Aramis Renewable Energy Project

Project Description

Applicant

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1. Introduction

IP Aramis, LLC, a subsidiary of Intersect Power, LLC, proposes to construct and operate a mixed-use renewable energy project capable of generating, storing, and dispatching clean energy on up to 539 acres located in unincorporated Alameda County in the North Livermore area. The project would consist of a 100 megawatt (MW) photovoltaic power generation state at the Point of Interconnection. The project would interconnect to the public distribution system at Pacific Gas and Electric Company’s (PG&E) Cayetano 230 kilovolt (kV) substation located adjacent and interior to the project site. The project would serve East Bay Community Energy (EBCE), Clean Power San Francisco (CPSF), and/or PG&E customers by providing local generation capacity under a long-term contract.

Intersect Power has developed over 3.7 gigawatts (GW) of solar photovoltaic projects throughout the United States and Canada, and is currently developing a pipeline of 3 GW of early- to mid-stage projects. The team’s functional expertise spans all relevant disciplines including site acquisition, permitting, interconnection, origination, engineering, procurement, construction and finance.

The proposed project would be located on portions of four privately-owned parcels (APNs 903-0006-001-02 [eastern 350 acres of a 523-acre parcel], 903-0007-002-01 [44 acres of a 50-acre parcel], 902-0001-005-00 [56 acres of a 60-acre parcel], and 903-0006-003-07 [30 acres of a 100-acre parcel]) totaling 580 acres roughly 2.5 miles north of the Livermore city limits and I-580 (see Figure 1). The project footprint has been designed to avoid Cayetano Creek, which runs through portions of two properties. The project footprint has also been designed to avoid the FEMA regulatory floodway present adjacent to the banks of Cayetano Creek and identified tributaries. All project infrastructure would be installed a minimum of 50 feet from the top-of-bank of Cayetano Creek.

The entire project site is zoned A (Agriculture), and the vast majority is designated Large Parcel Agriculture (LPA) by the East County Area Plan (ECAP), a part of the County General Plan. Portions of the northern project parcels are designated as Resource Management (RM), and a corridor 400 feet wide along Cayetano Creek is designated Water Management (WM). Through the course of environmental review and land use compatibility evaluation, if the County determines that solar panel development on these portions is not compatible with the RM and WM land use designations, a project alternative may be defined to exclude development of that portion of the properties.

The site is currently cultivated with dryland crops or for grazing and most of the site does not contain any structures. Parcel 902-0001-005-00 (the Stanley Ranch) contains many structures and two residences. A review of aerial photographs and landowner interviews indicates that the properties have been harvested and grazed for many decades.

Surrounding properties are also zoned for agricultural and rural residential uses. Surrounding land uses include grazing, electric utilities, plant and animal habitat, various rural residential
uses, and the natural habitat is dominated by Cayetano Creek, an intermittent waterway, and hilly areas almost directly west of Cayetano Creek. Proposed nearby land uses include a solar photovoltaic development proposed by an unrelated applicant.

IP Aramis, LLC requests a conditional use permit from Alameda County to operate a solar photovoltaic and electricity storage facility for at least 50 years. IP Aramis, LLC further requests that the County process a parcel subdivision of APN 903-0006-001-02 to modify the eastern boundary and create a legal parcel for the proposed solar facility and a distinct and separate parcel for the hilly NW portion of this parcel and on which no solar facility development is intended.

If any of the project interconnection facilities (gen-tie poles or substations) are required to be owned in part by the interconnecting utility (PG&E), the California Public Utilities Commission (CPUC) would have jurisdiction over approval of those portions of the project.

2. Project Components

The project would include photovoltaic modules connected in strings mounted onto a single-axis tracker racking system, which would in turn be affixed to steel piles. A site layout plan is shown in Figure 2. The module strings would track the sun during the day, from east to west, to optimize power generation of the facility. Modules would be connected by low-voltage underground or above-ground electrical wiring to a central inverter station or to string inverters located throughout the facility, where the electricity would be converted from direct current (DC) to alternating current (AC). The system would then step up the voltage of the electricity to a medium voltage (MV) of 34.5kV (or lower suitable voltage) to collect the energy generated to a project substation. The substation would step up the MV collected energy to the interconnection voltage via one or more step up transformers. The substation will meter and protect the energy pursuant to the Interconnection Agreement and Power Purchase Agreement(s) with the utility and offtaker(s), respectively.

The project substation would provide the necessary circuit breaker, switches, protection relays, and other necessary equipment to reliably and safely protect the electrical infrastructure.

The project substation is adjacent to the PG&E Cayetano Substation, allowing the gen-tie to be short and overhead with a possibility of underground construction as well. Overhead lines would be constructed on either tubular steel poles or wood H-frames, and may be constructed to be single-circuit or double-circuit. The heights of the overhead poles could vary from 30 to 100 feet, depending on the entry angle required by the interconnecting utility. The northern property (north of Manning Road) will be electrically connected to the southern property via medium-voltage distribution lines. Medium voltage distribution lines on the project will be routed either overhead or underground. The approximate dimensions and layout of the system are shown in the attached site plan. An encroachment permit would be obtained as necessary for the crossing of Manning Avenue.
Integrated on site with the PV system would be a battery storage system located proximal to the photovoltaic system transformer, which would be shared with the battery system. The battery system could be sized to balance the local distribution load and smooth out the electricity demand peak in the service area. The storage system could be designed to accept excess electrical load from the distribution system, and subsequently dispatch stored electricity during times of peak demand. Additionally, the storage system could be designed to charge from the facility during low demand hours and subsequently discharge during high demand hours. Batteries would be contained in several locking metal electrical enclosures. Low-voltage wiring from battery enclosures would be undergrounded and converted at a bi-directional inverter station and transformed at the shared transformer. The system would fit in four 100 foot by 180-foot buildings which would be sited near the O&M building.

The renewable energy system components would be enclosed by security fencing. Locked gates would provide two points of ingress/egress. Access pathways within the fence line would provide access for routine maintenance of the system. A meteorological station would collect site-specific weather data. A fiber optic telecommunications line required by the interconnecting utility would be integrated with the generation tie-line. An electrical control enclosure would be included on site for the operations electrician to monitor and manage the system.

An existing building at the southern end of the project properties will be retrofitted to serve as a construction management trailer and an operations and maintenance (O&M building).

Shielded, downward directional security lighting would be located at the control enclosure and O&M building for emergency repairs. Night lighting would not be required except during scheduled maintenance periods and emergency repairs.

Signage would be limited to what is required by the interconnecting utility and the County, and would conform to County guidelines.

The maximum height of modules would be approximately 8 feet in their stow position. The maximum height of electrical poles would be 100 feet.

3. Construction Schedule

The duration of project construction would be approximately 9 months, beginning with installation of interconnection facilities, followed by site preparation activities, continuing with cable installation, followed by pile and skid installation, and finishing with tracker and module installation and site cleanup. The total construction duration could be longer if stop-work circumstances out of the contractor’s control were to arise.
4. Construction Methods

During construction, it is anticipated that up to 50,000 gallons of water would be used daily and that up to 42 acre feet would be used for construction purposes and dust suppression (including truck wheel washing).

During construction, a maximum of 400 construction workers would be on site during the peak work period. During the peak construction period (anticipated to last up to 5 months), workers would travel to and from the site on a daily basis, at an average one-way distance of 20 miles. Local labor would be used to the maximum extent practicable. A traffic engineering study is under way and will determine roadway impacts. If a significant temporary impact to roadway level of service is identified, mitigation would be put in place.

Portable restrooms would be used for the duration of construction and would be removed upon completion of construction.

The anticipated maximum number of all construction vehicle trips per day is as follows:

- 60 vehicles per day for site preparation;
- 80 vehicles per day for PV panel system installation; and,
- 20 vehicles trips per day for installation of inverters and connection.

This would result in a maximum of 120 construction vehicle round trips to the site per day during the 9-month construction period.

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Units</th>
<th>Daily Use</th>
<th>Duration per Unit</th>
</tr>
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<tr>
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<td>50 days</td>
</tr>
<tr>
<td>Grader</td>
<td>15</td>
<td>7 hours</td>
<td>50 days</td>
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<td>Roller/compactor</td>
<td>8</td>
<td>7 hours</td>
<td>50 days</td>
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<td>Water Buffalo</td>
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<td>4 hours</td>
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<td>Trencher/Cable Layer</td>
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<td>7 hours</td>
<td>30 days</td>
</tr>
<tr>
<td>Loader</td>
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<td>7 hours</td>
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<td>200 days</td>
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<tr>
<td>Skid Steer</td>
<td>4</td>
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<tr>
<td>Flatbed Truck</td>
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<td>Pile Driver</td>
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<td>1 day</td>
</tr>
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5. Environmental Management

Wildlife protection and reporting procedures. During construction, the site would be cleared by a qualified, professional biologist prior to start of construction. If nesting birds or other protected wildlife are encountered on site, a no-construction buffer would be established and enforced by the biologist and construction foreman until the wildlife vacate the area. Specific avoidance and minimization measures for the California red-legged frog (CRLF) would include the following:

California Red-Legged Frog Avoidance and Minimization Measures:

1. Preconstruction surveys for CRLF would be conducted in the project site approximately two weeks prior to the initiation of construction activities to ensure that CRLF is not actively using the project site as a dispersal corridor. Preconstruction surveys would be conducted by a qualified biologist familiar with all life stages of the frog and would cover all aquatic habitats on the project site suitable for CRLF dispersal.

2. If any life stage of CRLF (e.g., egg mass, tadpole, juvenile, or adult) is detected within the project site during surveys, the United States Fish and Wildlife Service (USFWS) will be notified regarding the presence of the CRLF. A plan will be developed in consultation with USFWS to relocate the CRLF to the nearest suitable location, if necessary.

3. Activities conducted within 200 feet of on-site drainages will be limited to a period outside of the active season for CRLF (approximately May 15 to October 15, depending on the precipitation year). This construction window is during the dry season in which creek levels are lower to dry, providing limited aquatic dispersal habitat for CRLF. The dry season is defined generally as that time between April 15th and the first qualifying rain event on or after October 15th defined as precipitation of more than one half of an inch for 24 hours. Any extension of the work window outside of the May 15 to October 15 time-frame due to abnormally dry conditions would require coordination with the USFWS.

4. Construction activities within 200 feet of on-site drainages will be restricted to daylight hours to avoid CRLF that may be present in the project site during the time they are most active – between dusk and dawn. Construction activities will cease one half hour before sunset and will not begin prior to one half hour before sunrise.

5. Construction activities and clearing within the project site will be confined to the minimal area necessary to facilitate construction activities. To ensure that construction equipment and personnel do not affect sensitive habitat outside of designated work areas, orange barrier fencing will be erected to clearly define the habitat to be avoided. This will delineate the environmentally sensitive area (ESA) on the project. The integrity and effectiveness of ESA fencing and erosion control measures will be inspected on a daily basis. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective stormwater best management practices (BMP).
6. To prevent CRLF from moving through the project site during construction, temporary exclusion fencing will be placed adjacent to the ESA fencing, at least two days prior to the start of construction activities. The fence will be made of a material that does not allow CRLF to pass through, with one-way exit holes, and the bottom will be buried to a depth of two inches so that frogs cannot crawl under the fence. To avoid entanglement of CRLF, the use of plastic monofilament netting is prohibited.

7. A USFWS-approved biologist shall survey the project site immediately prior to installation of temporary exclusion fencing to ensure that this species is not present within the site. Once the temporary exclusion fencing is installed, the work area within the exclusion fence shall be surveyed again immediately prior to the onset of construction activities. If CRLF is found in the project site during pre-construction surveys, construction activities shall not start until the frog has left the area on its own. The approved biologist shall notify the County project manager and USFWS within 24 hours to reinitiate consultation. Handling of CRLF without a take permit pursuant to the federal endangered species act (FESA) is not allowed.

8. Before any construction activities begin, a USFWS-approved biologist shall conduct a worker awareness environmental training session for all construction personnel. At a minimum, the training shall include a description of the CRLF and its habitat, the importance of the CRLF and its habitat, the avoidance and minimization measures that are being implemented to conserve the CRLF as they relate to the project, and the boundaries within which work may occur. Personnel will also be instructed on the penalties for not complying with avoidance and minimization measures. If new construction personnel are added to the project, the contractor will ensure that the new personnel received the mandatory training before starting work.

9. A qualified biological monitor will be present daily during initial construction activities including but not limited to equipment mobilization, site clearing, vegetation removal, and grading/ground disturbance to verify that no CRLF enter the project site during construction. Daily monitoring can be reduced to weekly inspections at the discretion of the biological monitor once site grading has been completed and no habitat/refugia is present for CRLF on the site.

   a. If CRLF are found during construction, work will immediately stop, the CRLF will be allowed to move out of harm’s way on its own accord, and the USFWS will be contacted within 24 hours to reinitiate consultation.

   b. The biological monitor shall monitor the CRLF to make sure the frog is not harmed and that it leaves the site on its own and does not return. Handling of CRLF without a take permit pursuant to the FESA is not allowed.

   c. Prior to the start of daily construction activities during initial ground disturbance, the biological monitor will inspect the perimeter fence to ensure that it is neither ripped nor has holes and that the base is still buried. The fenced area will also be
inspected to ensure no frogs are trapped. If CRLF are found inside or outside of the fence, work will immediately stop, and the USFWS will be contacted within 24 hours to reinitiate consultation. Any frogs will be closely monitored until they move away from the construction area.

10. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologist or biological monitor, the fieldwork code of practice developed by the Declining Amphibian Population Task Force will be followed at all times.

11. Standard construction stormwater BMPs will be implemented throughout construction, in order to avoid and minimize adverse effects to the water quality within the project site. Appropriate erosion control measures will be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from the project site. The integrity and effectiveness of the BMPs will be inspected on a daily basis by the resident engineer. Corrective actions and repairs shall be carried out immediately.

12. Construction by-products and pollutants such as petroleum products, chemicals, or other deleterious materials should not be allowed to enter into streams or other waters. A plan for the emergency clean-up of any spills of fuel or other materials should be available when construction equipment is in use.

13. Equipment shall be re-fueled and serviced at designated construction staging areas. All construction material and fill will be stored and contained in a designated area that is located away from channel areas to prevent transport of materials into adjacent streams. The preferred distance is 100 feet from the wetted width of a stream. In addition, a silt fence will be installed to collect any discharge, and adequate materials should be available for spill clean-up and during storm events.

14. Vehicles and equipment shall be driven only within designated areas.

15. Construction vehicles and equipment will be maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease. Leaking vehicles and equipment shall be removed from the site.

16. Building materials storage areas containing hazardous or potentially toxic materials such as herbicides and petroleum products will be located outside of the 100-year flood zone, have an impermeable membrane between the ground and the hazardous material, and will be bermed to prevent the discharge of pollutants to groundwater and runoff water.

17. All disturbed soils will undergo erosion control treatment prior to October 15 and/or immediately after construction is terminated. Appropriate erosion control measures will be used (e.g., hay bales, filter fences, vegetative buffer strips or other accepted equivalents) to reduce siltation and contaminated runoff from project sites. Erosion control blankets will be installed on any disturbed soils steeper than a 2:1 slope or
steeper. During project activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.

18. To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than one foot deep shall be covered at the close of each working day with plywood or other suitable material or provided with one or more escape ramps constructed of earth fill or wooden planks. At the beginning of each working day and before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist, or an on-site designee identified by the USFWS-approved biologist, will immediately place escape ramps or other appropriate structures to allow the animal to escape, or USFWS will be contacted for guidance and notified of the incident. All holes and trenches more than one foot deep shall be filled or securely covered prior to October 15.

Agricultural Management Plan. Project operations would adhere to an Agricultural Management Plan (AMP) to ensure consistency of the facility with adjacent agricultural land uses. The AMP would fulfill the following project objectives:

■ Promote continued agricultural use of the project site
■ Promote wool production
■ Promote honey-bee forage vegetation and control invasive weeds
■ Promote pollination services and honey production
■ Maintain soil capability and minimize agricultural water use
■ Manage onsite fuel load of vegetation

The project owner would work with commercial beekeepers and sheep operators to both ensure the project is developed for viable sheep and bee operations and to provide for routine, periodic access to the project site when forage conditions are favorable.

Trash cleanup. The construction site would be maintained free of debris except in an orderly condition in designated laydown areas. Trash would be removed from the site on a routine schedule to maintain community aesthetics. All trash and construction debris would be removed from the site at the conclusion of construction.

Water conservation. Water would be used only for dust suppression during construction, and a limited amount of water would be required for panel washing during commissioning and during operations. The project would consume a very low amount of water during its operational lifetime.

Construction waste recycling. In accordance with California law, 50% of recyclable construction waste will be recycled. A larger component of construction waste will be recycled if feasible.
**Dust mitigation.** Dust would be contained on site by regular dampening of soils, and by laying gravel and spraying environmentally friendly soil binders where necessary.

**Fire protection and coordination.** Prior to construction, the project team would coordinate with the Alameda County Fire Department to ensure firefighter access and training in an emergency. On-site vegetation would be managed to minimize fire risk. Emergency fire kits would be kept on site during construction and operation.

**Hazardous materials management.** Hazardous materials used during construction and operation would be limited to de minimis levels of fuels and lubricants. All fuels and lubricants would be contained and labeled in tanks or sealed containers and would not be removed.

**Community engagement and communication.** Site signage would include contact information for any community complaints. Complaints would be addressed within 72 hours of receipt.

**Stormwater management.** A stormwater pollution prevention plan (SWPPP) would be prepared by qualified engineer, and the approved stormwater management practices in the SWPPP would be carried out by on-site construction and operations personnel to ensure that off-site stormwater sedimentation would not occur.

6. **Operations Procedures**

Routine maintenance would consist of repairing or replacing faulty equipment as needed, module washing up to four times annually, regular waste removal, and vegetation, weed, and pest management.

In addition to the activities described above, the facility plans to optimize at some point within 7 to 10 years. Facility optimization would consist of removing and replacing older modules and inverters, and reworking some of the cabling systems as well as potentially increasing the electrical capacity of the facility. Up to 15 personnel would be on site for up to 16 weeks during the optimization period. Flatbed trucks would be used to transport new modules and inverters to the site and haul away old modules and inverters. In addition, several welders, skid steers, a crane, and pickup trucks would be used intermittently throughout the optimization period.

During operation up to 4 acre-feet of water per year would be used for panel washing. In addition, a low level of initial site irrigation water could be needed to establish on-site vegetation. No other water would be used onsite for operation and maintenance. No wastewater would be generated during panel washing because the water used would run-off into onsite soil beneath the panels or evaporate. No chemical cleaners would be used for module washing.

From a distance, the project would appear as a muted, dark field of panels, similar to a body of water, and would exhibit minimal glint and glare in comparison to a body of water.
From a closer vantage point, viewers will notice that sheep grazing will be used by the project operator both to maintain existing agricultural operations, enhance the rural character of the facility, and provide for natural vegetation control at the facility. In addition, a vegetation buffer consisting of native wildflowers would be planted along North Livermore and Manning Roads to enhance the aesthetic experience of the facility for residents of the Bel Roma community, and drivers and cyclists along North Livermore and Manning Roads. Figure 3 shows a typical view of the interior of the project.

7. Repowering

The project would either be repowered or dismantled at the end of the project’s useful life. At the end of its useful life, anticipated to be 50 years or more, the project would be decommissioned in compliance with a decommissioning plan to be submitted to the County.

8. Technical Studies

The project company has contracted with a qualified environmental consulting firm to prepare the following technical studies, reports of which will be submitted to the County upon completion:

- California red-legged frog protocol surveys
- Reconnaissance surveys for other protected and common species
- Biological resources technical studies
- Cultural resources records search and pedestrian surveys
- Air quality modeling
- Traffic engineering study
- Hydrologic modeling study (Flo2D)

Figures and Attachments

- Figure 1: Aramis Renewable Energy Project Vicinity
- Figure 2: Aramis Renewable Energy Project Site Plan
- Figure 3: Typical Interior of System Showing Vegetation and Agriculture
Figure 1: Aramis Renewable Energy Project Vicinity

Figure 2: Aramis Renewable Energy Project Site Plan [see enclosed]