

CUMULATIVE IMPACTS

Even if an individual project has a minor effect, significant environmental effects may result from the combination of the minor effects of multiple individual actions over time (CEQ 1997a). The CEQ regulations implementing the procedural provisions of NEPA define cumulative impacts as those impacts “on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). The regulations further explain that “cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.” This section addresses potential cumulative impacts of the ESJ U.S. Transmission Line project, when added to impacts from other past, present, and reasonably foreseeable future actions in the region.

5.1 METHODOLOGY

The cumulative impacts analysis presented in this document is based on the potential effects of the ESJ U.S. Transmission Line project when added to impacts from other past, present, and reasonably foreseeable future actions in the region. The potential effects are evaluated both for the period of project construction (anticipated to be up to 6 months), and for the post-construction (operation) period of the project.

The region of influence (ROI) varies for each resource area, depending on the distance a potential effect can travel or be experienced. For example, cumulative effects to visual resources are typically limited to other projects that occupy the same field of view as the alternative corridors. However, comments received during the public scoping process for the ESJ U.S. Transmission Line project indicate that members of the public and community groups are concerned with changes in the general visual quality of the region that may be diminished by the proliferation of visible structures, even if the changes are not within the same field of view as the alternative corridors. Therefore, for visual resources, the ROI is relatively large and includes southeastern San Diego County and southwestern Imperial County. In comparison, since impacts to geology and soils are limited to the existing resources onsite, the ROI for cumulative effects is the alternative corridors’ rights-of-way. Cumulative issues relating to environmental justice could result from potential effects identified under all other resource areas, therefore, the ROI for environmental justice includes southeastern San Diego County and southwestern Imperial County. The ROI for the remaining resource areas is as follows: for biological resources, land use, recreation, and cultural resources, the ROI is southeastern San Diego County and southwestern Imperial County; for water resources, the ROI is the alternative corridors’ rights-of-way and Jacumba groundwater basin; for socioeconomics, the ROI is the census tract that includes the alternative corridors and the towns of Jacumba and Boulevard; for transportation and traffic the ROI is the segment of I-8 between eastern San Diego County and western Imperial County; and for air quality, the ROI is the San Diego Air Basin, including the potential for wind transport of air pollutants generated by reasonably foreseeable actions from Mexico into

the air resources ROI (in the U.S.). The analysis includes actions that could be reasonably anticipated to occur and have cumulative effects within the ROI of each resource area.

5.2 REASONABLY FORESEEABLE ACTION IDENTIFICATION

The cumulative impact analysis incorporates the sum of the effects of the ESJ U.S. Transmission Line project in combination with past, present, and future actions, since impacts may accumulate or develop over time. The actions described in this analysis are those that have already occurred, are ongoing, or are “reasonably foreseeable”; that is, they are funded for future implementation, or are included in firm near-term plans. In addition, DOE has limited its identification of reasonably foreseeable projects to those proposals with the potential to be executed within the next 10 years. Projects predicted to occur beyond 10 years are generally presumed to be speculative and thus not reasonably foreseeable. Types of actions with firm near-term plans include:

- Actions for which NEPA and/or CEQA documents are in preparation or finalized;
- Actions in a detailed design phase;
- Actions listed in formal NOI published in the *Federal Register* or State publications;
- Actions for which enabling legislation has been passed or a Memorandum of Understanding has been signed; and
- Actions that have been submitted to Federal and State regulators to begin the permitting process.

Table 5.2-1 summarizes actions that have been identified as recently completed, ongoing, or reasonably foreseeable and are thus included in the analysis of cumulative impacts. These actions were identified through the scoping process for the ESJ U.S. Transmission Line project, discussions with regional resource agencies (e.g., CalTrans, BLM, County of San Diego, U.S. Border Patrol), review of the Cal-ISO Interconnection Queue¹, review of regional planning documents (e.g., County of San Diego General Plan), and NEPA and CEQA documents for other known actions in the area (e.g., Sunrise Powerlink and SDG&E ECO Substation Project). Each action is described in greater detail in the sections below and displayed in Figure 5-1.

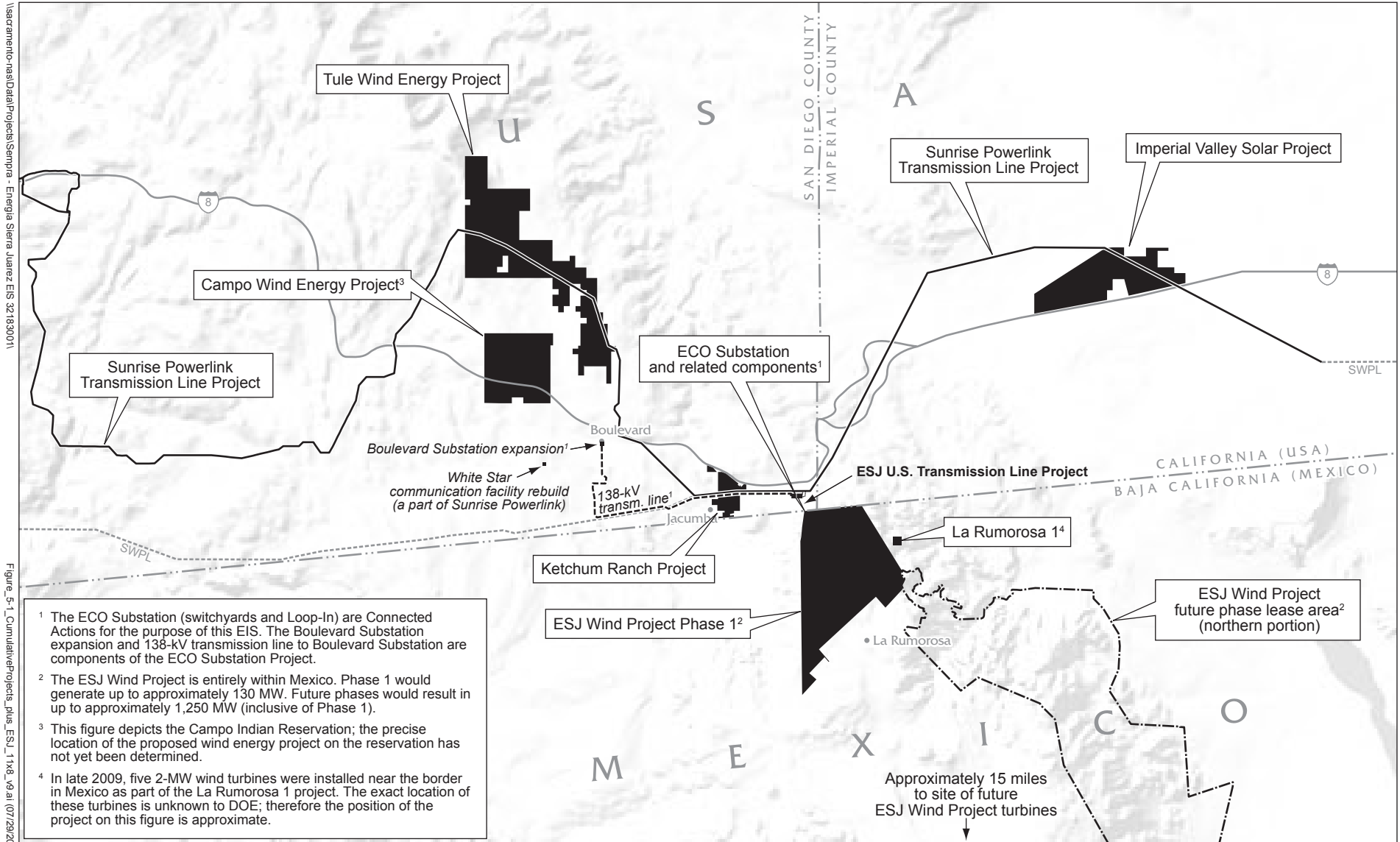
¹ The Cal-ISO Interconnection Queue is periodically updated and lists energy-related facilities that have submitted requests to interconnect to the existing electric transmission system. The list is available online at: <http://www.caiso.com/14e9/14e9ddda1ebf0ex.html>

**Table 5.2-1
Past, Present, and Reasonably Foreseeable Future Actions That May Cumulatively Affect Resources of Concern**

Section Number	Project Name	Status	Primary Impact Location
Energy Projects			
5.2.1	Sunrise Powerlink Transmission Line Project	The ROD for the Final EIR/EIS was adopted in January 2009; however the decision was appealed in March 2009 and is the subject of ongoing litigation	Imperial County/San Diego County
5.2.2	SDG&E ECO Substation Project (138-kv Transmission Line, Boulevard Substation Expansion, White Star Communication Facility) ¹	Under environmental review by the CPUC and BLM – NOI/Notice of Preparation for an EIR/EIS published December 2009	Southeastern San Diego County
5.2.3	Tule Wind Energy Project	Under environmental review by the CPUC and BLM – NOI/Notice of Preparation for an EIR/EIS published December 2009	Boulevard
5.2.4	Campo Wind Energy Project	A Memorandum of Understanding was signed by the tribe, Invenergy LLC, and SDG&E in June 2009	Campo
5.2.5	Imperial Valley Solar Project	Under environmental review by the BLM and California Energy Commission – NOI for an EIS published October 2008. Draft Staff Assessment/EIS published February 12, 2010	Southwestern Imperial County
5.2.6	La Rumorosa I Project	Constructed in September 2009	Baja California and southeastern San Diego County
Development Project			
5.2.7	Ketchum Ranch	Application for development filed with County of San Diego	Jacumba

**Table 5.2-1
Past, Present, and Reasonably Foreseeable Future Actions That May Cumulatively Affect Resources of Concern**

Section Number	Project Name	Status	Primary Impact Location
Regional Planning Projects			
5.2.8	County of San Diego General Plan Update	Under environmental review by County of San Diego – Notice of Publication of Draft EIR published June 2009	San Diego County/ Mountain Empire Sub-Region
5.2.9	BLM South Coast Resource Management Plan Revision	NOI for development of the Resource Management Plan published August 2007	Portions of San Diego, Riverside, Los Angeles, Orange, and San Bernardino Counties
5.2.10	BLM Eastern San Diego County Resource Management Plan Revision	Adopted October 2008	Portions of San Diego County
5.2.11	East County Multiple Species Conservation Plan	Under development by County of San Diego	Portions of San Diego County
5.2.12	Solar Energy Development	Under environmental review by the DOE and BLM – NOI for a Programmatic EIS published May 2008	Jacumba Mountain Wilderness Area, Imperial County
¹ This cumulative assessment addresses all of the SDG&E ECO Substation Project components. Section 4 (Connected Actions) provides additional analysis of the ECO Substation switchyard and the SWPL loop-in as stand-alone projects because they are connected actions to the ESJ U.S. Transmission Line project.			



¹ The ECO Substation (switchyards and Loop-In) are Connected Actions for the purpose of this EIS. The Boulevard Substation expansion and 138-kV transmission line to Boulevard Substation are components of the ECO Substation Project.

² The ESJ Wind Project is entirely within Mexico. Phase 1 would generate up to approximately 130 MW. Future phases would result in up to approximately 1,250 MW (inclusive of Phase 1).

³ This figure depicts the Campo Indian Reservation; the precise location of the proposed wind energy project on the reservation has not yet been determined.

⁴ In late 2009, five 2-MW wind turbines were installed near the border in Mexico as part of the La Rumorosa 1 project. The exact location of these turbines is unknown to DOE; therefore the position of the project on this figure is approximate.



Source(s): Argonne National Laboratory 2009; BIA 2007; BLM 2008; Burns & McDonnell 2009; Campo Band of Kumeyaay Indians 2008; CPUC/BLM 2008, 2010; EDAW 2010; ESJ LLC 2009; Google Maps 2009; Iberdrola Renewables 2009; SDG&E 2009; USGS 2006.



ENERGIA SIERRA JUAREZ U.S. TRANSMISSION LINE EIS

FIGURE 5-1

PROJECTS CONSIDERED IN CUMULATIVE EFFECTS ANALYSIS

August 2010

5.2.1 Sunrise Powerlink Transmission Line

SDG&E is planning to construct a new 150-mile (241.4 km) transmission line between Imperial and San Diego Counties that would consist of a new 91-mile (146.4 km) single-circuit 500-kV overhead electric transmission line connecting the existing Imperial Valley Substation to a proposed new Central East Substation (in San Diego County, near the community of San Felipe). Between the Central East Substation and the existing Pensacitos Substation in the City of San Diego, SDG&E proposes to construct a new 59 mile (94.9 km) 230-kV double-circuit and single-circuit transmission line, portions of which would be underground. The CPUC voted in December 2008 to approve the Final Environmentally Superior Southern Route; this route would traverse the ESJ U.S. Transmission Line project area near Old Highway 80, parallel to the existing SWPL, and immediately north of the proposed ECO Substation Project. The BLM issued a ROD² for the project in January 2009 approving the same route. The U.S. Forest Service issued a ROD³ for the project in July 2010 to allow construction through 19 miles (30.6 km) of the Cleveland National Forest. Construction of the line is expected to begin in the second half of 2010 and take place over a period of 2 years (BLM 2009f); however, BLM's decision was appealed to the Interior Board of Land Appeals on March 23, 2009, and is the subject of ongoing litigation.

White Star Communication Facility

SDG&E owns and operates a communications facility at White Star in an easement that is adjacent to an existing communication facility owned by the County of San Diego. As a part of the Sunrise Project, SDG&E would replace 2 wooden poles with one 75-foot (22.8-m) tall steel tubular pole at this site. The new equipment to be installed would include a 6-foot (1.8-m) diameter microwave antenna, waveguide, and grounding attached to the steel pole. The microwave dish would be attached to the tower approximately 50 feet (15.2 m) from the ground.

In addition, voice radio antennas may be attached to the tower to support electrical crews' fieldwork and operation safety. SDG&E would remove an existing equipment control shelter and install a small, pre-fabricated control building, 12 feet (3.7 m) by 16 feet (4.9 m) in size, adjacent to the new steel pole, which would house the microwave radio system and other telecommunication equipment. SDG&E would also be required to install a 48-VDC direct current battery, including a rectifier, and 1 backup generator. The new facility would be approximately 30 feet wide by 30 feet long (9.1 m by 9.1 m) and enclosed within a 6-foot (1.8-meter) high chain-link fence (SDG&E 2009b).⁴

² The BLM ROD for the Sunrise Powerlink Project can be found at the following website: <http://www.cpuc.ca.gov/environment/info/aspen/sunrise/rod.pdf>

³ The USFS ROD for the Sunrise Powerlink Project can be found at the following website: <http://www.fs.fed.us/r5/cleveland/projects/sunrise-powerlink/fs-rod-july-09-2010.pdf>

⁴ Additional information regarding the ECO Substation Project is available online at: <http://www.cpuc.ca.gov/environment/info/dudek/ECOSUB/ECOSUB.htm>

5.2.2 SDG&E East County Substation Project

As described in Section 2.5 and discussed in Section 4, SDG&E has filed an application with the CPUC for a Permit to Construct a new substation in eastern San Diego County (ECO Substation) which would loop into the existing SWPL transmission line. BLM and the CPUC published a joint NOI/Notice of Preparation for an EIS/EIR for the project in December 2009 (BLM 2009e). The proposed ECO Substation switchyards and SWPL loop-in would be located on the south side of I-8 and Old Highway 80, east of Jacumba, on the west side of the Jacumba Mountain range and north of the U.S.-Mexico border. The ECO Substation switchyards would be located entirely on privately-owned, undeveloped land. SDG&E would acquire up to 6 parcels to construct the ECO Substation switchyards, totaling approximately 498 acres (202 hectares) of land, of which the ECO Substation switchyards would occupy approximately 58 acres (23.5 hectares). The following subsections describe the additional components of the SDG&E ECO Substation Project.

138-kV Transmission Line

SDG&E is planning to construct a 13.3 mile (21.4-km) 138-kV transmission line to connect the ECO Substation switchyard facility with the existing SDG&E Boulevard Substation. The transmission line would include approximately 98 steel transmission poles. In addition, nine wooden distribution poles would be installed to replace the existing distribution Circuit 445 poles; this distribution line would be collocated on the new 138-kV transmission line structures near the intersection of Jewel Valley Road and Tule Jim Lane in Boulevard. Some service lines may need to be extended to the relocated distribution line. The final approximately 440 feet (134 m) of the 138-kV transmission line would be installed underground in a concrete duct bank, terminating at the rebuilt Boulevard Substation. One steel cable riser pole would be installed at the end of the overhead segment to connect the overhead conductors to the underground substation getaways.

This transmission line would exit the west side of the ECO Substation switchyard facility and then parallel the existing SWPL transmission line for approximately 5.7 miles (9.2 km) to the west. At this point, the line would cross under the SWPL and continue parallel for approximately 3.2 miles (5.1 km) along its north side until it intersects with an existing dirt access road. At this point, the line would turn and continue generally north for approximately 1.5 miles (2.4 km). The line would cross over Tule Jim Lane and run north along the west side of Tule Jim Lane for approximately 1.3 miles (2.1 km) until it crosses Eady Lane. At this point, the line would change from an aboveground line to an underground line and turn northeast for approximately 0.1 mile (0.2 km) until it enters the rebuilt Boulevard Substation (SDG&E 2009b).

Boulevard Substation

The interconnection of a 138-kV transmission line with the Boulevard Substation would require rebuilding and expansion of the Boulevard Substation. SDG&E acquired one 8.5-acre (3.4 hectare) parcel attached to the eastern property line of the existing substation, in which the Boulevard Substation would be rebuilt to operate at 138/69/12-kV. One residential home and eight associated structures located on this parcel would be demolished prior to expanding the substation. A new 25-foot (7.6 m) wide, asphalt-paved access road, approximately 190 feet (58 m) in length, would be constructed off of Old Highway 80 to the rebuilt substation site. A paved spur road off the main access road, approximately 210 feet (64 m) in length, would

provide secondary access into the substation. The fenced area of the new substation would be approximately 2 acres (0.8 hectare) (277 feet by 319 feet [84.4 m by 97.2 m]), allowing for the installation of new 138-kV, 69-kV, and 12-kV facilities to accommodate connection of the new 138-kV transmission line, as well as the potential for up to 4 generation tie-lines. In order to connect the existing 69-kV transmission line to the rebuilt Boulevard Substation, 2 new direct embedded steel poles, approximately 85 feet (26 m) tall, would be installed southwest of the rebuilt Boulevard Substation. The electrical facilities would include 138-kV, 69-kV and 12-kV air-insulated buses, transformers, circuit breakers, disconnect switches, communication equipment and protective relays (SDG&E 2009b).

5.2.3 Tule Wind Energy Project

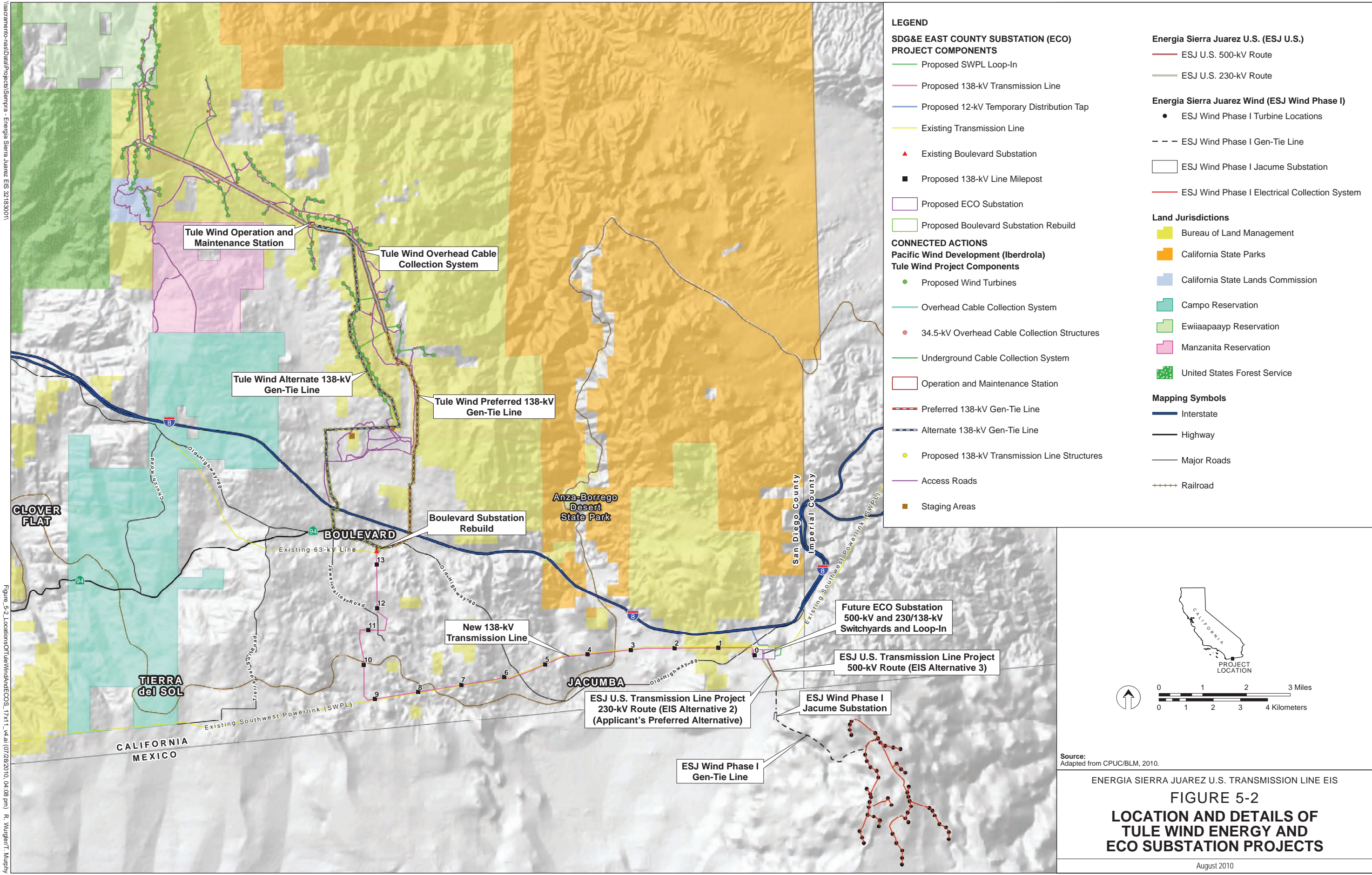
Iberdrola Renewables has submitted an application for a right-of-way to construction a wind energy project on BLM-managed land; and state, private, and tribal lands in the McCain Valley, which are north of I-8, the alternative corridors, and the existing Kumeyaay Wind Farm. The wind turbines (approximately 125) would be constructed on approximately 15,500 acres (6,272.7 hectares) and would provide up to 200 MW of power. Current plans for the Tule Wind Energy project would tie this project into the proposed Boulevard Substation rebuild component of the SDG&E ECO Substation Project (described above). BLM and the CPUC published a joint NOI/Notice of Preparation for an EIS/EIR for the project in December 2009⁵ (BLM 2009e). Figure 5-2, developed by the BLM and CPUC to provide additional information during the NEPA and CEQA scoping processes is included here to illustrate project details (including potential wind turbine locations, the electrical connections system, and generation tie lines to the Boulevard substation).

5.2.4 Campo Wind Energy Project

The Campo Band of Mission Indians of the Kumeyaay Nation, Invenergy LLC and SDG&E signed a Memorandum of Understanding in June 2009 to build a 160 MW wind energy project on tribal land in eastern San Diego County, in addition to the existing 25 turbine project located on tribal lands that was completed in 2005. Although exact placement has not yet been determined, the project would involve as many as 100 new wind turbines. According to project developers, the project is expected to begin producing energy in late 2012⁶ (SDG&E 2009c). No other information is currently available regarding this project and no formal applications have been files with the CPUC or California Department of Energy.

⁵ Additional information regarding the Tule Wind Energy Project is available online at: http://www.blm.gov/ca/st/en/info/fed_reg_archives/2009/december/tule_wind_noi.html and <http://www.iberdrolarenewables.us/tulewind/index.html>

⁶ Additional information regarding the Campo Wind Energy Project is available online at: http://www.invenergyllc.com/news/campo_project.pdf



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5.2.5 Imperial Valley Solar Project

Stirling Energy System submitted an Application for Certification to the California Energy Commission in June 2008 to construct a 750 MW solar energy facility on a 6,500-acre (2,630-hectare) project site in Imperial County 14 miles (22.5 km) west of El Centro and 4 miles (6.4 km) east of Ocotillo Wells. The primary equipment for the generating facility would include approximately 30,000 25-kilowatt solar dish Stirling systems and associated infrastructure. The project would also include the construction of a new 230-kV substation located in the approximate center of the site and would be connected to the SDG&E Imperial Valley Substation via a 10.3-mile (16.6 km), double-circuit, 230-kV transmission line.

The double-circuit 230-kV transmission line would parallel the SWPL transmission line within the designated right-of-way (BLM 2008b). BLM published a NOI for the project on October 17, 2008, the California Energy Commission found the Application for Certification data adequate on October 8, 2009, and BLM published a Notice of Availability of the Draft EIS on February 12, 2010 (BLM 2010).⁷

5.2.6 La Rumorosa I Project

Turbo Power Services installed five 2-MW wind turbines on the road between Mexicali and Tijuana, Baja California, Mexico in September 2009. The project was implemented as a local-consumption project for the municipalities of Mexicali and Tijuana and is expected to generate the equivalent to half the electricity demand in the region, which includes about 35,000 families (Latin American Wind Energy Association 2009).⁸

5.2.7 Ketchum Ranch Project

The Ketchum Ranch Specific Plan proposes a residential community with recreational and visitor-oriented commercial uses on approximately 1,300 acres (526 ha) on the east side of Carrizo Gorge Road, on the east side of the community of Jacumba. The proposed Specific Plan would be developed in two phases.

Phase 1 would develop the southern 653 acres (264 ha) of the Ranch with 1,110 residential units and various support and neighborhood commercial and recreational uses such as a golf course, equestrian trails, clubhouse, tennis courts, swimming pools and other residential-orientated recreational uses. Phase 1 would also include a sewage treatment facility, and may include a hotel and visitor-serving recreational uses in the northern portion of the Specific Plan Area.

The proposed sewage treatment facility and trunk lines would be sized to serve future phases of development. Phase 2 would develop the northern 694 acres (281 ha) of the Specific Plan area with residential, light industrial, and commercial uses. Phase 2 would be deferred for a minimum

⁷ Additional information regarding the Imperial Valley Solar project is available online at: <http://www.energy.ca.gov/sitingcases/solartwo/index.html>

⁸ Additional information regarding the La Rumorosa I project is available online at: <http://www.windfair.net/press/6094.html>; http://www.greenmomentum.com/wb3/wb/gm/gm_content?id_content=1465; <http://www.rechargenews.com/energy/wind/article172862.ece>

of 3 years or until Phase 1 is expanded to include the northern portion of the Ranch (County of San Diego 2010).

5.2.8 County of San Diego General Plan Update

The County of San Diego DPLU has developed a Draft General Plan Update for the county. The Notice of Publication of the Draft EIR for the General Plan was published June 2009 and adoption of the General Plan Update by the County of San Diego Board of Supervisors is planned for fall 2010.⁹ According to the Draft General Plan zoning of the parcels proposed for the ESJ U.S. Transmission Line project would be changed from Multiple Rural Use to Rural Lands (RL-80), which allows one dwelling unit per every 80 acres. The Rural Lands category would be applied to large open space and very low density private and publicly owned lands that provide for agriculture, managed resource production, conservation, and recreation and thereby retain the rural character for which much of unincorporated San Diego County is known. According to the Draft General Plan, rural areas are not appropriate for intensive residential or commercial uses due to significant topographical or environmental constraints, limited access, and the lack of public services or facilities. Also, according to the updated Mobility Element developed as part of the Draft General Plan, Old Highway 80 and Carrizo Gorge Road would be downgraded from their current classification as Major Collector (4 lanes) to Light Collector with Improvement Options (2+ lanes) (County of San Diego 2010).

5.2.9 South Coast Resource Management Plan Revision

The BLM is currently developing a revision to the South Coast Resource Management Plan (RMP). The revised South Coast RMP would provide guidance for the management of approximately 300,000 acres (121,400 ha) of BLM-administered public lands in portions of San Diego, Riverside, San Bernardino, Orange, and Los Angeles Counties. A NOI for the development of the RMP was published in the Federal Register in August 2007 (72 FR 44173).¹⁰ Included in the Planning Area for this RMP is the BLM land north of the alternative corridors in San Diego County. As of May 2010, the Draft RMP had not yet been released (BLM 2008c). According to BLM staff, the Draft RMP planning area does not extend to BLM lands in vicinity of the ESJ U.S. Transmission Line project (Hill 2010).

5.2.10 Eastern San Diego County Resource Management Plan Revision

In October 2008, the BLM signed the ROD implementing the revised Eastern San Diego County RMP. The Planning Area for the revised RMP includes the area proposed for the alternative corridors, although the corridors are not located on BLM-administered land. Within the revised RMP, the alternative corridors rights-of-way are located in the Jacumba/Boulevard Destination Special Recreation Management Area (SRMA). The Boulevard/Jacumba Destination SRMA includes the most extensively used areas in the Planning Area. Land uses include the established campgrounds, horse corrals, and designated off-highway vehicle use area and route network. The SRMA also includes lands that are designated as wilderness areas, wilderness study areas, and ACECs. The primary activities in these areas are camping, off-highway vehicle use, equestrian

⁹ Additional information regarding the County of San Diego General Plan Update is available online at: <http://www.sdcounty.ca.gov/dplu/gpupdate/index.html>

¹⁰ Additional information regarding the South Coast Resource Management Plan is available online at: http://www.blm.gov/ca/st/en/fo/palmsprings/SCRMP_Revision.html

use, target shooting, hunting, mountain biking, hiking and backpacking, wildflower and wildlife viewing, rock hounding, and pleasure touring. The SRMA boundaries are not intended to confer BLM authority, responsibility, or jurisdiction over lands and waters that are not administered by the BLM. Instead, planning boundaries reflect the fact that these adjacent lands are vital in the appropriate management of the entire area. Under the revised RMP, this SRMA would be managed as a regional or national destination through collaborative partnerships in order to promote the continued use of the lands for these activities (BLM 2008a).¹¹

5.2.11 East County Multiple Species Conservation Plan

The County of San Diego Multiple Species Conservation Program is a division of the County of San Diego DPLU that is tasked with preserving and protecting San Diego's native habitats and watersheds as well as ensuring compliance of projects with CEQA, NEPA, and the ESA. The Program has developed a draft Map for the East County Study Area which covers the area east of Alpine to the Imperial County line and north to Riverside County. The draft map was released for public review in December 2008. Although the alternative corridors are included in the Study Area as depicted on the draft map, it is not part of the Program area and has not been designated a Conservation Strategy Area (County of San Diego 2008).

5.2.12 Solar Energy Development

The DOE and BLM published a NOI for a Programmatic EIS to evaluate solar energy development and develop and implement agency specific programs related to solar energy development in May 2008 (73 FR 30908). The Proposed Action to be analyzed in the Programmatic EIS is the development and implementation of agency-specific programs that would facilitate environmentally responsible utility-scale solar energy development. The programs would establish policies and mitigation strategies related to solar energy development in six western states (Arizona, California, Colorado, New Mexico, Nevada, and Utah) that would apply to the deployment of DOE-supported solar energy projects on BLM-administered lands or other Federal, State, tribal, or private lands. As stated in the NOI, the Programmatic EIS will identify lands that are appropriate for solar development (DOE/BLM 2009). Study area maps released in June 2009 indicate the location of four BLM tracts of land that have been identified for in-depth study of solar development in California. The nearest study area to the ESJ U.S. Project includes 12,380 acres (5,010 ha) located in southeastern Imperial County, approximately 20 miles (32 km) east of El Centro along the U.S.-Mexico border (DOE/BLM 2009).¹²

5.3 CUMULATIVE IMPACTS ANALYSIS

The cumulative impacts analyses presented in the following sections encompass the direct and indirect impacts associated with both the ESJ U.S. Transmission Line project, and the potential impacting factors for each of the reasonably foreseeable future actions described in Section 5.2. The cumulative impact analysis considers the period of construction for the ESJ U.S. Transmission Line project and the post-construction period of operation.

¹¹ Additional information regarding the Eastern San Diego County Resource Management Plan is available online at: <http://www.blm.gov/ca/st/en/fo/elcentro/esdrmp.html>

¹² Additional information regarding the Programmatic EIS for solar energy development is available online at: <http://solareis.anl.gov/>

5.3.1 Biological Resources

Cumulative impacts to biological resources would result if the ESJ U.S. Transmission Line project, in combination with other projects considered in this analysis, resulted in impacts to special status plant or wildlife species, nesting birds, or loss of habitat. Existing linear development features including I-8 and Old Highway 80 to the north, and the U.S.-Mexico border fence to the south, have the potential to inhibit the north-south movement of large terrestrial wildlife species through the area. The ESJ U.S. Transmission Line project design incorporates widely spaced transmission towers (or monopoles), which would not substantially interfere with connectivity between blocks of habitat or potentially block or substantially interfere with the movement of terrestrial wildlife.

Biological surveys conducted in the area for the SDG&E ECO Substation Project found small mammal burrows in high densities throughout the site, as well as three inactive bird nests. In addition, four special status plant and wildlife species were found to occur or have a high potential to occur in the area. Construction activities associated with the ESJ U.S. Transmission Line project in combination with the ECO Substation switchyard could result in cumulative disturbance of wildlife due to temporary cumulative increases in ambient noise levels. However, environmental protection measures incorporated into the ESJ U.S. Transmission Line project design would ensure the ESJ U.S. Transmission Line project contributions to such noise increases would be minor. In addition, protocol-level surveys for the Quino checkerspot butterfly conducted for the ECO Substation Project in 2009 located individuals of the species and larval host plants at Jacumba Peak (within the designated critical habitat area), along the 138-kV transmission line route and over 5 miles (8 km) west of the ESJ U.S. Transmission Line project. As discussed in Section 4.0 (Connected Action), the surveys did not identify any individual or larval host plants at the ECO Substation switchyard facility. Therefore, the ESJ U.S. Transmission Line project would not contribute to any potential cumulative impacts to the Quino checkerspot butterfly.

Once operational, minor to moderate permanent cumulative impacts to biological resources would occur. Implementation of the projects considered in this analysis would result in the permanent loss of habitat; however, the ESJ U.S. Transmission Line project contribution to this cumulative impact would be minor (approximately 9 acres [14.4 ha] of permanent habitat loss) compared to the Sunrise Powerlink project and related components of the SDG&E ECO Substation Project, as well as proposed wind and solar projects. These impacts would be offset by the proposed conservation easement. The cumulative presence of the proposed transmission line and ESJ Wind project could result in impacts to migratory birds that could potentially collide with transmission lines, towers, or turbines. However, as described in Section 3.1 (Biological Resources), the alternative corridors and the ESJ Wind project turbines would not be located in a known flyway or migratory corridor. Similarly, the other wind projects considered in this cumulative analysis (Campo Wind Energy project and Tule Wind Energy project) would also be located outside of any known flyways or migratory corridors. Impacts to avian species would most likely consist of impacts to raptors, which are known to forage along ridgelines and could collide with the turbines. However, the Migratory Bird Treaty Act (of which both the U.S. and Mexico are signatories) is designed to minimize cumulative impacts to migratory birds (including raptors). The USFWS is the regionally responsible agency designated to ensure compliance with the Migratory Bird Treaty Act in the U.S. Through consultation with the

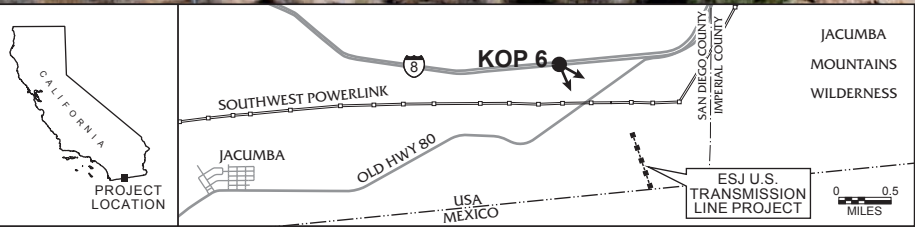
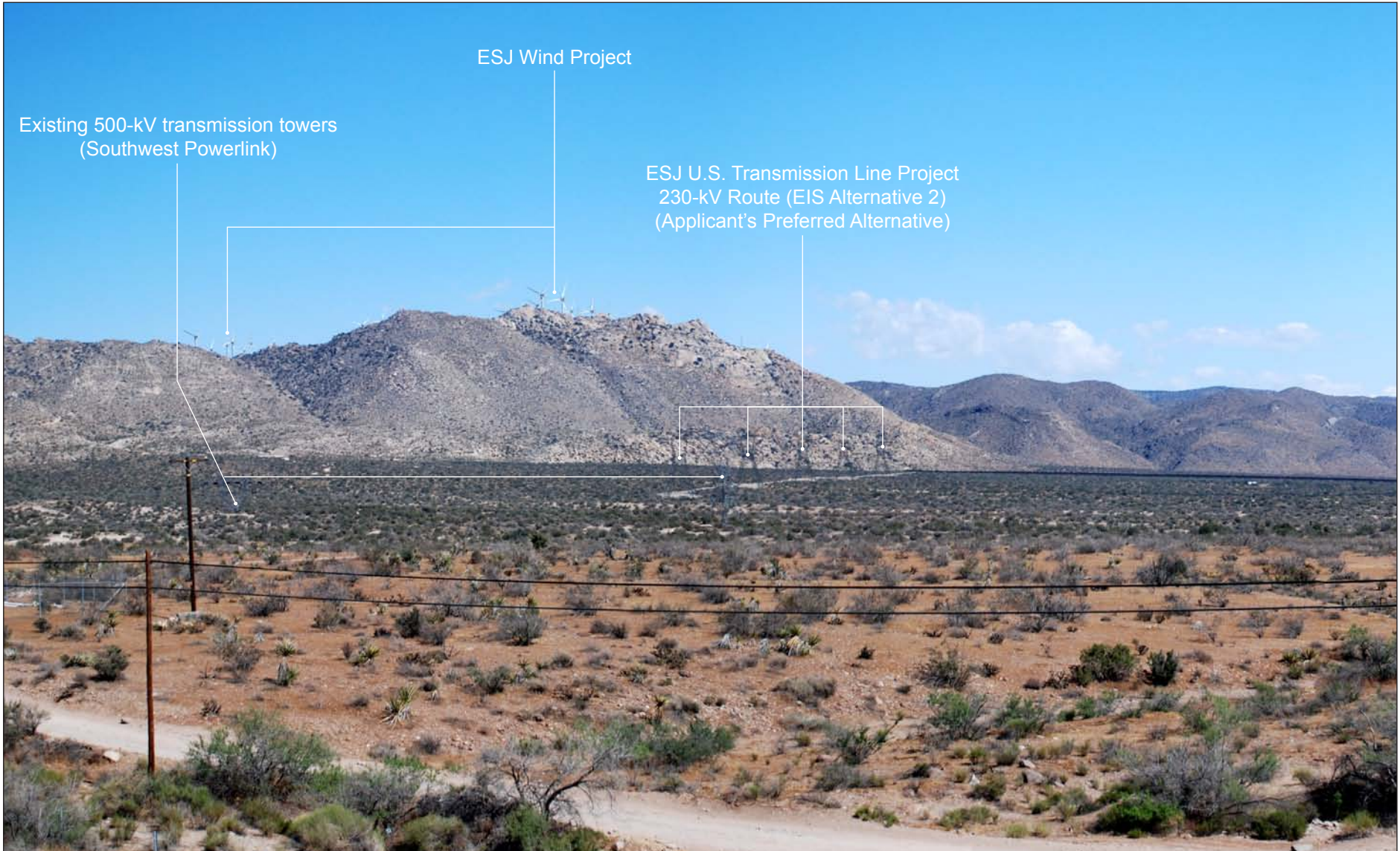
USFWS, each project would be required to implement measures to avoid and/or minimize impacts to migratory birds. Therefore, no major cumulative impacts to migratory bird species are anticipated.

5.3.2 Visual Resources

The ROI for analysis of cumulative visual impacts is relatively large and includes southeastern San Diego County and southwestern Imperial County. Within this ROI, the ESJ U.S. Transmission Line project, when considered in conjunction with the other wind energy, solar power, and transmission line projects considered in this analysis, could result in a substantial increase in industrial character, structure prominence, and view blockage¹³. The combined effect of the projects would result in a perceived increase in industrialization of the landscape, diminished visual quality, and an increase in visual contrast in eastern San Diego County and western Imperial County. As discussed further in Section 3.2 (Visual Resources), although there are numerous existing man-made features including the interstate highway and regional roads, existing transmission structures, and the international border fence, these areas are currently largely rural in nature. Structures associated with the ESJ U.S. Transmission Line project, Sunrise Powerlink, ECO Substation switchyards and related components, Imperial Valley Solar, any future DOE solar projects (as identified in the Programmatic EIS), the Campo Wind Energy project, and the Tule Wind Energy project would all be visible to motorists traveling along I-8, residents in nearby rural towns, and recreational users of surrounding open space areas (e.g., portions of Table Mountain ACEC and Anza Borrego Desert State Park). These structures would introduce additional industrial character wherever they are viewable. The combined size and character of the introduced structures, as well as the large number of each required for the respective projects, would result in considerable structure contrast, view blockages, and skylining in the region and would cumulatively cause permanent, major impacts to the existing visual character of the region.

The combined ESJ U.S. Transmission Line, ECO Substation and ESJ Wind projects would be visible from surrounding BLM recreational areas (Table Mountain ACEC to the north, and Jacumba Wilderness to the east) (Figure 5-3; note – the ECO Substation switchyard facility is not simulated in the figure). As discussed in Section 3.4 (Visual Resources), the ESJ U.S. Transmission Line project structures in and of themselves would not substantially change the character of views from these areas due to the tendency of transmission towers to blend with the surrounding desert landscape when viewed from a distance, and because the new towers would be substantially similar in appearance to the existing SWPL transmission towers.

¹³ In late 2009, five wind turbines of comparable size were installed near the border in Mexico as part of the La Rumorosa I project to supply power to the cities of Mexicali and Tijuana, Baja California, Mexico. These turbines were not yet installed at the time that the simulations for this EIS were developed. The existing turbines are not shown in this EIS, but are presently visible from certain vantage points in the Jacumba area.



ENERGIA SIERRA JUAREZ U.S. TRANSMISSION LINE EIS
FIGURE 5-3
SIMULATION OF VIEW OF PROJECTS
CONSIDERED IN CUMULATIVE EFFECTS
ANALYSIS (KOP 6)
 August 2010

Source:
ICF Jones & Stokes 2010.

Overall, it is clear that this is an area of active renewable energy development (see the following Web sites: http://www.20percentwind.org/20percent_wind_energy_report_revOct08.pdf; <http://solareis.anl.gov>; <http://windeis.anl.gov>). Much of that development is occurring in Mexico and is beyond the jurisdiction of U.S. regulatory agencies (see footnote 7). The ESJ U.S. Transmission Line project would be a relatively small contribution to the cumulative effect to visual resources. Each of the projects in the U.S. is subject to mitigation and other measures to address the visual impact of the developments. Therefore, the ESJ U.S. Transmission Line project would have a minor but permanent contribution to this visual change.

5.3.3 Land Use

The proposed and existing energy projects in eastern San Diego County would cumulatively increase the amount of industrial land uses in eastern San Diego County. This area of the county is designated Multiple Rural Use by the current County of San Diego General Plan. As discussed in Section 3.3 (Land Use), this land use designation is focused on maintaining and promoting the rural character of the local communities and open spaces. Each project would be required to obtain discretionary review and approval by the applicable local, state and federal agencies, prior to construction. The permitting processes of these agencies would entail a detailed review of the individual projects in relation to the agency's goals and policies related to preservation of rural land uses, including a consideration of cumulative land use effects. The County of San Diego DPLU staff has proposed changes to the County of San Diego General Plan. Adoption of the Plan is anticipated in fall 2010. If these changes are adopted, then the land use designation for the ESJ U.S. Transmission Line project and SDG&E ECO Substation Project areas would change slightly from Multiple Rural Use to Rural Lands (RL-80). This change would reduce allowed residential land use density from one unit per 20 acres to one unit per 80 acres; however, the designation would not alter the permitted uses. Relative to other proposed renewable energy projects in the region, the ESJ U.S. Transmission Line project's contribution to cumulative land use impacts, if any, is expected to be minor because the proposed transmission line would be located on private, undeveloped land, would not conflict with the existing or proposed land use designation, and would not be visible from residential areas. Furthermore, in areas from which the ESJ U.S. Transmission Line project structures would be visible (e.g., I-8, Old Highway 80, and surrounding recreational lands), the structures in and of themselves would not substantially contribute to a cumulative change in the visual character of the landscape due to the tendency of transmission towers to blend with the surrounding desert landscape when viewed from a distance, and because the new towers would be substantially similar in appearance to the existing SWPL transmission towers.

With regard to other applicable regional plans, the ESJ U.S. Transmission Line project would be located outside the planning area of the BLM's South Coast RMP and would not directly affect or be affected by the implementation of this plan. While the ESJ U.S. Transmission Line project would be within the planning area of the BLM's East County RMP, the ESJ U.S. Transmission Line project corridor is not owned or operated by the BLM and therefore the ESJ U.S. Transmission Line project would not affect, or be affected by, activities associated with this plan.

5.3.4 Recreation

Cumulative impacts to recreation would occur if the ESJ U.S. Transmission Line project, in conjunction with any of the other projects included in this analysis, resulted in either the

temporary or permanent preclusion of access to recreational areas or changes in the character of recreational areas. Construction of the ESJ U.S. Transmission Line project would not result in direct impacts to recreation because the project would be located entirely on private land. Further, although the proposed conservation easement would be located in an area contiguous with BLM-managed recreational land, any existing recreational trails would remain accessible. Similarly, the ECO Substation switchyard facility, which would be constructed near the ESJ U.S. Transmission Line project, would also be on private land. The access roads and rights-of-way for these projects would not be fenced, and would not obstruct access to existing or planned recreational areas.

Short-term construction traffic along I-8 and Old Highway 80 could cumulatively interfere with vehicles travelling to and from recreational areas, particularly if more than one project is under construction concurrently. However, given the existing low volume to capacity usage of these road segments (relative to County of San Diego thresholds for congestion); and considering the short-term nature of construction traffic, any such impacts would be minor and temporary, even if multiple projects were to be constructed concurrently.

To the extent that distant views of the surrounding landscape is a valuable component of recreational use of the project area, then any diminishment of this character could be considered an indirect and potentially major impact. Once operational, the ESJ U.S. Transmission Line project towers (or monopoles), in combination with the ECO Substation Project facilities and other renewable energy projects (e.g., Tule Wind, Campo, and Solar Two), could have both direct and indirect impacts on the recreational use of trails within nearby BLM-managed lands. Direct impacts could occur as a result of the Tule Wind project's placement of wind turbines and related roads and infrastructure in BLM lands that are currently accessible to recreational users. The combined ESJ U.S. project and ECO Substation switchyards would be visible from surrounding BLM recreational areas (Table Mountain ACEC to the north, and Jacumba Wilderness to the east). As discussed in Section 3.4 (Visual Resources), the ESJ U.S. Transmission Line project structures in and of themselves would not substantially change the character of views from these areas due to the tendency of transmission towers to blend with the surrounding desert landscape when viewed from a distance, and because the new towers would be substantially similar in appearance to the existing SWPL transmission towers. The ECO Substation switchyard facility would create a more substantial change in the visual landscape from these vantage points. Therefore, the ESJ U.S. Transmission Line project would have a minor, but a permanent, contribution to this change.

5.3.5 Cultural Resources

The geographic scope for the analysis of cumulative impacts on cultural resources is all of Imperial and San Diego Counties. The proximity of cultural resources to the ESJ U.S. Transmission Line project would be of interest only to the extent that proximity would considerably affect the context or integrity of the resource. This wide geographic scope is appropriate because it is likely that cultural resources similar to those in the ESJ U.S. Transmission Line project's APE are present throughout this area. There are numerous projects in the planning or construction phase within Imperial and San Diego Counties that have the potential to adversely affect cultural and paleontological resources, including the specific projects listed in Table 5.2-1. However, the actual number and type of resources that could be

adversely affected cannot be determined without a comprehensive inventory of the area within the geographic scope of the cumulative analysis. No such inventory is known to exist.

Typically, cultural resources are identified as part of the permitting process for individual undertakings, and often are discovered only during ground disturbing activities. Applicable laws and regulations afford specific protections to discovered resources. The project could contribute to cumulative impacts to cultural resources if construction activities affected known Native American sites. As discussed in Section 3.5 (Cultural Resources), with the implementation of applicant proposed measures, ESJ U.S. Transmission Line project impacts to cultural resources would be minor. Therefore, the ESJ U.S. Transmission Line project's contribution to cumulative impacts to cultural resources would also be minor.

The Quechan Tribe, in their letter dated March 9, 2009 (Appendix D), indicated a concern that the EIS analysis should consider the cultural landscape. As discussed in Section 3.5 (Cultural Resources), no impacts to the cultural landscape are identified. In the context of cumulative impacts, it is noted that multiple wind development projects in southeast San Diego County and northern Baja could be considered an adverse impact on cultural values in the region. Since the ESJ U.S. Transmission Line project has no impact on cultural resources, it would not contribute to this cumulative impact.

5.3.6 Noise

Cumulative construction noise impacts in the area are expected to be minor due to the lack of sensitive receptors in the project area, and the distances between the individual projects. In the event that the SDG&E ECO Substation Project and/or the Sunrise Powerlink project construction occurs concurrently with the ESJ U.S. Transmission Line project, the cumulative effect of construction activities would elevate ambient noise levels in the area; however, noise levels would not exceed the County of San Diego's threshold (75 dBA) as measured at the location of the nearest occupied residence. Therefore, cumulative noise impacts would be minimal during construction. During project operation, corona noise from the ESJ U.S. Transmission Line project and other proposed transmission lines (Sunrise Powerlink, ECO Substation and associated 138-kV Transmission Line) could result in occasional adverse cumulative impacts to residential receptors during wet weather. However, ESJ-U.S. has committed to selecting a conductor configuration that would not exceed the County of San Diego's noise threshold at the property line. Therefore, the ESJ U.S. Transmission Line project's contribution to long-term cumulative noise increases would be minor.

5.3.7 Transportation and Traffic

No foreseeable transportation improvement projects are proposed that would affect existing project area traffic and transportation conditions in the area of the projects considered in this analysis. Cumulative impacts to existing traffic conditions could occur if the ESJ U.S. Transmission Line project were constructed at the same time as any of the other projects considered in this analysis, particularly the SDG&E ECO Substation Project or other wind projects (due to the addition of commuters and over-sized trucks transporting construction materials on I-8 traveling to the area from the City of San Diego or cities in Imperial County). The timing of construction of the individual projects is difficult to predict. Based on recent project status reports, the Sunrise Powerlink and Imperial Valley Solar projects may be

constructed concurrent to construction of the ESJ U.S. Transmission Line project. Similarly the ECO Substation and the Tule Wind projects could be built concurrently with the ESJ U.S. Transmission Line project. Since the number of daily vehicle trips associated with ESJ U.S. Transmission Line project would be less than 0.1 percent of the existing average daily traffic on I-8 and one percent of existing traffic on Old Highway 80, with implementation of applicant-proposed measures described in Section 3.7, ESJ U.S. Transmission Line project contributions to cumulative transportation impacts during construction would be minor. Following completion of construction activity, the ESJ U.S. Transmission Line project would not contribute to cumulative transportation impacts; therefore no long-term cumulative transportation and traffic impacts are indicated.

5.3.8 Public Health and Safety

During construction, the ESJ U.S. Transmission Line project would handle hazardous materials and potentially contaminated soils in accordance with all applicable regulations; therefore, construction of the ESJ U.S. Transmission Line project would not contribute to any cumulative public health and safety issues.

Once operational, the electric fields associated with the ESJ U.S. Transmission Line project may be of sufficient magnitude to impact the operation of pacemakers but would not combine with the impacts of other projects because the impact would only occur in the immediate area of the ESJ U.S. Transmission Line project. The addition of other new lines (e.g., Sunrise Powerlink, SDG&E 138-kV Transmission Line) would not change the level of effect at any specific location. Similarly, impacts associated with EMF exposure from transmission lines would only occur in the immediate vicinity of the line. The ESJ U.S. Transmission Line project would not contribute to any cumulative public health impacts associated with EMF due to its distance away from any potential receptors.

5.3.9 Fire and Fuels Management

As shown in Table 5.2-1, numerous construction activities are planned in the vicinity of the ESJ U.S. Transmission Line project and nearby wildland areas in eastern San Diego County and western Imperial County. These projects increase the cumulative level of human influence adjacent to wildlands and could potentially increase the number of human-caused wildfire ignitions. Potential for wildfire ignitions during construction could be reduced but not eliminated, through potential additional mitigation measures described in Section 3.9.3. The ESJ U.S. Transmission Line project's contribution to increased probability of human-caused wildfire ignitions would be minor based on the short duration of construction activity and the scale of construction compared to other projects considered in this analysis (e.g., Sunrise Powerlink, SDG&E ECO Substation Project, wind development projects, and related infrastructure).

As stated in Section 3.9 (Fire and Fuels Management), the presence of the overhead transmission line would create an ongoing source of potential wildfire ignitions for the life of the ESJ U.S. Transmission Line project. Line faults can be caused by such unpredictable events as conductor contact by floating debris, gun shots, and helicopter collisions. These events are rare but would be unavoidable. When considered in combination with other planned projects in the surrounding area, the potential for wildfire ignitions is cumulatively significant. Implementation of the ESJ-U.S. proposed Fire Protection Plan and the potential additional mitigation measures described in

Section 3.9.3 could reduce the probability of igniting a wildfire and reduce the impacts of fires when they occur; however, the potential for ignition would remain. Therefore, this potential for ignition is considered a significant and unavoidable cumulative impact. No additional mitigation measures are available to reduce the ESJ U.S. Transmission Line project's contribution to the potential for ignition to less than considerable.

5.3.10 Air Quality and Climate

Criteria Pollutants

Cumulative impacts were assessed by determining if the ESJ U.S. Transmission Line project, in conjunction with other projects, would have the potential to contribute to a long-term impact on air quality. As described in the County of San Diego Guidelines for Determining Significance for Air Quality (County of San Diego 2007a), the SDAPCD and the County of San Diego assume that if project level emissions are less than significance thresholds and there is not a closely related project, then the project would not have a cumulatively considerable impact on air quality. As demonstrated in Section 3.10 (Air Quality and Climate Change), emissions associated with construction, operation, and maintenance of the ESJ U.S. Transmission Line Project would be below SDAPCD thresholds; therefore, the ESJ U.S. Transmission Line project impacts on air quality would not be cumulatively considerable and would be minor.

With regard to the SDG&E ECO Substation Project, emissions from construction of the substation may exceed SDAPCD thresholds, and combined with the transmission line and other projects, could result in cumulative impacts if built concurrently. The SDG&E ECO Substation Project, along with other projects considered in this analysis, would be subject to federal, state, and local regulations, including County of San Diego and SDAPCD permitting, which would result in project design changes or mitigation measures that would serve to reduce construction and operational emissions below applicable thresholds. The energy projects listed in Table 5.2-1 would also have very little contribution to a cumulative air quality effect. The development and planning projects considered in this analysis may have a larger air quality impact than the ESJ U.S. Transmission Line project; however, the combined emissions with the ESJ U.S. Transmission Line project are not anticipated to result in a cumulative impact on air quality.

Climate Change

As discussed in Section 3.10 (Air Quality and Climate Change), construction and operation of the ESJ U.S. Transmission Line project would result in minor emissions of GHG. These emissions would contribute incrementally to cumulative GHG emissions and associated global climate change. Implementation of potential mitigation measures described in Section 3.10 would reduce ESJ U.S. Transmission Line project emissions of GHG. As discussed in Section 3.10, GHG emissions from the ESJ U.S. Transmission Line project would likely be more than offset by the indirect net decrease in GHG and other emissions from fossil-fueled power plants. Any such net reduction of GHG emissions is considered a beneficial impact. This is also the case for the other renewable energy projects considered in this analysis (Sunrise Powerlink Transmission Line project, SDG&E ECO Substation Project, Tule Wind Energy project, Campo Wind Energy project, Imperial Valley Solar project, and La Rumorosa I project; see Section 5.2 for complete descriptions of these projects).

5.3.11 Water Resources

Surface water features near the alternative corridors are isolated and do not connect to other surface waters. Therefore, no cumulative effects related surface water impacts are indicated. Water required for construction uses, such as dust control would likely be trucked onsite from a County of San Diego-approved source; however, depending on final design and further discussion with the County of San Diego, construction water could be obtained from an onsite well or an existing brackish well near Jacumba. Regardless of the water source, the amount of water required for short-term construction use is small relative to groundwater availability in the vicinity of the ESJ U.S. Transmission Line project. Therefore, the ESJ U.S. Transmission Line project would make only a minor and short-term contribution to cumulative demands on local water supply.

5.3.12 Geology and Soils

The ESJ U.S. Transmission Line project would create a minor potential for erosion due to construction grading and disturbance; and during long-term maintenance activities (e.g., due to vehicle usage of the access roads). The adjacent ECO Substation switchyard facility would add to this potential for erosion in the vicinity of both projects. Both projects are located in gently sloping topography; and both projects propose to implement erosion control BMPs during construction and operations. Therefore, no cumulative impacts related to erosion are anticipated. Cumulative impacts related to seismic activity or other geologic hazards are not anticipated because the ESJ U.S. Transmission Line project, as well as the ECO Substation switchyard facility would be located in an area that is not in close proximity to active faults or susceptible to liquefaction; and both projects would be designed to meet applicable seismic and geotechnical design standards. Other projects may be susceptible to site-specific erosion or other geologic hazards (e.g., wind farm development on steep slopes); however, these developments would also be required to meet various design standards and are distant from the ESJ U.S. Transmission Line project. Therefore, no cumulative impacts related to geology and soils are indicated.

5.3.13 Socioeconomics

The projects considered in this analysis would cumulatively increase employment in the trade, transportation, and utilities sectors, and in manufacturing sectors in San Diego and Imperial Counties. During construction of the ESJ U.S. Transmission Line project, employment would increase temporarily; however, no new long-term jobs would be created to operate the transmission lines. Therefore, the ESJ U.S. Transmission Line project would not contribute to cumulative long-term in-migration or population impacts in either San Diego or Imperial County. Further, although the projects in this analysis would cumulatively generate government revenues through tax revenues, wage and salary expenditures, and material procurement, the socioeconomic impacts resulting from the ESJ U.S. Transmission Line project would be temporary and would not contribute significantly to beneficial or adverse cumulative impacts in San Diego or Imperial Counties. Another issue that was presented during the scoping period for the project is the cumulative impact of the energy projects in this analysis on property values in the area. As discussed in Section 3.13 (Socioeconomics), numerous studies cited in the Sunrise Powerlink RDEIR/SDEIS (CPUC/BLM 2008b) have concluded that the actual effects of industrial projects on property values is generally smaller than anticipated and that impacts diminish over time due to diminished sensitivity to the features. Therefore, although it is likely

that property values are adversely affected by the cumulative change in landscape character, the anticipated impacts are moderate. Further, based on the distance of the ESJ U.S. Transmission Line project from residential areas and the minor visual impact, the ESJ U.S. Transmission Line project contribution to this potential change in property values would be minor.

5.3.14 Environmental Justice

As discussed in Section 3.14 (Environmental Justice), no disproportionately high or adverse impacts to minority or low-income populations directly adjacent to the alternative corridors or surrounding areas (including the communities of Jacumba and Boulevard in eastern San Diego County and unincorporated areas in western Imperial County) have been identified as a result of the ESJ U.S. Transmission Line project. Although the ESJ U.S. Transmission Line project, in combination with the other projects considered in this analysis, could result in cumulatively substantial impacts to visual resources, such impacts would not disproportionately affect low-income or minority populations in comparison to impacts to the general public. Therefore, the ESJ U.S. Transmission Line project would not contribute to any cumulative environmental justice impacts.

5.3.15 Services and Utilities

The cumulative effects of the energy projects considered in this analysis are expected to be beneficial and provide additional sources of electrical energy to San Diego County and Imperial County. Construction activities associated with the projects in this analysis may result in increased demand on existing resources; however, the ESJ U.S. Transmission Line project contribution to this impact would be temporary and minimal based on the scale of the ESJ U.S. Transmission Line project in comparison to the other projects proposed. In addition, because operation of the ESJ U.S. Transmission Line project would not require the hiring of any new employees, the ESJ U.S. Transmission Line project would not contribute to any cumulative demands for schools, libraries, or other public facilities.