Determination of Environmental Compliance (*Spanish acronym*)
Diatom	Diatom Environmental Services
DOE	U.S. Department of Energy
DRNA	Puerto Rico Department of Natural and Environmental Resources (*Spanish acronym*)
EA	Environmental Assessment
EIR Program	Energy Infrastructure Reinvestment Program
EJ	Environmental Justice
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
GHG	greenhouse gas
ICP	Institute of Puerto Rican Culture (*Spanish acronym*)
Infinigen	Infinigen Renewables LLC
IPaC	Information for Planning and Consultation
ISU	Inverter Step-up Transformer
kV	kilovolt
Lord RES	Lord Renewable Energy Systems
LPO	Loan Programs Office
MLAA	May Affect, Likely to Adversely Affect
MTR	Minimum Technical Requirement
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hours
NATA	National-Scale Air Toxics Assessment
NEPA	National Environmental Policy Act
NOAA	National Oceanic Atmospheric Administration
NRCS	Natural Resource Conservation Service
O&M	operations and maintenance
OGPe	Puerto Rico Office of Permit Management (*Spanish acronym*)
OSHA	U.S. Occupational Safety and Health Administration
P3	Puerto Rico Office of Public and Private Partnerships
PBO	Programmatic Biological Assessment
PCS	power conversion system
PCU	Development Permit (*Spanish acronym*)
POI	Point of Interconnection
PPOA	power purchase and operating agreement
PR	Puerto Rico
PR100	Puerto Rico Grid Resilience and Transition to 100% Renewable Energy Study

PRAD	Puerto Rico Department of Agriculture
PRASA	Puerto Rico Aqueduct and Sewer Authority
PRCZMP	Puerto Rico Coastal Zone Management Program
PRDTOP	Puerto Rico Department of Transportation and Public Works
PREPA	Puerto Rico Electric Power Authority
PREQB	Puerto Rico Environmental Quality Board
Project	32.1 MW photovoltaic energy and up to 75 MW BESS facility in Yabucoa, Puerto Rico
PRPB	Puerto Rico Planning Board
PUI	Single Incidental Permit (*Spanish acronym*)
PV	photovoltaic
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1. PURPOSE AND NEED

1.1 Introduction

YFN Yabucoa Solar, LLC (Applicant), an indirect wholly owned subsidiary of Infinigen Renewables LLC (Infinigen), is proposing to construct a 32.1-megawatt (MW) solar photovoltaic (PV) energy facility and an up to 75 MW Battery Energy Storage System (BESS) in the Municipality of Yabucoa, Puerto Rico (Project**)**. The Project site is owned by the Puerto Rico Land Administration and is located at the intersection of state highways PR-53, PR-901, and PR-9914 in the Juan Martín neighborhood in Yabucoa (Project site; see Figure 1). The Project will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martín 115-kilovolt (kV) substation located 147 feet west of the Project site across PR-901.

The Applicant has applied for a loan guarantee pursuant to the U.S. Department of Energy (DOE) Title XVII Clean Energy Financing Program, authorized by the Energy Policy Act of 2005 (EPAct), as amended. Under Title XVII, the Secretary of Energy is authorized to provide loan guarantees for projects that support clean energy deployment and energy infrastructure reinvestment in the United States, to include the Commonwealth of Puerto Rico.

The Title XVII program is administered by DOE's Loan Programs Office (LPO). LPO originates, underwrites, and services loans and loan guarantees to eligible applicants for projects that accelerate commercial deployment of innovative energy technology. LPO has reviewed and determined that the Applicant's application is eligible for a potential loan guarantee (10 Code of Federal Regulations [CFR] Parts 609.3 and 609.5).

The decision whether to provide a loan guarantee (federal financial assistance) constitutes a major federal action, which requires DOE to conduct an environmental review under the National Environmental Policy Act of 1969 (NEPA). LPO has prepared this Environmental Assessment (EA) in accordance with NEPA (42 United States Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA implementing regulations (40 CFR Parts 1500–1508), and the DOE NEPA implementing regulations (10 CFR Part 1021). LPO is using the NEPA process to inform its decision whether to issue a loan guarantee to the Applicant to support the Project.

1.2 Purpose and Need for Agency Action

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment Program (EIR Program). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs)(42 U.S.C. 16517(a)(2)).

1.3 Background

The Applicant is an indirect wholly owned subsidiary of Infinigen, a renewable energy operator based in Puerto Rico (PR) that owns and has operated Horizon Solar Park in Salinas, PR and Oriana Solar Park in Isabela, PR since 2015 and 2016, respectively. The Applicant has a 25-year power purchase and operating agreement (PPOA) with PREPA to develop, construct, and own the Project, which will contribute to the goal of the Puerto Rico Energy Public Policy Act of 2019 (Act 17).

Act 17 calls for meeting 100 percent of Puerto Rico's electricity needs with renewable energy by 2050. On Monday April 1, 2024, DOE and the Federal Emergency Management Agency (FEMA) released the Puerto Rico Grid Resilience and Transition to 100% Renewable Energy Study (PR100), which concluded that the Act 17 goal can be achieved through utility-scale renewable power generation, distributed energy sources, and grid stabilization measures (DOE and FEMA 2024).

The Title XVII Clean Energy Financing Program is central to LPO's mission to serve as a "Bridge to Bankability" for clean energy projects that are critical to achieving the decarbonization of the energy sector. With the EIR Program, LPO can support projects that reinvest in energy infrastructure throughout the United States to include upgrading energy infrastructure so it can restart or operate more efficiently, at higher output, or with lower emissions; replacing retired energy infrastructure with clean energy infrastructure; and building new facilities for clean energy purposes that utilize legacy energy infrastructure.

1.4 Scope of Environmental Assessment

LPO is preparing this EA to address the construction and operation of the Project—a PV solar energy generation and BESS facility in Yabucoa, Puerto Rico. DOE is preparing this EA to comply with NEPA, Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500−1508), and DOE NEPA Implementing Procedures (10 CFR Part 1021). If no significant impacts are identified during preparation of this EA, DOE will issue a Finding of No Significant Impact. If potentially significant impacts are identified, DOE will prepare an environmental impact statement. As presented below, natural, physical, and socioeconomic resources that may be subject to potentially significant environmental issues are identified, as well as such resources that would not be subject to potentially significant environmental issues; thereby, narrowing the scope of the environmental review to those environmental issues deserving of study.

The Applicant proposes to construct the Project in the Juan Martín neighborhood of Yabucoa, Puerto Rico, at the intersection of state highways PR-53, PR-901, and PR-9914 (see Figure 1). Construction phases include the demarcation of wetlands and a creek; site clearing; the installation of perimeter fencing and preparation of a temporary laydown area; site grading, excavation, and filling; construction of entrances and internal access roads; racking and PV module installation; construction of the Operation and Maintenance (O&M) building, substation, and BESS; installation of the necessary electrical distribution system; and the construction of the transmission line and any necessary upgrades to the Point of Interconnection (POI), the existing PREPA Juan Martín substation. The final phase of Project construction would include equipment testing and site stabilization before demobilizing and restoring the temporary laydown area upon construction completion. Facilities relating to energy generation, storage and transmission necessary to complete the Project would be new and within the scope of the DOE LPO loan.

Documentation of DOE's interagency coordination undertaken for the Project is provided in Appendix A. At the state level, the Project has completed the environmental process, obtaining a Determination of Environmental Compliance (DEA, according to its Spanish acronym) from the Puerto Rico Office of Permit Management (OGPe, according to its Spanish acronym). The DEA calls for the Applicant to adhere to regulatory guidelines that protect the environment, such as obtaining the necessary construction permits, preventing runoff contamination, and complying with noise control and solid waste regulations. In addition, it requires compliance with the recommendations made by the Puerto Rico Department of Natural and Environmental Resources (DRNA, according to its Spanish acronym), which have been included in the Project design. The Project also completed its land use consultation process and has approval from the Puerto Rico Planning Board (PRPB). It has received a Certification of Consistency with the Puerto Rico Coastal Management Program from PRPB. At the federal level, the

Project has obtained concurrence the U.S. Fish and Wildlife Service (USFWS), the State Historic Preservation Office (SHPO) and the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). For a more detailed overview of the issued permits and authorizations for the Projects see Appendix B.

This EA describes the Project and its potential impacts on multiple resource areas due to the construction and operation of a PV solar facility. The resource areas assessed in this EA include:

- Cultural Resources
- Water Resources, including wetlands, surface water, and floodplains
- Noise
- Transportation
- Aesthetic and Visual Resources
- Biological Resources
- Socioeconomics and Environmental Justice
- Soils and Prime Farmlands
- Land Use

These resource areas were identified as potentially being impacted by the Project, and each was assessed to determine the nature, extent, and significance of those impacts (see Section 3). The assessment combined desktop research and analysis of available information with select field studies, including site assessments related to the presence of wetlands, water bodies, floodplains, cultural resources, threatened or endangered species, wildlife, and vegetation.

Resources not included in this EA pertain to geology, groundwater, air quality, health and safety, recreation, and Native American interests. Geology is not included in this EA because grading the land and installing the solar panels and other Project elements would primarily impact the surface and would not have a significant impact on the underlying geology. Groundwater would not be affected by installation and operation of the solar PV facilities and energy storage systems, and the Applicant's contractor would follow best management practices (BMPs) for spill prevention and control. The emissions associated with the construction of the Project and lack of emissions during operation would not result in a significant impact on air quality. In addition, construction and operation of the projects would not result in any significant health and safety or waste management concerns, as the construction and operation of the Project would be in accordance with applicable health and safety and waste management standards and practices. Recreation is also not included in this EA because no reasonably foreseeable impacts on known recreational resources would occur, given the past and current industrial and agricultural land uses associated with the Project site, and the fact that the Project would not affect usage or access to the Hacienda Lucía area. Lastly, because of the absence of federally recognized Native American tribes in Puerto Rico, DOE has not assessed impacts on Native American interests nor conducted tribal communications for the Project.

2. DESCRIPTION OF THE PROPOSED ACTION

The Project will consist of a 32.1 MW PV facility, an up to 75 MW BESS, a substation, an O&M building with a small parking area, a 285-foot 115kV transmission line to PREPA's existing Juan Martín substation, graveled access roads, a tree mitigation area, and floodplain mitigation ponds. During construction, the Project will have a temporary laydown area.

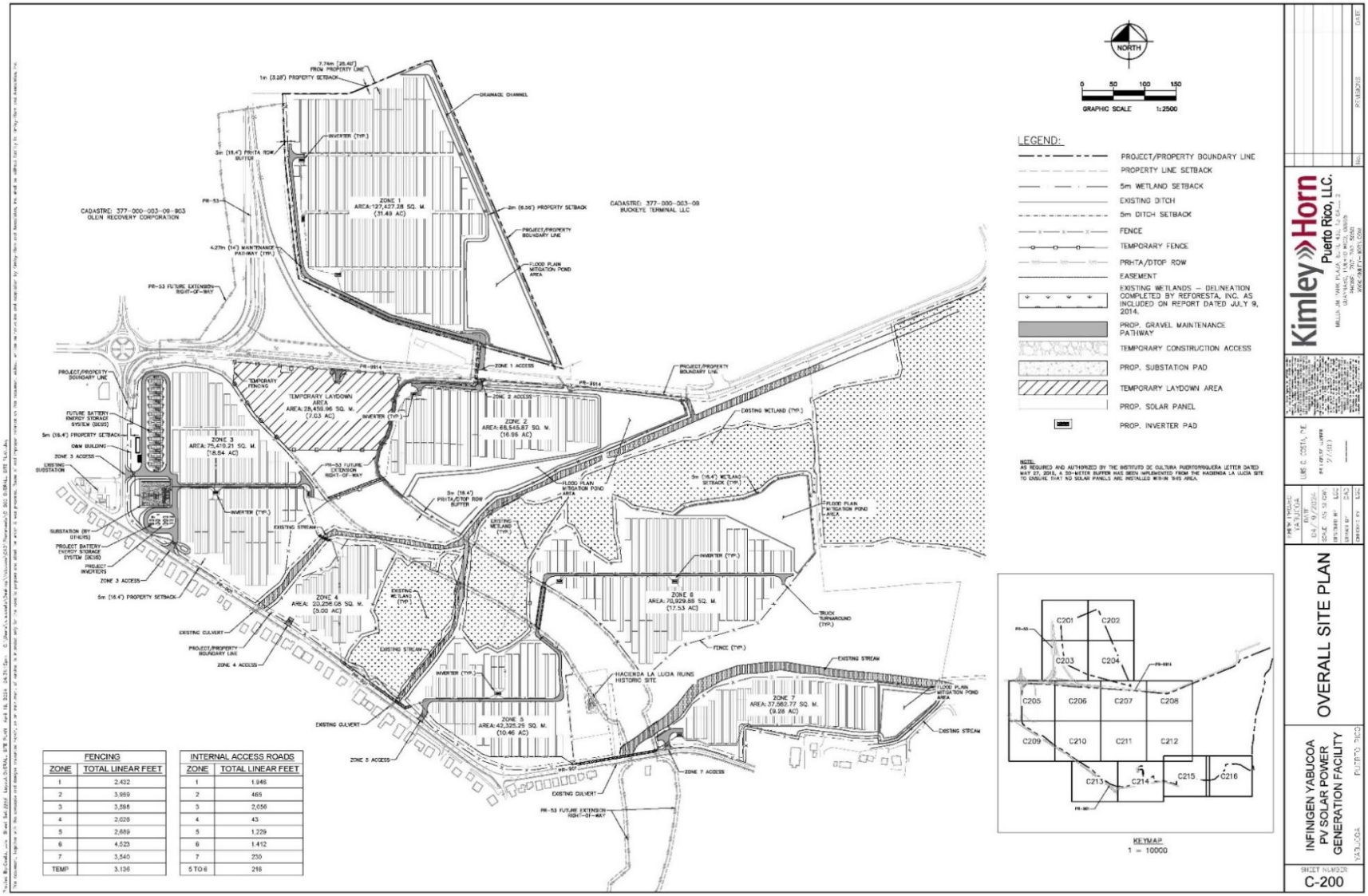
The Applicant is leasing an approximately 247-acre property from the Puerto Rico Land Administration for the Project, but will not utilize the entire leased property. The Project will disturb approximately 122 acres, as described in further detail below. The Project components will primarily be located within seven fenced zones; other disturbance areas will include the temporary laydown area, the tree mitigation area, the transmission line, cable crossings, and access roads (see Figure 1 and Figure 2). The Project was designed to avoid directly impacting the four wetlands, one creek, and the Hacienda Lucía ruins found on the leased property.

Construction and operation of the Project will permanently disturb 115 acres, comprised of the following (see Figure 1 and Figure 2):

- A 31.49-acre fenced Zone 1 area that will contain a PV field, three inverters, a graveled access road, and a floodplain mitigation pond. The eastern edge of this zone contains an existing drainage channel that will be relocated approximately 30 feet eastward to the edge of the fenced area. This will require approval as part of the Project's Single Incidental Permit (PUI, according to its Spanish acronym). Access to Zone 1 will be through a permanent asphalt entrance off PR-9914 that will utilize approximately 0.02 acres.
- A 16.96-acre fenced Zone 2 area that will contain a PV field, one inverter, a graveled access road, and a floodplain mitigation pond. Access to Zone 2 will be through a permanent asphalt entrance off PR-9914 that will utilize approximately 0.02 acres.
- A 18.64-acre fenced Zone 3 area that will contain a PV field, two inverters, the BESS, the substation, a 1,200-square-foot O&M building, a 20-foot by 30-foot asphalt parking area, and a graveled access road. Access to Zone 3 will be through two permanent asphalt entrances, both off PR-901, that will utilize approximately 0.02 acres each.
- A 5.0-acre fenced Zone 4 area, that will contain a PV field. Access to Zone 4 will be through a permanent asphalt entrance off PR-901 that will utilize approximately 0.02 acres.
- A 10.46-acre fenced Zone 5 area, containing a PV field, a graveled access road, and one inverter. Access to Zone 5 will be through a permanent asphalt entrance off PR-901 that will utilize approximately 0.02 acres.
- A 17.53-acre fenced Zone 6 area that will contain a PV field, two inverters, a graveled access road, and a floodplain mitigation pond. Access to Zone 6 will be through an approximately 285-foot-long graveled access road from Zone 5 that will utilize approximately 0.31 acres. An electrical cable crossing will be directionally bored underneath this access road. The crossing is on the leased property, so no easements are required.
- A 9.28-acre fenced Zone 7 area that will contain a PV field, one inverter, a graveled access road, and a floodplain mitigation pond. Access to Zone 7 will be through a permanent asphalt entrance off PR-901 that will utilize approximately 0.02 acres.

Figure 1: Project Disturbance Areas with Satellite Imagery

Figure 2: Project Site Plan



FENCING	
ZONE	TOTAL LINEAR FEET
1	2,432
2	3,959
3	3,586
4	2,026
5	2,689
6	4,523
7	3,540
TEMP	3,126

INTERNAL ACCESS ROADS	
ZONE	TOTAL LINEAR FEET
1	1,946
2	465
3	2,056
4	43
5	1,229
6	1,412
7	250
5 TO 6	216

- An approximately 100-foot-long directionally bored electrical cable crossing between Zone 1 and Zone 2 that will utilize less than 0.01 acres. This will cross underneath PR-9914 and will require an easement from the Puerto Rico Department of Transportation and Public Works (PRDTOP).
- An approximately 315-foot-long directionally bored electrical cable crossing between Zone 2 and Zone 3 that will utilize approximately 0.01 acres. This crossing is on the leased property, so no easements are required.
- An approximately 245-foot-long directionally bored electrical cable crossing between Zone 3 and Zone 4 that will utilize approximately 0.01 acres. This will cross underneath a drainage channel and will require approval from the U.S. Army Corps of Engineers (USACE).
- An approximately 400-foot-long directionally bored electrical cable crossing between Zone 4 and Zone 5 that will utilize approximately 0.01 acres. This will cross underneath PR-901, not underneath the wetland between these two zones, and will require an easement from PRDTOP.
- An approximately 475-foot-long directionally bored electrical cable crossing between Zone 5 and Zone 7 that will utilize approximately 0.01 acres. This will cross both underneath PR-901 and the creek; therefore, it will require approval from USACE and an easement from PRDTOP.
- A 115 kV transmission line measuring approximately 285 linear feet that will connect the Project substation in Zone 3 to PREPA's existing Juan Martín substation. Approximately 147 linear feet of this transmission line will stretch beyond the fenced Zone 3, aerially crossing PR-901 to a single pole next to the PREPA substation. The base of this pole would be approximately 3 feet in diameter (a ground disturbance of 0.05 square feet) and will be the only additional ground disturbance required by the transmission line. A permanent right-of-way is not required for this transmission line.
- A 5.5-acre area between Zones 6 and 7 where the Applicant will plant trees as part of its tree mitigation plan (see Section 3.7.1)

Construction of the Project will temporarily disturb 7.05 acres, comprised of a 7.03-acre temporary laydown area and a temporary asphalt entrance off PR-9914 that will utilize approximately 0.02 acres. The laydown area will only be used during construction, and the entire area, including its fencing and entrance, will be removed after construction is completed.

2.1 Construction

Construction of the Project will require the use of heavy machinery, such as bulldozers, graders, excavators, dump trucks, and cement trucks, along with smaller tools such as jack hammers and nail guns. The construction phases of the Project are expected to be as follows:

- Demarcation of Wetlands and the Creek: A 5-meter setback around the perimeter of the four wetlands and the creek within the Project site will be demarcated with silt fencing.
- Clearing: Vegetation will be removed, and the site will be cleared and grubbed.
- Perimeter Fence: A perimeter fence will be installed around the Project site to enhance security and safety during construction and operation.
- Laydown Area: A temporary laydown area will be established, covered with Geotextile Filter Fabric and crushed stone on top, for use during construction for temporary equipment storage and temporary parking. A temporary entrance would be constructed to access the temporary laydown area.

- Site Grading, Excavating, and Filling: Site grading will be performed to ensure a level surface for the installation of solar arrays and other infrastructure. Permanent fill would be placed where needed to ensure a level surface and support for structures. Flood capacity loss by permanent fill placement in floodplains will be offset by the excavation of floodplain mitigation ponds.
- Entrances and Access Roads: Seven permanent asphalt entrances to the Project site and gravel access roads within the Project site will be constructed.
- Pile Installation & Racking: Piles required to support the solar racking system will be driven into the ground, embedded 10 to 19 feet deep. If a driven pile is refused, the pile would either be anchored at the point of refusal, or a pier would be drilled and concreted. The racking systems that will hold the solar modules will be assembled and erected.
- Solar Modules Installation: The solar modules will be mounted onto the racking system.
- Electrical Works: Trenches will be excavated for installation of conduits and electrical cables and other components of the electrical distribution system.
- O&M Building: Construction of O&M building and its parking area.
- Testing and Commissioning: Each component of the facility will be tested once all are installed.
- Site Stabilization: During construction, disturbed areas will be stabilized with the use of water and/or dust palliatives to minimize wind and water erosion as well as fugitive dust.
- Demobilization and Restoration: All temporary fabrication and construction facilities will be removed from the site once construction is complete. The temporary laydown area, including its entrance and fencing, will be removed.

The sequence will be in accordance with Section 2.1.2, beginning September 1, 2024 and completing August 14, 2025.

2.1.1 Construction of Project Structures and Equipment Installation

The Project Site Plan (Figure 2) shows the locations of the Project structures and equipment to be constructed on the Project site.

2.1.1.1 Perimeter Fencing

Approximately 22,767 linear feet (4.31 miles) of permanent fencing constructed out of wire mesh on steel posts will be installed around the perimeter of Zones 1-6. Temporary fencing measuring approximately 3,136 linear feet (0.59 miles) will be installed around the perimeter of the temporary laydown area.

2.1.1.2 Temporary Laydown Area

A temporary laydown along PR-9914 will be prepared for use during construction. Preparation of this area will involve cutting all brush and bush hogging the area, placing Geotextile Filter Fabric across the area, placing ~4-12” of crushed stone on top of the filter fabric, and installing fencing around the area to provide security for the plant equipment. One temporary entrance would be constructed to access the temporary laydown area.

2.1.1.3 Solar System Frame

Approximately 79,000 Canadian Solar model CS6W-545MB-AG solar panels (see Exhibit 1) will be installed on the Project site. The solar panels will measure 89.2 inches by 44.6 inches and will be

contained within a metal frame. The frames will be mounted on supporting steel structures erected on driven piles and designed to permanently tilt the solar panel at a fixed angle to the sun. The panels will be installed at a height between four and ten feet above ground level, depending on the degree of inclination of the frame.

Exhibit 1: Canadian Solar Panel Specification Drawing

2.1.1.4 Electrical Distribution System

The electrical distribution system collects electricity from the solar panels and directs it to where it's needed. Direct current (DC) cables from each string of solar panels will be clipped to the racking structure and will be routed underground, then up to a combiner box. Each combiner box will connect between 10 to 20 strings and will include safety features like surge protection and a disconnect switch. The output from the combiner box is then routed to an underground trench, and back up to a power conversion system (PCS). The PCS, built on skids, will have sections for DC inputs from the combiner boxes; inverters to convert DC to alternating current (AC); and auxiliary power for networking, communications, and SCADA monitoring.

The DC input sections of the PCS can accept up to a total of 40 PV inputs in four sections, and each section will be connected to a common bus that combines all the inputs to the inverter section through a motorized switch. Each inverter will have an output voltage of 660 V and is connected to an Inverter Step-up Transformer (ISU). The ISU increases the voltage to 34.5 kV for distribution and is protected by a circuit breaker.

Each ISU will be connected to a 34.5 kV collection feeder. The Project will have two collection feeders, each with five PCS, configured to allow maintenance without disrupting other units. The feeders will be routed as three single conductors along with a trench ground conductor and a fiber optic communications conductor in conduit to a riser structure at the Project substation. The Applicant has applied for the necessary permits from USACE and PRDTOP to directionally bore certain crossings as described in Section 2 and shown in Figure 1. If these boring approvals are delayed or denied, the crossings would be redesigned as overhead crossings.

2.1.1.5 Inverters

The Project will have a total of ten Power Electronics inverters model FS4200 of 4,200 kW that will convert the DC generated by the panels to AC used in the electrical system.

2.1.1.6 Project Substation & Main Power Transformer

At the Project substation, a 34.5/115 kV power transformer with 70 megavolt-amperes (MVA) capacity will be installed to convert the voltage for connection to PREPA's transmission system.

2.1.1.7 BESS

The Project requires the installation of battery banks with a storage capacity of 14.45 MW and generation capacity of up to 20 MVA in order to comply with PREPA's Minimum Technical Requirements (MTRs) for frequency modulation and voltage maintenance. This equipment will be installed with a fire extinguishing system and measures to prevent spills. They will be elevated above the ground for protection from the elements. Up to 60 MW of additional BESS on the same Project site and utilizing the same infrastructure would be constructed as a second phase of the Project.

2.1.1.8 Interconnection Transmission Line to PREPA Substation

An aerial transmission line measuring approximately 285 linear feet will be built across PR-901 to connect the Project's substation in Zone 3 to PREPA's existing Juan Martín substation (see Figure 1).

2.1.1.9 Operation and Maintenance (O&M) Building

A 1,200-square-foot, single-story O&M building containing office space, a bathroom, a break room, a storage area, and the SCADA and IT equipment will be constructed. A graveled area for parking and storage measuring approximately 20 feet by 30 feet will be provided. The O&M building will require a new connection to the Puerto Rico Aqueduct and Sewer Authority (PRASA) for domestic water. An approximately 40-foot-long connection would be required to reach the PRASA pipelines along PR-901. Any used water will be discharged to an onsite septic tank that will be cleaned as needed by a local server service provider.

2.1.1.10 Supervisory Control and Data Acquisition (SCADA)

A SCADA system will be installed to collect operating and performance data. The solar modules and BESS will be linked to a fiber optic network via one or more central computers. Fiber optic cables for the SCADA system will be installed in the collector cable trenches above the electrical trenches. The host computer is expected to be located in the O&M building at the Project site.

2.1.1.11 Entrances & Access Roads

Seven permanent entrances (in addition to the one temporary entrance to the temporary laydown area) measuring 48-foot x 14-foot will be constructed out of asphalt and will be designed under the direction of a professionally licensed engineer and compacted to meet equipment load requirements. The entrances will be located off PR-9914 and PR-901 as described in Section 2 and will lead to 7,597 linear feet (1.44 miles) of 14-foot-wide all-weather gravel roads that will be built to enable access throughout the PV fields.

2.1.2 Project Schedule

Currently construction of the Project is expected to take place over an approximate 18-month period beginning in September 2024, subject to changes due to delays with obtaining all necessary permits and

authorizations. A general overview of the construction schedule associated with the Project is provided below in Table 1.

Table 1: Construction Schedule

Task Name	Start	Finish
Site Mobilization and Start of Clearing & Grubbing	9/3/24	10/8/25
Grading	10/8/24	4/1/25
Pile & Racking Installation	10/15/24	5/15/25
Modules Installation	12/10/24	7/3/25
Inverters Installation	12/17/24	4/24/25
DC Cabling (Aboveground)	12/26/24	8/25/25
DC Cabling (Underground)	4/4/25	7/18/25
AC Cabling	2/28/25	5/12/25
Substation	9/24/24	9/22/25
BESS	11/4/24	6/17/25
Commissioning & Start-up	10/14/25	2/23/26

2.1.3 Construction Staffing

Headcount during construction (not including commissioning) will fluctuate between 30-120 at peak, as shown in Table 2:

Table 2: Estimated Construction & Commissioning Headcount

Month	Estimated Headcount
September 2024	30
October 2024	30
November 2024	40
December 2024	60
January 2025	80
February 2025	120
March 2025	120
April 2025	120
May 2025	100
June 2025	100
July 2025	80
August 2025	80
September 2025	60
October 2025	40
November 2025	30
December 2025	10
January 2026	10
February 2026	10

2.1.4 Shipping and Receiving

The construction site will receive approximately 150 tons of structural steel for the racking system, mostly delivered via flatbeds and 40-foot containers, 142 40-foot containers containing around 2,268 solar

module pallets, 15 containers with the inverters, 5 containers with the battery modules, one large main power transformer, one small auxiliary transformer, approximately five flatbeds carrying substation equipment, and roughly 250,000 feet of electrical cables. If the Project site is not ready to receive material, a warehouse storage location will be utilized. Based on the anticipated construction headcount above, the Applicant estimates daily vehicle traffic at the peak of construction, when there would be 120 construction employees on site, to be around 200 vehicles.

2.1.5 Waste Management

During construction, it is estimated that an average of 40 cubic yards of landfill qualified waste, such as packing materials for equipment, or common waste produced by construction workers (e.g., food, beverage, and general office waste) will be generated on average by week during the overall construction phase. It will be managed by the contracted construction company per applicable federal, state, and local environmental regulations. No hazardous waste will be generated.

2.2 Operation

The facility has a performance obligation of 25 years from the start of commercial operation, which is currently anticipated to occur in September 2025. If mutually agreed between PREPA and the Applicant, the off-take agreement can be extended for an additional 10 years. As the facility service life comes to an end, the Applicant will either seek a new off-take agreement and replace equipment as required to continue operation or will decommission the facility, offering equipment to other companies for resale or recycle purposes. A decommissioning plan would be developed ahead of decommissioning.

When fully operational, the Project will have approximately two full-time O&M jobs. During the life of the Project, O&M personnel will follow an Annual Maintenance Plan, which will establish detailed schedules for completing preventative maintenance tasks, such as conducting visual inspections or ad hoc replacements of parts. The team will also conduct corrective maintenance if any equipment failure is detected while monitoring the facility. The O&M team will also oversee additional site maintenance services such as panel cleaning and vegetation control.

2.2.1 Operation Staffing

Regular operations are forecasted to require a 2-person team on site with weekday day shifts and alternating remote monitoring on-call day shifts on weekends.

A primary focus of the O&M personnel will be continuously monitoring the facility's operational status, output, performance, and diagnostics from the main control room in the O&M building using the SCADA system. O&M personnel will also perform preventative and corrective maintenance outside of the O&M building. O&M procedures will be established to define specific routine maintenance and inspection activities following the manufacturer's recommendations. Examples of preventative maintenance include replacing lubricating fluids periodically, checking parts for wear, recording operating parameters, and maintaining vegetation to allow access to equipment.

2.2.2 Shipping and Receiving

In the event of equipment failure that would require replacement, the O&M team will requisition replacement parts. Once the purchase order is issued to the supplier and the order is fulfilled, delivery of the equipment will be made directly to the O&M team at the site. The planned site access roads are sufficient to manage these infrequent, and generally small, requirements.

2.2.3 Waste Management

During operations, the facility will generate general solid nonhazardous waste associated with routine building operations and maintenance during operations. All waste generated at the facility will be collected, categorized, disposed of, and recycled in accordance with all applicable federal, state, and local environmental regulations. Limited quantities of hazardous materials, such as lubricants, solvents, janitorial supplies, paint, degreasers, herbicides, pesticides, gasoline, may be stored on site for O&M activities but such materials will generally be used and stored in small quantities.

3. ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

In each of the following sections, a specific resource area is addressed with both qualitative and, where applicable, quantitative information to concisely describe the nature and characteristics of the resource that may be affected by the Project, as well as the potential direct and indirect impacts on that resource from the Project given Project controls. A conclusion regarding the significance of impacts is provided for each resource area.

Section 3.11 provides a review of the present and reasonably foreseeable federal and nonfederal actions that may contribute to a cumulative impact when added to the impacts of the Project. The impacts of past actions were reviewed and are included as part of the affected environment to establish the current condition of the resource (the baseline condition) that may be affected by the Project.

3.2 Cultural Resources

A Phase 1A archaeological study was conducted in March 2013 on the approximately 247-acre leased property for the Project (González Colón 2013a). The study, consisting of documentary research and a field inspection, identified one historic site known as Hacienda Lucía within the Project area. Hacienda Lucía, located on the southern edge of the leased property along state highway PR-901 (see Figure 1), is composed of the ruins and machinery remnants of a 19th-century sugar mill. Its significance comes from its representation of the area's sugarcane history and for having part of its original machinery included in the official list of the Historic American Engineering Record. The Phase 1A study concluded that the Project would not affect Hacienda Lucía since it is located inside a buffer zone and was delineated in a 2004 study prepared for the state highway PR-53 expansion project (Pantel del Cueto & Associates 2004). The field inspection also found no presence of pre-Colombian materials.

The Institute of Puerto Rican Culture (ICP, according to its Spanish acronym) Archeology and Ethnohistory Program requested a Phase 1B archaeological study which was conducted in September 2013 on the same parcel (González Colón 2013b). The study consisted of a field inspection and 579 soil test probes, which confirmed the absence of pre-Colombian or historical cultural materials. The Phase 1B study recommended the installation of a fence around the Hacienda Lucía ruins to protect them. Both the ICP Archeology and Ethnohistory Program and the ICP Program for Built Heritage gave authorization to proceed with the Project in 2016, with the condition that work must stop if materials of archaeological, historical, or cultural value are discovered or impacted during construction.

To confirm the findings of the 2013 studies, a supplemental Phase 1A archaeological study was conducted in February 2024 (Freytes Rodriguez 2024). It consisted of a records search and review of previously completed cultural resources investigations, a pedestrian and aerial drone survey of the area, and a LiDAR imaging study. The study concluded that the Project would have no adverse effect on cultural resources.

In addition, since the 2013 studies, the Municipal Government of Yabucoa has constructed a passive park around the Hacienda Lucía ruins, with chain-link fences installed both around the ruins and around the perimeter of the approximately 2.5-acre park. The park is maintained and promoted by the Municipal Government of Yabucoa as a tourist attraction. Due to the existing passive park and fences, as well as the Project layout's incorporation of a 50-meter setback between the nearest solar panel and the ruins, Project-related impacts on this historic site would not be significant.

On March 13, 2024, a consultation letter was sent to the Puerto Rico SHPO for Section 106 consultation, requesting concurrence with the DOE's review and finding that the Hacienda Lucía historic property would not be affected, given the incorporation of avoidance measures into the Project design. On March

20, 2024, SHPO concurred with DOE's finding that no historic properties would be affected by the Project (see Appendix A).

If unexpected cultural resources are discovered during the Project's construction, activities would cease in the immediate vicinity of the discovery, and ICP, SHPO, and DOE would be notified within 24 hours for it to evaluate any such discovery and implement the appropriate measures before construction activities would resume. Because SHPO concurred with a finding that no historic properties would be affected and due to the controls that are in place in the event of an unanticipated discovery of such materials, the Project's impact on cultural resources would not be directly or indirectly significant.

3.3 Water Resources

3.3.1 Wetlands

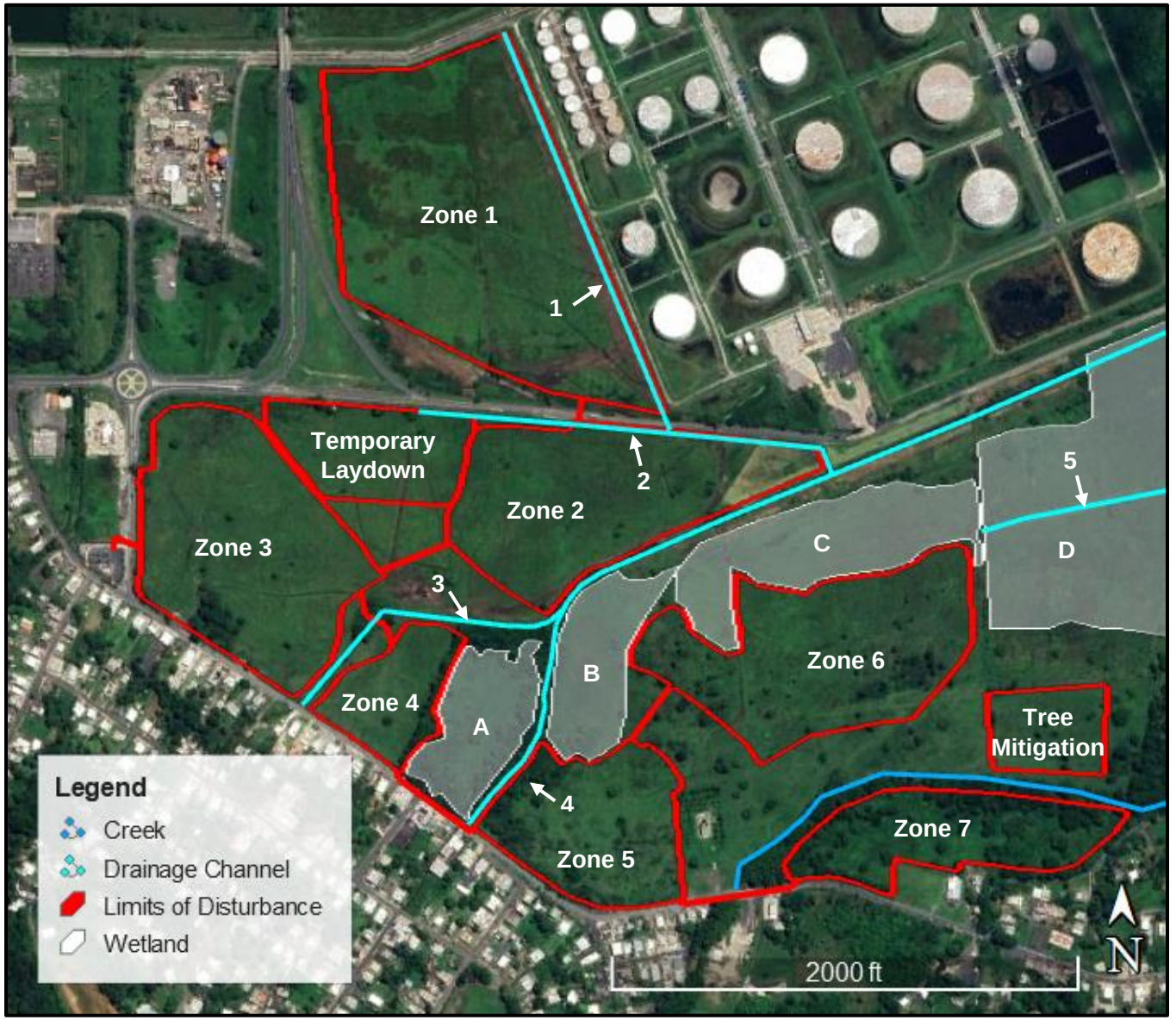
A Wetland Jurisdictional Determination and Delineation was conducted on the entire leased site in 2014 that identified four emergent wetlands on the Project site (Reforesta, Inc. 2014; see Figure 3). Wetland A covers approximately 5.13 acres and is mostly enclosed by two drainage channels that join near the middle of the Project site and flow eastward toward the coast. Wetland B covers approximately 5.44 acres and is separated from Wetland A by a drainage channel. Wetland C covers approximately 9.3 acres. The northern edges of the Wetlands B and C are separated to the north from a drainage channel by a dirt and rock fill mound. Wetland D covers approximately 43.6 acres and is mostly located beyond the eastern-most limits of the Project site. The four wetlands are dominated by grasses, taro, and cattails.

Following the delineation, the Project layout was redesigned to completely avoid construction activities on the wetlands. A "No Permit Required" letter was sent to the USACE on July 10, 2014, with the study and the new Project layout, requesting concurrence (Cubiñá 2014). A response was never received from USACE; however, given the completed study and new Project layout, the DRNA endorsed the Project as part of the Project's DEA process, with the condition that a buffer zone of 5 meters to the wetlands be demarcated on the ground. Additionally, as part of a flora and fauna field inspection conducted in February 2024, the Project's environmental consultant found that the wetland conditions on the property remain the same (Vélez Arocho 2024).

In compliance with the DRNA's endorsement letter, the Applicant would demarcate a 5-meter buffer zone measured from the edges of the identified wetlands prior to beginning construction. To minimize potential impacts to the wetlands during construction, temporary silt fences would be installed along the demarcation, and vegetation between the wetland edge and demarcation would not be altered. The Applicant has developed and would implement a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion and Sediment Control Plan (CES Plan, according to its Spanish acronym) to minimize erosion and sedimentation.

Because the Project avoids construction and placement of permanent fill or structures in the wetlands, no direct impact to the wetlands is expected. Due to the buffer zone, the silt fences, and the controls of the SWPPP and CES Plan, potential indirect impacts on wetlands as a result of the Project would not be significant.

Figure 3: Wetlands and Surface Waters Within the Leased Property



3.3.2 Surface Water

The Project is located in the Eastern Puerto Rico watershed (HUC – 21010005). A Hydrological and Hydraulic Study was conducted on the Project site (García 2023). Per the study, there is a creek and five existing drainage channels that drain the property and the adjacent lands eastward. The drainage channels are labeled 1-5 in Figure 1. Drainage Channel 1 is located between Zone 1 and the oil tank facility and runs southeast. Culverts on either side of PR-9914 allow water to run from this channel to the roadside Drainage Channel 2, which runs eastward along PPR-9914. Drainage Channel 3 originates from a small creek south of the Project site. Drainage Channel 4 drains water that flows eastward from the El Negro community that is located south of the Project site. In both cases, culverts and small bridges on state PR-901 allow water to flow from south of the site through these drainage channels. Drainage Channel 5 runs across Wetland D and is beyond the outer limits of the Project's various disturbance areas. None of these drainage channels are listed as impaired under Clean Water Act Section 303(d).

As described in Section 2, Drainage Channel 1 will be relocated approximately 30 feet eastward to the edge of the fenced zone. This will require approval as part of the Project's PUI construction permit. In addition, there will be two directionally bored electrical cable crossings that will require approval from the USACE: one crossing under Drainage Channel 3 and another under the creek. If these boring approvals are delayed or denied, the crossings would be redesigned as overhead crossings.

To minimize indirect impacts to surface water, and as required by the DRNA's endorsement of the Project, a 5-meter buffer will be maintained from the edge of the creek and from Drainage Channels 3, 4, and 5. Applicant would also regularly monitor and maintain the drainage channels, removing vegetation or man-made debris that may fall into the drainage channels, in order to promote positive drainage on the site. Riparian vegetation would not be altered. In addition, the Applicant would develop and implement a SWPPP and CES plan to minimize erosion and sedimentation, and silt fences would be used during construction to prevent sediment from entering the drainage channels or the creek.

The Project has also been designed to minimize the increase in impervious surface areas. The inverters and BESS would be built on concrete piers as opposed to on concrete foundations. Grass would be maintained on the majority of the Project site's footprint, including under the solar panels, and the access roads will be constructed with gravel as opposed to asphalt. The Project components that would require concrete foundations are the O&M building, two auxiliary transformers, and the main power transformer in the Project substation. These combined would account for an approximately 0.5-acre increase in impervious surface areas, which would not be significant.

3.3.2.1 Water Use

Potable water pipes are present along state highway PR-901, which borders the western and southwestern part of the Project site. Therefore, the Project would obtain its water from PRASA system, which has adequate capacity to serve the Project's anticipated needs.

Water use during construction would include water applications for compaction, dust control, and the onsite creation of concrete if a concrete supplier cannot be sourced in the Yabucoa area. Most of the water would be used to control dust. The amount of water applied daily to the Project site would be variable and dependent on daily weather temperatures, humidity, wind speeds, and local precipitation amounts. During the 9-month construction phase, the estimated total construction water use for the Project is 900,000 gallons.

Once the Project is operational, water usage would substantially decrease. The primary water requirement for the working staff would occur at the O&M building and is limited to restrooms, sinks/hand washing stations, and internal/external hoses. Up to two full-time staff would be employed at the Project,

and the operational water use would be approximately 5,000 gallons monthly, which aligns with the observed water usage at two similar operating facilities owned indirectly by Infinigen, the Applicant's parent company. Any water used in the O&M building will be discharged to an onsite septic tank that will be cleaned as needed by a local server service provider.

The solar modules must be kept clear of dirt and debris, as these can affect the performance of the PV plant. Operation and management activities would outsource the washing of the solar panels, utilizing clean water. At other plants owned and operated by Infinigen, the average use of water is 0.29 gallons per cleaning. The Project contains 78,180 panels; therefore, the estimated use of water for cleaning of solar panels is 22,672 gallons, and this would occur approximately every 3 years.

Given the Project's construction and operation would not be water-intensive and that a Hydrological and Hydraulic Study was conducted, and because indirect impacts to surface waters would be minimized through the Project design, the implementation of buffer zones, the use of silt fences, and by following a SWPPP and CES Plan, the Project would not have significant impacts to surface water.

3.3.3 Floodplains

Per FEMA Flood Insurance Rate Map panel 72000C1815J and the Puerto Rico Advisory Base Flood Elevations Maps (ABFE maps), the Project site includes FEMA-designated Flood Hazard Areas (FEMA 2009; PRPB 2018). Over half of the Project site is mapped as Zone AE (100-year floodplain, an area with a 1 percent annual chance of flooding), with pre-determined Base Flood Elevations between 5.0 and 5.1 meters, or Zone X Shaded (between the limits of the 100-year and 500-year floods, an area of lesser to moderate flood hazards); see Figure 4. Of the 115 acres to be disturbed by the Project, approximately 73 acres are in the 100-year flood hazard area. The PRPB Regulation Number 13 (Regulation on Special Flood Risk Areas) allows development in such areas (PRPB 2021).

Construction of the Project will require cutting and filling throughout the site. Of the areas located in the floodplain, Zone 1 will have a net fill of approximately 40,157 cubic yards, Zone 2 will have a net fill of approximately 4,300 cubic yards, Zone 6 will have a net cut of approximately 2,927 cubic yards, and Zone 7 will have a net cut of approximately 9,077 cubic yards. There would not be grading in the temporary laydown area or the tree mitigation area. To offset the loss of floodplain capacity, floodplain mitigation ponds would be constructed (see Figure 4), designed to enhance the natural hydrology of the area and promoting surface water flow toward existing drainage channels. In addition, Applicant has contracted a floodplain impacts analysis to be conducted by Kimley-Horn at the end of construction in order to update the Hydrologic and Hydraulic Study already conducted and to validate that the impact to the floodplain has been mitigated. A memorandum of the results would be provided to the LPO.

In accordance with 10 CFR 1022, Compliance with Floodplain and Wetland Review Requirements, and Executive Order 11988, Floodplain Management, this EA provides a statement of findings, as required in Section 1022.14. The Project would occur on 73 acres of floodplains. A project description and information regarding the Project's location are provided in Chapter 2 of this EA, along with the alternatives DOE is considering in deciding whether to fund the loan guarantee. The action conforms to all applicable floodplain protection standards, as required by the permitting authorities in Puerto Rico. The Project would modify elevations; however, this would be offset through floodplain mitigation ponds. In addition, the Project would maintain the permeability of the soils by maintaining grass and vegetation under and around the solar panels and by constructing its minimal access roads out of gravel; therefore, continued infiltration of precipitation and floodwaters into the soils is expected, with no change in runoff patterns. PV panels would be installed above the 100-year flood base elevations, in compliance with the applicable provisions of the PRPB Regulation Number 13 (PRPB 2021).

Figure 4: Flood Zones on the Project Site

Lastly, the LPO would review the validation studies provided by the Applicant post-construction to verify no impact to the floodplains. Because of design considerations and permitting reviews, no significant impacts related to flood levels or floodplains are expected as a result of the Project.

3.4 Noise

State regulations for the control of noise pollution require noise emission sources to comply with regulatory limits, as published by the Puerto Rico Environmental Quality Board (PREQB) and regulated by DRNA (PREQB 2011). These limits are shown in Table 3.

Table 3: Noise Emission Limits (dBA) by Receptors Zones

	Receptor Zones							
	Zone I (Residential)		Zone II (Commercial)		Zone III (Industrial)		Zone IV (Quiet Zone)	
Emission Source	D	N	D	N	D	N	D	N
Zone I (Residential)	60	50	65	55	70	60	55	50
Zone II (Commercial)	65	50	70	60	75	65	55	50
Zone III (Industrial)	65	50	70	65	75	75	55	50
Zone IV (Quiet Zone)	65	50	70	65	75	75	55	50

Notes: dBA = A-weighted decibels; D = daytime period; N = nocturnal period

The Project site is zoned for agricultural uses, making Zone III (Industrial), the emissions source used for evaluation. Surrounding areas are agricultural and commercial to the west and north, industrial (an oil terminal) to the north and east, and residential to the south. Existing noise sources near the Project include daily vehicular traffic on the surrounding highways, including trucks transporting materials to and from the oil terminal, the operation of farm machinery, and overhead aircraft.

The Project would generate temporary noise during construction from the use of heavy machinery, such as bulldozers, graders, excavators, dump trucks, and cement trucks, along with smaller tools such as jack hammers and nail guns. Noise and sound levels would be typical of new construction activities, and they would be intermittent and temporary. In addition, the noise produced by specific equipment would vary considerably during different phases and work cycles. Table 4 shows the noise emission levels in A-weighted decibels for common construction equipment that may be used at the Project site, as measured at a distance of 50 feet.

Table 4: Noise Emission Levels (dBA) for Construction Equipment at 50 Feet

Equipment	Noise Levels
Scraper	89-95
Bulldozer	77-87
Bulldozer, caterpillar	90-93
Wheel loader	80-81
Loader (“terex”)	96
Excavator	79-85
Concrete pump truck	91
14-wheel truck	88
Compressor	71-97
Rock drill (manual, pneumatic)	88
Taladro (crawler)	91
Water pump tank	79
Generator	76
Grader	87-89
Motor grader	71-87
Crane	80-85
Gradall	87-88
Concrete pump	69-75

Figure 5 shows the nearest receptor zones to the Project site, which are approximately 40 homes and businesses located along PR-901, and across from Zones 3, 4, and 5, and a group of approximately 12 homes and businesses south of Zone 7. The homes and businesses across PR-901 are all generally 65 feet away from the Project limits. Those below Zone 7 are between 30 and 200 feet from the Project limits. It is possible that during construction, noise emissions levels may exceed the 65 dBA PREQB limit during daylight hours by a Zone III (Industrial) emissions source to a Zone I (Residential) receptor zone 50 feet away. However, such noises would be temporary and likely not continuous in nature. In the event noise emissions are above this regulatory limit, an affected party could submit a complaint to DRNA, which would send a representative to measure the noise levels. The Applicant would implement any noise mitigation measures, as required by DRNA. In general, the Project would manage noise with BMPs, and by limiting construction activities to daylight working hours between approximately 7:00 a.m. and 6:00 p.m.

Regarding impacts on employees working on the site, all construction activities would be conducted by U.S. Occupational Safety and Health Administration (OSHA) guidelines, which address noise and hearing conservation in specific standards for the construction industry. If construction workers or other contractors or employees have the potential to be exposed to noise that exceeds OSHA standards, they would be provided personal protective equipment per the regulations.

In general, operation of a stationary facility would not increase existing ambient noise levels. The greatest source of noise during Project operation would be the Project’s substation, which according to the National Electrical Manufacturers Association, generates sound levels of 71 dBA when measured at 5 feet. With the nearest residence being approximately 150 feet away from the Project substation, this is expected to be within the PREQB limits.

Figure 5: Nearest Residences & Businesses to Site

Because of the temporary and intermittent noise sources as well as the controls that would be implemented during construction, and the minimal noise produced during operation, noise impacts from the Project would not be significant.

3.5 Transportation

The Project site is located at the intersection of state highways PR-53 and PR-9914. PR-53 spans multiple municipalities and is the main access route from the eastern part of the island to the Municipality of Yabucoa. It is also the main highway taken if traveling to Yabucoa from the metropolitan areas of San Juan or Caguas, Puerto Rico. PR-901 starts at the Yabucoa town center before reaching the intersection, then continues southward until it reaches PR-3 and PR-53, which run along the southern coast of the island. PR-9914 starts at this intersection and only runs eastward for a little over a mile until reaching the coast. PR-53 and PR-901 would be the main access routes to the Project site during both construction and operation, and they already experience a frequent and consistent flow of traffic from other parts of the island. The estimated annual average daily traffic at the intersection of PR-53 and PR-9914 is estimated to be approximately 19,300 vehicles (Datos.PR 2024).

3.5.1 Construction

During the estimated 12-month construction phase, there would be a slight and temporary increase in the number of vehicles traveling on PR-53 and PR-901. At the peak of the construction stage, light passenger vehicle daily trips are estimated to be approximately 200, distributed over 10 hours due to the entry and exit of the approximately 120 construction employees. The increase in vehicle flow during the construction stage would not be a notable increase in relation to the vehicle volumes already experienced on PR-53 and PR-901 daily. In addition, during the peak of the construction phase, there would be an estimated 30 non-permitted heavy vehicle trips in a day delivering equipment. Signage would be put up to alert drivers to the construction activity and to the entry and exit of construction vehicles. Construction vehicles delivering equipment would primarily enter the Project site at the temporary entrance to the temporary laydown area, located off of PR-9914. It is anticipated that most of these vehicles would be traveling southward on PR-53, take the roundabout at the intersection with PR-9914, then continue eastward for 0.5 miles to reach this temporary entrance.

3.5.2 Operation

During operation, the two O&M employees would access the Project through an entrance near the O&M building, to a small, paved parking lot on the edge of PR-901. It is estimated that five daily trips will be generated during its operation. This calculation was made based on the two full-time employees who would work daily at the facilities and possible suppliers of services.

Internal to the Project site, unpaved roads would be constructed to provide access to the PV and inverter equipment. There will be seven entrances to these access roads, located off of PR-9914 and PR-901 (see Figure 2). Such entrances would only be used by the two O&M employees or third-party contractors when conducting maintenance functions. Long-term impacts would not be significant because Project operations and maintenance would not generate a significant increase in traffic in the area.

Because the main access roads already experience heavy traffic, and due to the measures that will be implemented during construction, impacts to traffic from the Project would not be significant.

3.6 Aesthetic and Visual Resources

The Project is surrounded by agricultural and commercial areas to the west and north, an oil terminal and refinery to the north and east, and a residential area to the south.

A Visual Impact Assessment study was conducted to analyze the overall visual impact of the Project (Kimley-Horn 2023). The study found that residents of the El Negro community located to the south of the Project site would arguably be the residents of the region who would have the most unrestricted view of the Project. Although most of these residents would have a view of the solar farm, the much larger visual burden would remain that of the existing oil refining site, which casts a larger Area of Visual Effect (AVE) than any other existing man-made structure or project in the region. The 40 oil tanks, ranging in size from 15-75 feet radii and approximately 30 feet in height are currently visible from all affected viewpoints of the Project (from roads and residences). In addition, the Project has been designed with a 10-meter buffer from public roads to the solar panels, which provides sufficient distance to reduce visual impact of the solar farm.

The study concluded that no viewshed mitigation or enhancements would be necessary for the Project, since it would be minimally visually invasive when contrasted against the existing, much larger and more prominent oil refining site.

Because of the incorporation of the 10-meter buffers from public roads and due to the presence of busy state highways and of a more visually significant oil refinery, impacts on aesthetic and visual resources as a result of the Project's location would not be significant.

3.7 Biological Resources

3.7.1 Vegetation and Wildlife

The Project site is surrounded by state highways, an oil terminal and storage tanks, agricultural land, and a residential neighborhood to the south. The Project site itself was historically used for agricultural activities. Although no formal agricultural activity has occurred on the Project site for at least the last 20 years, cattle and horses have since grazed freely on the site, eating the existing grasses and clearing most of the plants growing below the tree canopy. The site is therefore currently composed mainly of pastures and heavy grasses. Denser vegetative areas (shrubs and patches of trees) total approximately 15 acres of the Project's areas of disturbance.

A flora and fauna study was conducted on the entire 247-acre leased property and submitted to the DRNA in 2012 as part of the Project's DEA process (Ruiz Lebrón 2012). The vegetation identified in the study included trees, palms, shrubs, vines and grasses that are associated with tropical environments and typical for areas disturbed by agricultural activities. Examples of grass species included Common Bermuda Grass (*Cynodon dactylon)* and Common Bamboo (*Bambusa vulgaris*), shrub species included Verbena (*Stachytarpheta jamaicensis*) and chaff-flower (*Achyranthes indica*), and tree species included Capulín (*Muntingia calabura*) and Palo blanco (*Casearia guianensis*), among many others. The observed animal species were all common and widely distributed in Puerto Rico. Examples of bird species included the Great egret (*Ardea alba*) and the Puerto Rican woodpecker (*Melanerpes portoricensis*), amphibian species included the Common Coquí (*Eleutherodactylus coqui*) and the Bullfrog (*Rana catesbeiana*), reptile species included the Gecko (*Sphaerodactylus sp.*) and the Green Iguana (*Iguana iguana*), mammal species included the Small Indian mongoose (*Herpestes auropunctatus*) and the rat (*Rattus* sp.), and fish species included Chopa (*Tilapia* sp.) and Gupi (*Poecilia* sp.), among many others. No threatened or endangered species were observed on or near the property (see next section for additional information on threatened and endangered species).

A flora and fauna field inspection of the property was conducted in February 2024, which confirmed that the environmental conditions on the Project site had not changed since the 2012 study. It concluded that the property continues to be composed mainly of pastures and heavy grasses and that all the observed species (wildlife, plant associations, and birds) are commonly found in the eastern wet coastal forest in Puerto Rico and not listed as threatened or endangered (Vélez Arocho 2024).

During construction, potential direct impacts to wildlife could include injury or death caused by contact with construction equipment and disturbances caused by equipment noise. However, this would be short-term and would conclude with the construction activities. During operations, noise and vehicle activity throughout the Project site is expected to be minimal.

The clearing of the site would remove approximately 15 acres of denser vegetation; this activity could displace wildlife to nearby habitat areas. However, the Applicant has prepared a tree inventory and tree mitigation plan, which are required for the Project to receive a tree cutting permit (part of the PUI permit approval to be obtained from OGPe). During construction, 1,544 trees will be removed; to mitigate this, the Applicant will plant 4,670 trees, all native species recommended for the Yabucoa area. The trees will be planted over a six-month period beginning prior to the start of construction, on a 5.5-acre area between Zones 6 and Zone 7 (see Figure 1). Planting native tree species within the existing lands and watershed would protect water resources and provide an alternative habitat for wildlife that may be displaced from the areas of the property that will be disturbed by the Project.

Because of the tree mitigation plan, and due to the Project site's historical and current uses for agricultural and grazing activities resulting in low potential for wildlife use, impacts on general vegetation and wildlife as a result of the Project would not be significant.

3.7.2 Threatened or Endangered Species

To identify the possible existence of vulnerable, threatened, or endangered species on the Project site, the following sources of information from the Government of Puerto Rico and the United States were consulted:

- the Environmental Sensitivity Index Map for PR-54, published by the National Oceanic Atmospheric Administration (NOAA) (NOAA 2000)
- Regulation to Govern Vulnerable and Endangered Species in the Commonwealth of Puerto Rico, published by DRNA (DRNA 2016)
- Puerto Rico Critical Wildlife Areas Puerto Rico (DRNA 2005)
- the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) tool (USFWS 2024)

The Environmental Sensitivity Index Map PR-54 identified a population of the White-cheeked pintail duck (*Anas bahamensis*), which is classified in Puerto Rico as a vulnerable species, located approximately 1,600 meters northwest of the Project site. This species was not observed on the Project site during the 2012 flora and fauna study nor the 2024 field inspection conducted by Diatom Environmental Services (Diatom). Nevertheless, given the importance of the species, information about the species will be disseminated to staff during the construction phase to inform them about the need to protect it.

The USFWS IPaC tool listed the following federally listed threatened or endangered species as possibly being affected by activities on the Project site: the West Indian Manatee (*Trichechus manatus*) and the Puerto Rican Boa (*Chilabothrus inornatus*). Due to the IPaC database results, Diatom's 2024 field inspection included a reptile sampling to search for the presence of Puerto Rican Boa. No individuals of this species nor suitable habitats for the species were identified on the Project site.

The DOE made a No Effect determination for the West Indian Manatee because there are no water bodies on the Project site capable of supporting manatees nor Project indirect effects that would impact the species. DOE also determined that adhering to the terms and conditions of the Programmatic Biological Assessment (PBO) for the Puerto Rican Boa is in the best interest of species conservation. Under the PBO, the DOE is required to make a determination that the Project May Affect, Likely to Adversely Affect (MLAA) the Puerto Rican Boa. The PBO contains an incidental take statement for this

species for federal agencies consulting under the PBO. On March 20, 2024, the DOE initiated a consultation with the USFWS under Section 7 of the Endangered Species Act requesting concurrence with the DOE's MLAA determination. On May 3, 2024, the USFWS concurred with the DOE's findings and use of the PBO to conserve the Puerto Rican Boa. During construction, the Applicant would undertake the non-discretionary reasonable and prudent measures, the terms and conditions, the monitoring and reporting requirements, and the conservation measures included in the PBO.

Given the disturbed conditions of the Project site, and due to consultation with USFWS (with associated concurrences) and requirements to comply with the requirements in the PBO for the Puerto Rican Boa, impacts on threatened and endangered species as a result of the Project would not be significant.

3.8 Socioeconomics and Environmental Justice

3.8.1 Socioeconomics

The Project site is located in the Municipality of Yabucoa, Puerto Rico, approximately 2.0 miles east of the town of Yabucoa. The site is surrounded by agricultural fields to the north, an oil terminal and oil storage tanks to the north and east, Playa Lucía beach to the east, and the El Negro residential community to the south and west. The nearest hospital is located approximately 2.0 miles west of the Project site, and the nearest school is approximately 0.3 miles south.

According to the American Community Survey 2022, the Municipality of Yabucoa has a population of 30,313 that is 99.8 percent Hispanic or Latino. The median age is 46. Median household income is $19,972, which is less than the $24,002 median for Puerto Rico as a whole. The poverty rate for the Municipality is estimated at 49.7 percent, and the unemployment rate for the population 16 years and over is estimated to be 11.1 percent. Approximately 74.8 percent of the population 25 years and over is a high school graduate or has a higher level of educational attainment (U.S. Census Bureau 2022).

During construction of the Project, which is expected to last approximately 15 months (not including commissioning), the number of workers on site per day will range from 30 to as many as 120. The total number of temporary jobs generated during construction would be approximately 120. Based on the workers that will be needed for construction and the availability of a local labor pool, beneficial socioeconomic impacts are expected from increased employment and training opportunities. The Project's construction will be completed by Lord Renewable Energy Systems (Lord RES), which is committed to recruiting construction labor for the Project from the Municipality of Yabucoa and the adjacent municipalities. Lord RES has an in-house training and education division that will enable it to hire local workers, preparing them with the technical skills necessary for construction. Increasing the technical skills of the local workers will better prepare them for future employment opportunities, including the possibility of working on other renewable energy construction projects that are expected to occur in the near term throughout Puerto Rico as the island moves toward its goal of achieving 100 percent renewable energy generation by 2050.

Given the relatively small size of Puerto Rico, it is expected that many non-local construction workers would commute to and from the site from their homes; therefore, no significant adverse impacts are expected on the demand for housing, schooling, or residential services.

In addition to bolstering the local economy through employment, beneficial socioeconomic impacts are expected from increased tax-revenue generation and spending in the local economy by the influx of construction workers.

For the operation of the Project, it is expected that two full-time employees will be needed to handle the operations and maintenance activities of the facility. The Applicant is committed to hiring for these two roles from the local workforce, and if possible, from among those workers who will be employed for the

construction of the facility, as they will have gained valuable technical skills and experience applicable to the roles.

The Project is expected to generate socioeconomic benefits by providing a source of renewable energy to PREPA's transmission grid that would contribute to the development of a more stable and affordable electric service, by generating construction jobs, by bolstering the local economy during construction, and by generating two full-time jobs for the operation of the plant. Therefore, no significant adverse socioeconomic impacts are expected from construction and operation of the Project.

3.8.2 Environmental Justice

LPO's review of environmental justice (EJ) issues focuses on Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," the National-Scale Air Toxics Assessment (NATA) cancer risk and respiratory hazard index as defined in the U.S. Environmental Protection Agency (EPA's) EJ screening tool, and on any site-specific population centers (e.g., schools, day-care centers) near the Project site.

Executive Order 12898 directs federal agencies to address environmental and human health conditions in minority and low-income communities. The evaluation of EJ is dependent on determining whether high and adverse impacts from the Project would disproportionately affect minority or low-income populations in the affected community.

In accordance with EPA's EJ guidelines, minority populations should be identified when either 1) the minority population of the affected area exceeds 50 percent or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

The EPA's EJScreen report for the area where the Project will be located covers the census block-group 721519513001, a 7.3 square mile area with a population of 1,139. The Selected indicators from the report are included in Table 5.

Table 5: EPA's EJScreen Report Selected Indicators for Project Census Block

	Value	Puerto Rico Average	Percentile in Puerto Rico	U.S. Average	Percentile in U.S.
Pollution and Sources					
NATA* Cancer Risk (lifetime risk per million)	10	20	0	25	1
NATA* Respiratory Hazard Index	0.1	0.19	0	0.31	1
Socioeconomic Indicators					
People of Color Population	100%	96%	31	39%	98
Low-income Population	65%	70%	31	31%	91
Unemployment Rate	14%	15%	55	6%	90

Notes: Selected Variables – Block-group 721519513001, Puerto Rico. Approximate Population: 1,139. Accessed March 24, 2024.

** More information on the NATA can be found at: https://www.epa.gov/national-air-toxics-assessment*

The census block-group where the Project is located has a population that is 100 percent people of color and 65 percent low-income. According to American Community Survey data for the entire Municipality of

Yabucoa in 2022, the population of 30,313 is 99.8 percent Hispanic or Latino and 49.7 percent is below the poverty line. Therefore, per the EPA's EJ guidelines, the community surrounding the Project site is both a minority population and low-income community.

For the NATA Cancer Risk Index and Respiratory Hazard Index (lifetime risk per million), the Project is in an area that is in the 1st percentile in the U.S., meaning that this population has among the lowest exposure risk in the U.S. to air toxics.

Nevertheless, most of the Project-related emissions would be temporary, occurring during construction and falling within the levels of criteria pollutants and hazardous air pollutants permitted by the Applicant's construction permit. Once in operation, the Project is expected to generate approximately 73,875 megawatt-hours of clean electrical power per year. Based on the EPA's Greenhouse Gas Equivalencies Calculator, this is equivalent to eliminating roughly 51,608 metric tons per year of carbon dioxide (CO_2) emissions.

The Project is anticipated to have an overall positive impact on the Municipality of Yabucoa community due to the facility's displacement of greenhouse gas emissions and to the employment opportunities created. Given the Project is a clean energy generation facility, disproportionate or adverse environmental impacts on this minority and low-income community are not anticipated; therefore, EJ impacts would not be significant.

3.9 Soils and Prime Farmlands

The property leased for the Project was historically used for agricultural purposes but it has not been utilized for formal agricultural production for at least the last twenty years. The Applicant has leased the property from the Puerto Rico Land Administration since 2012 but has not developed nor utilized the land during this time. Portions of the site have been used freely by third parties for informal agricultural activity, including for cattle and horse grazing and for growing lawn grass.

Based on information obtained from the NRCS, there are eight soil associations within the Project's disturbance areas, which are shown in Table 6.

Table 6: Soil and Farmland Classification of the Project Disturbance Areas

Map Unit Symbol	Current Use	Acres	Percent of Total Acres	Farmland Classification
Cr	Coloso silty clay, 0 to 2 percent slopes, occasionally flooded	39.2	32.1%	Prime farmland if drained
Vw	Vivi loam	36.4	29.8%	Prime farmland if irrigated
Me	Maunabo clay	17.3	14.2%	Farmland of statewide importance
PeC2	Parcelas clay, 5 to 12 percent slopes, eroded	14.6	12.0%	Farmland of statewide importance
Ta	Talante soils	14.1	11.6%	Farmland of statewide importance
TeE	Teja gravelly sandy loam, 12 to 40 percent slopes	0.2	0.1%	Not prime farmland
Ul	Urban land	0.1	0.1%	Not prime farmland
PdF	Pandura-Very stony land complex, 40-60 percent slopes	0.1	0.1%	Not prime farmland
TOTAL		**122.0**	100%	

Prime Farmland, as defined by the USDA, is land with the ideal parameters for the production of food, feed, forage, fiber, and oilseed crops. Approximately 62.0 percent of the Project's disturbance areas are classified by NRCS as prime farmland if drained or irrigated, 37.7 percent is farmland of statewide importance, and 0.3 percent is not prime farmland. Development of the Project would result in the permanent conversion of approximately 115 acres from being available for farming. Because the Project would result in conversion of potential farmland, DOE consulted with NRCS to conduct a farmland conversion impact rating in compliance with the NRCS to conduct a farmland conversion impact rating in compliance with the Farmland Protection Policy Act (FPPA). The rating is based on a land evaluation component, which identifies the relative value of farmland to be converted on a scale of 0 to 100, and a site assessment component, which evaluates other factors that contribute to the site's agricultural importance on a scale of 0 to 160. For sites receiving a score of 160 or greater, alternative actions to reduce impacts on farmland should be considered. The Project received a land evaluation rating of 71 and a site assessment rating of 73, for a total score of 144 (see Appendix A). The AD1006 forms completed pursuant to FPPA used an estimate of 182 acres of direct conversion as a conservative estimate, which includes areas outside the actual limits of disturbance within the property boundary.

The Project would result in development in areas that contain soils that have been classified as prime farmlands; however, the Municipality of Yabucoa has ample unutilized farmland, including land surrounding the Project site and the specially protected Yabucoa Valley Agricultural Reserve northwest of the Project site. Given the small reduction in total farmland availability in the Municipality of Yabucoa (1.4%), the FPPA assessment scoring for the Project land, and the extensive additional farmland resources within the Municipality of Yabucoa, impacts on soils and prime farmland by the Project would not be significant.

3.10 Land Use

The PRPB is the regulatory agency empowered by law to make determinations on land use in Puerto Rico. The Project has been in development since 2012, and up until 2015, the property leased for the Project did not have a zoning designation. Regardless, as a public improvement project to be developed on a property owned by a Puerto Rico government agency, the Project required a Land Use Consultation (CUB, according to its Spanish acronym) with PRPB. The Applicant submitted the CUB in 2014 (case no. 2014-75-0121-JGU-T). The PRPB's evaluation process involved consultations with the Municipality of Yabucoa and with other agencies, including the Puerto Rico Highways and Transportation Authority, the Puerto Rico Department of Agriculture (PRAD), and DRNA, all of which endorsed the Project. It did not require a public hearing, but the PRPB did take into consideration the concerns of community groups over potential development on the wetlands on the property. The Applicant clarified that the Project had been designed to not directly impact the wetlands. Considering this, and the various endorsements of the other agencies, PRPB issued a resolution approving the CUB for the subdivision, lease, and siting of the Project on July 14, 2024.

The CUB remains valid under the laws of Puerto Rico since its approval, and the Applicant continued its permitting efforts for the subsequent development stages and obtained a Notification of Requirements for Approval of a Development Permit (PCU permit) (case no. 2015-074181-PCU-116387) on May 24, 2016, and OGPe reactivated it in October 2023 given there were no substantial changes to the Project (case no. 2015-074181-PRR-013726). The CUB is also valid pursuant to Act 142-2012, and the PRPB's interpretative resolutions regarding such act which settled general discrepancies in interpretations as to the validity of certain land use consultations approved between 2012 and 2019, including the CUB.

The Project abuts the La Lucia Natural Reserve to the east. In the planning document for this reserve, the Junte de Planificación specifically excluded the YFN Yabucoa LLC solar project from the limits of the reserve, because the CUB was approved prior to establishment of the reserve (Junte de Planificación 2016). In addition, the Project is located within the Coastal Zone Inland Boundary (CZIB) and therefore

falls under the purview of the Puerto Rico Coastal Zone Management Program (PRCZMP). The CZIB includes areas 1,000 meters from the shoreline (approximately 24 percent of the Project's disturbance areas). The PRCZMP requires all federally funded projects within the Coastal Zone to be evaluated through the coastal consistency determination process and issued a certification of consistency. The Project was presented to the program's evaluating agency, PRPB, on March 20, 2024. PRPB issued a federal consistency certificate on June 18, 2024 (case no. CZ-2024-0315-135; see Appendix A).

Based on conformance of the Project to the requirements in the PRPB's resolution approving the Project's CUB, and because the Project would be consistent with the PRCZMP, impacts on land use would not be significant.

3.11 Cumulative Impacts

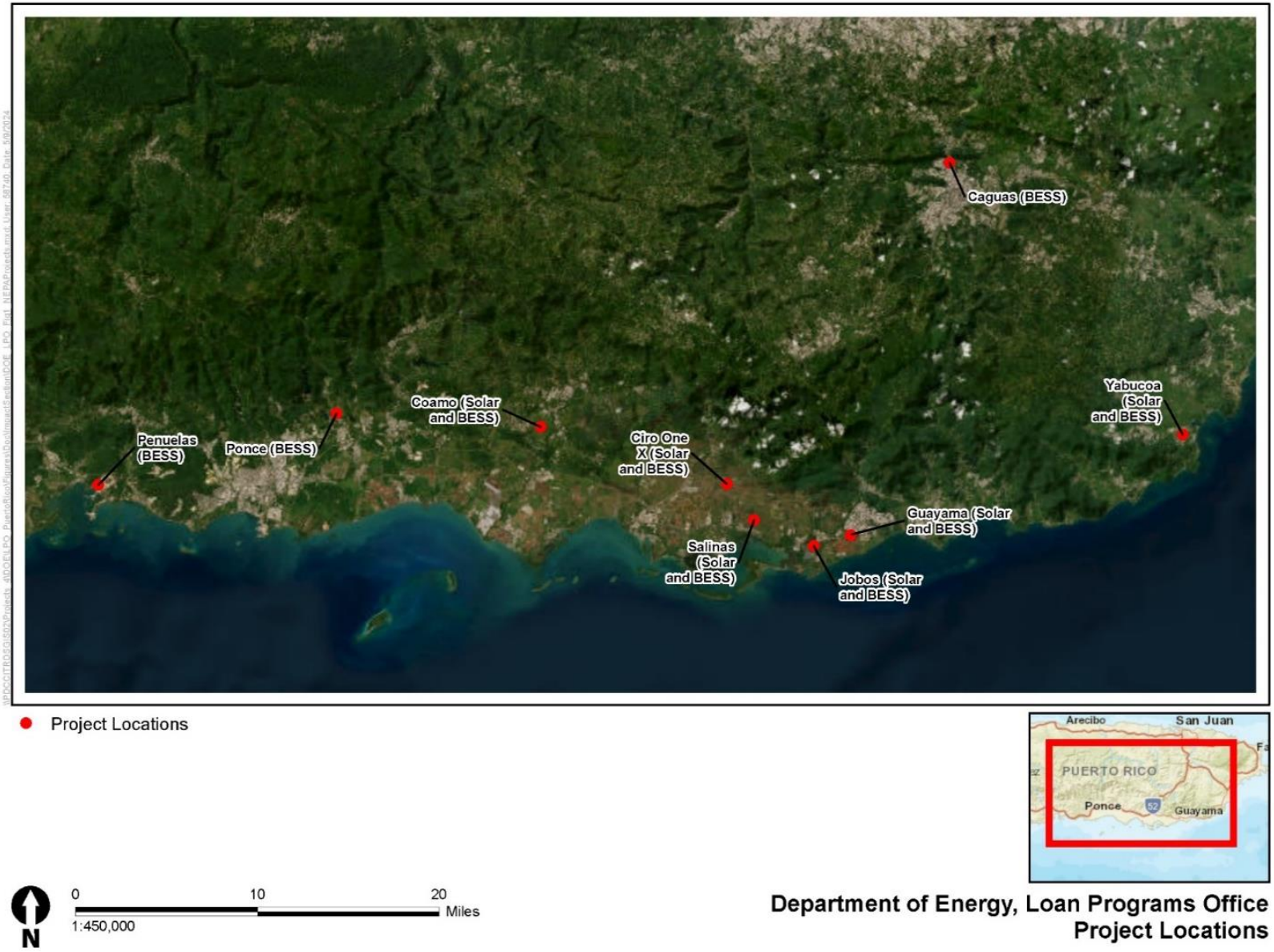
Cumulative impacts are potential effects on the environment from the incremental impact of a project when added to the past, present, and reasonably foreseeable future actions undertaken by local and/or federal agencies or persons. Projects considered in this section were identified through a review of the permit database included in the Puerto Rico interactive map tool hosted by the PRPB and the PR100 study (DOE and FEMA 2024). The Project is located in an immediate area that has no present or future projects planned. The Applicant is planning a future BESS addition to the Project that would be constructed within the same Project site (in Zone 3).

Other DOE projects in Puerto Rico (Shown in Figure 6), including those undergoing active NEPA review by LPO, include:

- Two developments by AES Corporation: A 80 MW solar PV facility and 110 MW BESS on 318 acres (327.84 cuerdas) of property owned by the Puerto Rican Industrial Development Company on PR-7707 and PR-3 (Barrio Jobos, Guayama, Puerto Rico 00784) and a 120 MW solar PV and 175 MW BESS facility between highways PR-53 (to the north), PR-3 (to the south), PR-713 (to the east), and PR-706 (to the west) in the municipalities of Salinas and Guayama.
- A 100 MW solar PV facility and 55 MW BESS on 322 acres in the Municipality of Coamo, bounded by PR-14 to the north and the Coamo River to the southeast. Also includes 100 MW BESS in Penuelas, 25 MW BESS in Ponce, and 25 MW BESS in Caguas, all to be developed by Convergent Ashford Development, LLC.
- A 65 MW solar PV and 25 MW BESS on 177 acres in the Lapa Ward of Salinas and 65 MW solar PV and 25 MW BESS on 132 acres in the Machete Ward of Guayama, to be developed by the Ciro Energy Group (not including the existing Ciro One facility).
- Programa Acceso de Solar – Program opened on February 22, 2024, supporting installation of residential rooftop solar and battery energy storage at 30,000 households throughout Puerto Rico for zero upfront costs (DOE n.d.).
- Project Hestia – LPO portfolio loan guarantee to Sunnova Corporation to build residential rooftop solar with a focus on Puerto Rico.

Programa Access de Solar and Project Hestia residential rooftop sites are located throughout Puerto Rico. Refer to Figure 6 for the approximate location of the other utility-scale solar and battery storage projects under DOE NEPA review.

Figure 6: Other DOE Projects in Puerto Rico



LPO reviewed the other solar projects identified in the region, projects subject to active NEPA review by LPO, and DOE's Programa Acceso de Solar to determine the resources that may be subject to a cumulative impact. Based on this review, the following resources were evaluated for cumulative impacts:

- Socioeconomics and environmental justice
- Land use
- Soils and prime farmland
- Greenhouse Gases and Climate Change
- Aesthetic and visual resources

Law No. 17 of April 11, 2019 (Act 17), established a goal for Puerto Rico to produce 100 percent of its energy from renewable sources by 2050. PR100 study supported the technical evaluation of this objective, which included a recommendation to include utility-scale solar in Puerto Rico's energy portfolio to meet the island's energy needs. PR100 found that 100 percent renewable power generation by 2050 is achievable and identified grid stabilization measures, utility-scale renewables, and the deployment of distributed energy resources as ways to achieve that goal.

3.11.1 Socioeconomics and Environmental Justice

The construction and operation of the Infinigen Yabucoa Project would be done near communities considered as a minority, socioeconomically disadvantaged, and environmentally burdened due to their proximity to the other local industrial facilities. The Project would not intensify the emission level of National Ambient Air Quality Standard criteria air pollutants during construction and operation. Furthermore, operation of alternate energy projects, including PV solar, has the objective of decreasing the island's dependency of fossil fuels and reducing the generation of GHG emissions while providing socioeconomic benefits by contributing to a more reliable electric distribution system. A more reliable electric grid is also conducive to improving business and investment opportunities in the Commonwealth. The projects undergoing active NEPA review by LPO would create thousands of temporary jobs altogether during the construction phase, which totals hundreds of workers on site per day per project, in addition to indirect and induced jobs in supporting services and the economy. The total number of direct temporary construction jobs for Infinigen Yabucoa is 120.

The production of energy from renewable sources under LPO's Energy Infrastructure Reinvestment Program would replace existing fossil fuel power generation. The projects would not represent an additional, disproportionate, or excessive burden on communities in the area. In contrast, the development of renewable energy sources would result in environmental and human health benefits by replacing fossil fuel energy sources and reducing the emissions of pollutants and GHGs. The displacement of these sources of pollution through the shift to renewable energy fulfills the central objective of EJ to reduce environmental pollution sources. In addition, it contributes to reducing the effects of climate change, which disproportionately affect disadvantaged communities. In conclusion, the projects are expected to provide local benefits for EJ.

The Project, when considered together with the identified projects in Puerto Rico, would not have the potential to result in significant cumulative impacts on other resources due to the environmental protection measures implemented during construction and their contribution to stabilization and decarbonization of the electricity grid of Puerto Rico.

3.11.2 Land Use

Any proposed solar and storage project over 1 MW, including the Project analyzed in this EA and the other projects analyzed for cumulative impacts, must complete the CUB process. The CUB process requires consultation with all infrastructure and environmental agencies, as well as the public, and

neighboring notification. The Applicant completed the CUB process on July 14, 2015. During the Project's CUB process, the Project received a letter of no objection from PRAD, conditional on allowing the individual who has been freely using the land to grow lawn grass to continue his business. The Applicant is committed to allowing this individual to continue his grass-growing activity on the leased property.

Infinigen Yabucoa solar would construct its 32.1 MW solar PV project on 122 acres, visible from surrounding roadways. The Yabucoa project would be adjacent to existing petrochemical facilities and therefore consistent with existing industrial uses in the area. The AES project would install 190 MW PV and BESS on 959 acres. Convergent Energy would construct a 100 MW solar PV array on 322 acres in the Municipality of Coamo, on a site that is now active agricultural land and vacant agricultural land, along with 8.5 acres for three separate BESS sites. The two 65 MW solar and 25 MW BESS proposed by Ciro Group represent another 309 acres of converted land uses to electricity generation. Programa Accesso de Solar and Project Hestia apply only to existing residential buildings and would not change land uses.

For LPO's current PREPA Tranche 1 projects undergoing active NEPA review in Puerto Rico, a total of 1,723 acres would be changed from their past land uses to solar and storage. The projects all require approvals through CUB prior to construction. Because land use decisions, including development of solar PV and storage projects greater than 1 MW, must be explicitly approved by agencies and municipalities within Puerto Rico, and the federal action of the potential loan guarantee requires permits and approvals, in this case including the CUB process, there would be no significant negative cumulative effects on land use.

3.11.3 Aesthetic and Visual Resources

The Project would be located adjacent to an existing petrochemical storage facility and active industrial marine terminal, along with an existing PREPA substation. It is bordered to the south by residential areas, and to the east by vacant land and Playa Lucía. Construction of the Infinigen Yabucoa Project would result in a visual impact that would last for the life cycle of the Project, estimated at approximately 25 years. The change in the landscape in this area was considered by and consistent with the approved land uses for the site and the co-location of other energy infrastructure in the area. The Yabucoa Project would not be visible from any of the other PV solar facilities in Puerto Rico undergoing active NEPA review by LPO. The Yabucoa Project is roughly 19 miles east of the nearest project (Ciro Group's Guayama Solar Project) and is therefore in a different viewshed. Because the additional solar development in the Project is consistent with the approved zoning and land uses, and prominence of the adjacent oil terminal as viewed from surrounding areas, cumulative impacts on aesthetics and visual resources would not be significant.

3.11.4 Soils and Prime Farmland

Coordination with NRCS indicates there are roughly 181 acres of prime or unique farmland soils on the site (Appendix A [AD 1006 form]). Within the site, the 122-acre Project is located on an area with only informal livestock and grass-growing uses and would not displace any food production operations. The Yabucoa Project would result in 1.4 percent of the total acreage of prime or unique farmlands and farmlands of statewide importance in the Municipality of Yabucoa being converted to renewable energy uses. Currently, LPO is actively preparing NEPA documents for the AES Corporation, Convergent Energy, and Ciro Group solar PV and storage projects, in addition to the Infinigen Yabucoa projects, that may result in the conversion of farmland soils. The projects under active NEPA review represent a conversion of approximately 1,722 acres of prime or unique farmland and farmland of statewide importance soils, or 0.3 percent of the total acreage of prime or unique farmland and farmland of statewide importance soils in Puerto Rico. The area of farmland soil conversion by municipality from the projects under active NEPA review are shown in Table 7. LPO notes that Programa Accesso de Solar and Project Hestia affect only existing buildings and would not affect prime farmland.

Table 7: Farmland Soil Conversion from DOE LPO Projects by Municipality

Municipality	Acres of Conversion	Percent of Total Acres of Farmland by Municipality
Caguas	6	0.05%
Coamo	541	4.42%
Guayama	726	5.84%
Ponce	12	0.08%
Salinas	245	0.95%
Santa Isabel	12	0.08%
Yabucoa	181	1.40%

Note: Includes soils classified as prime farmland and farmland of statewide importance based on NRCS Web Soil Survey Data (USDA NRCS 2024). Acres of conversion are based on current design of projects in DOE LPO NEPA review (Jobos, Salinas, Convergent Energy, Ciro Energy, Infinigen Yabucoa) as of May 2024 and are subject to change.

To receive funding from LPO, all projects must acquire local permits and have permission to build and operate their projects. This process involves permitting by Puerto Rico regulatory authorities pursuant to all local laws and regulations, including those pertaining to land use changes. These projects would not represent a displacement of the potential agricultural productivity of the land because renewable energy use could be combined with livestock grazing and other agricultural activities; therefore, agricultural and PV land uses would not be mutually exclusive. Because of the projects' compliance with all local laws and regulations regarding the use of farmland and low percentage (less than 0.03 percent) of land area of prime or unique farmlands as a share the total in Puerto Rico, the Project would not have significant cumulative impacts on soils and prime farmlands.

3.11.5 Greenhouse Gas Emissions and Climate Change

The purpose of the PV solar facility is to provide alternative energy that reinforces PREPA's distribution system while decreasing the need for burning fossil fuels and generating GHGs. LPO evaluates the technical eligibility of each loan guarantee application, which includes an analysis of GHG emissions associated with a project. The Yabucoa solar project would avoid 76 kilotons of CO_2 annually. For the AES projects, LPO determined that the projects would result in GHG emissions reductions by displacing energy generated at existing fossil fuel generation resources by roughly 372 kilotons of CO_2 annually. Convergent Energy would avoid 360 kilotons of CO_2 emissions, with an additional 63 MW of energy replaced from fossil fuel generation by its energy storage components. The Ciro Group Project would avoid 433 kilotons of CO_2 emissions annually. Together, these projects would avoid 1,241 kilotons of CO_2 annually while producing electricity that would have otherwise been generated by fossil fuel resources and contribute to Puerto Rico's goal of producing 100 percent of its power with renewable energy by 2050. In general, the potential benefits associated with reducing CO_2 emissions would support a reduction in GHG concentrations and the associated climate change impacts (e.g., increases in atmospheric temperature, changes in precipitation, increases in the frequency and intensity of extreme weather events, and rising sea levels). In addition, to protect the projects from the effects of climate change (e.g., severe weather), the solar PV systems is designed to withstand windspeeds of up to 158 mph, which is a Category 5 on the Saffir-Simpson scale.

4. FINDING

Based on this EA, DOE has determined that providing a federal loan guarantee to YFN Yabucoa Solar, LLC for construction of a 32.1- MW solar PV energy facility and an up to 75 MW BESS in the Municipality of Yabucoa, Puerto Rico on approximately 122 acres, will not have a significant effect on the human environment. The preparation of an environmental impact statement is therefore not required, and DOE is issuing this Finding of No Significant Impact.

This Finding of No Significant Impact should not be construed as a final decision about the issuance of a loan guarantee.

TODD STRIBLEY Digitally signed by TODD STRIBLEY Date: 2024.09.10 11:59:04 -06'00'

Todd Stribley
NEPA Compliance Officer
DOE Loan Programs Office

September 10, 2024
Date

5. LIST OF AGENCIES CONTACTED

U.S. Fish and Wildlife Service (USFWS)

USDA Natural Resources Conservation Service

U.S. Environmental Protection Agency (EPA)

Puerto Rico Office of the Governor

Puerto Rico State Historic Preservation Office (SHPO)

Puerto Rico Department of Natural and Environmental Resources (DRNA)

Puerto Rico Electric Power Authority (PREPA)

Puerto Rico Office of Public and Private Partnerships (P3)

Puerto Rico Permit Management Office (OGPe)

Puerto Rico Planning Board (PRPB)

6. LIST OF PREPARERS

6.1 DOE

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María Cecilia Santos, BS Mechanical Engineering and J.D., 15 years of experience

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7. REFERENCES

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APPENDIX A AGENCY CORRESPONDENCE

Table A-1. Summary of Agency Coordination

Organization	Contact Date(s)	Summary of Contact
Puerto Rico Office of the Governor	12/18/2023	Request to identify PR agencies to involve in the NEPA process
	12/19/2023	Distribution List Input Received
	03/15/2024	**Notice of Intent to Prepare an Environmental Assessment**
	01/23/2024	Request for PR agency contact information
	02/02/2024	Interagency Meeting – Virtual
	03/14/2024	Interagency Meeting – In Person
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
Puerto Rico Departamento de Recursos Naturales y Ambientales	03/15/2024	**Notice of Intent to Prepare an Environmental Assessment**
	02/02/2024	Interagency Meeting – Virtual
	03/14/2024	Interagency Meeting – In Person
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
EPA Region 2, Environmental Review Section	03/18/2024	**Notice of Intent to Prepare an Environmental Assessment**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
Puerto Rico Electric Power Authority (PREPA)	03/15/2024	**Notice of Intent to Prepare an Environmental Assessment**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
Public-Private Partnerships Authority (P3)	03/15/2024	**Notice of Intent to Prepare an Environmental Assessment**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office	03/15/2024	**Notice of Intent to Prepare an Environmental Assessment**
	03/20/2024	**Submission of Biological Assessment**
	05/03/2024	**USFWS Concurrence Received**
	06/20/2024	**Updated species list obtained**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
USDA Natural Resource Conservation Service	12/15/2023	Coordination Meeting
	02/13/2024	Initial FPPA AD1006 Submission
	02/27/2024	**AD1006 Comments Received**
	03/15/2024	Notice of Intent to Prepare Environmental Assessment
	03/18/2024	In-Person Coordination Meeting
	04/11/2024	**Final AD1006 Sent**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**

Organization	Contact Date(s)	Summary of Contact
Unidad de Zona Costanera, Oficina de Geología e Hidrogeología, Junta de Planificación	02/02/2024	Federal Consistency Review Process Meeting
	02/05/2024	Federal Consistency Review Instructions Received
	03/24/2024	**Consistency Review Submitted**
	06/20/2024	**Federal Consistency Certificate Received**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**
Puerto Rico State Historic Preservation Office	08/17/2023	Initial request for information
	09/15/2023	Virtual Coordination Meeting
	03/13/2024	**Section 106 Consultation Request Sent**
	03/18/2024	In-Person Coordination Meeting
	03/20/2024	**Concurrence Received from PRSHPO**
	07/22/2024	**Notice of Availability of Draft Environmental Assessment**

Table A-2. Response to Public Comments on YFN Yabucoa, LLC Draft Environmental Assessment

Comment No.	Public Comments on YFN Yabucoa, LLC Draft Environmental Assessment		
	Commenter	Comment Summary	Response
1	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Opposition to project due to presence of tsunami zone	The Project is designed in accordance with all requirements and regulations. The Project drawings were all stamped by Professional Engineers registered in Puerto Rico, and the facility was designed to the codes and standards of 2018 Puerto Rico Building Code. The design included considerations for the potential of tsunami flooding in this specific location. The solar modules, electrical inverters, battery equipment, operations building, and all high voltage electrical equipment are located at elevations higher than the flood zone. Floodplains and flood resiliency measures are discussed in Section 3.3.3 of the EA.
2	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Opposition to project – agricultural land	Applicable land use changes have been addressed through Puerto Rico's permitting and site consultation process (Land Consultation 2014-75-0121-JGUT). The effects of land use changes, including impacts to land designated as prime or unique farmland by NRCS, are addressed in Sections 3.9, 3.10, and 3.11 of the EA.
3	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Opposition to project – effects on La Lucia Natural Reserve	Details and maps of the Reserva La Lucía can be found in the Plan Sectorial de la Reserva Natural de Puerto Rico Humedal de la Playa Lucía. The delimitation of the natural reserve references Land Consultation 2014-75-0121-JGUT (the "Land Consultation") under which the YFN Yabucoa Solar project was approved, as well as the Wetlands Survey on which the Land Consultation is partially based. The development of the facility is contemplated in the plan that delimits the reserve. The delineation of the natural reserve occurred after the approval of the Land Consultation, and the rights granted under the Land Consultation were not modified or constrained. The facility was designed in accordance with the Land Consultation and the Wetlands Survey, avoiding any direct impacts on wetlands and providing required setbacks, and is therefore consistent with the purpose of the natural reserve. A statement has been added to Section 3.10 clarifying the project is not included in the La Lucia Reserve, as noted in the JP's plan for that area.
4	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Project should be located on brownfield or using rooftop solar	DOE is investing in rooftop solar as noted in the EA. Programa Access de Solar, which makes rooftop solar and storage available to low-income residents of Puerto Rico, and Project Hestia residential rooftop programs are available in Puerto Rico.

Comment No.	Public Comments on YFN Yabucoa, LLC Draft Environmental Assessment		
	Commenter	Comment Summary	Response
			The Yabucoa Solar site was specifically selected over a decade ago mainly for its proximity to an existing PREPA 115kv substation. The Yabucoa Solar interconnection transmission line will be approximately 285 linear feet long, needing only to cross PR-901 to reach PREPA's Juan Martin substation. This proximity eliminates the need for extensive transmission infrastructure, which in turn minimizes both the environmental impact and the costs associated with the project. It also enables a more efficient and reliable integration into the grid, adding to the project's resiliency. The documentation submitted by the Applicant for the original Environmental Recommendation process conducted in 2014 mentions other factors that were influential during the site selection, including (i) economic benefits to the owner of the land and the Municipality of Yabucoa, (ii) prevention of permanent urban spawl, and (iii) its lack of suitability for large scale agricultural activities. The Environmental Assessments carried out in 2014 and 2024 demonstrate that the proposed project will not have significant environmental impact on the land, further supporting that the site is adequate for the proposed development.
5	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Inifingen is not concerned with safety and energy efficiency	Energy Efficiency: The Applicant's mission is to provide reliable clean energy sources. Safety: Section 1.4 of the EA provides that the project would be constructed in accordance with all applicable health and safety standards. The Applicant has provided the following additional safety details: During project construction, comprehensive safety procedures will be implemented to ensure the safety and well-being of all personnel. As required under the Engineering, Procurement and Construction Agreement, RES (the contractor) and any subcontractors will develop and submit a detailed Site Safety Plan for Infinigen's approval, which will include a Job Hazard Analysis for all activities with a medium to high-risk level. RES will comply with all relevant safety regulations, including those set by federal, state, and local authorities. Specific safety measures that will be implemented include: • Safety Monitoring and Reporting: RES will establish a process to monitor and report safety performance, including first aid incidents, near misses, and safety violations. Regular safety inspections will be conducted, and any hazards identified will be promptly addressed. • Safety Orientation and Training: All personnel, including subcontractors, will undergo a mandatory site-specific safety orientation

Public Comments on YFN Yabucoa, LLC Draft Environmental Assessment			
Comment No.	**Commenter**	**Comment Summary**	**Response**
			covering safe work practices, emergency procedures, and relevant safety requirements. Additionally, RES will ensure that all workers have completed OSHA safety training and are familiar with the use of personal protective equipment (PPE). • Pre-Job Safety Briefings: Daily safety briefings will be held before the start of each shift to review potential hazards, safe work procedures, and the required PPE. Follow-up briefings will be conducted as necessary, particularly in response to changes in work scope or incidents. • Accident and Incident Reporting: All accidents, incidents, and near-misses will be reported immediately, with corrective actions implemented to prevent reoccurrence. The contractor will maintain thorough documentation of all safety-related incidents and corrective measures. • Safety Inspections and Equipment Maintenance: RES will conduct daily inspections of the work area and all equipment to ensure a safe working environment. Special attention will be given to scaffolding, cranes, forklifts, and other machinery to ensure they are in proper working order and compliant with safety standards. • Emergency Preparedness: An emergency response plan will be developed and regularly updated, covering scenarios such as fire, chemical spills, or severe weather. Emergency drills will be conducted to ensure that all workers are familiar with procedures and know how to respond swiftly to protect themselves and others. During operations, Infinigen Renewables will establish a comprehensive Health and Safety Manual that outlines the specific safety procedures to be followed at each plant to ensure the well-being of all personnel and anyone entering the plant. The procedures and practices covered in the manual include: employee training requirements, electrical safety practices that meet OSHA standards, defensive driving, personal fall protection systems, hazard communication, hearing conservation, and personal protective equipment, among other topics.

Comment No.	Public Comments on YFN Yabucoa, LLC Draft Environmental Assessment		
	Commenter	Comment Summary	Response
6	Comité Yabucoeño Pro-Calidad de Vida, Inc.	Project is located in an area with heavy industry and environmental justice concerns	Socio-economic and environmental justice impacts are discussed in Section 3.8 of the EA, noting that the intent of the facility is to displace greenhouse gas and air pollutant emissions from fossil-fuel power generation, and thus reduce the burdens of air pollution on local communities.
7	Local Partido Independentista Puertorriqueno Yabucoa	DOE should prioritize distributed renewable energy generation and use of brownfields for solar sites	See responses to Comments 2 and 4.
8	Local Partido Independentista Puertorriqueno Yabucoa	The project is not compatible with this ecological restoration because it will directly affect the reefs, marine life and the different ecosystems that exist in the Lucia wetland.	The project avoids direct impact to wetlands and incorporates buffer zones as required by PR DRNA (See Section 3.3). The Applicant will implement a Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan (See Section 3.3) to minimize erosion and sedimentation. Also see response to Comment No. 3 regarding how the project is not located on the reserve.

Department of Energy
Washington, DC 20585

March 15, 2024

Omar A. Vega-Albino
Senior Advisor to Energy Affairs
Office of the Governor
PO Box 9020082
San Juan, PR 00902-0082

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Vega-Albino,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support energy infrastructure reinvestment (EIR) in the United States and U.S. territories.

DOE is evaluating whether to provide a federal loan guarantee to YFN Yabucoa Solar LLC (the Applicant), to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico (See Figure 1). The PV installations will provide electricity to the distribution network of the Puerto Rico Electric Power Authority (PREPA). The decision to prepare an EA for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The purpose and need for DOE's proposed action, the issuance of a Federal loan guarantee, is to implement DOE's authority under Title 17 of the EPAct, which is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs)(42 U.S.C. 16517(a)(2)).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a

switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

The DOE NEPA regulations provide for the notification of host states and territories of NEPA determinations and for the opportunity for host states and territories to review EAs prior to DOE approval. This process is intended to improve coordination and to facilitate early and open communication.

If you or your staff would like to receive further information concerning this Project or DOE's NEPA process, please contact me at 240-457-7973 or email at LPO_Environmental@hq.doe.gov.

Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

Figures and Attachments:
Figure 1: Site Map
Figure 2: Preliminary Project Layout

CC:
Hon. Rafeal Maldonado, Departamento de Recursos Naturales y Ambientales
Dave Kleusner, U.S. Environmental Protection Agency
Lcdo. Samuel Acosta Camacho, Departamento de Recursos Naturales y Ambientales
Carlos R. Fajardo Verdejo, Departamento de Recursos Naturales y Ambientales
Milagros M. Navon Rivera, Departamento de Recursos Naturales y Ambientales
Jorge L. Cotto-Perez, Puerto Rico Electric Power Authority
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Manual Matos, Natural Resource Conservation Service
Carlos Rubio-Canela, State Historic Preservation Office
Ivelisse Espinosa, Departamento de Recursos Naturales y Ambientales

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Yabucoa Site Boundary

Municipality Boundaries

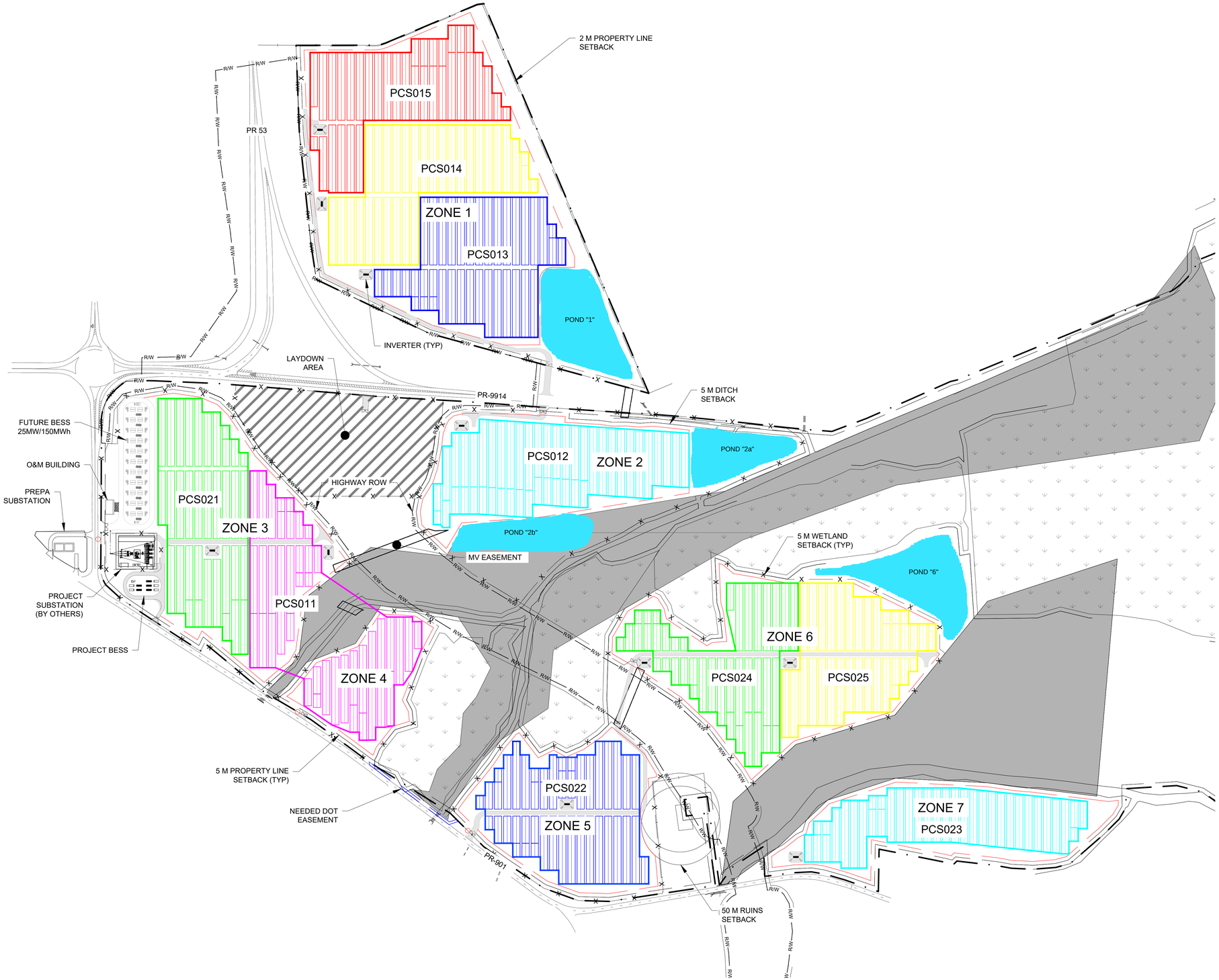
N

0 0.25 0.5 Miles

1:25,000

Department of Energy, Loan Programs Office
Project Yabucoa Site - Project Location

Figure 2: Preliminary Project Layout



OVERALL SITE PLAN

200' 100' 0 200' 400' 600'

SCALE: 1"=200'

LEGEND

- PROPERTY BOUNDARY
- BUILDABLE AREA
- FLOODWAY
- WETLAND

PROJECT SUMMARY	
AC CAPACITY @ POI (kW):	32,100
AC CAPACITY INV NAMEPLATE (kVA):	42,000
DC CAPACITY @ STC (kW):	43,982
DC/AC RATIO @ POI:	1.37
INVERTER LOADING RATIO	1.05
INVERTER MODEL #:	PE FS4200M
INVERTER (kW AC) @ 40° C:	4,200
INVERTER TOTAL QUANTITY:	10
MODULE MODEL:	CS6W-545MB-AG
MODULE WATTAGE (W)	545
MODULE TOTAL QUANTITY:	80,700
MODULES PER STRING:	30
NUMBER OF STRINGS:	2,690
RACKING MANUFACTURER:	GAMECHANGE
TILT ANGLE (deg)	5
ROW SPACING (ft/m):	38.21/11.65
GROUND COVER RATIO:	79.1%
PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

FastGrid, LLC
225 E Germann Road
Suite 310
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
A	30% DESIGN	11/22/2023
B	60% DESIGN	12/21/2023
C	90% DESIGN	01/29/2024

PROJECT NAME:
YABUCOA
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 15, 2024

Anaís Rodríguez Vega
Secretary
Departmento de Recursos Naturales y Ambientales
San José Industrial Park
1375 Ave Pince de León
San Juan, PR 00926

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Ms. Rodriguez Vega,

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Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

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Department of Energy, Loan Programs Office
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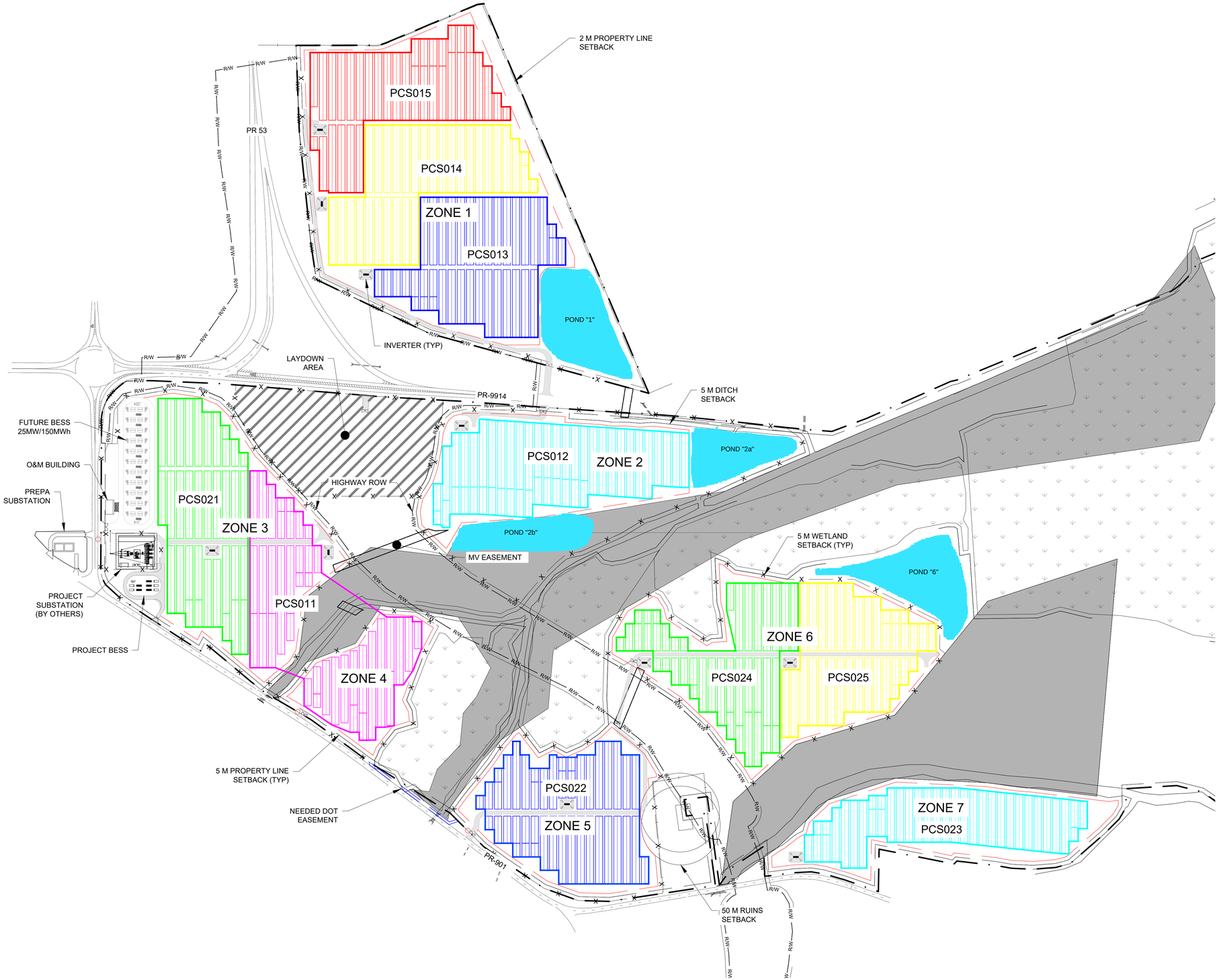

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PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

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225 E Germann Road
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Gilbert, AZ 85297

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Department of Energy
Washington, DC 20585

March 15, 2024

Milagros M. Navon Rivera
Oficiales de Informacion
Departamento de Recursos Naturales y Ambientales
San José Industrial Park
1375 Ave Ponce de León
San Juan, PR 00926

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Ms. Navon Rivera,

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Respectfully,

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Environmental Protection Specialist
Loan Programs Office

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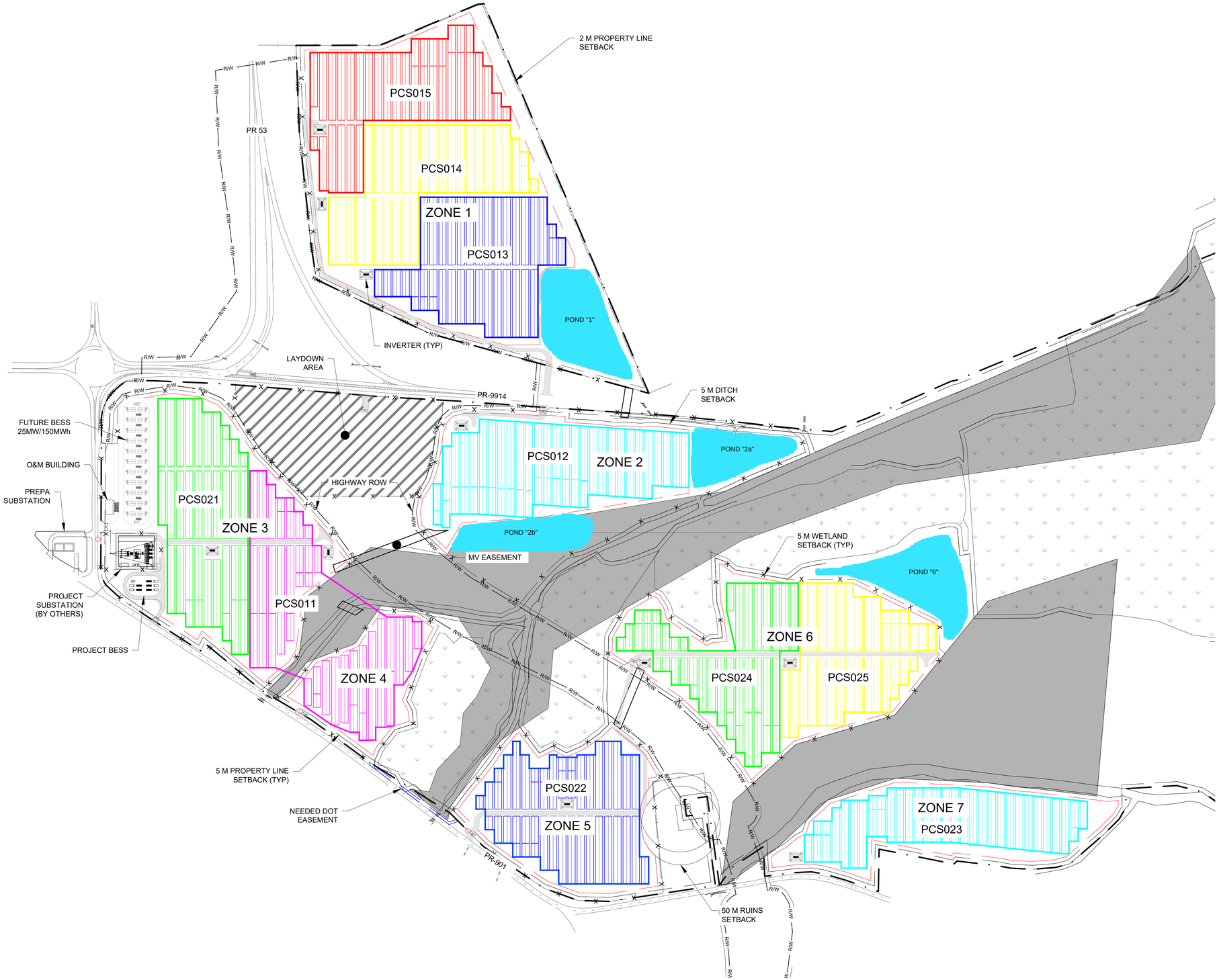

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If you or your staff would like to receive further information concerning this Project or DOE's NEPA process, please contact me at 240-457-7973 or email at LPO_Environmental@hq.doe.gov.

Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

Figures and Attachments:
Figure 1: Site Map
Figure 2: Preliminary Project Layout

CC:
Hon. Rafeal Maldonado, Departamento de Recursos Naturales y Ambientales
Dave Kleusner, U.S. Environmental Protection Agency
Lcdo. Samuel Acosta Camacho, Departamento de Recursos Naturales y Ambientales
Carlos R. Fajardo Verdejo, Departamento de Recursos Naturales y Ambientales
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Figure 1: Infinigen Yabucoa Site Map

Yabucoa Site Boundary

Municipality Boundaries

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0 0.25 0.5 Miles

1:25,000

Department of Energy, Loan Programs Office
Project Yabucoa Site - Project Location

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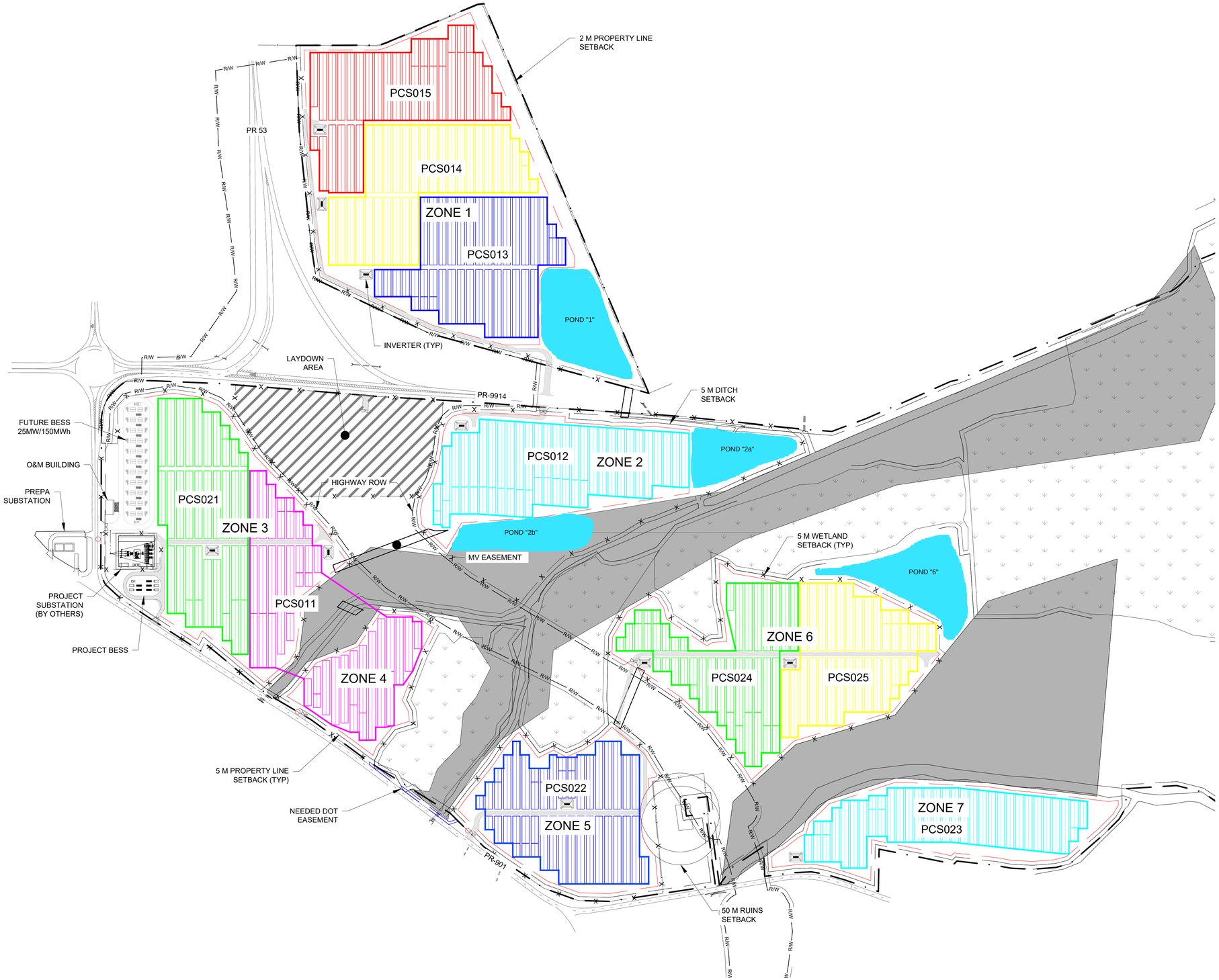

OVERALL SITE PLAN

200' 100' 0 200' 400' 600'

SCALE: 1"=200'

LEGEND

- PROPERTY BOUNDARY
- BUILDABLE AREA
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INVERTER MODEL #:	PE FS4200M
INVERTER (kW AC) @ 40° C:	4,200
INVERTER TOTAL QUANTITY:	10
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MODULE WATTAGE (W)	545
MODULE TOTAL QUANTITY:	80,700
MODULES PER STRING:	30
NUMBER OF STRINGS:	2,690
RACKING MANUFACTURER:	GAMECHANGE
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GROUND COVER RATIO:	79.1%
PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

FastGrid, LLC
225 E Germann Road
Suite 310
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
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B	60% DESIGN	12/21/2023
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PROJECT NAME:
YABUCOA
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 15, 2024

Carlos R. Fajardo Verdejo
Oficiales de Información
Departamento de Recursos Naturales y Ambientales
San José Industrial Park
San Juan, PR 00926

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Fajardo Verdejo,

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Loan Programs Office

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Department of Energy, Loan Programs Office
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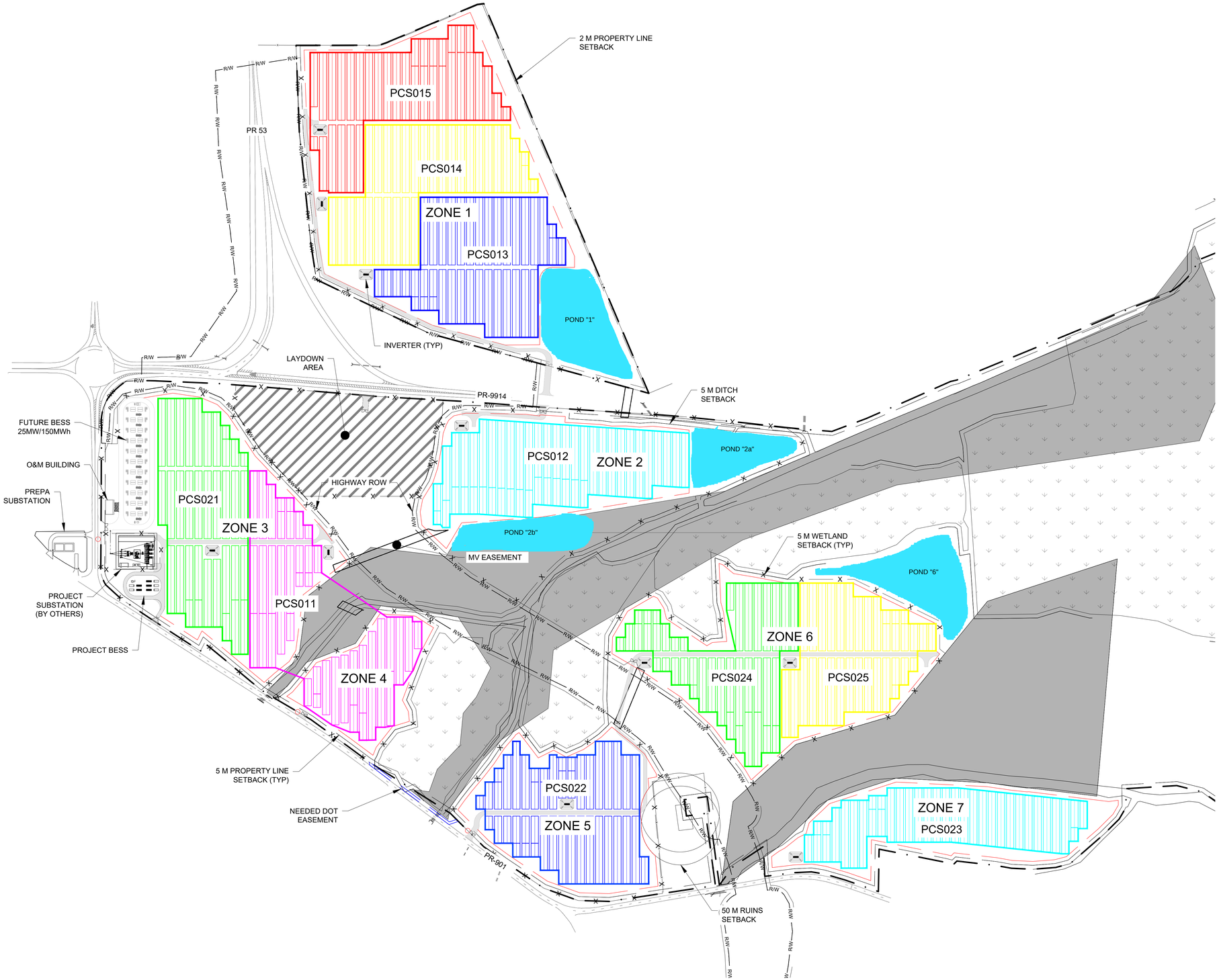

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Gilbert, AZ 85297

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PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 18, 2024

Dave Kluesner
Acting Director
EPA Region 2, Environmental Review Section
290 Broadway, 25th Floor
New York, NY 10007-1866

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Kluesner,

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Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

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Carlos R. Fajardo Verdejo, Departamento de Recursos Naturales y Ambientales
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Department of Energy, Loan Programs Office
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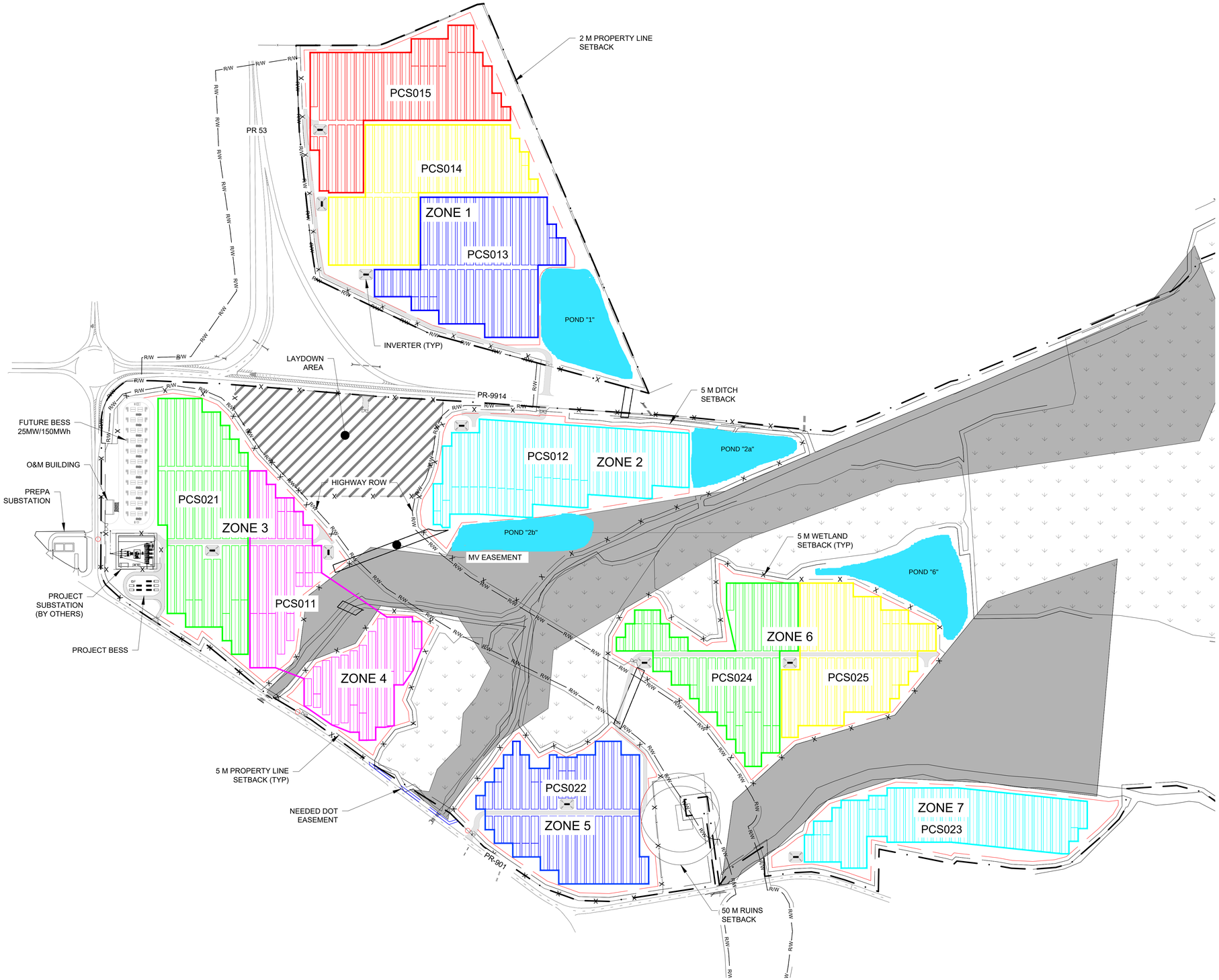

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PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

FastGrid, LLC
225 E Germann Road
Suite 310
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
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PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

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PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 15, 2024

Jorge L. Cotto-Perez
Puerto Rico Electric Power Authority

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Cotto-Perez,

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Loan Programs Office

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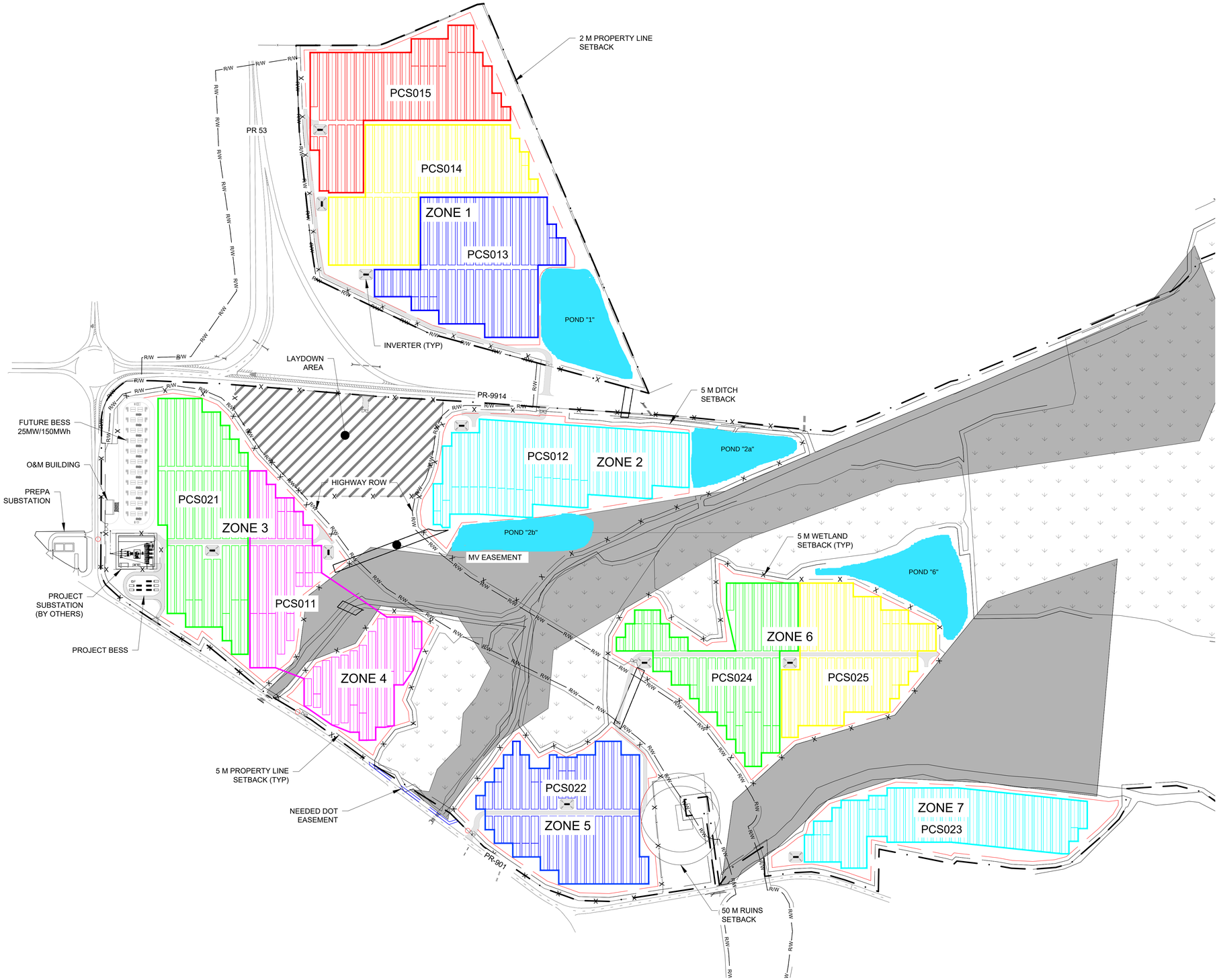

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Department of Energy
Washington, DC 20585

March 15, 2024

Sheila A. Torres-Sterling
Public-Private Partnerships Authority (P3)

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

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Hon. Rafeal Maldonado, Departamento de Recursos Naturales y Ambientales
Dave Kleusner, U.S. Environmental Protection Agency
Lcdo. Samuel Acosta Camacho, Departamento de Recursos Naturales y Ambientales
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Ernesto-Rivera, Puerto Rico Public Private Partnerships Authority
Lourdes Mena, U.S. Fish and Wildlife Service
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Carlos Rubio-Canela, State Historic Preservation Office
Ivelisse Espinosa, Departamento de Recursos Naturales y Ambientales

Figure 1: Infinigen Yabucoa Site Map

Yabucoa Site Boundary

Municipality Boundaries

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0 0.25 0.5 Miles

1:25,000

Department of Energy, Loan Programs Office
Project Yabucoa Site - Project Location

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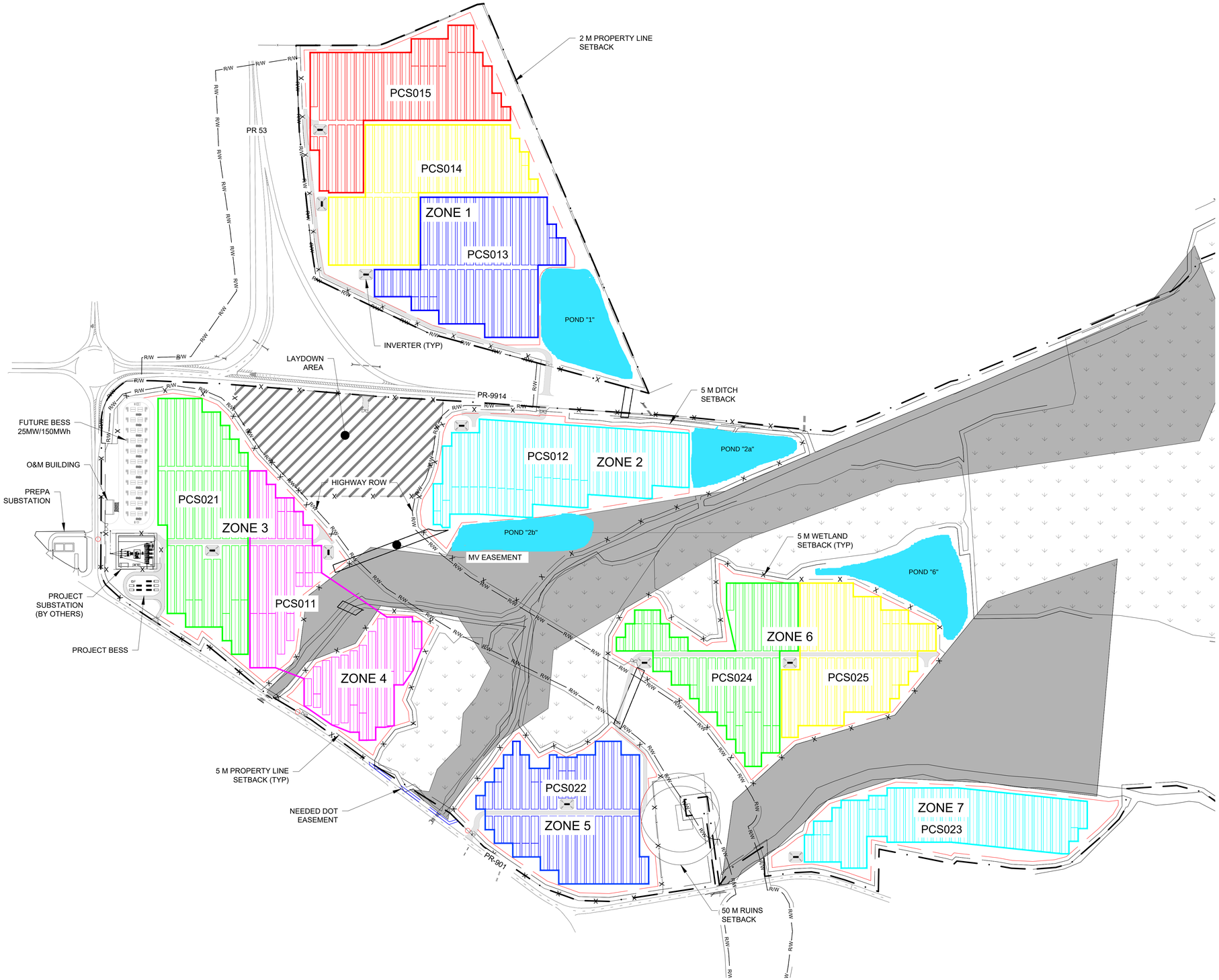

OVERALL SITE PLAN

200' 100' 0 200' 400' 600'

SCALE: 1"=200'

LEGEND

- PROPERTY BOUNDARY
- BUILDABLE AREA
- FLOODWAY
- WETLAND

PROJECT SUMMARY	
AC CAPACITY @ POI (kW):	32,100
AC CAPACITY INV NAMEPLATE (kVA):	42,000
DC CAPACITY @ STC (kW):	43,982
DC/AC RATIO @ POI:	1.37
INVERTER LOADING RATIO	1.05
INVERTER MODEL #:	PE FS4200M
INVERTER (kW AC) @ 40° C:	4,200
INVERTER TOTAL QUANTITY:	10
MODULE MODEL:	CS6W-545MB-AG
MODULE WATTAGE (W)	545
MODULE TOTAL QUANTITY:	80,700
MODULES PER STRING:	30
NUMBER OF STRINGS:	2,690
RACKING MANUFACTURER:	GAMECHANGE
TILT ANGLE (deg)	5
ROW SPACING (ft/m):	38.21/11.65
GROUND COVER RATIO:	79.1%
PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

FastGrid, LLC
225 E Germann Road
Suite 310
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
A	30% DESIGN	11/22/2023
B	60% DESIGN	12/21/2023
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PROJECT NAME:
YABUCOA
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 15, 2024

Ernesto Rivera
Public-Private Partnerships Authority (P3)

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Rivera,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support energy infrastructure reinvestment (EIR) in the United States and U.S. territories.

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The purpose and need for DOE's proposed action, the issuance of a Federal loan guarantee, is to implement DOE's authority under Title 17 of the EPAct, which is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs)(42 U.S.C. 16517(a)(2)).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission

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Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

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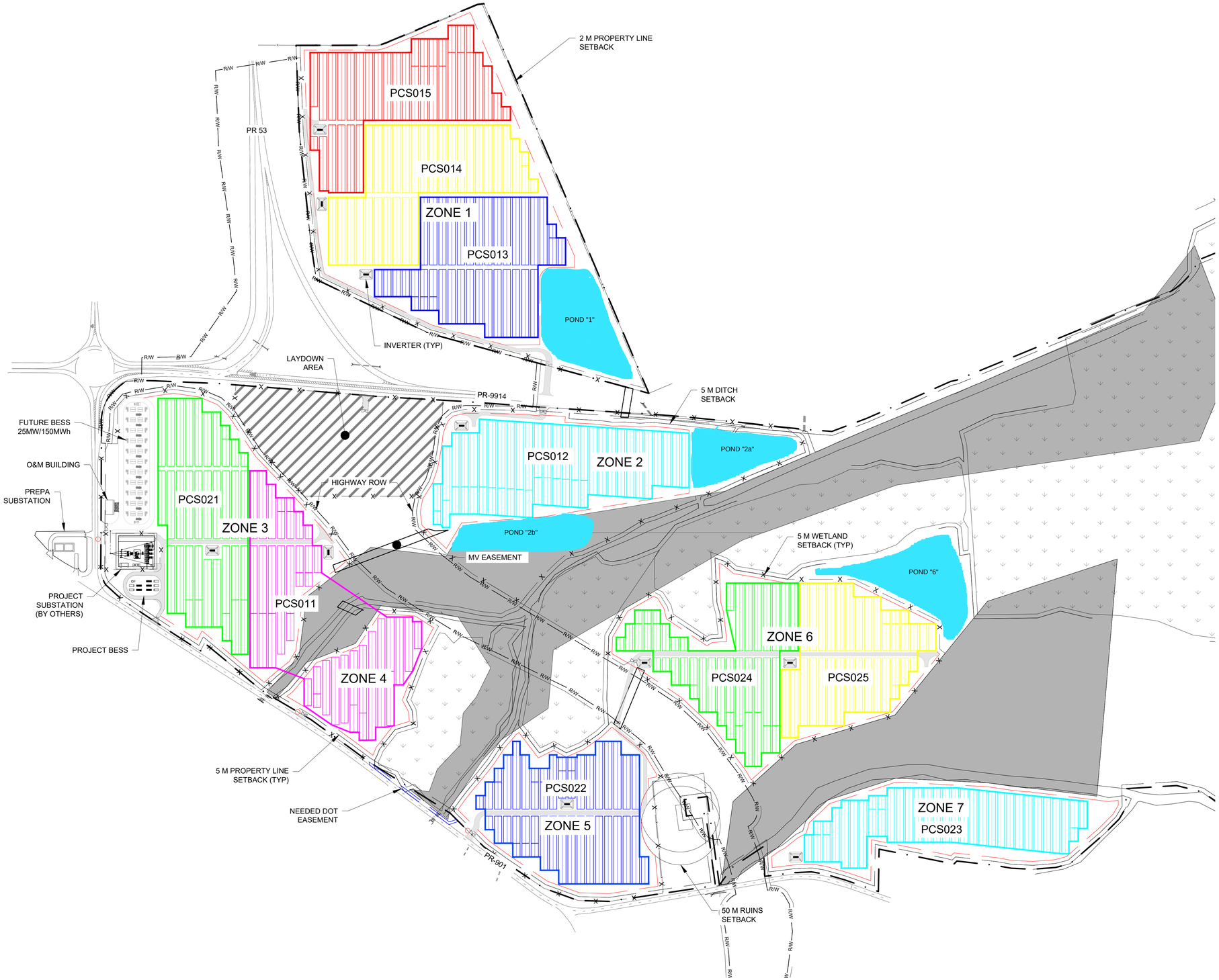

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PROJECT ADDRESS:
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PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
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DRAWN BY: LP
CHECKED BY: TG

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PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 15, 2024

Carlos Rubio-Cancela
State Historic Preservation Officer
Office of the Governor
State Historic Preservation Office
PO Box 9023935
San Juan, PR 00902-3935

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Rubio-Cancela,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support energy infrastructure reinvestment (EIR) in the United States and U.S. territories.

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Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

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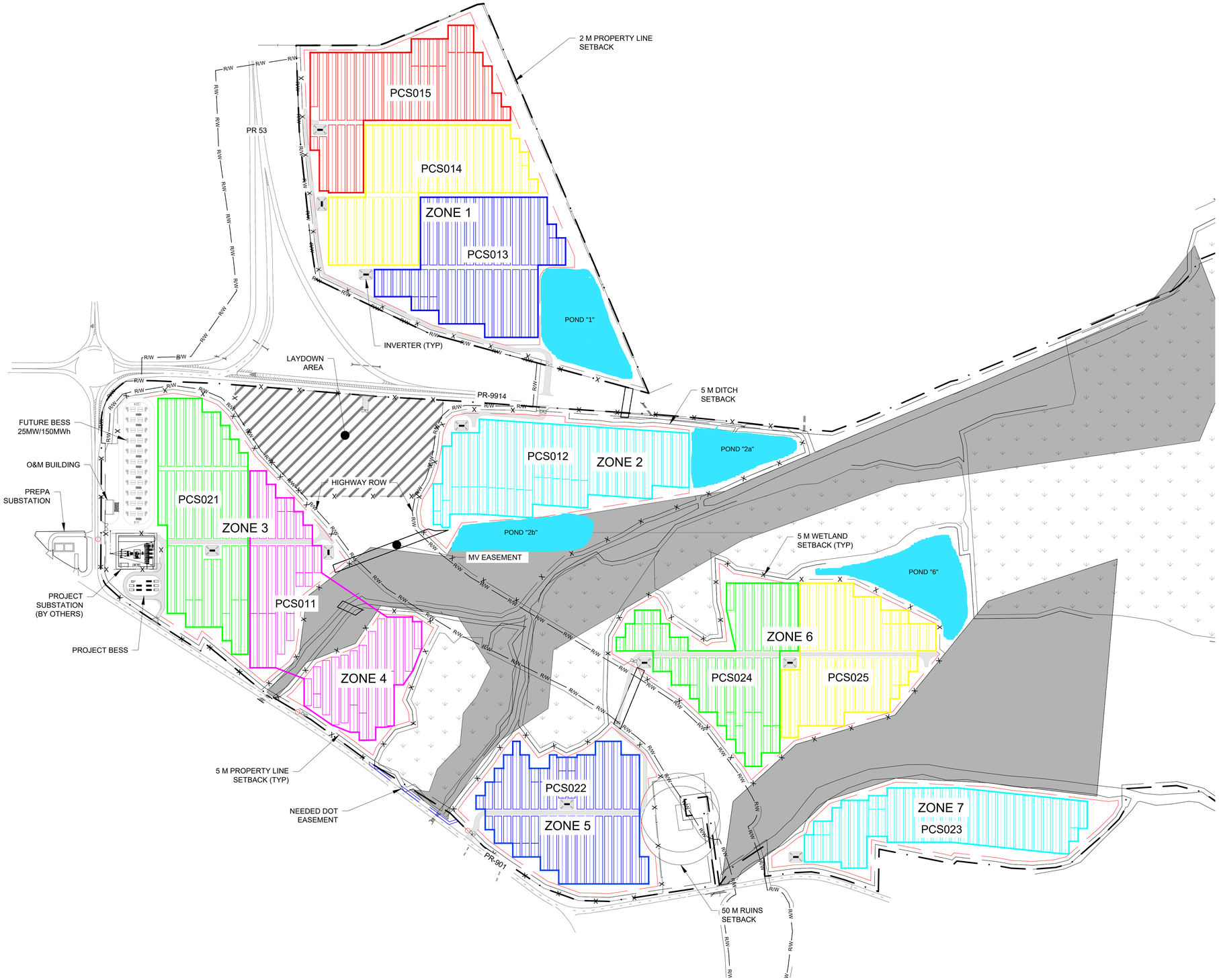

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PR-901, YABUCOA, PR

SEAL: PRELIMINARY

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PROJECT #: 230144.12
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Department of Energy
Washington, DC 20585

March 15, 2024

Lourdes Mena
Acting Field Supervisor
U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
Office Park I, Suite 303
State Road #2, KM 156.5
Mayaguez, PR 00680

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Ms. Mena,

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David Oster
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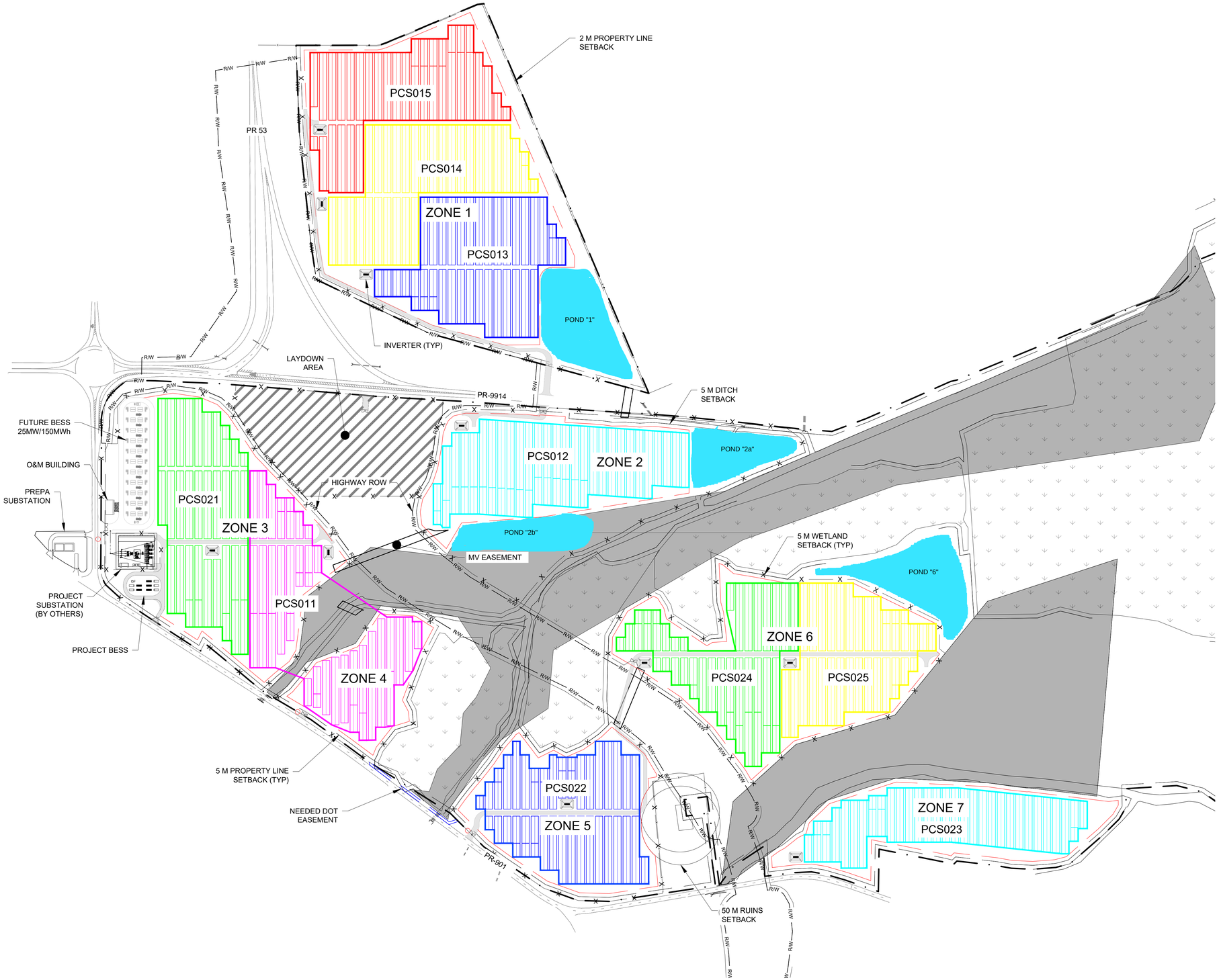

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Department of Energy
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Manual Matos-Rodriquez
State Soil Scientist for the Caribbean Region
Natural Resource Conservation Service
654 Munoz Rivera Ave., Suite 604
San Juan, PR 00918

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the Construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Mr. Matos-Rodriquez,

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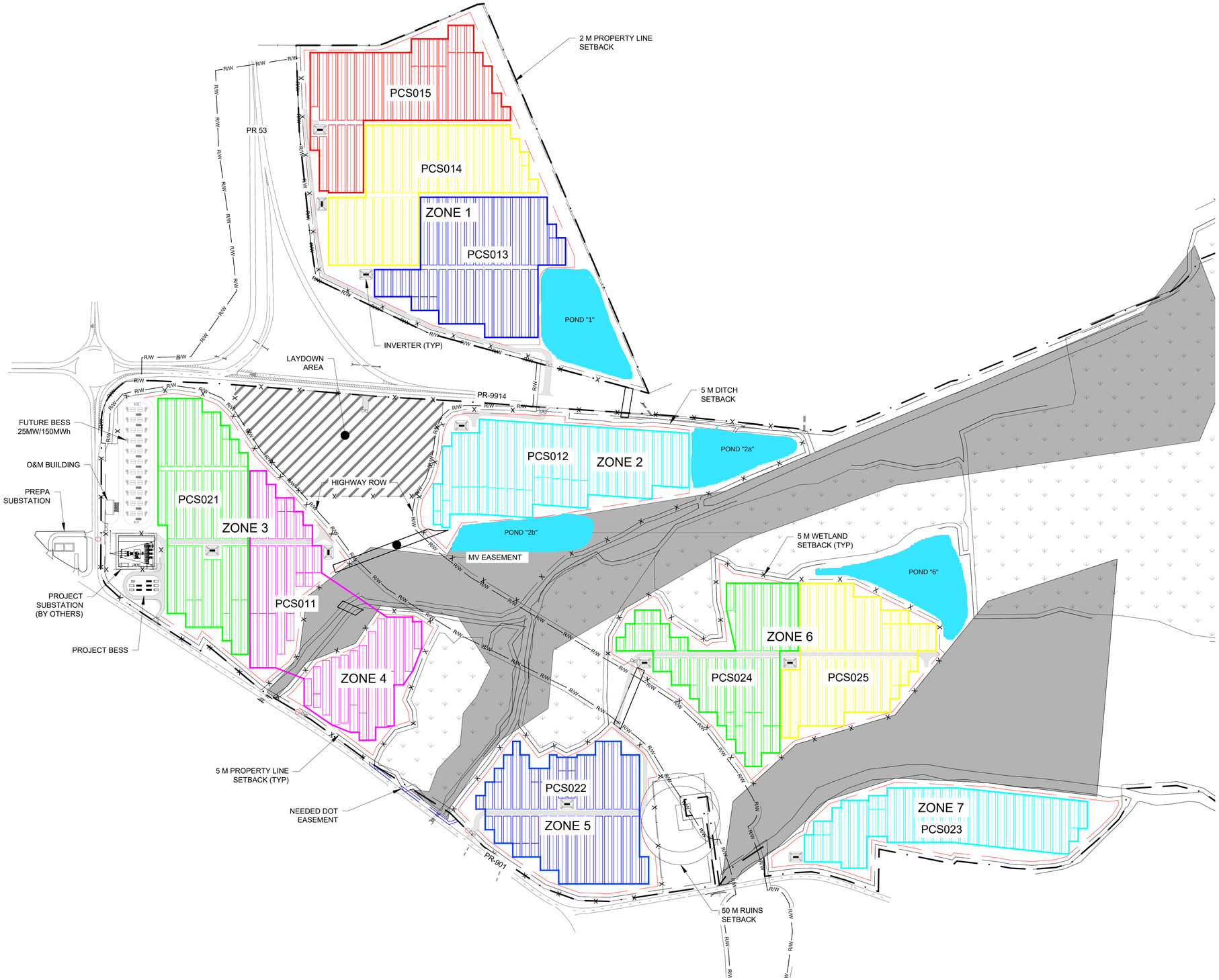

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INVERTER MODEL #:	PE FS4200M
INVERTER (kW AC) @ 40° C:	4,200
INVERTER TOTAL QUANTITY:	10
MODULE MODEL:	CS6W-545MB-AG
MODULE WATTAGE (W)	545
MODULE TOTAL QUANTITY:	80,700
MODULES PER STRING:	30
NUMBER OF STRINGS:	2,690
RACKING MANUFACTURER:	GAMECHANGE
TILT ANGLE (deg)	5
ROW SPACING (ft/m):	38.21/11.65
GROUND COVER RATIO:	79.1%
PLANT CONTROLLER LIMIT TO 32.1MW	

INFINIGEN RENEWABLES

FastGrid, LLC
225 E Germann Road
Suite 310
Gilbert, AZ 85297

REV	DESCRIPTION	DATE
A	30% DESIGN	11/22/2023
B	60% DESIGN	12/21/2023
C	90% DESIGN	01/29/2024

PROJECT NAME:
YABUCOA
PV SOLAR POWER
GENERATION FACILITY

PROJECT ADDRESS:
BO. JUAN MARTIN Y CAMINO
NUEVO, CARR PR-53 INT
PR-901, YABUCOA, PR

SEAL: PRELIMINARY

DATE: 02/07/2024
PROJECT #: 230144.12
DRAWN BY: LP
CHECKED BY: TG

SHEET NAME: OVERALL SITE PLAN

SHEET #: E-1000
REV #: C

PRELIMINARY - NOT FOR CONSTRUCTION

PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
SAVED BY: luke.peterson
LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 18, 2024

Ivelisse Espinosa
Secretaría Auxiliar
Secretaría Auxiliar de Permisos, Endosos y Servicios
Departamento de Recursos Naturales y Ambientales

SUBJECT: The U.S. Department of Energy's (DOE's) Intent to Prepare an Environmental Assessment (EA) for a Proposed Federal Loan Guarantee to YFN Yabucoa Solar LLC for the construction of a 32.1 megawatt (MW) Photovoltaic (PV) Energy Facility.

Dear Ms. Espinosa,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support energy infrastructure reinvestment (EIR) in the United States and U.S. territories.

DOE is evaluating whether to provide a federal loan guarantee to YFN Yabucoa Solar LLC (the Applicant), to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico (See Figure 1). The PV installations will provide electricity to the distribution network of the Puerto Rico Electric Power Authority (PREPA). The decision to prepare an EA for the Project was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR Part 1021).

The purpose and need for DOE's proposed action, the issuance of a Federal loan guarantee, is to implement DOE's authority under Title 17 of the EPAct, which is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs)(42 U.S.C. 16517(a)(2)).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a

switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

The DOE NEPA regulations provide for the notification of host states and territories of NEPA determinations and for the opportunity for host states and territories to review EAs prior to DOE approval. This process is intended to improve coordination and to facilitate early and open communication.

If you or your staff would like to receive further information concerning this Project or DOE's NEPA process, please contact me at 240-457-7973 or email at LPO_Environmental@hq.doe.gov.

Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

Figures and Attachments:
Figure 1: Site Map
Figure 2: Preliminary Project Layout

CC:
Hon. Rafeal Maldonado, Departamento de Recursos Naturales y Ambientales
Dave Kleusner, U.S. Environmental Protection Agency
Lcdo. Samuel Acosta Camacho, Departamento de Recursos Naturales y Ambientales
Carlos R. Fajardo Verdejo, Departamento de Recursos Naturales y Ambientales
Milagros M. Navon Rivera, Departamento de Recursos Naturales y Ambientales
Jorge L. Cotto-Perez, Puerto Rico Electric Power Authority
Ernesto-Rivera, Puerto Rico Public Private Partnerships Authority
Lourdes Mena, U.S. Fish and Wildlife Service
Manual Matos, Natural Resource Conservation Service
Carlos Rubio-Canela, State Historic Preservation Office
Ivelisse Espinosa, Departamento de Recursos Naturales y Ambientales

Figure 1: Infinigen Yabucoa Site Map

Yabucoa Site Boundary

Municipality Boundaries

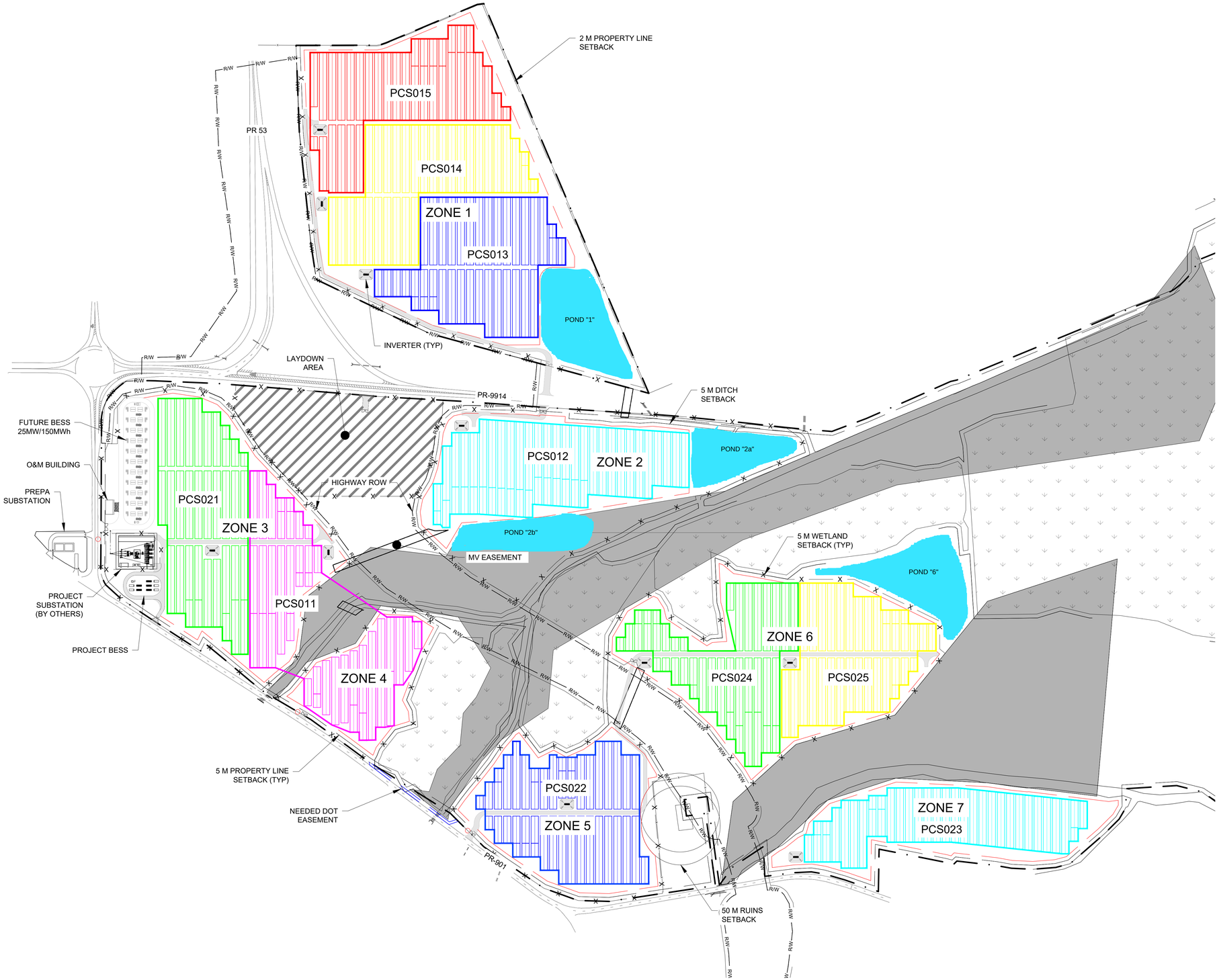
N

0 0.25 0.5 Miles

1:25,000

Department of Energy, Loan Programs Office
Project Yabucoa Site - Project Location

Figure 2: Preliminary Project Layout



OVERALL SITE PLAN

200' 100' 0 200' 400' 600'

SCALE: 1"=200'

LEGEND

- PROPERTY BOUNDARY
- BUILDABLE AREA
- FLOODWAY
- WETLAND

PROJECT SUMMARY	
AC CAPACITY @ POI (kW):	32,100
AC CAPACITY INV NAMEPLATE (kVA):	42,000
DC CAPACITY @ STC (kW):	43,982
DC/AC RATIO @ POI:	1.37
INVERTER LOADING RATIO	1.05
INVERTER MODEL #:	PE FS4200M
INVERTER (kW AC) @ 40° C:	4,200
INVERTER TOTAL QUANTITY:	10
MODULE MODEL:	CS6W-545MB-AG
MODULE WATTAGE (W)	545
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PLOT DATE: Wednesday, February 07, 2024
PLOT BY: Luke Peterson
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LOCATION: S:_09_PROJECTS\230144.12 - ARCLIGHT - YABUCOA EOR\02 ENGINEERING*DWG\E-1000 OVERALL SITE PLAN

Department of Energy
Washington, DC 20585

March 20, 2024

Robert Tawes
Acting Field Supervisor
Caribbean Ecological Services Field Office
U.S. Fish and Wildlife Service
P.O. Box 491 Boqueron, P.R. 00622

SUBJECT: Formal Consultation Under Section 7 of the Endangered Species Act for the YFN Yabucoa Solar, LLC Photovoltaic Solar and Battery Energy Storage Project in Yabucoa Municipality

Dear Mr. Tawes,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects that support energy infrastructure reinvestment and authorizes the Secretary of Energy to make loan guarantees available for those projects. YFN Yabucoa Solar, LLC (The Applicant), has applied for a loan guarantee pursuant to the U.S. Department of Energy's (DOE) Title XVII Energy Infrastructure Reinvestment Program. DOE is evaluating whether to provide a federal loan guarantee to the Applicant to support a 32.1 megawatt (MW) solar photovoltaic and battery energy storage system (BESS) (Project) facility on a 247-acre parcel leased from the Puerto Rico Land Administration in the Yabucoa Municipality (Figure 1).

The proposed Project will be constructed on approximately 104 acres within the 247-acre property (Figure 2). As documented in the attached Flora and Fauna Survey, the land cover within the Project site consists of unimproved pasture with shrub overgrowth, and a review of historical aerial imagery indicates that the property was cleared prior to 2002. The Information for Planning and Consultation (IPaC) screening flagged the federally endangered Puerto Rican Boa (*Chilabothrus inornatus*) and the threatened West Indian manatee (*Trichechus manatus*) as potential listed species occurrences in the general area (see IPaC report attached). There are no water bodies on the Project site capable of supporting manatees nor project indirect effects that would impact the species, therefore DOE makes a No Effect determination for the manatee.

In accordance with the Endangered Species Act of 1973, DOE is requesting formal consultation with your office regarding the effects on the federally endangered Puerto Rican Boa (*Chilabothrus inornatus*) for the Yabucoa project. Although the probability of Puerto Rican Boa occurrence on the site is minimal due to the property location within an urban area bounded by roads, and the pre-2002 site clearing, we have determined that adhering to the terms and conditions of the Programmatic Biological Assessment (PBO) for the Puerto Rican Boa is in the best interest of species conservation. Consultation under the PBO requires DOE to make a determination that the proposed action may affect, likely to adversely affect (MLAA) the Puerto Rican Boa. Adherence to the terms and conditions of the PBO provides for a take exemption related to this action.

DOE requests your concurrence with our MLAA determination and commitment to compliance with the terms and conditions of the PBO to support the conservation of the Puerto Rican Boa. If you or your staff have additional questions or comments, please contact me in the DOE Loan Programs Office at 240-457-7973, or email at LPO_Environmental@hq.doe.gov.

Respectfully,

David Oster
Environmental Protection Specialist
Loan Programs Office

Attachments:
Figure 1: Project Location
Figure 2: Site Plan
IPaC Resource List
Flora and Fauna Survey for Listed Species at the Yabucoa Solar YFN Site in the Autonomous Municipality of Yabucoa, Puerto Rico

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Caribbean Ecological Services Field Office
Bayamón | Mayagüez | Maricao | Río Grande | St Croix
P.O. Box 491
Boquerón, Puerto Rico 00622

In Reply Refer To:
FWS/R4/CESFO/72151-029

Submitted Via Electronic Mail: LPO_Environmental@hq.doe.gov

Mr. David Oster
Department of Energy
Environmental Protection Specialist
Loan Programs Office
Washington DC 20585

Re: YFN Yabucoa Solar, LLC Photovoltaic Solar and Battery Energy Storage Project, Yabucoa, Puerto Rico

Dear Mr. Oster:

Thank you for your letter of March 20, 2024, requesting initiation of formal consultation under section 7 of the Endangered Species Act (ESA) for the above referenced project. Our comments are provided under the ESA (87 Stat. 884, as amended; 16 United States Code 1531 et seq.), and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The U.S. Department of Energy-Loan Programs Office (DOE-LPO) is evaluating whether to provide a federal loan guarantee to YFN Yabucoa Solar, LLC (Applicant) to support the development of a 32.1 megawatt (MV) solar photovoltaic and battery energy storage system. The project will be established on approximately 104 acres within a 247-acre parcel leased form the Puerto Rico Land Administration in the municipality of Yabucoa.

According to the information provided, based on the U.S. Fish and Wildlife Service's (Service) Information for Planning and Consultation (IPaC) system, the proposed project lies within the range of the endangered Puerto Rican boa (*Epicrates inornatus*, now known as *Chilabothrus inornatus*) and the threatened West Indian manatee (*Trichechus manatus*).

Based on the project description and the Flora and Fauna Survey, the land cover within the project site consists of unimproved pasture with shrub overgrowth, and a review of historical aerial imagery indicates that the property was cleared prior to 2002. Thus, DOE-LPO made a no effect (NE) determination for the Antillean manatee. Furthermore, DOE-LPO determined that the proposed project may affect and is likely to adversely affect (MLAA) the Puerto Rican boa. Therefore, DOE-LPO will request the implementation of the terms and conditions included in amended Programmatic Biological Opinion (PBO) developed for the PR boa.

We acknowledge receipt of DOE-LPO NE determination for the Antillean manatee. Currently, we do not have information to refute that determination. Because DOE-LPO made a NE determination, DOE-LPO is not required to conduct formal or informal section 7 consultation with the Service for these species, and the Service is not required to concur with DOE-LPO NE determination.

We have reviewed the information provided by DOE-LPO and concur with their MLAA determination for the Puerto Rican boa with the implementation of the terms and conditions included in Sections 6.4 and 6.5 of the amended PBO**.**

In view of this, we believe that requirements of section 7 of the Endangered Species Act (Act) have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner that was not previously considered; (2) this action is subsequently modified in a manner not previously considered in this assessment; or, (3) a new species is listed, or critical habitat determined that may be affected by the identified action.

Thank you for the opportunity to comment on this project. If you have any questions or require additional information, please contact José Cruz Burgos, Threatened and Endangered Species Program Coordinator, via email at jose_cruz-burgos@fws.gov or caribbean_es@fws.gov, or by phone at (786) 244-0081.

Sincerely yours,

Robert Tawes
Acting Field Supervisor

mgv

Enclosure: Programmatic Biological Opinion for the Puerto Rican boa and the Virgin Islands tree boa

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Yabucoa County, Puerto Rico

Local office

Caribbean Ecological Services Field Office

(939) 320-3135
(787) 851-7440
CARIBBEAN_ES@FWS.GOV

MAILING ADDRESS
Post Office Box 491
Boqueron, PR 00622-0491

PHYSICAL ADDRESS
Office Park I
State Road #2 Km 156.5, Suite 303}
Mayaguez, PR 00680

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
West Indian Manatee *Trichechus manatus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4469	Threatened Marine mammal

Reptiles

NAME	STATUS
Puerto Rican Boa *Chilabothrus inornatus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6628	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, *please reach out to the local Fish and Wildlife Service office.*

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The data in this location indicates there are no migratory birds of conservation concern expected to occur in this area.

There may be migratory birds in your project area, but we don't have any survey data available to provide further direction. For additional information, please refer to the links above for recommendations to minimize impacts to migratory birds or contact your local FWS office.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on *survey data may not include this information. For additional information on marine bird tracking data, see the* Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine mammals

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*
https://ecos.fws.gov/ecp/species/4469

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1A

PEM1Cx

RIVERINE

R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

United States Department of Agriculture

Natural Resources Conservation Service

Caribbean Area State Office

654 Muñoz Rivera Ave.
Suite 604
San Juan, PR
00918

787-766-5206

www.pr.nrcs.usda.gov

February 21, 2024

David A. Oster
Environmental Protection Specialist
Loan Programs Office - LPO
U.S. Department of Energy
1000 Independence Ave SW
Washington, D.C. 20585

SUBJECT: NRCS Farmland Impact Rating Evaluation for the DOE Solar Project, at Yabucoa, Puerto Rico.

Dear David A. Oster

This letter is in response to your request for evaluation of the above-mentioned project. The Project is located in the Juan Martin neighborhood of Yabucoa, Puerto Rico, at the intersection of state highways PR-901 and PR-9914.

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. The USDA Natural Resources Conservation Service (NRCS) is responsible for evaluating the site and conducting a Farmland Conversion Impact Rating.

Based on the information provided by the sponsor agency, the project consists of the following components:

- Photovoltaic (PV) energy facility with a capacity of 32.1 megawatts (MW) peak to provide renewable energy to the distribution network of the Puerto Rico Electric Power Authority (PREPA).
- The Project will be connected to the Puerto Rico Aqueduct and Sewer Authority (PRASA) and will not store water on site.
- Approximately 79,000 PV modules, 10 inverters, a battery energy storage system, a substation, and a less than 1-mile interconnection line to the nearest PREPA substation (Juan Martín TC).
- Battery storage system and all equipment necessary for the proper operation of the storage system (14.45 MW/5.76MWh storage capacity).

- Internal access roads necessary for the operation and maintenance of the system.

- Control room and administrative office (1,000 square-foot).

NRCS uses a land evaluation and site assessment (LESA) system to establish a farmland conversion impact rating score on the proposed site of Federally funded and assisted projects. This score is used as an indicator for the project sponsor, in this case EPA (federal funds provider), to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level. The assessment is completed on form AD-1006, Farmland Conversion Impact Rating. The sponsoring agency completes the site assessment portion of the AD-1006, which assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land is converted to non-farm use, and compatibility with existing agricultural use. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners.

According to the Web Soil Survey (WSS), the project area corresponds to the Humacao Area, Puerto Rico Eastern Part (PR689). 53.2 acres (29.2 percent) of the evaluated area is mapped as Cr – Coloso silty clay, 0 to 2 percent slopes, occasionally flooded; 48 acres (26.3 percent), Vw – Vivi loam; 40.5 acres (22.2 percent), Ta- Talante soils; 21.6 acres (11.9 percent), Me- Maunabo Clay; 17.7 acres (9.7 percent), PeC2- Parcelas clay, 5 to 12 percent slopes, eroded; 0.8 acres (0.4 percent), UI- Urban land; 0.5 (0.3 percent), TeE – Teja gravelly sandy loam, 12 to 40 percent slopes; 0.2 acres (0.1 percent), PdF- Pandura-Very stony land complex, 40 to 60 percent slopes. Total for area of interest (AOI) is 182.5 acres.

A WSS soil interpretation report was generated for farmland classification to evaluate map units subject to the Farmland Protection Policy Act (FPPA). Based on the report,181.0 acres (99 percent) of the project footprint area of 182.50 acres (map units- Cr, Me, PeC2, Ta, Vw), are classified as prime farmland or farmland of statewide importance, and 1.50 acres (Map unit PdF, TeE, UI), are classified as Not prime farmland. Please refer to the enclosed Farm Conversion Impact Rating AD-1006 for the site evaluation. Parts II, IV and V have been completed by NRCS. Part VII needs to be completed by the sponsor agency. Once completed, please submit a copy for our records. If the selection of an alternative site is made, please submit for further evaluation.

Other environmental considerations are the presence of hydric soil inclusions. Soil map units within the area of interest have soil components that meet hydric criteria. Hydric soils formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Another consideration is the potential of flooding. Based on WSS, 89 percent of the area can experience frequent and occasional flooding events. "Occasional" flooding means the chance of flooding is 5 to 50 percent in any year, and "Frequent" means that flooding is likely to occur more than 50 percent in any year under normal weather conditions. Regarding susceptibility to erosion, the AOI is classified as Not highly erodible land (HEL). However, during the construction phase, proper erosion and sediment control measures should be incorporated into your construction plan to ensure minimal environmental degradation. Please refer to the enclosed WSS soil resource report for other consideration interpretations.

This data set is not designed for use as a primary regulatory tool in permitting or siting decisions but may be used as a reference source and for planning purposes. This is public information and may be interpreted by organizations, units of government or others based on need; however, these entities are responsible for the appropriate use and application of these

data. Digital and tabular data files are updated yearly, and users are responsible for obtaining the latest version of the data.

Should you need additional information, do not hesitate to contact me at (787) 452-6097 or manuel.matos@usda.gov.

Sincerely,

Manuel Matos
State Soil Scientist

Enclosures

pc: Luis Cruz Arroyo, State Conservationist

Attachment 1: NRCS-AD-1006 – Farmland Conversion Impact Rating
Attachment 2: Submitted Custom Soil Resource Report for the Project Area

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request	February 13, 2024
Name of Project	Yabucoa Solar	Federal Agency Involved	U.S. Department of Energy
Proposed Land Use	Solar Photovoltaic Power Generation	County and State	Yabucoa, Puerto Rico
PART II *(To be completed by NRCS)*		Date Request Received By NRCS	2/13/2024
		Person Completing Form:	Jacqueline Vega-NRCS

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated: 1669	Average Farm Size: 88
Major Crop(s): Plantains	Farmable Land In Govt. Jurisdiction Acres: 126825% 27	Amount of Farmland As Defined in FPPA Acres: 12682% 27	
Name of Land Evaluation System Used: LESA - Humacao (SSA-PR689)	Name of State or Local Site Assessment System: N/A	Date Land Evaluation Returned by NRCS: 2/21/2024	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	182			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	182			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	53.20			
B. Total Acres Statewide Important or Local Important Farmland	127.80			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.1427			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	17.04			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	71			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	71	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	71	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Humacao Area, Puerto Rico Eastern Part

DOE Photovoltaic Facility Project at Yabucoa

February 27, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humacao Area, Puerto Rico Eastern Part
Survey Area Data: Version 15, Sep 13, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cr	Coloso silty clay, 0 to 2 percent slopes, occasionally flooded	53.2	29.2%
Me	Maunabo clay	21.6	11.9%
PdF	Pandura-Very stony land complex, 40 to 60 percent slopes	0.2	0.1%
PeC2	Parcelas clay, 5 to 12 percent slopes, eroded	17.7	9.7%
Ta	Talante soils	40.5	22.2%
TeE	Teja gravelly sandy loam, 12 to 40 percent slopes	0.5	0.3%
UI	Urban land	0.8	0.4%
Vw	Vivi loam	48.0	26.3%
Totals for Area of Interest		**182.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Humacao Area, Puerto Rico Eastern Part

Cr—Coloso silty clay, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2wyl4
Elevation: 10 to 160 feet
Mean annual precipitation: 43 to 79 inches
Mean annual air temperature: 64 to 89 degrees F
Frost-free period: 365 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Coloso, occasionally flooded, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coloso, Occasionally Flooded

Setting

Landform: Flood plains on river valleys
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Stratified silty and clayey alluvium derived from volcanic and sedimentary rock

Typical profile

Ap - 0 to 7 inches: silty clay
Bw - 7 to 18 inches: silty clay loam
Bg - 18 to 27 inches: silty clay loam
Cg1 - 27 to 35 inches: silty clay loam
Cg2 - 35 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 0 to 11 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Bajura, frequently flooded

Percent of map unit: 10 percent
Landform: Flood plains on river valleys

Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Toa, occasionally flooded

Percent of map unit: 10 percent
Landform: Flood plains on river valleys
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Other vegetative classification: Unnamed (G272XZ000PR)
Hydric soil rating: No

Dique, frequently flooded

Percent of map unit: 5 percent
Landform: Flood plains on river valleys
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Me—Maunabo clay

Map Unit Setting

National map unit symbol: bz5n
Elevation: 0 to 50 feet
Mean annual precipitation: 43 to 90 inches
Mean annual air temperature: 65 to 89 degrees F
Frost-free period: 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Maunabo and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Maunabo

Setting

Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine textured sediments

Typical profile

H1 - 0 to 10 inches: clay
H2 - 10 to 39 inches: clay
H3 - 39 to 48 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Bajura

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

PdF—Pandura-Very stony land complex, 40 to 60 percent slopes

Map Unit Setting

National map unit symbol: bz5y
Elevation: 600 to 3,000 feet
Mean annual precipitation: 36 to 85 inches
Mean annual air temperature: 45 to 81 degrees F
Frost-free period: 150 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Pandura and similar soils: 70 percent
Very stony land: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pandura

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex

Across-slope shape: Convex, linear
Parent material: Weathered materials

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 19 inches: sandy loam
H3 - 19 to 35 inches: weathered bedrock

Properties and qualities

Slope: 40 to 60 percent
Depth to restrictive feature: 12 to 20 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Very Stony Land

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex
Across-slope shape: Convex, linear

Typical profile

H1 - 0 to 60 inches: fragmental material

Properties and qualities

Slope: 40 to 60 percent
Depth to restrictive feature: 40 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 in/hr)
Available water supply, 0 to 60 inches: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

PeC2—Parcelas clay, 5 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: bz5z
Elevation: 200 to 600 feet
Mean annual precipitation: 80 to 90 inches
Mean annual air temperature: 75 to 79 degrees F
Frost-free period: 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Parcelas and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parcelas

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Fine textured sediments

Typical profile

H1 - 0 to 7 inches: clay
H2 - 7 to 31 inches: clay
H3 - 31 to 60 inches: clay

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Ta—Talante soils

Map Unit Setting

National map unit symbol: bz6h
Elevation: 0 to 200 feet
Mean annual precipitation: 75 to 90 inches
Mean annual air temperature: 75 to 81 degrees F
Frost-free period: 365 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Talante and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Talante

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Medium to coarse textured sediments

Typical profile

H1 - 0 to 4 inches: clay loam
H2 - 4 to 10 inches: sandy clay loam
H3 - 10 to 18 inches: loam
H4 - 18 to 40 inches: loamy sand
H5 - 40 to 58 inches: coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Fortuna

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

TeE—Teja gravelly sandy loam, 12 to 40 percent slopes

Map Unit Setting

National map unit symbol: bz6j
Elevation: 50 to 300 feet
Mean annual precipitation: 80 to 90 inches
Mean annual air temperature: 77 to 81 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Teja and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Teja

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear
Parent material: Gravelly residuum

Typical profile

H1 - 0 to 6 inches: gravelly sandy loam
H2 - 6 to 14 inches: gravelly sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 12 to 40 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Ul—Urban land

Map Unit Setting

National map unit symbol: 2yg1h
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Vw—Vivi loam

Map Unit Setting

National map unit symbol: bz72
Elevation: 0 to 50 feet
Mean annual precipitation: 43 to 90 inches
Mean annual air temperature: 65 to 89 degrees F
Frost-free period: 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Vivi and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vivi

Setting

Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Coarse to medium textured stratified sediments

Typical profile

H1 - 0 to 14 inches: loam
H2 - 14 to 20 inches: very fine sandy loam
H3 - 20 to 30 inches: loam
H4 - 30 to 36 inches: sand
H5 - 36 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Bajura

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.


65° 51' 15" W
65° 50' 3" W
197900
198100
198300
198500
198700
198900
199100
199300
199500
199700
199900
18° 3' 0" N
18° 2' 15" N
1998000
1997800
1997600
1997400
1997200
1997000
1996800
Cr
Vw
Me
Cr
Carr 53
Carretera 53
Carr 901
Cr
Vw
PeC2
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Calle 4
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Soil Map may not be valid at this scale.
Map Scale: 1:9,700 if printed on A landscape (11" x 8.5") sheet.
N
Meters
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1800
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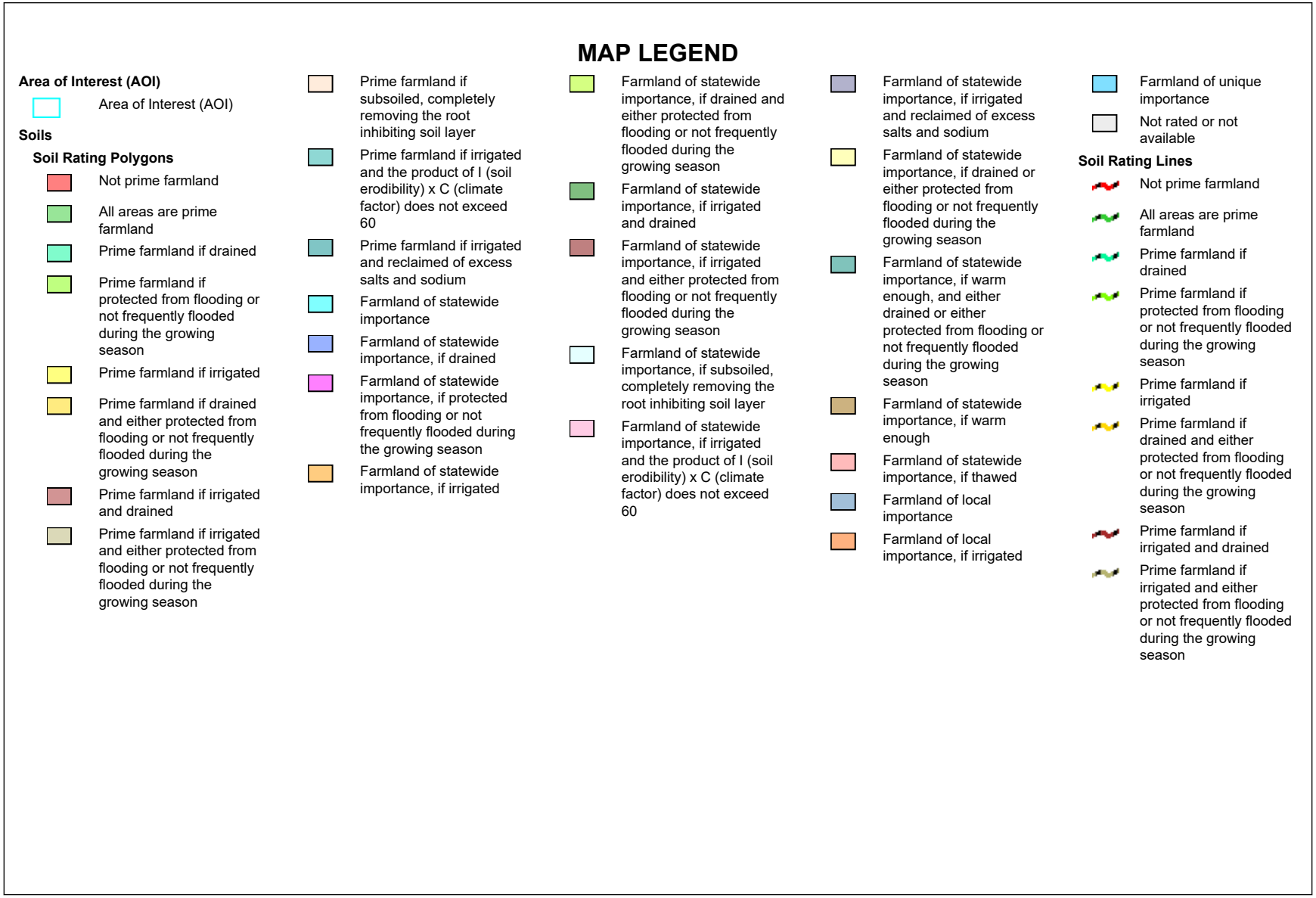
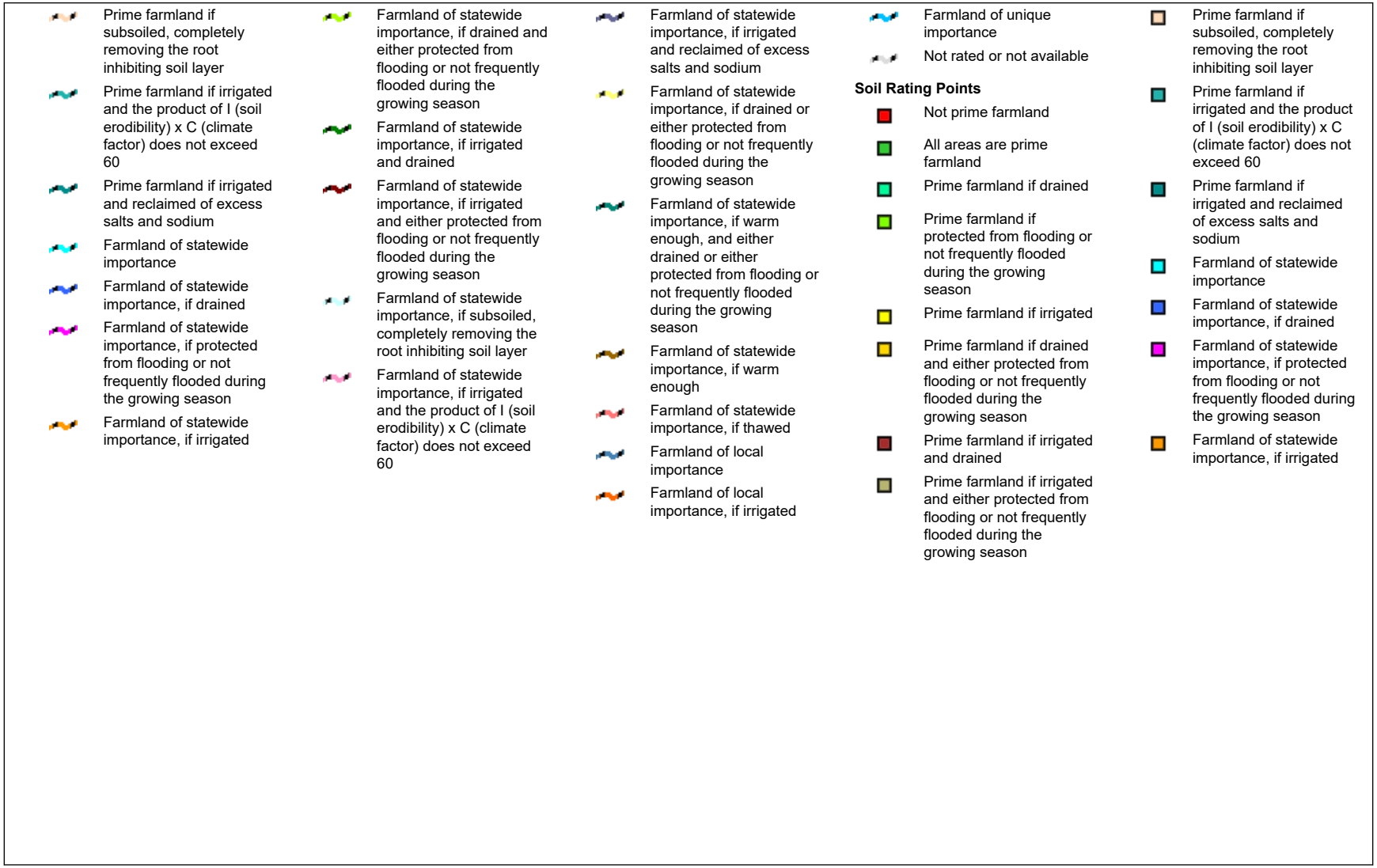
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 20N WGS84


MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Lines
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humacao Area, Puerto Rico Eastern Part
Survey Area Data: Version 15, Sep 13, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cr	Coloso silty clay, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained	53.2	29.2%
Me	Maunabo clay	Farmland of statewide importance	21.6	11.9%
PdF	Pandura-Very stony land complex, 40 to 60 percent slopes	Not prime farmland	0.2	0.1%
PeC2	Parcelas clay, 5 to 12 percent slopes, eroded	Farmland of statewide importance	17.7	9.7%
Ta	Talante soils	Farmland of statewide importance	40.5	22.2%
TeE	Teja gravelly sandy loam, 12 to 40 percent slopes	Not prime farmland	0.5	0.3%
UI	Urban land	Not prime farmland	0.8	0.4%
Vw	Vivi loam	Prime farmland if irrigated	48.0	26.3%
Totals for Area of Interest			**182.5**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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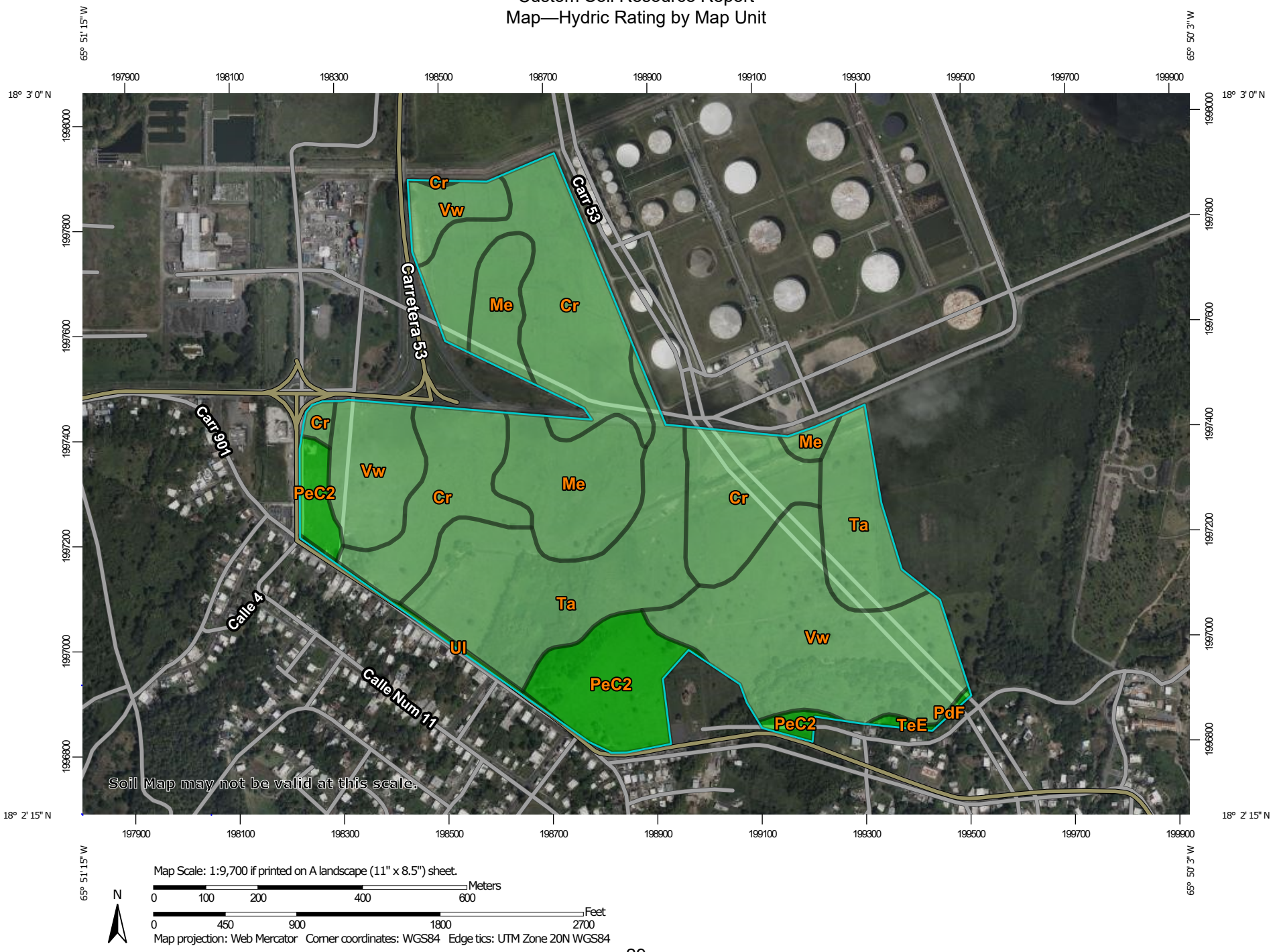
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.


65° 51' 15" W
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Soil Map may not be valid at this scale.
Map Scale: 1:9,700 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 450 900 1800 2700
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 20N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humacao Area, Puerto Rico Eastern Part
Survey Area Data: Version 15, Sep 13, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cr	Coloso silty clay, 0 to 2 percent slopes, occasionally flooded	10	53.2	29.2%
Me	Maunabo clay	10	21.6	11.9%
PdF	Pandura-Very stony land complex, 40 to 60 percent slopes	0	0.2	0.1%
PeC2	Parcelas clay, 5 to 12 percent slopes, eroded	0	17.7	9.7%
Ta	Talante soils	10	40.5	22.2%
TeE	Teja gravelly sandy loam, 12 to 40 percent slopes	0	0.5	0.3%
UI	Urban land	0	0.8	0.4%
Vw	Vivi loam	2	48.0	26.3%
Totals for Area of Interest			**182.5**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Water Features

Water Features include ponding frequency, flooding frequency, and depth to water table.

Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

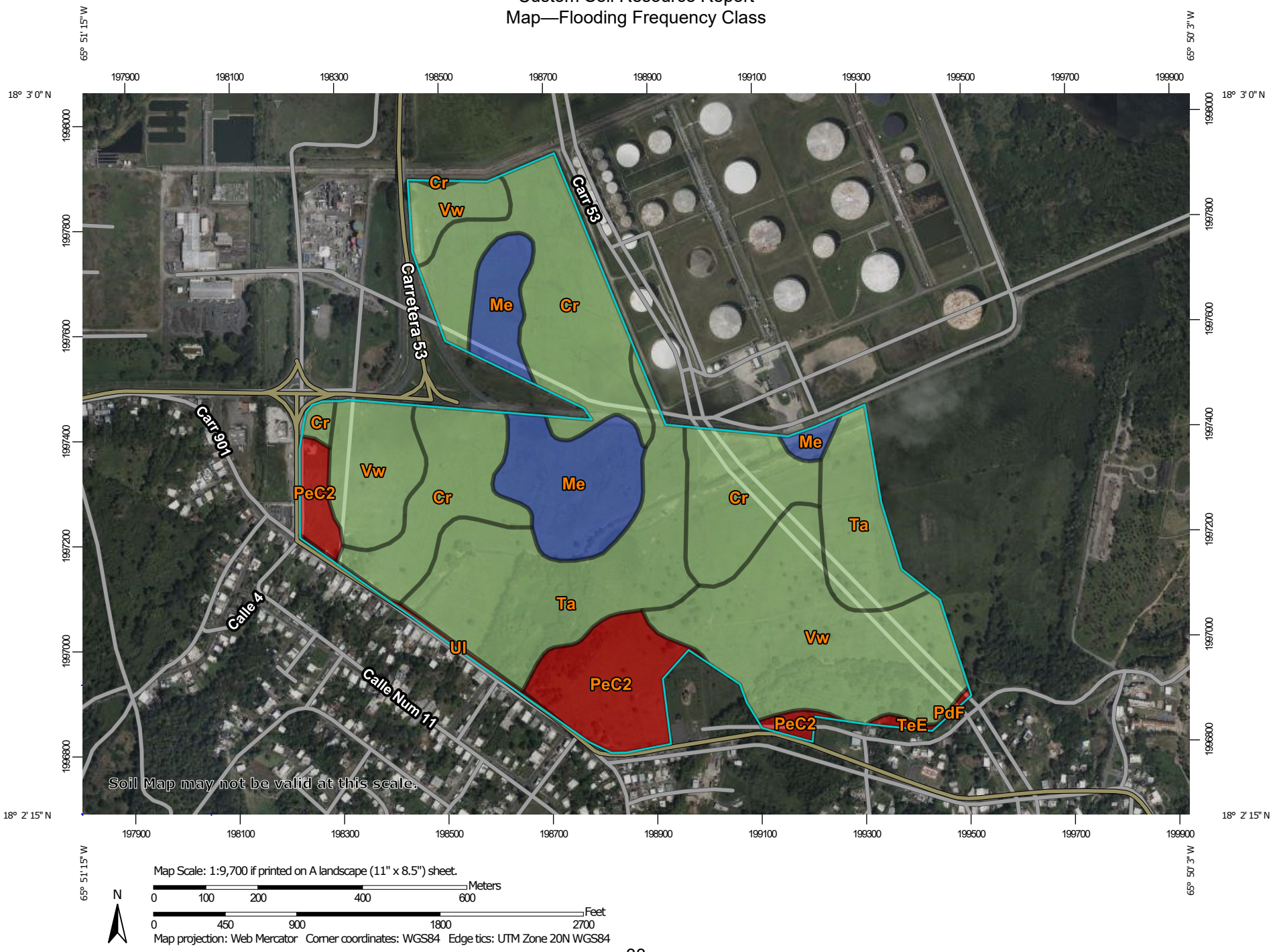
"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.


65° 51' 15" W
65° 50' 3" W
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Soil Map may not be valid at this scale.
Map Scale: 1:9,700 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
100
200
400
600
Feet
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450
900
1800
2700
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 20N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Lines
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Points
- None
- Very Rare
- Rare
- Occasional
- Common
- Frequent
- Very Frequent
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humacao Area, Puerto Rico Eastern Part
Survey Area Data: Version 15, Sep 13, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2022—Mar 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Flooding Frequency Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cr	Coloso silty clay, 0 to 2 percent slopes, occasionally flooded	Occasional	53.2	29.2%
Me	Maunabo clay	Frequent	21.6	11.9%
PdF	Pandura-Very stony land complex, 40 to 60 percent slopes	None	0.2	0.1%
PeC2	Parcelas clay, 5 to 12 percent slopes, eroded	None	17.7	9.7%
Ta	Talante soils	Occasional	40.5	22.2%
TeE	Teja gravelly sandy loam, 12 to 40 percent slopes	None	0.5	0.3%
UI	Urban land	None	0.8	0.4%
Vw	Vivi loam	Occasional	48.0	26.3%
Totals for Area of Interest			**182.5**	**100.0%**

Rating Options—Flooding Frequency Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request February 13, 2024	
Name of Project Yabucoa Solar		Federal Agency Involved U.S. Department of Energy	
Proposed Land Use Solar Photovoltaic Power Generation		County and State Yabucoa, Puerto Rico	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 2/13/2024	Person Completing Form: Jacqueline Vega-NRCS
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 1669	Average Farm Size 88
Major Crop(s) Plantains	Farmable Land In Govt. Jurisdiction Acres: 126825% 27	Amount of Farmland As Defined in FPPA Acres: 12682% 27	
Name of Land Evaluation System Used LESA - Humacao (SSA-PR689)	Name of State or Local Site Assessment System N/A	Date Land Evaluation Returned by NRCS 2/21/2024	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	182			
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site	182			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	53.20			
B. Total Acres Statewide Important or Local Important Farmland	127.80			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.1427			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	17.04			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	71			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	5			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	20			
5. Distance From Urban Built-up Area	(15)	10			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	10			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	3			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	73	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	71	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	73	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	144	0	0	0

Site Selected: Yabucoa	Date Of Selection April 11, 2024	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

The Yabucoa site is being evaluated as the preferred alternative for the 32.1MW PV Installation as part of DOE's evaluation of the Yabucoa Solar Project loan application through the National Environmental Policy Act review process.

Name of Federal agency representative completing this form: David A. Oster	Date: July 9, 2024

(See Instructions on reverse side)

Form AD-1006 (03-02)

JP-833
Rev. Jan. 01

Commonwealth of Puerto Rico
Office of the Governor
Puerto Rico Planning Board
Physical Planning Area
Land Use Planning Bureau

Application for Certification of Consistency with the Puerto Rico Coastal Management Program

General Instructions:

A. Attach a 1:20,000 scale, U.S. Geological Survey topographic quadrangular base map of the site.

B. Attach a reasonably scaled plan or schematic design of the proposed object, indicating the following:

1. Peripheral areas

2. Bodies of water, tidal limit and natural systems.

C. You may attach any further information you consider necessary for proper evaluation of the proposal.

D. If any information requested in the questionnaire does not apply in your case, indicate by writing "N/A"(not applicable).

E. Submit a minimum of seven (7) copies of this application.

DO NOT WRITE IN THIS BOX

Type of application: _____ Application Number: _____

Date received: _____ Date of Certification: _____

Evaluation result: ☐ Objection ☐ Acceptance ☐ Negotiation

Technician: _____ Supervisor: _____

Comments:

1. Name of Federal Agency: US Department of Energy

2. Federal Program Catalog Number: _____

3. Type of Action:

☐ Federal Activity ☐ License or permit ☒ Federal Assistance

4. Name of Applicant: YFN Yabucoa Solar LLC

5. Postal Address: PO Box 363991, San Juan, PR 00936-3991

Telephone: (787) 765-1499 Fax: _____

6. Project name: Yabucoa Solar

7. Physical Description of Project Location (area, facilities such as vehicular access, drainage, storm and sanitary sewer placement, etc.): The project will be built on the western portions of an approximately 247-acre leased property located at the intersections of state highways PR-53, PR-901, and PR-9914 in the Juan Martín neighborhood in the Municipality of Yabucoa.

Lambert Coordinates: X = 262120.3082 Y = 224103.7381

8. Type of construction or other work proposed:

☐ drainage ☐ channeling ☐ landfill ☐ sand extraction

☐ pier ☐ bridge ☐ residential ☐ tourist

others (specify and explain) Renewable Energy - Solar Farm

Description of proposed work: The project area will be comprised of seven fenced areas containing PV fields, inverters, a Battery Energy Storage System (BESS), a substation and main power transformer, a 1,200-square-foot operations and management building, a graveled area for parking, and an area for a potential BESS expansion that will be left as a grassy field.

9. Natural, artificial, historic or cultural systems likely to be affected by the project

Place an X opposite any of the systems indicated below that are in the project area or its surroundings, which are likely to be affected by that activity. Indicate the distance from the project to any outside system that would likely be affected.

System	Within Project	Outside Project	Distance (meters)	Local name of affected system
beach, dunes		x	300	Playa Lucía, Yabucoa
marshes	x			Unnamed wetlands
coral, reefs		x	1,400	Unnamed
river, estuary		x	1,588	Guayanés River
bird sanctuary		x	16,459	Refugio Vida Silvestre Humacao
pond, lake, lagoon		x	16,459	Refugio Vida Silvestre Humacao
agricultural unit		x	2,855	Puerto Rico Land Authority
forest, wood				
cliff, breakwater				
cultural or tourist area	x			Hacienda Lucía
other (explain)	x			Unnamed floodway

Describe the likely impact of the project on the identified system (s).

Positive ☒ Negative ☐

Explain:

The project will use the existing land contours, and the land will retain many of its important features and conditions that would allow the return to agricultural lands after the project's life ends. The leased property contains jurisdictional wetland areas, a cultural site called Hacienda Lucía, and a floodway, all of which the project completely avoids. The project design includes 5-meter wetland setbacks so as to not affect or impact the wetlands and a 50-meter avoidance buffer and site perimeter fencing so as to not affect the Hacienda Lucía site. The project will also be constructed using the Best Management Practices in the industry, including erosion control plan, stormwater Pollution prevention plan and an aggressive tree mitigation plan that will include the planting of more than 3,200 trees within the existing lands and watershed to protect water resources and to provide habitat for native and endemic species. In addition, the project will eliminate the generation of roughly 51,576 metric tons per year of carbon dioxide (CO2) emissions based on the U.S. Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator.

10. Indicate permits, approvals and endorsements of the proposal by Federal and Puerto Rican government agencies. Evidence of such support should be attached to the proposal.

	Yes	No	Pending	Application Number
a. Planning Board	☒	☐	☐	2014-75-0121-JGU-T
b. Regulation and Permits Administration	☒	☐	☐	2015-074181-PRR-013726
c. Environmental Quality Board	☒	☐	☐	2013-165337-REA-11921 2014-165347-DEA-23220
d. Department of Natural Resources	☒	☐	☐	2013-165337-REA-11921 2014-165347-DEA-23220
e. State Historic Preservation Office	☐	☐	☒	SHPO-CF-03-13-24-05
f. U.S. Army Corps of Engineers	☐	☒	☐	
g. U.S. Coast Guard		☒	☐	
h. Other (s) (specify) Endorsements: Municipio de Yabucoa Departamento de Agricultura Autoridad de Carreteras y Transportación Instituto de Cultura Puertorriqueña	☒	☐	☐	

CERTIFICATION

I CERTIFY THAT __Yabucoa Solar__ is consistent with the Puerto Rico Coastal Zone Management Program, and that to the best of my knowledge the above information is true.

Leslie Hufstetler
Name (legible)

Leslie Hufstetler
box SIGN 13V8YLV4-13JQX3RV
Signature

President of YFN Yabucoa Solar LLC
Position

Mar 20, 2024
Date

GOVERNMENT OF PUERTO RICO
PUERTO RICO PLANNING BOARD

May 15, 2024

Federal Consistency Certification with the
Puerto Rico Coastal Zone Management Program
Federal Assistance from the Department of Energy
YFN Yabucoa Solar LLC
Road PR-53, Int. PR-906, of Juan Martin Ward
CZ-2024-0315-135

RESOLUTION

TO NOTIFY PARTIES ABOUT THE ISSUANCE OF A FEDERAL CONSISTENCY CERTIFICATE ACCORDING TO THE COASTAL ZONE MANAGEMENT ACT FEDERAL CONSISTENCY REGULATIONS, 15 CFR Part 930

Leslie Hufstetler, in representation of YFN Yabucoa Solar LLC submitted the application at reference to obtain a federal financing loan from the U.S. Department of Energy (DOE) for the development and construction of photovoltaic solar system with capacity estimated in 28.82 MW. The project involves the installation of 90,072 photovoltaic solar panels with 32 inverters, a Battery Energy Storage System (BESS), a substation and main power transformer, a 1,200 square foot operations and management building, a graveled area for parking and an area for a potential BESS expansion that will be left as a grassy field.

The project will be developed in a property of 238.78 acres and will occupy an area of 101.71 acres (47.77 %). It is located at road PR-53, Int. PR-906, of Juan Martin Ward in Yabucoa, Puerto Rico.

As part of the completed evaluation, the Puerto Rico Planning Board made the following findings:

- On October 15, 2014 letter, the PR Permit Management Office (OGPE) submitted the Environmental Compliance Determination number 2014-165347-DEA-23220 for this project.
- The Department of Natural and Environmental Resources (DNER), in its letter of September 2, 2014, expressed that according to the project plans submitted in DNER on august 25, 2014, the project will not impact the wetlands and jurisdictional waters present within the property and will maintain a minimum buffer zone of 5 meters from these areas. Taking this into account the DNER expressed no objection to the proposed project. Notwithstanding it must comply with conditions established by this agency for the protection of wetlands and natural resources within the project area.
- The Puerto Rico Planning Board (PRPB) approved the site consultation number 2014-75-0121- JGU-T for this project on June 23, 2015.
- On January 28, 2015 letter, the PR Department of Agriculture expressed no objection to the proposed project on the condition that the agricultural activity of grass planting continue without being impacted.
- On May 27, 2016 letter, the Archaeology and Ethnohistory Program of the Puerto Rican Culture Institute (PRCI) expressed that in base to the presented investigatlo11 the project will not have adverse impacts in archaeological resources.
- On May 31, 2016 letter, the Built Historical Heritage Program of the PRCI submitted a favorable recommendation for the project with the condition that the photovoltaic panels must be installed at a minimum distance of 50 meters from the ruins of Hacienda Lucia.

According to Resolution JPI-41-02-2024, the Puerto Rico Planning Board (PRPB) established that site consultation approved under the Joint Regulations 2010, 2019 and 2020 will remain in effect for a period of two (2) years, from the enactment of the Joint Regulation 2023, until June 15, 2025.

Considering the above-mentioned findings, the Puerto Rico Planning Board (PRPB) in its meeting held on May 15, 2024, **determined that the federal assistance in form of a loan from the Department of Energy for the Yabucoa Project is consistent with the PR Coastal Zone Management Program. The project must comply with any applicable laws, regulations and endorsements.**

This certification does not exempt the project from complying with other required federal or state permits and endorsements.

The following parties shall be notified: Leslie Hufstetler, Yabucoa Solar LLC; Gina M. Carrillo, PMG & Associates; David Oster, Department of Energy and Magaly Massanet Rodriguez, Office of the Puerto Rico Coastal Zone Management and Climate Change.

Julio Lassús Ruiz, LLM, MP, PPL
President

Certify: That this Resolution is copy of the agreement adopted by Puerto Rico Planning Board (PRPB) in its meeting held on May 15, 2024. I issue and notify a copy of this resolution to the parties under my signature and the official stamp of the Puerto Rico Planning Board.

In San Juan, Puerto Rico, today JUN 1 8 2024

Edgardo Vázquez Rivera
Secretary

GOBIERNO DE PUERTO RICO
JUNTA DE PLANIFICACIÓN

Department of Energy
Washington, DC 20585

March 13, 2024

Miguel Bonini
Senior Historic Property Specialist
State Historic Preservation Office
Office of the Governor
P.O. Box 9023935
San Juan, P.R. 00902-3935

SUBJECT: U.S. Department of Energy, Yabucoa Solar Project, Section 106 Consultation

Dear Mr. Bonini,

Title XVII of the Energy Policy Act of 2005 (EPAct) established a federal loan guarantee program for certain projects and authorizes the Secretary of Energy to make loan guarantees available for those projects. Under Title XVII, the Department of Energy (DOE) Loan Programs Office (LPO) may provide loan guarantees for projects that support clean energy deployment and energy infrastructure reinvestment in the United States and U.S. territories. YFN Yabucoa Solar, LLC (Applicant) is proposing to construct the Yabucoa Solar Project (Project), a 32.1-megawatt (MW) photovoltaic (PV) energy facility in the municipality of Yabucoa, Puerto Rico. DOE has determined that the Project will be replacing "energy infrastructure" (as defined in Section 1706 of Title XVII) that has ceased operations in Puerto Rico, and is therefore eligible to apply for a loan guarantee from LPO under Title XVII.

The purpose of this letter is to consult with the Puerto Rico State Historic Preservation Office (SHPO) under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [U.S.C.] 306108), and its implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, "Protection of Historic Properties," and to present DOE's Finding of No Historic Properties Affected (Finding) for this undertaking, pursuant to 36 CFR § 800.4(d)(l). The Puerto Rico SHPO Section 106 Project Delivery Control Form is included as Attachment 1.

Description of the Project and Location

The Project will be constructed on approximately 104 acres of a 247-acre property leased from the Puerto Rico Land Administration and located at intersection of State Roads PR-53, PR-901, and PR-9914 in the Juan Martín neighborhood in Yabucoa, Puerto Rico 00767 (Cadastral Number 377-000-003-09). The Project will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard, located 147 feet west of the project site across PR-901. The Project will involve the construction of a 32.1 MW PV solar energy generation facility consisting of solar panels, inverters, a Batter Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line to PREPA's switchyard. Attendant structures will include an Operation and Maintenance (O&M) building, a small parking and storage area, access and maintenance roads, water retention ponds, and a temporary

laydown area. The Project area is depicted in Attachment 2 (Topographic Location Map), Attachment 3 (Site Plan), and Attachment 4 (Schematic Design).

The Project consists of the following components:

- PV facility with a capacity of 32.1 MW nominal power utilizing solar panel modules with ground-mounted module support structures to be installed between 4 and 10 feet in height.
- Inverters, BESS, switchyard, transformer, SCADA system, and electrical distribution system.
- A 147-foot aerial transmission line built across PR-901 to connect the Project's switchyard to PREPA's existing Juan Martín switchyard.
- A 1,200-square-foot O&M building and 600-square-foot parking and storage area.
- 2.3 acres of 14-foot-wide all-weather gravel access and maintenance roads enabling access to the inverters, and 0.09 acre of 48-foot x 14-foot-wide asphalt access entrances off PR-901 and PR-9914.

Description of the Undertaking and Area of Potential Effects

DOE's undertaking is the proposed federal loan guarantee to the Applicant to construct the Project, which includes the installation of a 32.1 MW solar PV system on 104 acres of land in the municipality of Yabucoa. As described above, the Project also includes an electrical substation, an approximately 60-foot interconnection line, and other equipment and facilities necessary for construction, as well as operation and maintenance of the site.

As defined in the Section 106 regulations (36 CFR § 800.16(d)), the area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The dimensions of the APE are influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. The APE for this undertaking is defined as the Project limits of disturbance (LOD) within the Project area shown in Attachments 2, 3, and 4.

Description of the Steps Taken to Identify Historic Properties

The Applicant completed studies compliant with the provisions of Law 112 and Article 6 of Regulation 8932. The archaeological Phase 1A and Phase 1B studies (Attachments 5 and 6) of the Project area were conducted in 2013, and a supplemental Phase 1A study conducted in 2024 included an updated records search and pedestrian survey of the Project area, as well as an aerial drone survey and LiDAR imaging study (Attachment 7). This work followed the guidelines for archaeological investigations of the SHPO and the Regulation for Filing and Archaeological Evaluation of Construction and Development Projects of the Council for the Protection of Terrestrial Archaeological Heritage of Puerto Rico, assigned to the Institute of Puerto Rican Culture (ICP).

The 2013 and 2024 Phase 1 studies identified one historic property known as Hacienda Lucía, which includes the above-ground structural remnants and below-ground material remains of a 19th-century sugar plantation. This resource was previously investigated for an unrelated undertaking in 2004 and was recommended eligible for inclusion on the National Register of Historic Places (NRHP) under criterion D at that time. The 2013 and 2024 Phase 1 studies for the current Project recommended avoidance of Hacienda Lucía by constructing a perimeter fence around the Project area in order to preserve the historic property. The Applicant has since incorporated a 50-meter avoidance buffer around Hacienda Lucía into their site plan (see Attachments 3 and 4). The avoidance measures will

ensure that this potential historic property remains outside of the APE for the current undertaking, and that the Project will not affect this potential historic property.

The results of the systematic subsurface archaeological survey of the Project area provided in the 2013 Phase 1-B study were negative, and no additional cultural resources over 45 years in age were identified within the Project area (see Attachment 6). The supplemental Phase 1-A study conducted in 2024 identified 16 cultural surface features in addition to Hacienda Lucía (see Attachment 7). These 16 cultural surface features are mostly related to agricultural functions and include seven culverts, two repurposed segments of railroad tracks used as fence posts, a concrete fence post, a water pipe bridge, a concrete storage building, a concrete slab foundation, a cattle pen, an area with former sugar refining cauldrons, and one surface scatter of historic construction material. None of these resources are recommended as eligible for listing on the NRHP and are therefore not considered historic properties as defined in 36 CFR 800.16(l).

In a letter dated October 17, 2013, the ICP Archeology and Ethnohistory Program agreed that the project would have no impacts on archeological resources but recommended further study on Hacienda Lucinda. The applicant completed further study of this resource in an explanatory memorandum to ICP and on May 27, 2016, and the project was authorized by ICP. The ICP correspondence is provided in Attachment 8.

The Basis for the Determination of No Historic Properties Affected

This Finding is based on a review of existing and available information conducted by DOE LPO, including the background information and historic property identification results of the 2013 Phase 1-A and Phase 1-B studies of the Project area as well as the 2024 Phase 1-A study of the Project area, the Applicant's consideration and incorporation of the recommended avoidance measures, consultation with SHPO and ICP, and conclusions drawn from this information.

The undertaking includes the proposed federal loan guarantee to YFN Yabucoa Solar, LLC for construction of a 32.1-MW solar PV energy facility (Project). The identification effort resulted in the identification of one historic property, Hacienda Lucía, which was previously evaluated in 2004 and recommended eligible for inclusion on the NRHP under criterion D. The incorporation of avoidance measures into the Project design, including a 50-meter avoidance buffer and site perimeter fencing, will ensure that the proposed undertaking will not affect this historic property. Therefore, no historic properties will be affected for the undertaking of providing a federal loan guarantee to the Applicant for construction of the Project, consistent with 36 CFR § 800.4(d)(1).

Requesting your Concurrence and Next Steps

As part of the Section 106 process, we respectfully request your concurrence that the undertaking would not affect any historic properties. We look forward to consulting with your office throughout the Section 106 process. If you have any questions or would like to discuss this project further, please contact me in the DOE Loan Programs Office at 240-457-7973, or email LPO_Environmental@hq.doe.gov.

Respectfully,

David A. Oster
NEPA Document Manager
Loan Programs Office

Attachments:

Attachment 1: Section 106 Delivery Control Form
Attachment 2: Topographic Location Map
Attachment 3: Site Plan
Attachment 4: Site Schematic Design
Attachment 5: 2013 Phase 1A Archaeological Report
Attachment 6: 2013 Phase 1B Archaeological Report
Attachment 7: 2024 Phase 1A Archaeological Report
Attachment 8: ICP Authorization Letters

GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE
Executive Director | Carlos A. Rubio Cancela | carubio@prshpo.pr.gov

Wednesday, March 20, 2024

Karen Ramirez

53 Palmeras St, Suite 701, El Caribe Office Building, San Juan, PR, 00901

SHPO-CF-03-13-24-05 Yabucoa Solar

Dear Ms. Ramirez,

Our Office has reviewed the above referenced project in accordance with 54 U.S.C. 306108 (commonly known as Section 106 of the National Historic Preservation Act) and 36 CFR Part 800: Protection of Historic Properties.

We have examined the archaeological survey reports prepared for the project site and concur that, although a historic property is present (Hacienda Lucía), the applicant has designed the project to avoid this National Register of Historic Places eligible property. Therefore, our records support the finding of no historic properties affected emitted for this undertaking.

Please note that should you discover other historic properties at any point during project implementation, you should notify the SHPO immediately. If you have any questions regarding our comments, please do not hesitate to contact our Office.
Sincerely,

Carlos A. Rubio Cancela

State Historic Preservation Officer
CARC/GMO/ MB

Department of Energy
Washington, DC 20585

May 31, 2024

Lcdo. Samuel Acosta Camacho
Oficiales de Informacion
Departamento de Recursos Naturales y Ambientales
San José Industrial Park
1375 Ave Ponce de León
San Juan, PR 00926

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Lcdo. Samuel Acosta Camacho,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to Clean Flexible Energy LLC (the Applicant) to support two proposed solar photovoltaic (PV) installations in the municipalities of Salinas and Guayama, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment Program (EIR Program) (Section 1706). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs) (42 U.S.C. 16517[a][2]).

The Applicant is proposing to construct the project at two sites. The "Jobos" site is located on property owned by the Puerto Rican Industrial Development Company (PRIDCO) on PR-7707 and PR-3, Barrio Jobos, Guayama, Puerto Rico 00784. Jobos includes an 80 MW PV electricity generation facility covering 318 acres, an offsite electrical substation, an onsite 110 MW battery energy storage system (BESS), an offsite 1,000 meter transmission line of 115 kilovolts connecting to the substation, onsite internal access roads for the site, and an onsite control room with administrative office.

The second location is the "Salinas" site. Salinas is located on private properties between Aguirre and Jobos neighborhoods of the municipalities of Salinas and Guayama, respectively. The Project will be located between highways PR-53 (to the north), PR-3 (to the south), PR-713 (to the east), and PR-706 (to the west). Salinas consists of a 120 MW PV facility on 641 acres, onsite 175 MW BESS, an offsite electrical substation, an offsite 4,717 meter 115 kilovolt transmission line connecting to the substation, onsite internal access roads for the site, and an onsite control room with administrative office.

As an interested party and in accordance with DOE NEPA regulations, the EA with the draft Finding of No Significant Impact (FONSI) is included in the following link: https://www.energy.gov/lpo/ea-2256-draft-environmental-assessment-and-fonsi-clean-flexible-energy-llc-jobos-and-salinas

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If you have trouble accessing the link or need a copy, please contact LPO at LPO_Environmental@hq.doe.gov.

Please review and provide any comments you may have by **June 30, 2024 (comments must be received by this date)**.

Email:
Please include "Project Marahu EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Arielle M. Benjamin
Environmental Engineer, Environmental Reviews and Strategic Programs
Environmental Justice, Community Engagement and Environmental Reviews Division
U.S. Environmental Protection Agency, Region 2

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Ms. Benjamin,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment Program (EIR Program) (Section 1706). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs) (42 U.S.C. 16517[a][2]).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

As an interested party and in accordance with DOE NEPA regulations, the EA with the draft Finding of No Significant Impact (FONSI) is included in the following link: https://www.energy.gov/lpo/ea-2262-draft-environmental-assessment-and-fonsi-yfn-yabucoa-llc-yabucoa-puerto-rico

If you have trouble accessing the link or need a copy, please contact LPO at LPO_Environmental@hq.doe.gov.

Please review and provide any comments you may have by **August 21, 2024 (comments must be received by this date)**.

Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Jorge L. Cotto-Perez
Puerto Rico Electric Power Authority (PREPA)

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Mr. Cotto-Perez,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment Program (EIR Program) (Section 1706). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs) (42 U.S.C. 16517[a][2]).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

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Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Ivelisse Espinosa
Secretaría Auxiliar
Secretaría Auxiliar de Permisos, Endosos y Servicios Especializados
Departamento de Recursos Naturales y Ambientales

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Ms. Espinosa,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

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The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

As an interested party and in accordance with DOE NEPA regulations, the EA with the draft Finding of No Significant Impact (FONSI) is included in the following link: https://www.energy.gov/lpo/ea-2262-draft-environmental-assessment-and-fonsi-yfn-yabucoa-llc-yabucoa-puerto-rico

If you have trouble accessing the link or need a copy, please contact LPO at LPO_Environmental@hq.doe.gov.

Please review and provide any comments you may have by **August 21, 2024 (comments must be received by this date)**.

Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Manual Matos-Rodriquez
State Soil Scientist for the Caribbean Region
Natural Resource Conservation Service
654 Munoz Rivera Ave, Suite 604
San Juan, PR 00918

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Mr. Matos-Rodriguez,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

The purpose and need for DOE's proposed action, the issuance of a federal loan guarantee, is to implement DOE's authority under Title XVII of the EPAct, which was reauthorized, amended, and revised by the Inflation Reduction Act of 2022 to create the Energy Infrastructure Reinvestment Program (EIR Program) (Section 1706). The purpose of the EIR Program is to finance projects and facilities in the U.S. that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize, or sequester air pollutants or anthropogenic emissions of greenhouse gases (GHGs) (42 U.S.C. 16517[a][2]).

The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

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If you have trouble accessing the link or need a copy, please contact LPO at LPO_Environmental@hq.doe.gov.

Please review and provide any comments you may have by **August 21, 2024 (comments must be received by this date)**.

Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Rose A. Ortiz Diaz
Unidad de Zona Costanera
Oficina de Geologia e Hidrogeologia, Junta de Planificacion

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Ms. Ortiz-Diaz,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

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The Project activities will involve the construction of a 32.1 MW solar energy facility, consisting of solar panels, inverters, a Battery Energy Storage System (BESS), a switchyard and main power transformer, an electrical distribution system, a Supervisory Control and Data Acquisition (SCADA) system, and an interconnection transmission line. The site is located at the intersection of state highways PR-53 and PR-901 in the Juan Martin neighborhood of Yabucoa and will interconnect with the Puerto Rico Electric Power Authority (PREPA) transmission grid at PREPA's existing Yabucoa Juan Martin 115-kilovolt (kV) switchyard located 147 feet to the west of the Project site across PR-901.

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If you have trouble accessing the link or need a copy, please contact LPO at LPO_Environmental@hq.doe.gov.

Please review and provide any comments you may have by **August 21, 2024 (comments must be received by this date)**.

Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Anaís Rodríguez Vega
Secretary
Departamento de Recursos Naturales y Ambientales
San José Industrial Park
1375 Ave Ponce de León
San Juan, PR 00926

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Ms. Rodriguez-Vega,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

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Please review and provide any comments you may have by **August 21, 2024 (comments must be received by this date)**.

Email:
Please include "Yabucoa EA" in the subject line
LPO_Environmental@hq.doe.gov

If you would like to submit comments by mail, please call 240-457-7973 for more information.

Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Carlos Rubio-Cancela
State Historic Preservation Officer
Office of the Governor
State Historic Preservation Office
PO Box 9023935
San Juan, PR 00902-3935

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Mr. Rubio-Cancela,

The U.S. Department of Energy (DOE), Loan Program Office (LPO) prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) to consider the environmental impacts of its decision whether or not to provide a Federal loan guarantee to YFN Yabucoa Solar, LLC (the Applicant) to support one proposed solar photovoltaic (PV) installation in the municipality of Yabucoa, Puerto Rico. The PV installations will provide electricity to the distribution network of the Puerto Rican Electric Power Authority (PREPA). The decision to prepare an EA was made in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and DOE's implementing procedures for compliance with NEPA (10 CFR 1021).

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Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

David Sotomayor, PhD
Professor of Soil Science
University of Puerto Rico, Mayaguez
PO Box 518
Salinas, PR 00751

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Mr. Sotomayor,

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Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Robert Tawes
Acting Field Supervisor
U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
Office Park I, Suite 303
State Road #2, Km 156.5
Mayaguez, PR 00680

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Mr. Tawes,

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Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Sheila A. Torres-Sterling
Public-Private Partnerships Authority (P3)

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

Dear Ms. Torres-Sterling,

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David Oster
Environmental Protection Specialist
Loan Programs Office

Department of Energy
Washington, DC 20585

July 22, 2024

Omar A. Vega-Albino
Senior Advisor for Energy Affairs
Office of the Governor

SUBJECT: U.S. Department of Energy, Notice of Availability of Draft Environmental Assessment

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Sincerely,

David Oster
Environmental Protection Specialist
Loan Programs Office

APPENDIX B PERMITS AND APPROVALS

ITEM	AGENCY	REFERENCE NUMBER	DATE COMPLETED / EXPECTED
ENVIRONMENTAL			
Environmental Compliance Recommendation (REA)	OGPe	2013-165347-REA-11921	Completed 8/23/2013
PRDRNA Approval	DRNA	Case: O-NE-EEA03-SJ-00064-06062013 Ref: 2013-165347-REA-11921	Endorsement received 9/2/2014 and Habitat Certification and mitigation measures accepted 2/16/2016
ICP Approval	ICP Archaeology and Ethnohistory Program & ICP Program for Built Heritage	Ref: #2015-074181-PCU-116387	Approval letters received on 5/27/2016 and 5/31/2016
PRDA Approval	PRDA	Ref: 2013-165347-REA-11921	No objection letter received 1/28/2015
DEA	OGPe	Case: 2014-165347-DEA-23220 Ref: 2013-165347-REA-11921 Ref: O-NE-EEA03-SJ-00064-06062013 Recertification Case: 2015-074181-PCD-300038	Completed 10/15/2014 Recertified 05/29/2024
LAND USE CONSULTATION (CUB)			
PRACT Endorsement	Puerto Rico Highways and Transportation Authority (PRACT)	C#14-00013440 Ref: 2014-75-0121-JGU-T	Endorsement received 5/28/2015
Municipality of Yabucoa Endorsement	Municipality of Yabucoa	n/a	Endorsements received 10/10/2014 and 11/21/2014
CUB Approval	PRPB	2014-75-0121-JGU-T	Approved 6/23/2015
CONSTRUCTION PERMITS			
Development Permit (PCU)	OGPe	2015-074181-PCU-116387 2015-074181-PRR-013726	Approved 5/24/2016 Reactivated 10/26/2023
Single Incidental Permit (PUI)	OGPe	n/a	Expected to be submitted by end of June 2024
Entrances Permit	PRDTOP	n/a	Submitted June 2024
Easements for cable crossings	PRDTOP	n/a	Submitted June 2024
Boring Permits for cable crossings	USACE	n/a	Submitted June 2024
Equipment Installation Certifications	OGPe	n/a	Expected by September 2025

ITEM	AGENCY	REFERENCE NUMBER	DATE COMPLETED / EXPECTED
FEDERAL REQUIREMENTS			
Section 106 National Historic Preservation Act Consultation	SHPO	SHPO-CF-03-13-24-05	Completed 3/20/2024
Section 7 Endangered Species Act Consultation	USFWS	FWS/R4/CESFO/72151-029	Completed 5/3/2024
Certification of Federal Consistency with the Puerto Rico Coastal Management Program	PRPB	CZ-2024-0315-135	Completed 6/18/2024