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Sunrise Powerlink Project
B. PROJECT DESCRIPTION

B. Project Description

B.1 Introduction

Section B describes the Sunrise Powerlink Transmission Project (“SRPL” or “Proposed Project”) as proposed by San Diego Gas and Electric Company (SDG&E). The potential environmental effects of the project as described here are analyzed in Section D. Section B.2 presents an overview of the Proposed Project including possible future transmission system expansions. Section B.3 details the Proposed Project components and design specifications. Section B.4 describes the construction activities and procedures associated with the Proposed Project, Section B.5 explains the operation and maintenance procedures, Section B.6 contains a description of SRPL “Connected Actions” under the National Environmental Policy Act (NEPA) and “Indirect Effects” of the Proposed Project. Section B.7 presents a comprehensive listing of SDG&E’s Applicant Proposed Measures (APMs) to reduce potential impacts resulting from the Proposed Project.

This section includes maps of the Proposed Project area that illustrate land-ownership and general routing. Appendix 11 of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) includes detailed maps that illustrate the approximate proposed locations of each transmission structure and associated facilities based upon the status of SDG&E’s preliminary engineering studies to date.

The Project Objectives as defined by both SDG&E and the CPUC/BLM, along with the NEPA discussion of Purpose and Need for the Proposed Project, are set forth in Section A.2 of this EIR/EIS.

B.2 Overview of the Proposed Project

SDG&E proposes to construct new electric transmission lines between the existing Imperial Valley and Peñasquitos Substations, a proposed new Central East Substation, and other system modifications in order to reliably operate the new lines. Collectively, the proposed transmission line, substation and system modifications are known as the Sunrise Powerlink Transmission Project (SRPL). The entire project would traverse approximately 150 miles between the El Centro area of Imperial County and northwestern San Diego County, in southern California. The location of the Proposed Project is illustrated in Figure B-1. The project, as proposed by SDG&E, includes the following components:

Transmission Lines

- Construction of an overhead single-circuit 500 kV transmission line from the existing Imperial Valley Substation to a new 500/230 kV substation referred to as the Central East Substation.
- Construction of a double-circuit 230 kV transmission line from the Central East Substation to the existing Sycamore Canyon Substation. This project component consists of both overhead and underground segments.
- Construction of a single-circuit 230 kV transmission line from the existing Sycamore Canyon Substation to the existing Peñasquitos Substation. This project component consists of both overhead and underground segments.
- Relocation of an existing 69 kV transmission line to parallel the proposed 230 kV overhead transmission lines between the junction of State Route (SR) 76 and SR79 and a point near the existing Santa Ysabel Substation. To accommodate the proposed relocation, this segment would also include

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removal of the existing 69 kV structures, and placement of new towers along a nine miles segment to accommodate the relocated 69 kV line.

- Relocation of the existing 69 kV and 92 kV transmission lines to the Proposed Project ROW between the eastern boundary of Anza-Borrego Desert State Park (ABDSP) and the proposed Central East Substation. This segment would include placing portions of the existing 69 or 92 kV lines underground within the adjacent SR78 roadway and placing other portions of the existing 69 or 92 kV lines onto the 500 kV towers.

Substations

- Modification of the existing Imperial Valley Substation to accommodate termination of one new 500 kV transmission line
- Construction of the new Central East Substation capable of accommodating termination of one 500 kV transmission line from the Imperial Valley Substation and two 230 kV transmission lines that would extend to the Sycamore Canyon Substation
- Modification of the existing Sycamore Canyon Substation to accommodate termination of two 230 kV transmission lines from the Central East Substation and one new 230 kV transmission line that would extend to the Peñasquitos Substation
- Modification of the existing Peñasquitos Substation to accommodate termination of one new 230 kV transmission line from the Sycamore Canyon Substation

Other System Modifications

- Reconductoring of the existing 69 kV transmission line between the existing Sycamore Canyon and Elliot Substations
- Addition of a 230 kV, 69 megavolt-amperes reactive (MVAR) shunt capacitor¹ and a third 230/69 kV transformer to the existing San Luis Rey Substation
- Addition of a 69 kV, 50 MVAR shunt capacitor to the existing South Bay Substation.²

For clarity, the Proposed Project is described in five separate segments or “links” according to geographical location: Imperial Valley Link, Anza-Borrego Link, Central Link, Inland Valley Link, and Coastal Link (Figure B-2). In order to provide a consistent frame of reference, the proposed SRPL ROW has been assigned mileposts (MP), which range from the Imperial Valley Substation (MP 0) to the Peñasquitos Substation (MP 149.9). The sections that follow provide additional detail about each of the Proposed Project components.

¹ A shunt capacitor provides voltage stability so that when system load changes, the actual level of power delivered changes predictably.

² An Application for Certification for the South Bay Replacement Project (06-AFC-3) was filed on June 30, 2006 at the California Energy Commission. If approved, the existing South Bay Power Plant and substation would be demolished and rebuilt at a nearby site.

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Future Phases of the Proposed Project

SDG&E states that an objective of the Proposed Project is to allow for future expansion of the transmission system, including both 230 kV and 500 kV systems. However, approval of the SRPL would not result in automatic approval of the potential future expansions to the SRPL and all future 230 or 500 kV lines would require new applications by SDG&E, followed by preparation of project-level environment documents and separate approvals from the CPUC prior to permitting and construction. These potential future phases of the Sunrise Powerlink Project are described in Section B.2.7. The project is considered to include the following future phases:

- **230 kV Future Phases.** At least four additional 230 kV future circuits may be required after the two 230 kV circuits proposed as part of the SRPL. Although this expansion may not be needed for decades, it is expected that two additional 230 kV circuits are possible within the first decade following completion of the Sunrise Powerlink. The most likely substation end points for the additional 230 kV circuits are Sycamore Canyon, Peñasquitos, Escondido, Mission and Los Coches Substations.
- **500 kV Future Phases.** A 500 kV circuit may be constructed from the proposed Central East Substation to connect with the Southern California Edison transmission system. This would involve construction of a new 500 kV transmission line, likely following an existing 69 kV transmission corridor and also possibly the route of the Lake Elsinore Advanced Pumped Storage (LEAPS) Project's 500 kV line.

Connected Actions and Indirect Effects

The CPUC and BLM have determined that four projects are so closely related to the Proposed Project as to be considered "connected actions" under NEPA. These four projects are the Stirling Energy Systems solar facility, two components of the IID 230 kV transmission system upgrades, the Esmeralda-San Felipe Geothermal Project, and the Jacumba 230/500 kV Substation. One additional project, a wind project in northern Mexico's La Rumorosa area, under contract to meet Southern California Edison's renewable requirements, is considered as an "indirect effect" of the Proposed Project. These five projects are described in Section B.6, and the environmental impacts of these projects are presented in Section D of this EIR/EIS, following the discussion of the SDG&E transmission line and associated facilities.

B.2.1 Imperial Valley Link

The Imperial Valley Link extends from Milepost (MP) 0 at the existing Imperial Valley Substation to MP 60.9 at the eastern boundary of ABDSP. The Imperial Valley Link includes modifications to the existing Imperial Valley Substation and construction of a new 500 kV transmission line that would extend from the Imperial Valley Substation to ABDSP. Within this link, 60.9 miles of 500 kV overhead transmission lines would be supported by a combination of lattice towers and steel poles within a new 200-foot ROW (see Section B.3). Refer to Figure B-3 for details on the 500 kV route through Imperial Valley.

Transmission Line

The 500 kV overhead transmission line would originate at the existing Imperial Valley Substation (MP 0) and parallel the existing 500 kV Southwest Powerlink (SWPL) for approximately four miles. The pro-

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posed SRPL would be constructed approximately 450 feet north of the existing SWPL towers. The new SRPL structures would be constructed parallel to each existing SWPL tower.

At MP 4, the transmission line would turn north and travel through open desert land managed by the U.S. Bureau of Land Management (BLM), before crossing Interstate Highway 8 (I-8) and continuing through private agricultural land west of the outskirts of the unincorporated town of Seeley. The line would continue north-northeast toward the existing Imperial Irrigation District (IID) 161 kV transmission line at MP 20.4.

Between MP 20.4 to MP 37.7, the line would parallel the existing IID 161 kV transmission line to the east as it travels north-northwest toward the intersection of SR78 and SR86. At MP 37.7, the SRPL line would diverge from the IID ROW to follow SR78 for 2.5 miles to MP 40.2. The segment of 500 kV overhead transmission line between MP 40.2 and MP 47.3 would continue due west along the south side of SR78, turning due south and bypassing the existing IID Anza Substation (MP 47.2) to follow an existing IID 92 kV transmission line to MP 50. At MP 50, the SRPL line would turn southwest for one mile, then due west to parallel the southern extent of an existing BLM property line. At this point (MP 54.2), the line would be parallel to the southern edge of the existing IID 92 kV transmission line. From MP 54.2, the SRPL line would parallel the south side of the existing IID 92 kV transmission line to ABDSP at MP 60.9, passing the existing IID San Felipe Substation (MP 58.8).

Imperial Valley Substation

The existing Imperial Valley Substation (MP 0) is located west of El Centro in southern Imperial County (Figure B-3). SDG&E proposes to modify the existing substation to accommodate the termination of an additional 500 kV circuit. Currently, the 500 kV SWPL passes through the Imperial Valley Substation as it brings power from Arizona to San Diego and the Imperial Valley. The Imperial Valley Substation also interconnects with the IID transmission system and transmission lines importing power from Mexican generators at Mexicali and Rosita to the south. All proposed modifications and all activities associated with staging and access would be located within the previously disturbed area of SDG&E substation property. See Section B.4.2.1 for additional details on construction specifications for the existing Imperial Valley Substation.

B.2.2 Anza-Borrego Link

The Anza-Borrego Link extends 22.6 miles through the Park, from MP 60.9 to MP 83.5. The SRPL line would travel approximately 22.6 miles through ABDSP. The 500 kV transmission line would be constructed entirely overhead through the State Park on lattice towers or H-frame structures. Currently, an overhead 92 kV transmission line owned by IID enters the State Park approximately two miles south of SR78 near the Ocotillo Wells Airport and terminates at the Narrows Substation, within ABDSP. Additionally, SDG&E owns a 69 kV line that enters the western boundary of ABDSP from Grapevine Canyon, passes through the Narrows Substation and continues north to Borrego Springs. The Proposed Project within the entire Anza-Borrego Link would require relocation of the existing IID 92 kV and SDG&E 69 kV transmission lines, as described below. The SRPL line would follow the existing IID 92 kV or SDG&E 69 kV transmission line ROWs within ABDSP. However, an additional 50-foot ROW width would need to be acquired, as detailed in Section B.3.1. Refer to Figure B-4 for the route of the SRPL Project within the Anza-Borrego Link.

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Environmental Impacts and Mitigation Measures for the Proposed Project

D.6.4 Significance Criteria and Approach to Impact Assessment

This section provides an overview to explain how impacts are defined, identified, and assessed for agricultural resources. Specifically, Section D.6.4.1 presents the significance criteria on which impact determinations are based, Section D.6.4.2 lists the Applicant Proposed Measures (APMs) relevant to agricultural resources, and Section D.6.4.3 defines and lists the overall impacts identified for the Proposed Project and alternatives.

D.6.4.1 Significance Criteria

The following agriculture significance criteria were derived from previous environmental impact assessments and the CEQA Guidelines (Appendix G, Environmental Checklist Form). Impacts to agriculture would be significant if:

- The Proposed Project would convert more than 10 acres of DOC Farmland to non-agricultural use.
- The Proposed Project would involve other changes in the existing environment, which, due to their location or nature, could result in interference with agricultural operations.
- The Proposed Project would convert more than 10 acres of Williamson Act lands to non-agricultural use.

The conversion of DOC Farmland would be considered significant if more than 10 acres of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Significance, and/or Grazing Land are converted to non-agricultural use as a result of the Proposed Project. 'Interference with agricultural operations' refers to: (1) substantial direct loss of cultivated land (i.e., Active Agricultural Operations); and/or (2) substantial impacts relating to other issues. 'Substantial direct loss of cultivated land' refers to the loss of more than 10 acres of land under Active Agricultural Operations. 'Substantial impacts relating to other issues,' is defined to include effects that result in a permanent reduction in productivity or the ability to conduct pre-project operations (e.g., obstruction of and disturbance to agricultural land and operations, interference with aerial spraying applications, exposure of livestock to stray voltage and EMF, and avian perching near vineyards). The conversion of Williamson Act lands would be considered significant if greater than 10 acres of contract land or Agricultural Preserves are used for non-agricultural use. The 10-acre threshold for each issue area is based on the fact that 10 acres is both the minimum mapping unit area for DOC Farmlands and the minimum acreage requirement for individual parcels to enter into Williamson Act contracts, as stated in Section 51222 of the California Government Code. Impacts are assessed for the Proposed Project or alternative as a whole and not only within each individual link.

D.6.4.2 Applicant Proposed Measures

APMs identified by SDG&E in its CPCN Application to the CPUC are intended to address potential effects through design, construction, and/or operational features included as part of the Proposed Project. Table D.6-6 presents the Land Use APMs that are relevant to this section. The impact analysis assumes that all APMs will be implemented as defined in Table D.6-6.

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Table D.6-6. Applicant Proposed Measures – Agricultural Resources

APM No.	Description
APM LU-1	SDG&E will provide advance notice to residents, property owners, and tenants within 300 feet of construction activities and will appoint a public affairs officer to address public concerns or questions.
APM LU-3	Farmers will be compensated for loss of crops along ROW. Construction activities in croplands will be scheduled to minimize or avoid planting, growing, and harvesting seasons to the extent feasible.
APM LU-4	To facilitate access to properties obstructed by construction activities, SDG&E will notify property owners and tenants in advance of construction activities. SDG&E will provide alternative access if feasible.
APM LU-5	To remedy encroachment and safety conflicts with irrigation canals and flood management structures during construction, SDG&E will coordinate construction activities with appropriate water management representatives.
APM LU-6	The limits of construction activities within the ROW will typically be predetermined, with activity restricted to and confined within those limits. The ROW boundary and limits of construction activity will be flagged in environmentally sensitive areas to alert construction personnel that disturbance to those areas should be minimized or avoided.
APM LU-7	To the extent feasible, facilities for the Proposed Project would be installed along the edges or borders of private property, open space parks, and recreation areas. When it is not feasible to locate the Proposed Project facilities along property borders, SDG&E will consult with affected property owners to identify facility locations that create the least potential impact to property and are mutually acceptable to property owners to the extent feasible.
APM LU-10	SDG&E will match structure locations with existing transmission facilities where feasible and appropriate.

D.6.4.3 Impacts Identified

Table D.6-7 summarizes impacts to Agricultural Resources identified within the Proposed Project area, based on the identified significance criteria. As described in Section D.6.4.1, the term “Agricultural Resources” is used to describe DOC Farmlands, areas with Active Agricultural Operations, and lands within active Williamson Act contracts or preserves. Impacts are classified as No Impact; Class I (significant, cannot be mitigated to a level that is less than significant); Class II (significant, can be mitigated to a level that is less than significant); Class III (adverse, but less than significant); or Class IV (beneficial). A summary of Class I through IV impacts specific to the established significance criteria is provided in Table D.6-7. Detailed discussions of Proposed Project impacts and their specific locations within individual links provided in Section D.6.5.

Table D.6-7. Impacts Identified – Agriculture Resources

Impact No.	Description	Impact Significance
Proposed Project		
AG-1	Construction activities would temporarily interfere with Active Agricultural Operations	No Impact; Class II, III
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use	Class I
AG-3	Operation would permanently interfere with Active Agricultural Operations	Class I, II, III
AG-4	Operation would permanently convert Williamson Act lands to non-agricultural use	No Impact; Class I
Proposed Project – Future Expansion		
AG-1	Construction activities would temporarily interfere with Active Agricultural Operations	Class II, III
AG-2	Operation would permanently convert DOC Farmland to non-agricultural use	Class I
AG-3	Operation would permanently interfere with Active Agricultural Operations	Class I, II
AG-4	Operation would permanently convert Williamson Act lands to non-agricultural use	Class I
Proposed Project – Connected Actions		
AG-1	Construction activities would temporarily interfere with Active Agricultural Operations	Class II, III

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This section presents a detailed discussion of impacts and mitigation measures for the Proposed Project. The discussion is divided to correspond to the five identified project links (Figure B-2 in Section B, Project Description), one in Imperial County and four in San Diego County. Each section addresses both construction and operational impacts pursuant to the significance criteria established in Section D.6.4.1. The discussion includes the significance of each impact, followed by mitigation measures, where appropriate. Lands identified as Agricultural Resources may have multiple characterizations. For example, land that is designated DOC Farmland may also be under Active Agricultural Operation and/or be land under a Williamson Act contract. As a result, the total amount of Agricultural Resources may be less than the simple sum of each type of resource.

Table D.6-8 provides an overview of impacts to Agricultural Resources resulting from the Proposed Project, by link and in total.

Table D.6-8. Agricultural Resources Permanently Impacted by the Proposed Project (acres)

Link	DOC Farmlands					Total DOC Farmlands	Total Active Agricultural Operations	Total Williamson Act Lands	Total Agricultural Resources*
	Prime Farmland	Farmland of Statewide Importance	Unique Farmland	Farmland of Local Importance	Grazing Land				
Imperial Valley	145.5	105.5	1.2	18.2	0	270.5	28.4	6.7	491.8
Anza-Borrego	0	0	0	0	0	0	0	0	0
Central	0.1	0	0	28.6	8.1	36.7	104.8	124.2	250.3
Inland Valley	0	0	0	7.1	23.7	30.8	34.3	26.5	102.0
Coastal	0	0	0	0.7	6.0	6.7	0	0	32.8
TOTAL	145.6	105.5	1.2	54.6	37.8	344.7	167.5	157.4	864.1

* Lands identified as Agricultural Resources may have multiple characterizations such that land may be designated DOC Farmland and/or land under Active Agricultural Operation and/or land under a Williamson Act contract. As a result, the total amount of Agricultural Resources is less than the simple sum of each type of resource.

D.6.5 Imperial Valley Link Impacts and Mitigation Measures

Approximately 491.8 acres of Agricultural Resources (270.5 acres of DOC Farmland, 28.4 acres of land under Active Agricultural Operation, and 6.7 acres of Williamson Act lands) would be permanently impacted by the Imperial Valley Link. These impacts are described for each impact identified in Table D.6-8.

Environmental Impacts and Mitigation Measures

The full text for individual mitigation measures for all resource topics is provided in Appendix 12.

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Construction Impacts

Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations (Class II)

Active Agricultural Operations within the Imperial Valley Link would be temporarily impacted by construction activities associated with the construction of the project, including construction or expansion of temporary or permanent access roads, use of conductor pulling sites; equipment and vehicle staging areas; and material storage and assembly sites. Construction activities could temporarily interfere with Active Agricultural Operations by damaging or removing crops or precluding planting; impeding access to certain fields or plots of land and obstructing farm vehicles and equipment; or disrupting drainage and irrigation systems (including self-propelled irrigation rigs), all of which could result in the temporary withdrawal of land from production, thereby reducing agricultural productivity on the affected land.

The Proposed Project would incorporate APMs to minimize direct impacts to Active Agricultural Operations. APM LU-1 requires that advance notification be provided to all residents, property owners, and tenants within 300 feet of proposed construction activities. APM LU-3 would compensate farmers for lost crops and would schedule construction activities so as to avoid planting, growing, and harvesting seasons, when feasible. APM LU-4 would require that property owners and tenants whose land may be obstructed by construction activities be notified in advance and alternative access be provided, if feasible. APM LU-5 would ensure that SDG&E would coordinate construction activities with water management representatives to remedy encroachment into and around irrigation canals. APM LU-6 would require that limits of construction be predetermined and that construction activities remain within the predetermined limits. Refer to Table D.6-6 for details of applicable agriculture APMs.

As a result of incorporating these APMs, construction of the Proposed Project would not result in damage or loss of crops, obstruction of access to properties, or conflicts with irrigation canals. However, impacts related to the disruption of Active Agricultural Operations during construction activities, which would include disruptions relating to the use of farm vehicles and equipment as well as private drainage and irrigation systems (including self-propelled irrigation rigs), would be significant. Implementation of Mitigation Measure AG-1a would be necessary in order to ensure that impacts to Active Agricultural Operations as a result of the proposed route through the Imperial Valley Link would be mitigated to a less than significant level (Class II).

Mitigation Measures for Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations

AG-1a **Avoid interference with agricultural operations.** The Applicant shall coordinate with property owners and tenants to ensure that project construction will be conducted so as to avoid or minimize interference with agricultural operations. Agricultural operations include, but are not limited to, the use of farm vehicles and equipment, access to property; water delivery, drainage, and irrigation.

Agricultural Soils. During construction, soils would become compacted as a result of vehicles and construction equipment traversing them. Compaction of agricultural soils, left unaddressed, would impact subsequent Active Agricultural Operations. This would be a significant impact. Implementation of Mitigation Measure AG-1b would ensure that impacts to Active Agricultural Operations resulting from construction-related soil compaction would be less than significant by requiring that compacted soils within DOC Farmland be restored. Implementation of Mitigation Measures AG-1a and AG-1b would mitigate impacts to Active Agricultural Operations as a result of soil compaction resulting from construction activities associated with the proposed route through the Imperial Valley Link to a less than significant level (Class II).

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Mitigation Measures for Impact AG-1: Construction activities would temporarily interfere with Active Agricultural Operations

AG-1b Restore compacted soil. The Applicant shall restore soils compacted during construction by conferring with the property owner or tenant to identify and then implement a mutually agreed means to restore such soils. Restoration actions may include, but are not be limited to, disking, plowing, or other suitable restoration methods.

Operational Impacts

Impact AG-2: Operation would permanently convert DOC Farmland to non-agricultural use (Class I)

Impacts to DOC Farmland would occur where the location of Project facilities, such as access roads and towers, would permanently convert the land upon which they are situated to non-agricultural use. The Proposed Project would permanently convert approximately 270.5 acres of DOC Farmland within the Imperial Valley Link (145.6 acres of Prime Farmland, 105.5 acres of Farmland of Statewide Importance, 1.2 acres of Unique Farmland, and 18.2 acres of Farmland of Local Importance), which is greater than the 10-acre threshold for determining significance of impacts due to the conversion of DOC Farmland. Across all links, the Proposed Project would convert 663.4 acres of DOC Farmland to non-agricultural use. For both the Imperial Link and the entire project, the Proposed Project would exceed the 10-acre threshold. In the Imperial Valley Link, there are no non-agricultural areas near the proposed route to which the Proposed Project could be relocated so as to reduce impacts to agriculture. Development on land to the north and west of the Proposed Project is prohibited by the DOD. Land to the south and east is already occupied by agriculture. If the transmission line were moved in this direction, the Proposed Project would no longer border certain agricultural areas, but would actually cross over them, resulting in additional impacts to Active Agricultural Operations. Because the Proposed Project as a whole would convert more than 10 acres of DOC Farmland, impacts to DOC Farmland as a result of the proposed route through the Imperial Valley Link would be significant (Class I), and no feasible mitigation measures exist to mitigate this impact to a less than significant level.

Impact AG-3: Operation would permanently interfere with Active Agricultural Operations (Class I for Disruption of Farming and Aerial Spraying; II for Disruption of Livestock Grazing; III for Avian Perching)

The proposed route through the Imperial Valley Link would permanently remove approximately 28.4 acres of land under Active Agricultural Operation. Across all links, the entire Proposed Project would remove 500 acres of land under Active Agricultural Operation. For both the Imperial Link and the entire project, the Proposed Project would exceed the 10-acre threshold for determining significance of impacts due to the loss of land under Active Agricultural Operation. As such, the Proposed Project would significantly impact Active Agricultural Operations. In the Imperial Link, there are no non-agricultural areas near the proposed route to which the Proposed Project could be relocated so as to reduce impacts to agriculture. Development on land to the north and west of the Proposed Project is prohibited by the DOD. Land to the south and east is already occupied by agriculture. If the transmission line were moved in this direction, the Proposed Project would no longer border certain agricultural areas, but would actually cross over them, resulting in additional impacts to Active Agricultural Operations. Impacts relating to the loss of land under Active Agricultural Operation as a result of the proposed route through the Imperial Valley Link would be significant (Class I), and no feasible mitigation measures exist to mitigate this impact to a less than significant level.

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In addition to the permanent loss of land under Active Agricultural Operation, the Proposed Project would result in other adverse agricultural impacts in the vicinity of the project. These include (1) disrupting farming facilities or operations, including dairy; (2) disrupting or altering aerial spraying practices; (3) introducing electric field effects on apiaries; and (4) exposing livestock to stray voltage and electric and magnetic fields.

Disruption of Farming Facilities or Operations (Class II). The presence of new project components would permanently disrupt active farming operations in nearby areas, by dividing or fragmenting agricultural fields, obstructing access, impeding the delivery and use of water for livestock and irrigation, reducing the efficacy of windbreaks, and/or disrupting the operation of farm equipment.

Incorporation of APM LU-7 would ensure that the location of proposed facilities are matched to existing facilities (where feasible and appropriate), and incorporation of APM LU-10 would ensure that facilities are installed along the edges of private property (also where feasible and appropriate). If facilities cannot be located along property or field boundaries, APM LU-7 would ensure that SDG&E would consult with affected property owners to identify facility locations that would create the least potential for impact. Incorporation of these APMs would minimize impacts to farming operations through avoidance of areas to the greatest extent feasible, but such impacts would not be reduced to a less than significant level. Implementation of Mitigation Measure AG-1a, as noted under Impact AG-1, would ensure that impacts relating to the disruption of Active Agricultural Operations as a result of the proposed route through the Imperial Valley Link would be mitigated to a less than significant level (Class II).

Dairy Operations (Class II). Dairy operations would be permanently disrupted by presence of the transmission line. Specifically, the Proposed Project would traverse over the Bullfrog Farms dairy property and its structures. Transmission line maintenance activities would also disrupt dairy operations. Thus, the Proposed Project's impact upon dairy operations within the Imperial Valley Link would be significant. However, implementation of Mitigation Measure AG-3a would ensure that impacts to dairy operations as a result of the proposed route through the Imperial Valley Link would be mitigated to a less than significant level (Class II).

Aerial Spraying Applications (Class I). Aerial spraying (i.e., crop dusting) is used to control insects, weeds, and diseases that may affect crops in the Imperial Valley. Aerial spraying occurs in those areas of the Imperial Valley actively cultivated with field crops. In relation to the Proposed Project, aerial application could occur at any point between MP 8 and 20. Aerial applicators fly at low elevations and sometimes at speeds in excess of 100 miles per hour. Fatalities associated with aerial applicators can partly be attributed to flying at low altitudes and high speeds, as well as the presence of obstacles such as power lines, trees, towers, or buildings within the flight area (Suarezzi, 2000). Where transmission lines exist in an agricultural area, pilots must fly over, beside, and (occasionally) under the lines to complete aerial spraying activities. Transmission lines and towers thus present a substantial obstacle to be avoided, and require additional attention from the pilots.

Transmission lines are especially hazardous when:

- Lines are oriented diagonally relative to field boundaries
- Multiple lines exist side-by-side
- Lines change direction (especially at a 90-degree angle) along the corridor
- New transmission lines and towers are installed
- Towers and lines are not clearly visible (TANC/WAPA, 1986)

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Thus, the presence of transmission lines and towers would result in interference with Active Agricultural Operations, a significant impact. Implementation of Mitigation Measure AG-3b would ensure that aerial applicators would be notified of the project location and components in order to educate pilots to significant dangers that would exist as a result of development of the Proposed Project. However, even with implementation of Mitigation Measure AG-3b, hazards to aerial spraying would continue to pose safety hazards to aerial applicators, or could preclude spraying activities in certain areas. As such, impacts to aerial spraying applications as a result of the proposed route through the Imperial Valley Link would remain significant (Class I).

Electric Field Effects on Apiaries (Class II). Power line electric fields have been shown to cause bees to leave their hives. As a result, significant impacts to apiaries located near a new transmission line would occur. However, these impacts would be less than significant (Class II) with implementation of Mitigation Measure AG-3c, which would require SDG&E to identify all apiaries within the area of potential effect and notify owners prior to energizing the line so the apiaries, which are mobile, could be relocated as necessary.

Exposure of Livestock to Stray Voltage and Electric and Magnetic Fields (Class III). Stray voltage and electric and magnetic fields (EMF) are two distinctly different phenomena. Both are described below.

Stray Voltage. Stray voltage is associated with electric utility distribution systems and local low voltage (120/240 volt) wiring on farms, not high voltage transmission lines. Utility distribution systems and low voltage wiring use a neutral conductor that is connected to the ground. In cases where there is not an adequate ground connection to the neutral, the current on the neutral conductor will find other paths to ground, thus, the term stray current or voltage.

Since early reports of stray voltage affecting livestock in 1969, there has been substantial research related to this topic. The vast majority of on-farm stray voltage occurrences are due to wiring and equipment problems which can be remedied by following the requirements of the National Electric Codes (NEC) and the USDA Handbook No. 696, *Effects of Electrical Voltage/Current on Farm Animals: How to Detect and Remedy Problems* (Lefcourt, 1991).

Since stray voltage is due to ground currents associated with distribution lines and farm wiring, this is not an impact that would result from the Proposed Project's high voltage transmission line. Thus, no impact would occur (No Impact), and no mitigation is required.

Electric and Magnetic Fields. Electric and magnetic fields occur both naturally and as a result of human activity across a broad electrical spectrum. Naturally occurring electric and magnetic fields are caused by the weather and the earth's geomagnetic field. The fields caused by human activity result from technological application of the electric and magnetic spectrum for uses such as communications, farm equipment, appliances, and the generation, transmission, and local distribution of electricity.

Electric fields from power lines are created whenever the lines are energized, with the strength of the field dependent directly on the voltage of the line creating it. Electric field strength is typically described in terms of kilovolts per meter (kV/m). Electric field strength attenuates (reduces) rapidly as the distance from the source increases. Electric fields are reduced at many receptors because they are effectively shielded by most objects or materials, such as trees or buildings.

Magnetic fields from power lines are created whenever current flows through power lines at any voltage. The strength of the field is directly dependent on the current in the line. Magnetic field strength is

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typically measured in milliGauss (mG). Similar to electric fields, magnetic field strength attenuates rapidly with distance from the source. However, unlike electric fields, magnetic fields are not easily shielded by objects or materials. Further discussion regarding the nature of EMF is provided in Section D.10 Public Health and Safety.

This review of EMF focuses on physiological effects and any subsequent animal health impacts that may affect agricultural productivity. Persons engaged in agricultural activities who depend upon live-stock (especially cattle) often raise concerns about animal fertility as well as biochemical responses to EMF that could lead to reduced output (e.g., milk production at dairies) and birth rates, or an increase in physical deformities (among other ailments) and mortality rates.

There is a wealth of literature addressing the issue of EMF and its effects upon livestock. Despite the number of studies performed and reported upon in such literature, however, the scientific community remains divided as to whether there is a direct correlation between EMF and various livestock maladies.

As noted above, electric fields are shielded by most objects. Electric fields from overhead high voltage transmission lines can induce voltages on large metal objects such as metal buildings, tractor-trailers, etc. Induced voltage is different from stray voltage in that it is caused by power line electric fields, not ground currents from distribution lines. Information prepared by the Public Service Commission of Wisconsin related to a 345 kV transmission line noted that the voltage a cow would feel from touching a large metal object below the line is estimated to be 0.02 Volts, which is substantially below the 2 to 4 Volt cow-contact threshold provided in USDA Handbook No. 696. Therefore, the electric fields from the Proposed Project's 230 kV and 500 kV lines are not expected to result in induced voltage impacts to livestock.

Magnetic fields are not shielded by most objects and have been shown to cause physiological effects in livestock. However, these physiological effects have not been determined to represent a health hazard for exposed cattle. Some of the most extensive controlled research on EMF and livestock has been performed by McGill University in Canada. The intensity of EMF used in this research was a 10 kV/m electric field and 300 mG magnetic field.

This research found that most of the variables assessed did not show any variation caused by EMF. However, there were positive associations with some variables such as feed consumption and milk fat content. Also, there were changes in the mineral and neurotransmitter metabolite concentrations. It was found that EMF caused a biological response in dairy cattle, affecting productivity variables which remained within the normal distribution for the population of dairy cattle.

Lacking a conclusion in the scientific community that EMF is a health hazard for livestock, and noting that the EMF from the Proposed Project is well below the levels utilized in the referenced research, EMF is not considered a significant impact to Active Agricultural Operations. Thus, impacts as a result of the proposed route through the Imperial Valley Link are considered adverse but not significant (Class III), and no mitigation is required.

Mitigation Measures for Impact AG-3: Operation would permanently interfere with Active Agricultural Operations

AG-1a **Avoid interference with agricultural operations.**

AG-3a **Coordinate with dairy operators.** SDG&E shall coordinate with dairy operators to ensure that agricultural productivity and animal welfare are maintained during project operation (e.g.,

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maintenance activities) to the maximum extent feasible. Coordination efforts shall address issues including, but not necessarily limited to:

- Impairment of cattle movements (e.g., provide alternate routes; reconfigure fencing/gates)
- Impacts to facilities, as well as related effects such as ingress/egress and management activities (e.g., replacement of damaged/removed facilities in kind; provide alternate access)

AG-3b Consult with and inform aerial applicators. The Applicant shall consult with landowners and the Imperial County Farm Bureau to determine which aerial applicators operate in the county. The Applicant shall provide written notification to all aerial applicators working in the county and to the CPUC stating when and where the new transmission lines and towers will be erected. The Applicant shall also provide all aerial applicators, the Imperial County Farm Bureau, and the CPUC with aerial photos or topographic maps clearly showing the new lines and towers in relation to agricultural lands.

AG-3c Survey for apiaries and inform owners. The Applicant shall perform a survey of the approved route and identify all apiaries within 1,000 feet of the transmission line. The Applicant shall notify all apiary owners at least 60 days prior to energizing the line that their apiaries are within a zone of potential transmission line effect, and shall advise them to relocate their hives to avoid any potential effects. The survey results and notification process shall be documented to the CPUC and BLM at least 30 days before the line is energized.

Impact AG-4: Operation would permanently convert Williamson Act lands to non-agricultural use (Class I)

Operation of the Proposed Project would permanently convert 18.2 acres of Williamson Act lands within the Imperial Valley Link due to the presence of transmission structures and access roads, which would exceed the 10-acre threshold for determining the significance of impact to Williamson Act lands. In addition, the Proposed Project as a whole would convert 254.3 acres of Williamson Act lands to non-agricultural use. In the Imperial Valley Link, there are no non-agricultural areas near the proposed route to which the Proposed Project could be relocated so as to reduce impacts to agriculture. Development on land to the north and west of the Proposed Project is prohibited by the DOD. Land to the south and east is already occupied by agriculture. If the transmission line were moved in this direction, the Proposed Project would no longer border certain agricultural areas, but would actually cross over them, resulting in additional impacts to Active Agricultural Operations. Because the Proposed Project as a whole would convert more than 10 acres of Williamson Act lands and that movement of the route elsewhere in the surrounding area would not be practical, impacts relating to the conversion of Williamson Act lands as a result of the proposed route through the Imperial Valley Link would be significant (Class I), and no feasible mitigation measures exist to mitigate this impact to a less than significant level.

Modifications to Imperial Valley Substation

No DOC Farmlands, Active Agricultural Operations, or Williamson Act lands would be impacted by the Imperial Valley Substation site. Thus, improvements to the Imperial Valley Substation would not create construction or operational impacts that would temporarily or permanently impact Agricultural Resources (No Impact) and no mitigation would be required.

D.6.6 Anza-Borrego Link Impacts and Mitigation Measures

No DOC Farmlands, Active Agricultural Operations, or Williamson Act lands exist within the Anza-Borrego Desert State Park, through which the Anza-Borrego Link would traverse. Therefore, the proposed route

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- A0002-1 The County of Imperial's concern with consistency of the Proposed Project with the Airport Land Use Compatibility Plan because of the proposed tower heights is acknowledged. Reference to the need for a discretionary action from the County of Imperial has been deleted from Table A-1, Permits or Other Actions Required Prior to Construction of the SRPL (i.e., Variance and General/Community Plan Amendment have been removed from the list).

LOCAL AND REGIONAL

County roads and highways, flood control/drainage channels	• Road/Highway Encroachment/Crossing Permit • Grading Permit • Flood Control/Drainage Channel Encroachment/Crossing Permit • General and/or Community Plan Amendment • Variance • Explosives Permit
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No local discretionary permits or local plan consistency evaluation is required for the Proposed Project or alternatives as the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of public utilities. However, SDG&E would be required to obtain all ministerial building and encroachment permits from the County of Imperial. As demonstrated in Section D.16, Policy Consistency, and Appendix 2, Policy Screening Report, the project is consistent, to the extent possible, with the County of Imperial's goals, objectives, and policies.

Additionally, Section D.9, Transportation and Traffic, considers the airports and air strips in Imperial County that are near the Proposed Project and alternative routes and assesses potential impacts to aircraft flights during construction and operation of the Proposed Project. The analysis also considers aircraft used for agricultural uses, which is discussed in Chapter D.6 Agriculture, under Impact AG-3.

- A0002-2 Imperial County has provided information from the Geothermal/Alternative Energy and Transmission Element of its General Plan, which includes reference to the Airport Land Use Commission. The Draft EIR/EIS has considered the location of airports and air strips in relation to the Proposed Project and alternative alignments and has considered the height of structures in the analysis. In the background information submitted as part of the County's comments, the type of actions that require review of the Airport Land Use Commission include those actions that would require a variance from the height limitation and/or actions that include structures with proposed heights above 150 feet. The text requires review if requested by the local agency as part of its action. For the Proposed Project, that review would come during the review of Building Permits by the County of Imperial. As noted in Response to Comment A0002-1, the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of public utilities and is not required to obtain discretionary permits from local agencies. However, as demonstrated in Section D.16 Policy Consistency and Appendix 2 Policy Screening Report, the project is consistent, to the extent possible, with the County of Imperial goals, objectives, and policies. The text and figures from the Draft EIR/EIS that were included as an attachment to this comment letter are acknowledged.