

A. Introduction

This Final Environmental Impact Report (EIR) has been prepared by the California Public Utilities Commission (CPUC) as Lead Agency under the California Environmental Quality Act (CEQA) and is intended to inform the public and meet the needs of local, State, and federal agencies that will need to consider issuing approvals and permits for Segments 2 and 3 of the Antelope Transmission Project (the proposed Project) proposed by Southern California Edison (SCE or “the Applicant”). The primary components of the proposed Project include: (1) Substation One, a 500/220/66-kV substation located in the Tehachapi Wind Resource Area in Kern County (designated by Kern County as the Eastern Wind Resource Area); (2) Substation Two, a 500/220/66-kV substation also located in the Tehachapi Wind Resource Area; (3) a new 220-kV transmission line connecting Substation One and Substation Two; (4) a new 500-kV transmission line, initially energized at 220 kV, between Substation One and the existing Antelope Substation located in northern Los Angeles County; and (5) a new 500-kV transmission line, initially energized at 220 kV, between the existing Antelope and Vincent Substations, both located in northern Los Angeles County. The components of the proposed Project are described in detail in Section B (Project Description). The EIR addresses the potential environmental impacts of the proposed Project and identifies an environmentally superior alternative, but does not make a recommendation regarding approval or denial of the Project. The EIR is purely informational in content and will be used by the CPUC in considering whether or not to approve the Project as proposed.

On December 9, 2004, SCE submitted application A.04-12-008 to the CPUC for a Certificate of Public Convenience and Necessity (CPCN). With the application, SCE also submitted its Proponent’s Environmental Assessment (PEA) for the construction and operation of the Antelope-Vincent 500-kV Transmission Line (referred to as Segment 2) and the Antelope-Tehachapi 500-kV and 200-kV Transmission Line (referred to as Segment 3). However, the December 2004 filing did not have complete environmental studies in the accompanying PEA or reflect substantial changes to the transmission line route that were suggested by land owners and developers. Therefore, SCE submitted an amended application and PEA on September 30, 2005, to include such changes, as well as new information about the Project objectives. The purpose of the proposed Project is to provide transmission for future wind energy resources from the Tehachapi area to users in southern California, consistent with CPUC Decision 04-06-010 and in furtherance of the Renewables Portfolio Standard established by Senate Bill 1078 (see Section A.2.5 below).

This EIR evaluates and presents the environmental impacts that are expected to result from construction and operation of SCE’s proposed Project, as presented in SCE’s amended application, and presents recommended mitigation measures that, if adopted, would avoid or minimize the significant environmental impacts identified. In accordance with CEQA requirements, this EIR also identifies and analyzes the alternatives that could avoid or minimize significant environmental impacts associated with the Project (including the No Project Alternative). The proposed Project is described briefly below and in detail in Section B (Project Description).

The content of this ~~Final Draft~~ EIR reflects relevant input received from government officials, agencies, nongovernmental organizations, and concerned members of the public during the EIR scoping period following the CPUC’s publication of the Notice of Preparation (NOP) of an EIR (April 27, 2006). During the public scoping comment period, several public involvement activities were completed, including:

- Distribution of the NOP;
- A scoping meeting notice;
- Establishment of an Internet web page and a telephone hotline;
- Two public scoping meetings; and
- Meetings with a number of affected local jurisdictions.

Consultation with agencies also continued after the formal scoping period ended. Significant issues identified during the scoping process are described in Section F.

A.1 Overview of the Proposed Project

The proposed Project would provide electric transmission capacity for wind energy resources that are expected to develop in Kern County. The Tehachapi area in southeastern Kern County is widely considered the largest resource for wind energy in California. Wind energy development in this area, as well as in other areas of Kern County and northern Los Angeles County, could meet a significant portion of the State's goals for provision of renewable energy in California. However, a current lack of transmission capacity in the area limits new wind energy installations. Large-scale transmission upgrades, such as the proposed Project, which are capable of transporting power from multiple wind projects, are needed in order to economically utilize the Tehachapi area's potential for generation of renewable energy.

The proposed Project consists of two primary elements, the Antelope-Vincent 500-kV Transmission Line, or Segment 2, and the Antelope-Tehachapi 500-kV and 220-kV Transmission Line, or Segment 3. Segment 2 would involve construction of a 21.0-mile 500-kV transmission line initially energized to 220 kV and 0.65-mile 220-kV transmission line between SCE's existing Antelope and Vincent Substations. The Antelope Substation is located in the City of Lancaster and the Vincent Substation is located near the community of Acton, both of which are located in northern Los Angeles County. Segment 3 would involve construction of two substations, a 25.6-mile 500-kV transmission line initially energized to 220 kV from the existing Antelope Substation to a proposed substation located on Oak Creek Road west of the Mojave area (Substation One), and a 9.6-mile 220-kV transmission line from Substation One to a proposed substation located near south of Tehachapi Boulevard ~~in~~ near the Monolith area (Substation Two). Both proposed substations would be located in Kern County (see Section B, Project Description). The proposed Project would consist of the following major components:

Segment 3: Antelope-Tehachapi 500-kV and 200-kV Transmission Line

- Construction of Substation Two, a 220/66-kV substation located ~~off~~ south of Tehachapi Boulevard ~~in~~ near the Monolith area;
- Construction of Substation One, a 500/220/66-kV substation on Oak Creek Road west of the Mojave area;
- Construction of a 9.6-mile 220-kV single-circuit transmission line from Substation Two (Mile S3-0.0) to Substation One (Mile S3-9.6), where 1.7 miles would be new ROW and 7.9 miles would be expanded ROW;
- Construction of a 25.6-mile 500-kV single-circuit transmission line, initially energized to 220 kV, from Substation One (Mile S3-9.6) to the Antelope Substation (Mile S3-35.2), where 22.7 miles would be new ROW and 2.9 miles would be expanded ROW;
- Installation and repair of new and existing access roads and spur roads to access tower locations;
- Installation of approximately 15 new pulling locations, 10 new tensioner locations, and 9 new splicing locations;
- Modification of Antelope Substation; and
- Installation of associated telecommunication infrastructure.

Segment 2: Antelope-Vincent 500-kV Transmission Line

- Construction of a 500-kV single-circuit transmission line, initially energized to 220 kV, from the Antelope Substation (Mile S2-0.035-2) to Mile S2-8.143-3 adjacent to the existing Midway-Vincent ROW (expanded ROW);
- Acquisition of new ROW over private land for the new segment of the Antelope-Vincent 500-kV transmission line from Mile S2-8.143-3 to Mile S2-10.645-8;

- Construction of a 500-kV single-circuit transmission line, initially energized to 220 kV, from Mile ~~S2-10.645-8~~ to Mile ~~S2-14.850-0~~ adjacent to the existing Midway-Vincent No. 1 500-kV ROW (expanded ROW);
- Appropriation of the existing SCE Midway-Vincent No. 3 Transmission line from approximately Mile ~~S2-14.850-0~~ to the Vincent Substation to form the Antelope-Vincent 500-kV transmission line;
- Construction of a 500-kV single-circuit transmission line, initially energized at 220 kV, from approximately Mile ~~S2-14.850-0~~ to the Vincent Substation (Mile ~~S2-21.056-2~~) adjacent to the existing Midway-Vincent ROW (expanded ROW) to replace the appropriated portion of the Midway-Vincent No. 3 Transmission line;
- Construction of a 0.5-mile 220-kV single-circuit transmission line (Mile ~~S2-21.056-2~~ to Mile ~~S2-21.656-7~~) to connect the new Antelope-Vincent 500-kV transmission line to the Vincent Substation 220-kV switchrack (expanded ROW);
- Relocation of 4.4 miles of double-circuit wood 66-kV subtransmission line 180 feet west of and parallel to its existing location on the westerly edge of the proposed ROW;
- Installation and repair of new and existing access roads and spur roads to access tower locations;
- Installation of approximately 19 new pulling locations, 20 new tensioner locations, and 9 new splicing locations;
- Modification of Antelope and Vincent Substations; and
- Installation of associated telecommunication infrastructure.

The proposed Project would provide transmission for wind energy resources proposed north of Antelope Substation in southeastern Kern County. The Project would also interconnect and integrate several potential independent energy producers' wind energy projects to SCE's electrical system. Segment 2 would improve overall system reliability by increasing capacity between SCE's Antelope and Vincent Substations. The California Independent System Operator (CAISO) manages the electricity generation interconnection queue, which consists of new generation projects proposed by independent power producers placed in priority order based on submittal of a completed interconnection application. ~~estimates that~~ Wind energy projects generating a combined total of 3,450 MW are currently being planned in the Tehachapi and Mojave areas in Kern County (CAISO, 2006). The additional transmission capacity that would be provided by the proposed Project is needed to accommodate a portion of the potential wind energy that would be generated by these planned wind energy projects. This EIR provides a discussion of potential impacts of the proposed Project in Sections C.2 through C.13.

At this time, information is not available for any specific wind energy projects that would be served by the proposed Project. For this reason, consideration of any such specific wind energy projects is speculative and, therefore, such projects are not analyzed in detail in this EIR; however, analysis of potential growth-inducing impacts of the Project are addressed in Section E.3. Other transmission projects that address separate constraints to the transmission of wind power from the Tehachapi area are also being planned and are included in the cumulative impact analysis.

A.2 Project Objectives

A project's statement of objectives describes the underlying purpose of the project and the reasons for undertaking the project. The project objectives are used to identify a range of reasonable alternatives to be analyzed in the EIR. To fulfill this requirement, the project proponent must define its objectives for the project and provide a description of the need for the project.

In order to proceed with its proposed Project, SCE must obtain authorizations and approvals from the CPUC as well as other State and local agencies. Per CPUC Decision 04-06-010, Ordering Paragraph No. 8, SCE is required to "...file an application seeking a certificate authorizing construction of" the proposed Project. SCE submitted its amended application for a CPCN on September 30, 2005. The CPUC must approve this

application in order for SCE to be authorized to construct and operate the proposed transmission facilities. Specifically, through approval and implementation of the proposed Project, SCE seeks to:

- Accommodate potential renewable power generation in the Tehachapi area;
- Prevent overloading of existing transmission facilities; and
- Comply with reliability criteria for transmission planning.

Each of these aspects of SCE's objectives for the proposed Project is described below.

A.2.1 Accommodation of Potential for Renewable Power Generation

Under Sections 210 and 212 of the Federal Power Act (16 U.S.C. § 824 (i) and (k)) and Sections 3.2 and 5.7 of the California Independent System Operator's (CAISO) Tariff, SCE is obligated to interconnect and integrate power generation facilities into its electric system. Therefore, SCE needs to develop and maintain a reliable transmission network with adequate capacity to transmit electrical power from new generation sources to areas of electrical load or demand. For SCE, this entails transmission of electrical power from sources north, east, and south of the Los Angeles metropolitan area. Within and near the northern portion of SCE's service region, power is generated from gas-fired thermal power plants, hydroelectric plants, and wind farms. Wind is an increasingly important source of power in the Antelope Valley and Tehachapi areas, which offer geographic and climatic conditions that are conducive to power generation through wind farms. As a variety of power sources continue to develop and become operational in the Antelope Valley and Tehachapi areas, transmission capacity beyond that which is currently available will be required in order to supply customers in SCE's service region.

The SCE power grid is a complex network of generation, transmission, and distribution infrastructure. For instance, the existing corridor between Antelope Substation and Vincent Substation contains one 500-kV line (Midway-Vincent No. 3) and three 220-kV lines (Antelope-Vincent, Antelope-Mesa, and a non-SCE line). As this corridor proceeds south, it is joined by two 500-kV lines (Midway-Vincent No. 1 and No. 2). In order to transmit power from wind farms north of Antelope Substation, additional transmission capacity is needed from the Tehachapi Wind Resource Area to the Antelope Substation (Segment 3) as well as south of the Antelope Substation to the Vincent Substation (Segment 2). These transmission improvements would expand the SCE transmission grid and allow delivery of power from current and future wind energy sources in the Antelope Valley and Tehachapi areas to SCE's high electrical demand areas farther south.

Transmission of wind power from the Antelope Valley and Tehachapi areas is currently restricted by the existing Antelope-Mesa 220-kV transmission line, which is currently operating at capacity. This transmission line would overload with the addition of new power to the system, including that received from wind generation. SCE indicated that overloading of the Antelope-Mesa transmission line would cause widespread system instability and reliability issues. Meanwhile, there is ongoing development of wind energy projects in the Tehachapi region, north of Antelope Substation. Because SCE is obligated to allow connection of new wind projects to its system, upgrades must be implemented to mitigate identified overload of ~~Despite the fact that~~ the Antelope-Mesa transmission line in order to maintain system reliability as required by the National Electric Reliability Council (NERC) and the Western Electric Coordinating Council (WECC) planning standards, as well as the ~~would overload with the addition of new power, SCE must allow connection of any new wind projects to its system due to its obligations per the Federal Energy Regulatory Commission (FERC) and CAISO, as referenced above~~ planning standards.

A.2.2 Prevention of Overloading of Existing Transmission Facilities

Based on information provided by SCE in its amended PEA for the proposed Project, there is not sufficient capacity in the current transmission grid to safeguard the system from overload under increasing renewable power generation and loading. As load grows, due to increased electrical demand, and power is received from other sources of generation, transmission overloading would occur in the vicinity of the proposed Project. As described above, the existing Antelope-Mesa-Vincent 220-kV transmission line could experience thermal overload if current power loads are increased, which is expected to occur as southern California's population continues to grow at projected rates. The proposed Project would provide needed transmission capacity to mitigate the potential overload of the existing Antelope-Vincent 220-kV transmission line, and would reduce loading on the Antelope-Mesa 220-kV transmission line to within the allowable line conductor thermal limits. The proposed Project would also increase transmission capability south of the Antelope Substation and allow power generated in the Antelope Valley and Tehachapi areas to be safely transferred, thus serving system load on the SCE grid.

The proposed Project would initially be operated at 220 kV in order to meet near-term transmission needs associated with ongoing wind development. However, the line would be built to 500-kV standards so that as renewable power loads increase, future overloading of transmission facilities would be avoided. The CAISO, which manages transmission grid reliability for the State of California, ~~has~~ is considering approval of construction of the proposed Project using a 500-kV transmission line. The CAISO maintains that the use of 500-kV standards for the proposed Project will avoid the future need to construct and/or tear down and replace multiple 220-kV facilities with 500-kV facilities to meet growing power generation and transmission needs.

A.2.3 Compliance with Reliability Planning Criteria

Use of a common utility ROW, such as the Antelope-Vincent corridor, must comply with reliability planning criteria, including criteria developed by the CAISO, the ~~Western Electricity Coordinating Council (WECC), and the North American Electric Reliability Council (NERC).~~ These criteria require that the potential loss of transmission lines (proposed and existing) be analyzed and the transmission system be designed to continue to function if a loss occurs. A transmission line could be lost (i.e., removed from service) due to designed system protection to remove transmission lines under equipment failures including transmission faults. In addition, transmission lines could be lost due to a natural disaster or accident, or even intentional attack. To the extent that simultaneous loss of both lines occurs and creates a problem with respect to system reliability, SCE must automatically utilize acceptable mitigation measures, which are referred to collectively as a Remedial Action Scheme (RAS) or a Special Protection Scheme (SPS), or implement transmission upgrades if the use of an SPS is untenable. If both of the existing and proposed Antelope-Vincent transmission lines were lost, other lines connected to the Antelope Substation would need to be able to accept the power that was previously flowing on the lines that were lost.

Of particular concern in terms of reliability is the Antelope-Mesa 220-kV line, which is currently susceptible to overloading. As discussed, the Antelope-Mesa 220-kV transmission line is currently operating at capacity. Based on SCE power flow studies, the addition of new power to the SCE system north of Antelope Substation would cause the Antelope-Mesa line to exceed its reliability (or capacity) rating for line conductor thermal limits (SCE, 2005, PEA page 2-2). Steps need to be taken to reduce the power flow on this line in order to maintain acceptable system reliability once new power from wind projects is connected to the system north of Antelope Substation. Reliability criteria require that for the loss of a single line, the system is designed such that there is no overloading on other lines. In the case where both the existing and proposed Antelope-Vincent lines are lost, it would be necessary to reduce power flowing into the Antelope Substation from power

generation plants such as Pastoria and Big Creek, as well as any other power generation sources that are connected to the Antelope Substation, such as potential future wind projects. This could only be implemented with the use of a SPS, which would not be feasible because the use of SPS has already been maximized for this area. In addition, CAISO criteria limit the amount of generation reduction to not more than 1,400 MW, ensuring reliability for customers of the SCE grid. While the Antelope-Mesa line is currently within line conductor thermal limits for reliability, the addition of new power to the SCE system north of Antelope Substation would cause the Antelope-Mesa line to exceed thermal limits, forcing reduction of power generation from northern power plants and potential future wind development.

The integration of additional power generation sources into the existing SPS would be extremely complex in that it is based upon a number of different criteria (e.g., monitoring of various line loadings and generator levels) and is designed to limit the need to reduce generation (i.e., limit the amount of electricity power plants that are allowed to generate) to situations only where certain line flows and other parameters are exceeded. The CAISO has stated in a letter to SCE "...due to high complexity of the existing and planned SPS in the Big Creek Corridor, any further expansion of the SPS should be very limited and will have to be approved by the California ISO..." SCE evaluated further modifications to the SPS, but determined further use to be infeasible in this area due to the fact that the use of SPS has already been maximized. ~~Instead, of undertaking extensive modifications to the SPS,~~ SCE is planning a series of upgrades to increase transmission capacity, including the proposed Antelope-Vincent (Segment 2) and Antelope-Tehachapi (Segment 3) transmission lines. The implementation of additional transmission capacity, such as that provided through the proposed Project, would create greater system reliability without altering the already complex SPS.

A.2.4 Summary of Project Objectives

Per CPUC Decision 04-06-010, Ordering Paragraph No. 8, SCE is required to "...file an application seeking a certificate authorizing construction of the first phase of...transmission upgrades consistent with its 2002 [2003] conceptual study and the [Tehachapi Collaborative] study group's recommendation..." These transmission upgrades include the proposed Antelope-Vincent (Segment 2) and Antelope-Tehachapi (Segment 3) transmission lines. Additionally, SCE's objectives for the approval and implementation of the proposed Project have three primary aspects, as follows:

- 1) Provide transmission capacity from the Tehachapi Wind Resource Area to the Antelope Substation in order to interconnect and integrate wind power generation facilities into the electric system.
 - A transmission connection is needed to allow for the transmission of renewable wind power generated in the Tehachapi area.
 - Wind power is being developed in the Tehachapi area to increase the amount of energy delivered in California from renewable resources.
 - The amount of wind power generated by renewable resources is being increased in response to the California Renewables Portfolio Standard Program (originally by SB 1078, but recently updated with an earlier RPS goal to be implemented by 2010 through the passage of SB107 in September of 2006), which requires utilities to increase the amount of power generated from renewable sources.
- 2) Prevent overloading of the existing Antelope-Mesa transmission line.
 - Increased capacity is needed to prevent overloading that would occur due to the transmission of wind power generated in the Tehachapi area.
- 3) Increase reliability of the SCE transmission grid by increasing capacity to serve demand from planned development in the Antelope Valley.

- Transmission system upgrades, including the proposed Project, would increase overall reliability of the grid and ensure compliance with the reliability planning criteria mentioned above.

A.2.5 Historical and Legislative Context

The CPUC is charged with the regulation of Investor-Owned Utilities (IOUs) in California, such as SCE. Under CEQA, the CPUC is the Lead Agency for the proposed Project and must assure compliance with CEQA. Prior to taking action to approve SCE's application for a CPCN for the proposed Project, the CPUC must also determine that the proposed Project is consistent with the CPUC's purpose and objectives for granting CPCNs, including, where applicable, compliance with CPUC General Order 131-D. This order states that no electric public utility shall construct electric transmission line facilities designed for operation at 200 kV or more without the CPUC having first found that the facilities are necessary "to promote the safety, health, comfort, and convenience of the public, and that they are required by the public convenience and necessity."

In addition, the CPUC seeks to facilitate the achievement of the State of California's goals for the distribution of renewable energy generated by IOUs operating within California. As a crucial step in fulfilling this purpose, the CPUC must explore possibilities for the removal of constraints on the transmission of electricity from its point of generation to its point of use. In addition, the CPUC must attempt to further the implementation of other State policies and programs related to power generation and transmission. Following is a discussion of factors that will be taken into consideration by the CPUC in its deliberations on the proposed Project.

Senate Bill 1038 (SB 1038)

SB 1038 took effect January 1, 2003, and is codified in the Public Utilities Code (PUC) and Public Resources Code (PRC). This bill required the California Energy Commission (CEC) to submit a comprehensive renewable electricity generation resource plan to the California State Legislature (Legislature), describing the potential renewable resources available in California, and also to develop a plan to increase the annual amount of electricity generated from renewable resources. The bill also required the CPUC to prepare and submit to the Legislature a comprehensive transmission plan (Plan) for renewable electricity generation facilities which would provide for the rational, orderly, and cost-effective expansions of transmission facilities that may be necessary to facilitate the development of renewable electricity generation facilities identified in the CEC's renewable electricity generation resource plan. The Plan was submitted to the Legislature on December 1, 2003, pursuant to PUC Section 383.6. The Plan has two sections: a policy text that describes key issues emerging from the development of the Plan, and a Transmission Plan detailing the transmission line and substation additions and modifications necessary to attain the legislative target of 20 percent renewable power generation by 2017 (see SB 1078, below).

Senate Bill 1078 (SB 1078): California Renewables Portfolio Standard Program

The Renewables Portfolio Standard (RPS) was established in 2002 by Senate Bill 1078 (SB 1078). Pursuant to SB 1078, the RPS requires investor-owned utilities, including retail sellers of electricity such as SCE, to increase their sale of electricity produced by renewable energy sources (such as wind) by at least one percent per year, achieving 20 percent by 2017 (at the latest). Subsequent to the RPS, the CPUC, the CEC, and the Consumer Power and Conservation Financing Authority (CPA - which is now defunct) adopted the Energy Action Plan (EAP) in 2003. The EAP established a target of 20 percent renewables by 2010 (CEC, 2003), which is a more aggressive goal than the previous SB 1078 goal of 20 percent by 2017.

Senate Bill 107 (SB 107)

SB 107, which was approved on September 26, 2006, confirms the accelerated schedule of meeting 20 percent renewables by 2010 for the State of California. This bill requires the amount of electricity generated per year from eligible renewable energy resources to increase to an amount that equals at least 20 percent of the total electricity sold to retail customers in California per year by December 31, 2010.

Wind Generation in the Antelope Valley-Tehachapi Region

The unique geography of the Antelope Valley and Tehachapi Region makes it one of the world's leading wind energy centers (Tehachapi Central, 2005). Prevailing northwesterly winds blow through passes in the Tehachapi Mountains that connect the San Joaquin Valley with the Mojave Desert. As a result of the regional geography, tax incentives, and favorable legislation in the wake of the 1970s energy crisis, California became the first state to develop large wind farms in the early 1980s. Upgrades to the SCE transmission grid (such as the proposed Project) are necessary in order to maximize benefits from continuing regional development of power generation such as renewable wind power.

The California Energy Commission's 2005 Integrated Energy Policy Report (IEPR) states that "California needs major investments in new transmission infrastructure to interconnect with remote renewable resources in the Tehachapi and Imperial Valley areas, without which it will not be able to meet its RPS targets" (CEC, 2005). RPS, or Renewable Portfolio Standard, targets are required by Public Utilities Code Section 399.14. The IEPR further explains that the "Tehachapi area transmission projects" proposed by SCE, which include the Antelope-Vincent and Antelope-Tehachapi transmission lines (i.e., the proposed Project), are critical in order to facilitate the development of renewable energy resources required by the State RPS targets.

SCE Renewable Conceptual Transmission Plan

SCE developed the first version of its Renewable Conceptual Transmission Plan (RCTP) in accordance with the Scope of Work described by the CPUC in a March 27, 2003, ruling (Proceeding I0011001). The plan describes all SCE conceptual transmission upgrades, and their estimated costs, that are needed to connect potential renewable energy resources in the SCE and Imperial Irrigation District territories. The identified upgrades would allow the congestion-free interconnection of up to 470 MW of renewable resources in 2005, up to 1,755 MW of renewable resources by 2008, and up to 4,220 MW of renewable resources by 2017. The proposed Project is the second transmission upgrade described in the RCTP and part of the first phase of upgrades referenced in CPUC Decision 04-06-010, Ordering Paragraph No. 8, which orders SCE to submit an application to the CPUC to authorize construction of these upgrades.

Federal Energy Regulatory Commission (FERC) Transmission Rate Limits on California Wind Projects

On July 1, 2005, FERC approved SCE's request for rolled-in rate treatment for, among others components, Segment 2 of the proposed Project, thus granting SCE's request to allow SCE to recover 100 percent of costs for Segment 2 of the proposed Project (112 FERC 61,014, Docket No. EL05-80-000). FERC allowed recovery of costs for Segment 2 of the proposed Project because it provides "...network upgrades to existing high-voltage transmission lines that can be fully integrated with the existing transmission network for the benefit of transmission ratepayers" (Stanfield, 2005). With regard to Segment 3, FERC denied SCE's request (1) to create a new category of transmission facilities – trunk facilities; (2) for rolled-in rate treatment; (3) for an advance prudence determination; (4) to recover all of its prudent costs, in the case of abandonment or cancellation; and (5) to place Segment 3 under the Operational Control of the CAISO. As such, SCE may need

to recover the reasonable transmission costs related to Segment 3 in retail rates per California Public Utilities Code §399.25(b)(2).

California Independent System Operator (CAISO)

The CAISO was established in 1998 to plan and operate a reliable electricity grid for California, provide non-discriminatory electric transmission services, and facilitate investment in electric transmission and generation infrastructure. The CAISO is a non-profit corporation that is chartered by the State of California and regulated by the FERC. As part of an overall grid planning process, the CAISO studies and approves new transmission proposals. Per the CAISO Tariff, Section 3.2 (Transmission Expansion) and Section 5.7 (Interconnection of New Facilities to the ISO Controlled Grid), SCE is obligated to interconnect and integrate power generation facilities into its electric system.

CAISO Management considered SCE's proposed Antelope Transmission Project, which includes the proposed Project as well as other transmission upgrades in the Antelope Valley, and recommended approval of Segment 1 (Antelope-Pardee 500 kV Transmission Line Project) ~~the Project~~ to the CAISO Board of Governors. On July 29, 2004, the Board of Governors accepted CAISO Management's recommendation and moved to: (1) approve ~~the proposed Segment 1 of the Antelope Transmission Project (in addition to other segments of the Antelope Transmission Project)~~ Segment 1 of the Antelope Transmission Project as an initial step towards developing a longer-term transmission solution to connect several thousand MWs of potential wind generation in the Tehachapi area of the CAISO-controlled grid; and (2) direct SCE to proceed with the design and environmental permitting activities necessary to construct the proposed Project (Segments 2 and 3) to 500-kV standards.

CPUC Decision 04-06-010

The CPUC issued Decision 04-06-010 on the transmission needs in the Antelope Valley and Tehachapi areas, which identified potential power generation in this area to be several thousand MWs. Decision 04-06-010 mandated the convening of a collaborative study group to develop a comprehensive development plan for the phased expansion of transmission capabilities in the Tehachapi area. Subsequently, the Tehachapi Collaborative Study Group (TCSG) was formed with coordination by the CPUC, assistance from the CAISO, and with the participation of the IOUs (such as SCE), wind-power developers, and other stakeholders.

The CEC's Renewable Resources Report Finding of Fact No. 18 found that the "magnitude and concentration" of renewable resources justified a "first phase of Tehachapi transmission upgrades" to facilitate achievement of the goals under PUC Section 399.14. As a result, CPUC Decision 04-06-010, Ordering Paragraph No. 8, required SCE to "file an application seeking a certificate authorizing construction of the first phase [which includes the proposed Project] of Tehachapi transmission upgrades consistent with its 2002 [2003] conceptual study and the [Tehachapi Collaborative] study group's recommendation..." The Final Report produced by the TCSG in 2005 identified four possible transmission phases for integrating several thousand MWs of potential renewable energy generation from the Tehachapi region. The "first phase" of these transmission upgrades mentioned in CPUC Decision 04-06-010, Ordering Paragraph 8, includes SCE's proposed Project, as evaluated in this EIR.

A.3 The Antelope Transmission Project

As discussed above, the proposed Project is part of a series of anticipated future transmission system upgrades intended to provide capacity to: (1) deliver wind energy from resources in the Tehachapi Wind Resource Area in response to State mandated RPS requirements; and (2) transmit wind energy to SCE customers. These anticipated upgrades are based on SCE's Renewables Conceptual Transmission Plan (RCTP) of 2003 and have

been recommended by the Tehachapi Collaborative Study Group (TCSG). The proposed Project (Segments 2 and 3) is part of the Antelope Transmission Project, a three-segment plan to construct upgrades to the transmission system that is part of SCE's RCTP.

Segments 2 and 3 provide transmission capacity for potential future development of unspecified wind energy projects in the Tehachapi Wind Resource Area. Currently, the Antelope-Mesa 220-kV transmission line is operating at capacity south of Antelope Substation and, therefore, any additional power generation connected to the transmission system north of Antelope Substation, such as wind energy projects, would result in thermal overload on the Antelope-Mesa transmission line. Segment 1, also referred to as the Antelope-Pardee 500-kV Transmission Project, would increase transmission capacity south of Antelope Substation in order to avoid this thermal overload problem on the Antelope-Mesa transmission line, thereby allowing planned wind energy projects to deliver wind power in the near term and help meet the State's Renewables Portfolio Standard (see Section A.2.5 above). Segment 1 would accomplish this by constructing an alternative transmission path that allows power to flow southwest to the Pardee Substation in Santa Clarita rather than to the Vincent Substation. The immediate necessity to provide transmission capacity to serve wind energy projects that are planned to be constructed in the near term is verified by Docket I. 00-11-001 which, as described below, requires that Segment 1 be addressed as a separate project from Segments 2 and 3 in order to avoid delay in its implementation.

When initially operated at 220 kV, Segment 1 would allow up to 350 MW of additional power generated from wind projects to be transmitted south without overloading the Antelope-Mesa transmission line. The additional transmission capacity provided by Segment 1 may be used to accommodate power from any source injecting new power to the system at Antelope Substation; however, up to 300 MW of this new capacity would be needed to serve the planned PdV Wind Energy Project, which has an application for approval pending with Kern County. Without this transmission capacity, Tehachapi-area wind energy projects that are scheduled to go online within the next few years, such as the PdV Project, cannot deliver additional wind energy to customers through Antelope Substation.

The proposed Project (Segments 2 and 3) would also increase the reliability of the regional transmission network by increasing capacity to serve demand from planned development in the Antelope Valley. The Antelope-Mesa line is currently within line conductor thermal limits for reliability and the addition of new power to the SCE system north of Antelope Substation would cause the Antelope-Mesa line to exceed its reliability (or capacity) rating for line conductor thermal limits (SCE, 2005). The proposed Project would reduce the power flow on this line in order to maintain acceptable system reliability once new power from wind projects is connected to the system north of Antelope Substation.

A.3.1 Certificates of Public Convenience and Necessity

The purpose for making application for the Antelope Transmission Project is derived from Ordering Paragraph No. 8 of Decision 04-06-010, which required SCE to "file an application seeking a certificate authorizing construction of the first phase of Tehachapi transmission upgrades [the Antelope Transmission Project] consistent with its 2003 conceptual study and the study group's recommendation within six months of the effective date of this order..." This order was premised on Finding of Fact No. 18, which described that the "magnitude and concentration" of renewable resources identified in the California Energy Commission's Renewable Resources Report justifying a "first phase of Tehachapi transmission upgrades" to facilitate achievement of the Renewable Portfolio Standard (RPS) goals required by Public Utilities Code Section 399.14.

In addition, in Docket I. 00-11-001 (Order Instituting Investigation into Implementation of Assembly Bill 970 Regarding the Identification of Electric Transmission and Distribution Constraints, Actions to Resolve those Constraints, and Related Matters Affecting the Reliability of Electric Supply), an Assigned Commissioner Ruling required SCE to file two separate applications for the Antelope Transmission Project; one CPCN application for Segment 1 of the Antelope Transmission Project and one CPCN application for Segments 2 and 3 (the proposed Project). The purpose of the ruling for separate applications was to avoid delay in the implementation of Segment 1, which is part of the first phase of the Tehachapi Conceptual Transmission Plan. As stated by Assigned CPUC Commissioner Loretta M. Lynch in the aforementioned Docket I. 00-11-001, Segment 1 should be addressed as a separate project from Segments 2 and 3 of the Antelope Transmission Project because there is an immediate need for the Segment 1 to accommodate developing wind projects in the Tehachapi area.

A.3.2 Transmission System Stability and Reliability

As described by SCE, there are specific, known limits to the transmission capacity of the existing and planned SCE system. Of immediate concern is the existing Antelope-Mesa 230-kV transmission line, which is currently supporting its full load of power. The Antelope-Mesa line travels in a southeast direction from Antelope Substation to Mesa Substation. Without implementation of the Antelope Transmission Project, the Antelope-Mesa line would be relied upon for the transmission of new power generated north of Antelope Substation connected to the SCE system. However, due to its current load, this line would overload with the addition of additional power to the system. According to SCE, overloading of the Antelope-Mesa transmission line would cause widespread system instability and reliability issues.

Meanwhile, there is ongoing development of wind generation projects in the Tehachapi Wind Resource Area, north of Antelope Substation. SCE is obligated to interconnect and integrate new generation resources into its system per the Federal Power Act, Sections 210 and 212 (16 USC Section 824 (i) and (k)), as well as the CAISO Tariff, Sections 3.2 and 5.7. Because SCE is obligated to allow connection of new wind projects to its system, upgrades must be implemented to mitigate identified overload of ~~Despite the fact that the Antelope-Mesa transmission line in order to maintain system reliability as required by the NERC and the WECC planning standards, as well as the CAISO planning standards. would overload with the addition of new power, SCE must allow connection of any new wind projects to its system.~~

The TCSG developed a conceptual transmission plan called the Tehachapi Transmission Project (TTP) for the purpose of accommodating the generation of renewable wind energy in the Tehachapi region. The TTP includes additional transmission upgrades that are expected to be implemented in the future. These anticipated future transmission upgrades are described in Section E.4.2, Energy and Transmission Projects, and are considered in the cumulative impact analysis. The future transmission upgrades included in the TTP are necessary to meet the State's goals for developing the wind energy potential of the Tehachapi Wind Resource Area and increasing the amount of energy generated from renewable sources that is delivered to California energy consumers by regulated utilities like SCE.

A.4 Agency Use of this Document

Pursuant to Article XII of the Constitution of the State of California, the CPUC is charged with the regulation of investor-owned public utilities, including SCE. The CPUC is the lead State agency for CEQA compliance in evaluation of proposed Project and has directed the preparation of an EIR. This EIR will be used by the CPUC, in conjunction with other information developed in the CPUC's formal record, to act on SCE's application for a CPCN, the approval of which would allow for construction and operation of the proposed

A. INTRODUCTION

Project or an alternative to the proposed Project. Under CEQA requirements, the CPUC will determine the adequacy of the Final EIR and, if adequate, will certify the document as complying with CEQA. If the Final EIR shows that the proposed Project, or an approved alternative to the proposed Project, would have significant and unmitigable impacts, the CPUC’s decision on the application must include a “Statement of Overriding Considerations,” which would explain the reasons for the application’s approval.

The CPUC has assigned Administrative Law Judge (ALJ) Julie Halligan to oversee the hearings on the proposed Project, and Commissioner Dian Grueneich is the Assigned Commissioner for the CPCN application. The ALJ, in accordance with her Scoping Memo, will hold Evidentiary Hearings on the CPCN application and expects to issue a Proposed Decision on the Project in 2007. The ALJ’s Decision and the Evidentiary Hearings will cover issues of project need, project cost, and other considerations.

Several other State and local agencies will rely on information in this EIR to inform them in their decision regarding the issuance of specific permits related to proposed Project construction or operation. In addition to the CPUC, State agencies such as the Department of Transportation, Department of Fish and Game, and Regional Water Quality Control Board would be involved in reviewing and/or approving the proposed Project.

No local discretionary permits (e.g., use permits) are required because the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of SCE facilities in California. SCE would still have to obtain all ministerial building and encroachment permits from local jurisdictions. The CPUC’s General Order 131-D also requires SCE to comply with local building, design, and safety standards to the greatest degree feasible to minimize Project conflicts with local conditions. The CPUC authority does not preempt the authority of special districts, such as local air pollution control districts, or other State agencies or the federal government.

Table A.4-1 lists the anticipated federal, State, and local permits and approvals required for the proposed Project.

Table A.4-1. Required Permits and Approvals	
Agency	Permit / Approval / Consultation
FEDERAL	
U.S. Army Corps of Engineers	Clean Water Act Section 404 permit, if Project activities result in discharge of fill or dredged material in and adjacent to Waters of the United States.
Federal Communications Commission	Licenses are required for the three new microwave paths in Segment 3 of the proposed Project, including the Antelope to Oak Peak Communication Site, the Substation One to Oak Peak Communication Site, and the Substation Two to Oak Peak Communication Site.
Federal Aviation Administration	Permits for new microwave towers
STATE / REGIONAL	
California Public Utilities Commission	Certificate of Public Convenience and Necessity.
California Department of Fish and Game	Streambed Alteration Agreement (per Section 1602 of the California Fish and Game Code).
California Air Resources Board	Portable Engine Registration for specified non-mobile portable engines.
Antelope Valley Air Quality Management District	Air Quality Permits for portable engines greater than 50 hp not registered under the CARB Portable Engine Registration Program.
South Coast Air Quality Management District Kern County Air Pollution Control District	Air Quality Permits for portable engines greater than 50 hp not registered under the CARB Portable Engine Registration Program.
State Water Resources Control Board	National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities.
California Department of Water Resources	Encroachment Permit required to traverse the East Branch of the California Aqueduct.
California Department of Parks and Recreation, State Historic Preservation Officer	Consultation and Memorandum of Understanding (MOU) (under Section 106 of the National Historic Preservation Act).

Table A.4-1. Required Permits and Approvals	
Agency	Permit / Approval / Consultation
California Department of Transportation, State and Local Project Development	Approval for private facilities running parallel to and falling in the rights-of-way of conventional highways with franchise rights from local agencies.
Division of Occupational Safety and Health (formerly CAL OSHA)	Construction permit (for construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend).
LOCAL	
County of Los Angeles, Public Works Department	Permit for road use: for moving of oversized or overweight loads. Excavation Permit: necessary when any portion of the public road ROW, from property line to property line, is cut for the purpose of laying down utility lines, installing electrical cabinets, installing poles or constructing manholes. Encroachment Permit: necessary for placing anything in the road right-of-way temporarily or long term. Construction Permit: necessary for activities such as cutting, removing, or reconstructing curbs, gutter, parkway drains, driveways, and/or sidewalks.
County of Kern, Roads Department	Transportation Permit: for oversize loads as required by the California Vehicle Code. Encroachment Permit: necessary for placing above ground structures, such as fences, power poles, curb and gutter, sidewalk, drive approaches, and private road approaches in the public road ROW. Also necessary for subsurface utility encroachments. Construction-related Road Closures: a permit is needed when a road closure is necessary for public safety for any road construction.
County of Kern, Engineering & Survey Services Department, Building Inspection Division	<u>Building permit for the new microwave tower at the Oak Peak Communication Site.</u>
City of Lancaster	Encroachment permit or similar authorization for work conducted in the public right-of-way.
City of Palmdale	Encroachment permit or similar authorization for work conducted in the public right-of-way.
City of Los Angeles, Department of Water and Power (LADWP)	Permit for crossing of LADWP transmission lines.

A.5 Overview of the Environmental Review Process

This ~~Final~~ Draft EIR has been prepared to meet all of the substantive and procedural requirements of CEQA (California Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.). The CPUC is the Lead Agency for the proposed Project, taking primary responsibility for conducting the CEQA environmental review and approving or denying the Project.

In reviewing SCE's amended application, the CPUC determined that the proposed Project could cause a significant adverse effect on the environment and, therefore, determined that the preparation of an EIR would be needed. The CPUC filed a Notice of Preparation (NOP) with the State Clearinghouse in the Office of Planning and Research as an indication that a Draft EIR would be prepared. The notice initiates a 30-day period during which public and agency input is solicited on the scope of issues that should be addressed in the EIR. As part of this scoping process, public meetings are sometimes conducted to present information on the proposed project and receive public input. Relevant comments received from agencies and members of the public that responded to the NOP were considered in preparation of the Draft EIR, as appropriate.

In accordance with CEQA, the EIR must be completed before the Lead Agency makes any decision to approve the proposed Project. The EIR must disclose a project's expected impacts on the environment, recommend measures to reduce or avoid significant impacts, and analyze a reasonable range of feasible alternatives to the proposed Project. The purpose of this process is to inform the public about the impacts of the proposed Project

and to provide information to agency decision makers that could aid them in their decision(s) regarding the Project. The basic contents of an EIR include:

- A description of the proposed project;
- A statement of objectives (per CEQA);
- A description of existing conditions in the proposed project area;
- A discussion of the potential significant environmental impacts of the proposed project;
- Recommendations of measures that would reduce impacts of the proposed project; and
- An evaluation of a reasonable range of feasible alternatives to the proposed project.

When the Draft EIR for the proposed Project has been completed, it will be distributed for public review and comment in accordance with CEQA procedures (State CEQA Guidelines §15087). Copies of the Draft EIR are also submitted to the California State Clearinghouse, as well as responsible, trustee, and cooperating agencies as defined by CEQA. A Notice of Availability (NOA) of the Draft EIR will be published in local newspapers and with the county clerk (State CEQA Guidelines §15087). Publishing the NOA initiates a 45-day public review period for the Draft EIR. All comments and concerns regarding the Draft EIR must be received by the Lead Agency before the end of the 45-day period in order to be considered in the Final EIR. During the 45-day comment period following publication of the NOA, a public meeting may be conducted to obtain public comment on environmental issues addressed in the Draft EIR. The date, time, and location of any public meetings will be announced in local newspapers.

Responses to substantive comments received on the Draft EIR are prepared by the Lead Agency and published in the Final EIR (State CEQA Guidelines §15088, 40). The Final EIR may also present additional information in response to comments made on the Draft EIR and include minor corrections to the Draft EIR that were discovered during the comment period.

At the end of the EIR process, in accordance with CEQA requirements (State CEQA Guidelines §15090), the CPUC, as Lead Agency, will review the Final EIR and certify the adequacy of the final document prior to taking any action to approve the Project. If the Final EIR determines that the proposed Project would lead to one or more significant environmental effects that cannot be mitigated to a level of insignificance, the Lead Agency must make specific findings regarding its approval of the project (State CEQA Guidelines §15091). These findings must either state that alterations have been made to the project to avoid or substantially reduce each significant impact, or that specific economic, legal, social, technological, or other considerations make mitigation of a significant impact infeasible.

If the CPUC decides to approve the proposed Project or an alternative to the proposed Project even though significant unavoidable impacts would occur, it must prepare and adopt a Statement of Overriding Considerations (SOC), which explains why the significant and unavoidable environmental impacts associated with the selected project are acceptable when compared to the benefits of other alternatives (State CEQA Guidelines §15093). If an SOC is required, it must be acted on before action to approve the proposed Project has been taken. The Lead Agency is required to file a Notice of Determination (NOD) with the California State Clearinghouse within five working days after approval of a project for which an EIR was prepared (State CEQA Guidelines §15094).

In addition, various other agencies may need to provide approvals prior to initiation of the proposed Project (see Section A.4 above). These agencies will utilize the information contained in the Final EIR in making their decisions regarding permits and approvals required for the proposed Project.

A.6 Reader's Guide to this Document

A.6.1 Incorporation by Reference

SCE's amended PEA (submitted as part of its amended Application No. A.04-12-008 for the Antelope Transmission Project, Segment 2 and Segment 3) contains certain information that is incorporated by reference in some sections of this EIR. This document is available for public review during normal business hours at the CPUC's Central Files (505 Van Ness Avenue, San Francisco) and via the Internet at:

<http://www.cpuc.ca.gov/environment/info/aspen/atp2-3/atp2-3.htm>

A.6.2 EIR Organization

This EIR is organized as follows:

Executive Summary. A summary description of the proposed Project, the alternatives, and their respective environmental impacts are included. A summary table lists impacts and the associated mitigation measures for each significant impact identified for the proposed Project and alternatives.

Section A (Introduction). A brief overview of the proposed Project, objectives of the Project, and the public agency use of the EIR are described.

Section B (Description of Proposed Project). A detailed description of the proposed Project is presented.

Section C (Environmental Analysis). A detailed description of the affected environment and regulatory framework is presented for each technical issue area. Each of the technical issue area sections also provide a detailed analysis of proposed Project impacts and present mitigation measures that would help reduce or avoid any potential impacts identified as resulting from implementation of the Project.

Section D (Alternatives Analysis). The process for selection of Project alternatives is described along with the steps and rationale for elimination of certain alternatives from further analysis. The impacts of the alternatives carried forward for analysis are described, but in lesser detail than the impacts of the proposed Project. Also, a comparison of the proposed Project and alternatives is provided along with the determination of the environmentally superior alternative.

Section E (Other CEQA Considerations). This section addresses the various permitting and compliance requirements should the Project be implemented. The long-term implications of the Project are also discussed, including growth-inducing and cumulative impacts.

Section F (Public Participation and Notification). Descriptions of the environmental review process and public participation program for the EIR are provided, including a list of agencies, organizations, and persons to whom copies of the EIR were sent.

Section G (References and Organizations/Persons Consulted). This section provides a listing of information sources used in preparation of the EIR, including persons contacted for information.

Section H (Glossary and Acronyms). Definitions to terms used in the EIR are provided.

Section I (List of Preparers). The authors of the EIR, their credentials, and their roles are presented in tabular format.

Appendices. Technical background information used in preparation of the EIR is included.