

DOCKETED

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Project Title:	Darden Clean Energy Project
TN #:	252984
Document Title:	CEC App_Chapter 1_Executive Summary_Darden Clean Energy
Description:	This chapter provides an executive summary of the Darden Clean Energy Project and presents Project objectives, location, components, schedule, and ownership details as well as a list of Application preparers.
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1 Executive Summary

IP Darden I, LLC and Affiliates¹ (Applicant), propose to construct, operate, and eventually repower or decommission the Darden Clean Energy Project (Project) on approximately 9,500 acres in western Fresno County. The major Project components include:

- 1,150 megawatt (MW) solar photovoltaic (PV) facility (solar facility)
- 34.5-500 kilovolt (kV) grid step-up substation (step-up substation)
- 10- to 15-mile 500 kV generation intertie (gen-tie) line
- Up to 4,600 MW-hour battery energy storage system (BESS)
- Up to 1,150 MW green hydrogen facility
- Pacific Gas and Electric Company (PG&E)-owned 500 kV utility switchyard along the Los Banos Midway #2 500 kV transmission line.

The Project site and related facilities were selected taking into consideration the Project objectives (Section 1.1), environmental impacts, water, engineering constraints, site geology, waste and fuel constraints, and electric transmission constraints, among other factors. A detailed discussion of site selection is provided in Chapter 6, *Project Alternatives*. The main elements of the Project are further summarized in Section 1.2. Chapter 2, *Project Description* provides Project details and Chapter 4, *Engineering*, provides additional engineering and design detail for this Opt-In Application. Section 5.5, *Visual Resources* provides a visual depiction of the existing conditions and visual simulations of the same areas following completion of construction of all Project components.

1.1 Project Objectives

The Project's primary goal is to contribute to the achievement of California's renewable energy goals and create a vital new point of interconnection for renewable energy in the Central Valley to California's electric transmission infrastructure.

The Project's objectives are as follows:

- Design, construct, and operate the facility in a manner that respects the local community, its values, and its economy.
- Operate the facility in a manner that protects the safety of on-site staff and off-site members of the public.
- Generate sales tax revenues for Fresno County by establishing a point of sale in the county for the procurement of most major Project services and equipment.
- Create temporary and permanent living-wage, union jobs for local and regional residents.
- Generate affordable wholesale electric power to serve the ratepayers of the Fresno County region and the state of California.

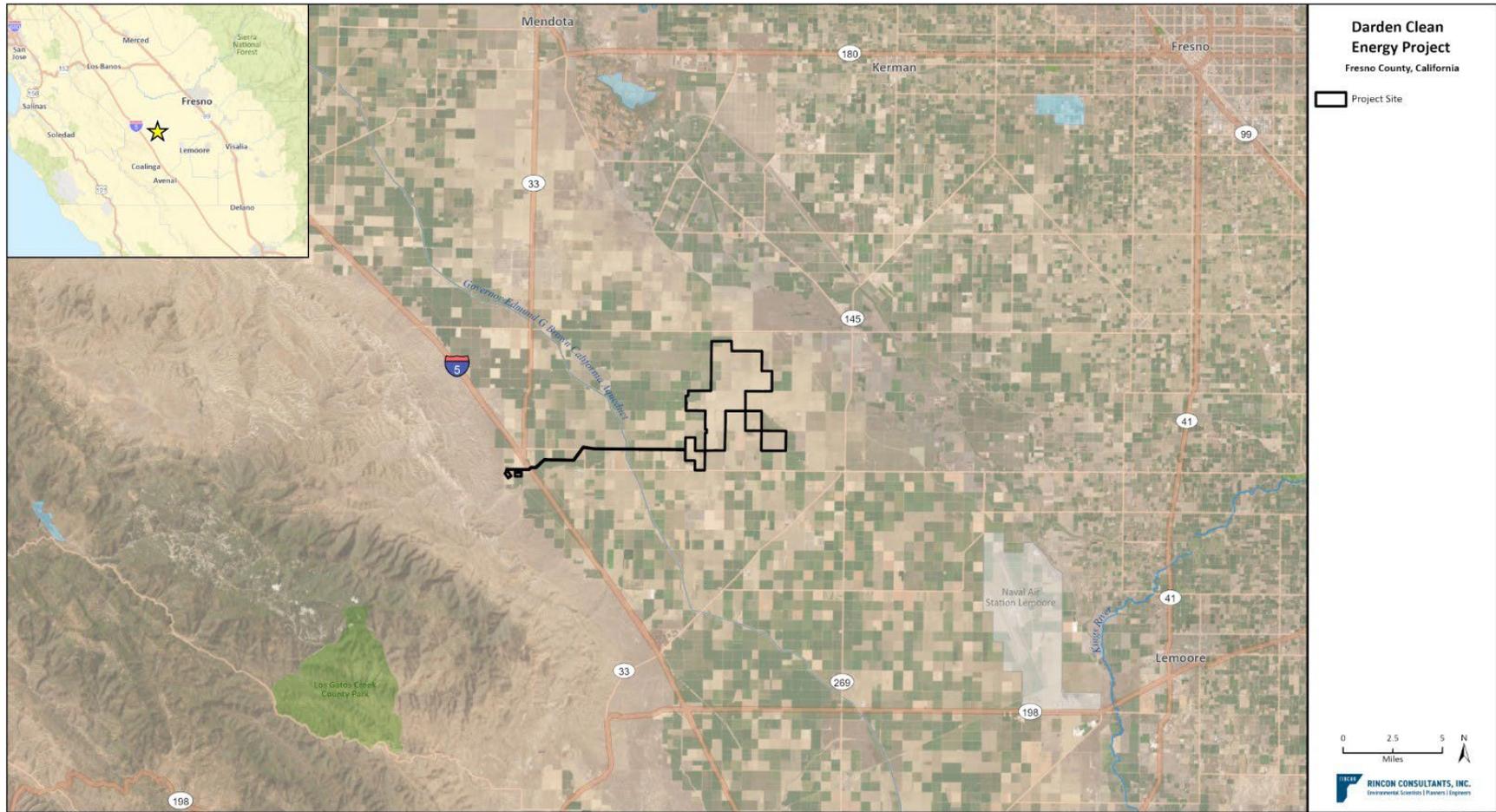
¹ "Affiliates" means IP Darden II, LLC, IP Darden III, LLC, IP Darden IV, LLC, IP Darden BESS I, LLC, IP Darden BESS II, LLC, IP Darden BESS III, LLC, IP Darden BESS IV, LLC, IP Darden I H2, LLC, IP Darden II H2, LLC, and IP Darden BAAH, LLC. IP Darden I, LLC and Affiliates are wholly owned subsidiaries of Intersect Power, LLC.

- Significantly contribute to addressing the climate crisis by generating renewable energy to displace climate-warming fossil fuel-based generation, and in so doing, helping to create a global climate that is hospitable to future generations and wild places.
- Substantially contribute to meeting the state of California’s renewable energy policy objectives as described by the interim targets in Senate Bill (SB) 1020 to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.
- Assist the nation in meeting its Nationally Determined Contribution commitments under Article 4 of the Paris Climate Agreement to achieve a 50 to 52 percent reduction in United States greenhouse gas pollution from 2005 levels by 2030, and to achieve 100 percent carbon pollution-free production in the electricity sector by 2035.
- Given the urgency of the climate crisis, site and rapidly construct a major renewable energy generation facility on contaminated lands that are poorly suited for agricultural use and where the highest and best use is long-term solar energy generation.
- Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors.
- Create a new point of interconnection in the Central Valley along California’s backbone transmission infrastructure to facilitate this Project and future generators helping meet the state’s renewable energy goals.
- Contribute to meeting SB 100 policy objectives with a 2045 goal of California’s electricity system to be carbon free by capturing and storing renewable energy when it is plentiful and dispatching for use when it is scarce.
- Assist California in its goal to become a federal hydrogen hub as part of the Regional Clean Hydrogen Hubs Program which was allocated \$8 billion dollars for the development of at least four regional clean hydrogen hubs through the 2021 Infrastructure Investment and Jobs Act.
- Produce green hydrogen to help California decarbonize its over-the-road transportation, heavy industry, and ports, and assist in meeting the Alliance for Renewable Clean Hydrogen Energy Systems’ (ARCHES) 500-ton per day hydrogen goal by 2030.
- Assist in establishing hydrogen’s role in California for decarbonizing the electrical and transportation sectors of the economy, and helping to achieve the goals set forth in The 100 Percent Clean Energy Act of 2018 (SB 100), the California Global Warming Solutions Act of 2006 (AB 32), and the Clean Energy and Pollution Reduction Act of 2015 (SB 350).
- Achieve economies of scale to enable low-cost delivery of green hydrogen to the Bay Area, Los Angeles Basin, and/or Central Valley.

1.2 Project Overview

The Project location and main elements of the Project are discussed in the following subsections. Figure 1-1 depicts the regional location and Project vicinity and Figure 1-2 provides an overview of the Project site and components.

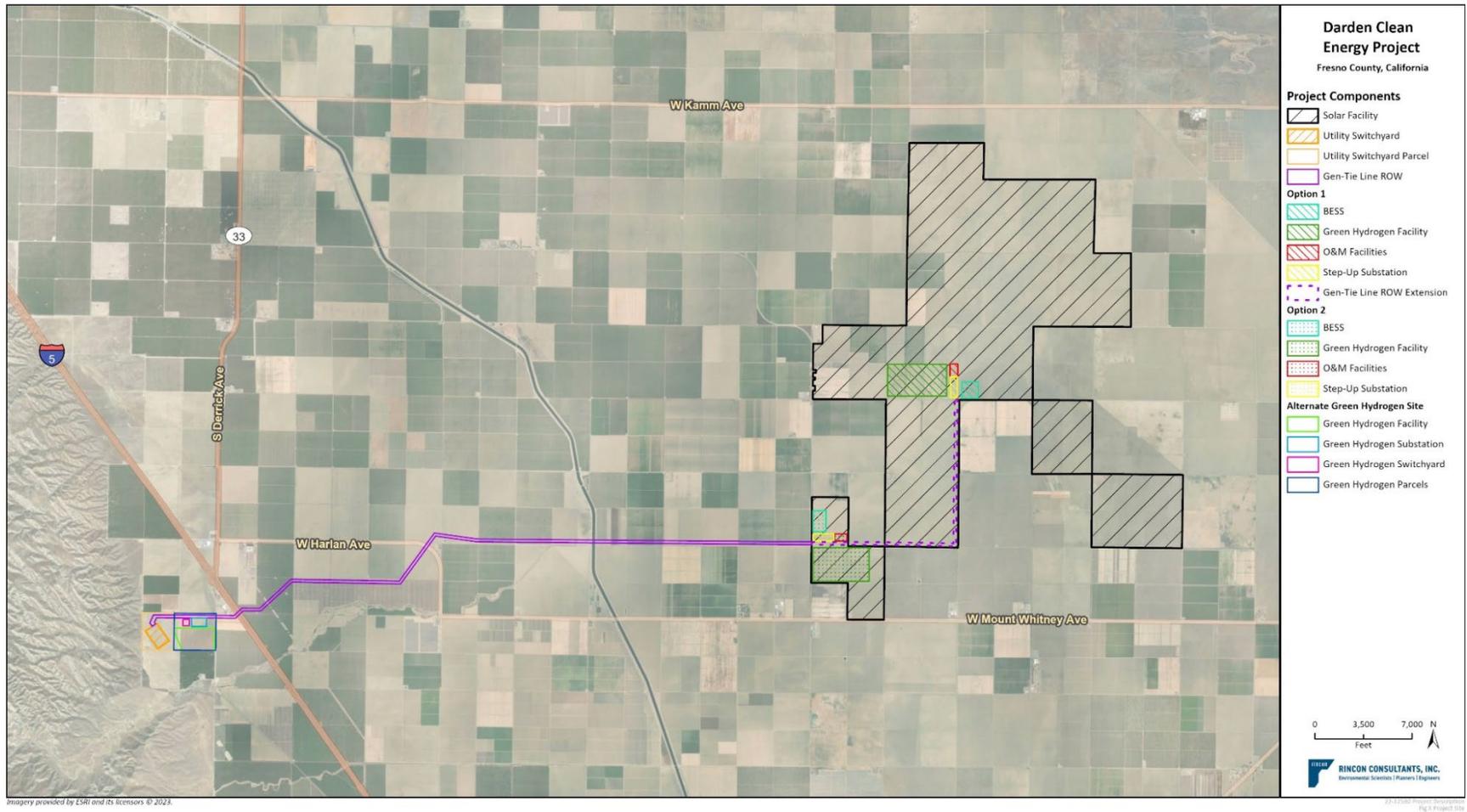
Figure 1-1 Regional Location and Project Vicinity



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22-111001 Project Land Use Plan
Fig. 1 Regional Location

Figure 1-2 Project Site Map



1.2.1 Project Location

The Project would be located on approximately 9,500 acres in an agricultural area of unincorporated Fresno County, south of the community of Cantua Creek (Figure 1-1). The solar facility and Option 1 and 2 locations for a cluster of Project facilities including the step-up substation, BESS, operations and maintenance (O&M) facility, and green hydrogen components would be located on approximately 9,100 acres of land currently owned by Westlands Water District, between South Sonoma Avenue to the west and South Butte Avenue to the east. The gen-tie line would span west from the solar facility from the intersection of South Sonoma Avenue and West Harlan Avenue to immediately west of I-5, where it would connect to the new utility switchyard along PG&E’s Los Banos-Midway #2 500 kV transmission line (Figure 1-2). The alternate green hydrogen facility location being considered is located adjacent to the utility switchyard site west of Interstate 5.

Land cover types are predominantly lands retired from irrigated agriculture that have been irregularly farmed over the last 10 years and seasonally or annually disked when not growing crops, plus associated dirt roads, field and road shoulders, basins, ditches, and berms. Some active farming occurred in limited areas on the Project site during 2023. Surrounding properties include retired and active agricultural lands. The Project’s gen-tie line spans privately-owned land on the western portion of the Project site with land-cover types including active agriculture. The California Aqueduct bisects the gen-tie parcels, running generally north-south. Compacted dirt and paved roads border and separate each land-cover type.

Table 1-1 provides the section, township, range, and assessor’s parcel number (APN) for all parcels located within the Project site and Figure 1-3a through Figure 1-3h visually depicts this information. A list of the owners of property within 1,000 feet of the Project facilities and 500 feet of the gen-tie line, as well as a map of the APNs within these areas and within the Project site are provided in Appendix A.

Table 1-1 Project Site Assessor’s Parcel Numbers

Assessor’s Parcel Numbers	Section(s)-Township-Range	County
Solar Facility, and Options 1 and 2 Step-up Substation and BESS		
040-070-31	S22 - 16S - 16E	Fresno County
040-070-32	S22 - 16S - 16E	Fresno County
040-110-15	S35 - 16S - 16E	Fresno County
040-110-16	S34 - 16S - 16E	Fresno County
040-110-20	S36 - 16S - 16E	Fresno County
040-110-21	S26 - 16S - 16E	Fresno County
040-110-23	S26 - 16S - 16E	Fresno County
040-110-25	S26 - 16S - 16E	Fresno County
040-110-27	S27 - 16S - 16E	Fresno County
040-110-28	S27 - 16S - 16E	Fresno County
040-110-29	S27 - 16S - 16E	Fresno County
040-110-30	S27 - 16S - 16E	Fresno County
040-110-31	S26 - 16S - 16E	Fresno County
040-110-32	S26 - 16S - 16E	Fresno County
040-110-34	S25 - 16S - 16E	Fresno County

Assessor's Parcel Numbers	Section(s)-Township-Range	County
050-020-47	S4 - 17S - 16E	Fresno County
050-030-04	S2 - 17S - 16E	Fresno County
050-030-05	S2 - 17S - 16E	Fresno County
050-030-07	S2 - 17S - 16E	Fresno County
050-030-08	S2 - 17S - 16E	Fresno County
050-030-10	S2 - 17S - 16E	Fresno County
050-030-21	S3 - 17S - 16E	Fresno County
050-030-24	S12 - 17S - 16E	Fresno County
050-030-25	S12 - 17S - 16E	Fresno County
050-030-26	S10 - 17S - 16E	Fresno County
050-030-27	S10 - 17S - 16E	Fresno County
050-030-29	S10 - 17S - 16E	Fresno County
050-030-30	S3 - 17S - 16E	Fresno County
050-030-31	S3 - 17S - 16E	Fresno County
050-030-32	S02, 03 - 17S - 16E	Fresno County
050-030-33	S3 - 17S - 16E	Fresno County
050-030-49	S10 - 17S - 16E	Fresno County
050-060-45	S21 - 17S - 16E	Fresno County
050-060-46	S16 - 17S - 16E	Fresno County
050-060-47	S16 - 17S - 16E	Fresno County
050-060-48	S16 - 17S - 16E	Fresno County
050-070-02	S15 - 17S - 16E	Fresno County
050-070-41	S15 - 17S - 16E	Fresno County
050-070-42	S15 - 17S - 16E	Fresno County
050-070-43	S15 - 17S - 16E	Fresno County
050-070-64	S15 - 17S - 16E	Fresno County
050-080-01	S18 - 17S - 17E	Fresno County
050-070-63	S15, 16 - 17S - 16E	Fresno County
Gen-tie Line Easement and Extension		
045-160-24	S25 - 17S - 14E	Fresno County
045-160-23	S25 - 17S - 14E	Fresno County
045-160-22	S25 - 17S - 14E	Fresno County
045-171-01	S30 - 17S - 15E	Fresno County
045-080-47	S19 - 17S - 15E	Fresno County
045-080-38	S19 - 17S - 15E	Fresno County
045-080-17	S20 - 17S - 15E	Fresno County
045-080-49	S21 - 17S - 15E	Fresno County
045-080-09	S16 - 17S - 15E	Fresno County
045-070-51	S15 - 17S - 15E	Fresno County
045-070-49	S15 - 17S - 15E	Fresno County

Assessor's Parcel Numbers	Section(s)-Township-Range	County
045-070-04	S14 - 17S - 15E	Fresno County
045-070-44	S14 - 17S - 15E	Fresno County
045-070-45	S14 - 17S - 15E	Fresno County
045-070-26	S13 - 17S - 15E	Fresno County
045-070-32	S13 - 17S - 15E	Fresno County
045-070-37	S13 - 17S - 15E	Fresno County
045-070-35	S13 - 17S - 15E	Fresno County
050-060-27	S18 - 17S - 16E	Fresno County
050-060-38	S17 - 17S - 16E	Fresno County
050-060-24	S17 - 17S - 16E	Fresno County
050-060-48	S16 - 17S - 16E	Fresno County
050-060-20	S16, 21 -17S - 16E	Fresno County
050-070-43	S15 - 17S - 16E	Fresno County
050-070-02	S15 - 17S - 16E	Fresno County
050-070-42	S15 - 17S - 16E	Fresno County
050-030-27	S10 - 17S - 16E	Fresno County
050-030-26	S10 - 17S - 16E	Fresno County
050-030-21	S3 - 17S - 16E	Fresno County
Green Hydrogen Facility (Option 1 and Option 2)		
050-030-21	S3 - 17S - 16E	Fresno County
050-060-45	S21 - 17S - 16E	Fresno County
Green Hydrogen Facility (Alternate)		
045-160-18	S25 - 17S - 14E	Fresno County
045-160-21	S25 - 17S - 14E	Fresno County
045-160-22	S25 - 17S - 14E	Fresno County
045-160-23	S25 - 17S - 14E	Fresno County
Utility Switchyard		
045-160-24	S25 - 17S - 14E	Fresno County

Figure 1-3a Project Site and Parcels Overview

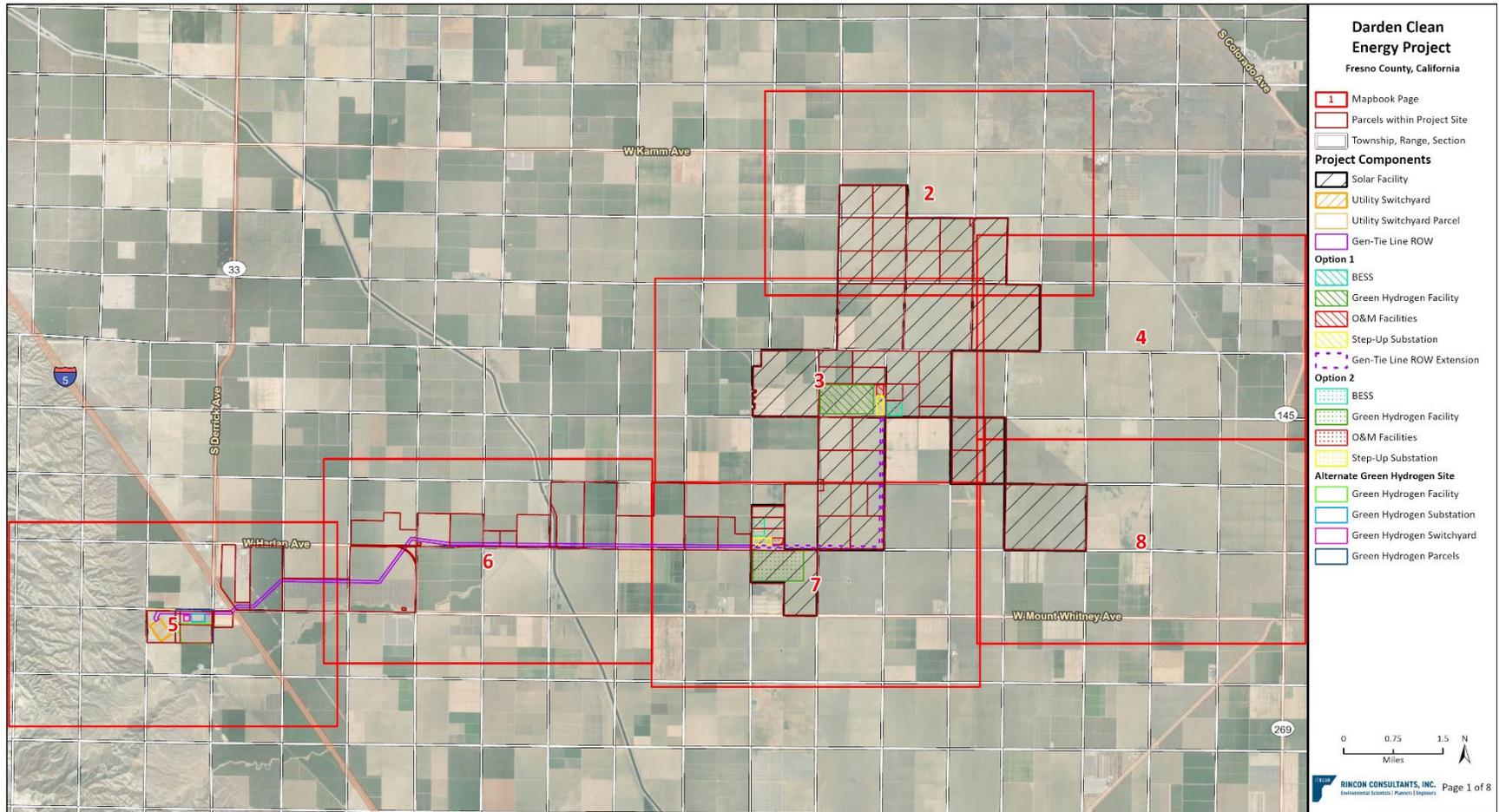


Figure 1-3b Project Site and Parcels (Mapbook Page 2)



Figure 1-3c Project Site and Parcels (Mapbook Page 3)



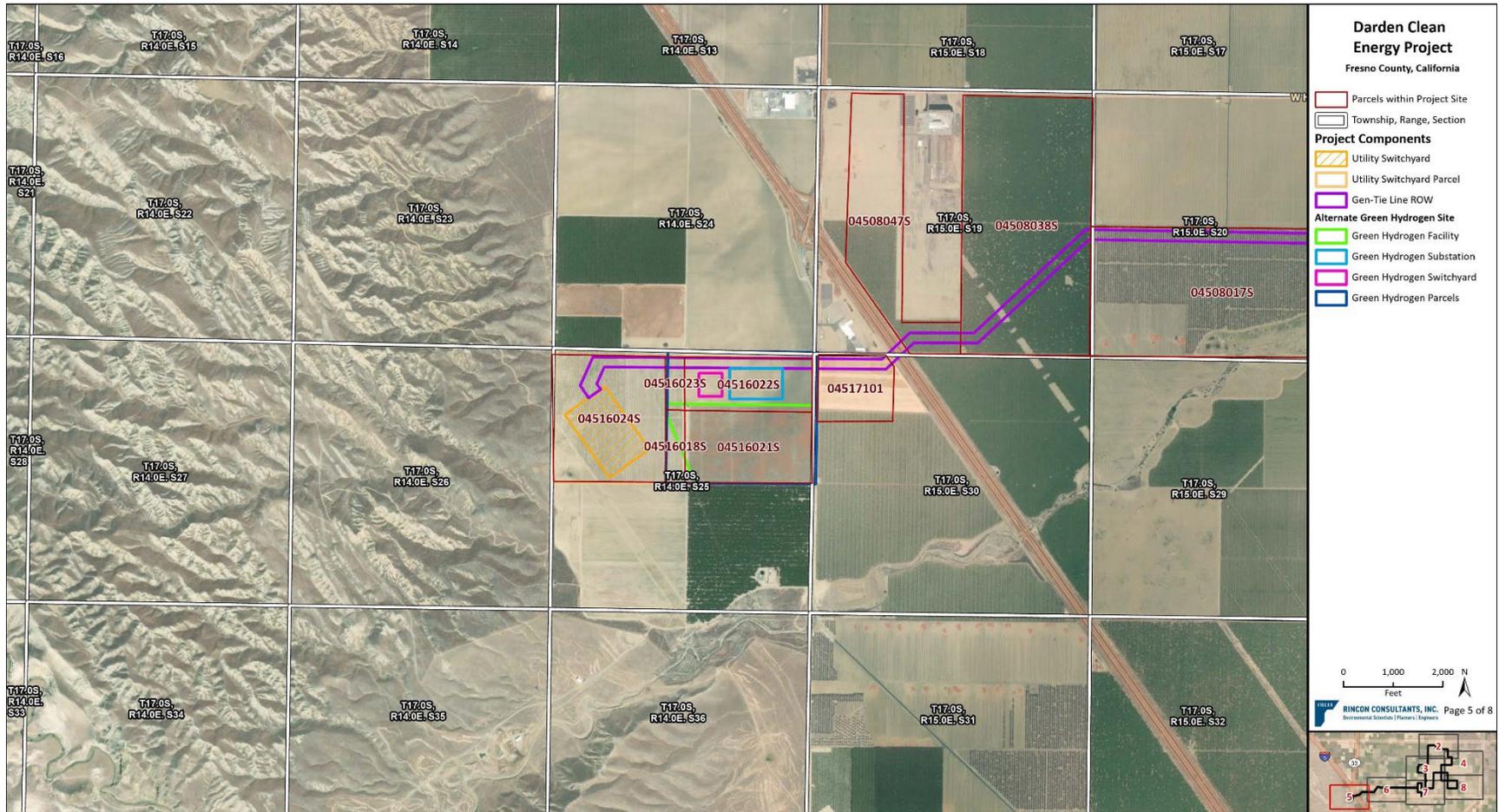
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 RINCON CONSULTANTS, INC. Page 3 of 8
 Environmental Science | Natural Systems
 20-12550 Project Description and Alternatives
 Fig. 21 Project Site Land parcels

Figure 1-3d Project Site and Parcels (Mapbook Page 4)



Figure 1-3e Project Site and Parcels (Mapbook Page 5)



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Figure 1-3f Project Site and Parcels (Mapbook Page 6)

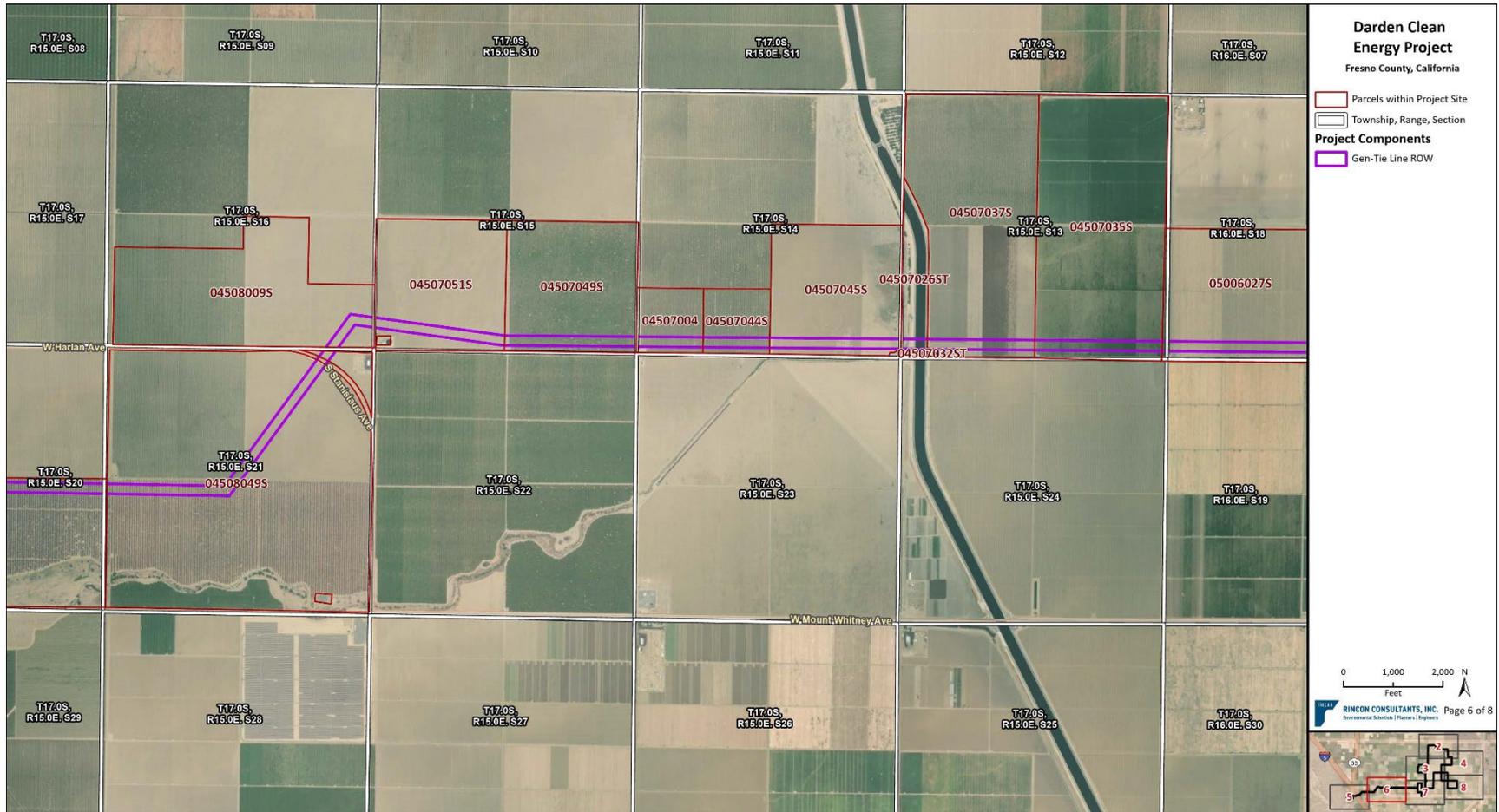


Figure 1-3g Project Site and Parcels (Mapbook Page 7)



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Figure 1-3h Project Site and Parcels (Mapbook Page 8)



1.2.2 Project Elements

Figure 1-2 shows the Project facilities and gen-tie line. The main Project elements are discussed in the following subsections.

Solar Facility, Step-Up Substation and Gen-tie

The 1,150 MWac (1,610 MWdc) solar PV facility would consist of approximately 3,100,000 solar panels, inverter-transformer stations, and an electrical collection system. The collection cables would be buried underground in a trench approximately 4 feet deep, with segments installed overhead on wood poles to connect all of the solar facility development areas to the onsite step-up substation. The onsite step-up substation would step up the medium voltage of the PV collector system from 34.5 kV to 500 kV and would be located on approximately 20 acres. Two locations (Option 1 and 2 sites) are being considered for the step-up substation. O&M facilities would be constructed adjacent to the step-up substation and would operate on electric power.

The approximately 10- to 15 mile 500 kV gen-tie line would consist of tubular steel poles or steel H-frame structures, and dead-end structures, to interconnect the step-up substation to the new utility switchyard. If the step-up substation is located within the Option 1 site, the gen-tie would be approximately 15 miles. If the step-up substation is located within the Option 2 site, the gen-tie line would be approximately 10 miles. The gen-tie line would be located within an up to 275-foot-wide easement or right-of-way.²

BESS

The Project BESS would be capable of storing up to 1,150 MW of electricity for four hours (up to 4,600 MWh) and would be located on approximately 35 acres. Two locations (Option 1 and Option 2 sites) are being considered for the BESS.

The storage system would consist of battery banks housed in electrical enclosures and buried electrical conduit and would require air conditioners or heat exchangers and inverters. Between 610 and 1,220 electrical enclosures would be installed on concrete foundations.

Green Hydrogen Facility

The up to 1,150 MW green hydrogen generator would consist of a proton exchange membrane (PEM) electrolyzer and water treatment plant with reverse osmosis/electrodeionization and ancillary equipment such as filters, storage tanks, backwash systems and chemical dosing systems. The water treatment plant may produce liquid discharges that would either be reused as electrolyzer feedstock or treated and disposed of. If a zero-liquid discharge system is employed, only solid waste would remain and would be disposed of in an appropriate landfill. Waste management is further discussed in Chapter 2, *Project Description*, and Section 5.11, *Waste Management*.

Three locations are being considered for the green hydrogen facility. Option 1 and Option 2 sites would be approximately 225 acres in size and would be located within the solar facility. Alternatively, an approximately 100-acre site located west of Interstate 5 is being considered. If the alternate site is selected, it would include the construction of a substation and switchyard on approximately 20 additional acres.

² The gen-tie line corridor is referred to as a “right-of-way”, “easement,” or “corridor” interchangeably throughout this document.

Operation of the hydrogen facility would be fully electric and would be powered by behind-the-meter renewable power generated by the solar facility and stored by the BESS, and from grid power when renewable power is not available. Up to six self-contained emergency backup diesel generator sets (genset) would supply emergency power to the hydrogen facility for all critical loads when electric power is not available. Each of the six gensets would have two engines with approximately 670.5 horsepower per engine.³

Hydrogen produced by the facility, up to 220 metric tons (approximately 243 tons) per day, would be transported off-site via pipeline. The offtake pipeline is not a part of this Project and would be proposed by others and subject to discretionary review and approval.

Utility Switchyard

The PG&E-owned utility switchyard would consist of high-voltage circuit breakers, switches, and series capacitor line compensation equipment in a breaker-and-half configuration, to electrically connect the Project's generation onto PG&E's 500 kV transmission network. The utility switchyard would be located on approximately 40 acres.

Water supply and use for the Project are discussed in Chapter 2, *Project Description* and in the Water Supply Assessment (Appendix S).

1.3 Project Schedule

Construction of the Project is anticipated to begin in 2025 or 2026, would take between 18 and 36 months to complete, and would be operational by 2027 or 2028. The Project would operate 7 days a week, 365 days a year, with an approximately 35-year anticipated lifespan.

1.4 Project Ownership

1.4.1 Project Applicant, Owner, and Operator

The Project would be owned and operated by the Applicant (IP Darden I, LLC and Affiliates). The electric transmission facilities would be owned and operated by PG&E.

The Applicant has executed a Letter Agreement with PG&E dated May 18, 2023, by which PG&E would (i) establish a project team, (ii) develop a preliminary milestones project schedule, (iii) provide definitive determination of the ability for the Applicant to self-build the Stand Alone Network Upgrades described in the Agreement, including a 500 kV utility switchyard and a 500 kV transmission line loop-in, and (iv) commence the detailed design, engineering and environmental inputs for the interconnection facilities and network upgrades required based on the feedback provided by PG&E in the Cluster 14 Phase I Study report dated September 15, 2022 for the Project (California Independent System Operator Queue #1949). PG&E would not perform any procurement or construction of the facilities upgrades under this Agreement; such procurement and construction activities would be performed pursuant to a subsequent Interconnection Agreement. The Applicant

³ The Project would include six emergency diesel-fired engines to maintain critical loads in the event of a loss of power. These engines are expected to operate less than 100 hours per year for reliability testing and maintenance and would not operate concurrently during testing. They would only otherwise operate in an emergency requiring operation of the critical facility loads when electric power is not available. This emergency backup equipment does not need to operate for the facility to function during normal operation.

intends to self-build the Stand-Alone Network Upgrades and would transfer ownership of such upgrades to PG&E.

1.5 Persons Who Prepared the Opt-In Application

Appendix C contains a list of persons involved in the preparation of the Opt-In Application including their roles and responsibilities.