

1.0 EXECUTIVE SUMMARY

The Talega-Escondido/Valley-Serrano 500-kV Interconnect (TE/VS Interconnect) project is a proposal by The Nevada Hydro Company, Inc. (TNHC or the Applicant) to construct an approximately 30-mile long high-voltage transmission line. The line, running through northern San Diego and western Riverside Counties, will provide a 500-kilovolt (kV) link between San Diego Gas & Electric Company's (SDG&E) existing 230-kV electric transmission system and Southern California Edison Company's (SCE) existing 500-kV electric transmission system.

The TE/VS Interconnect project is a 1,500 megawatt (MW) rated 500-kV alternating current (AC) transmission line interconnecting SCE's Valley-Serrano 500-kV line via a new Northern (Lake) substation located in Riverside County and SDG&E's existing and upgraded Talega-Escondido 230-kV transmission line via a new Southern (Pendleton or Case Springs) substation located in San Diego County. As proposed, operational control of the TE/VS Interconnect project will be turned over to the California Independent System Operator (CAISO) pursuant to a transmission control agreement and a participating transmission owner tariff. The TE/VS Interconnect project is illustrated in [Figure 1-1](#) (TE/VS Interconnect Project).

The TE/VS Interconnect project, as well as the Applicant's Lake Elsinore Advanced Pumped Storage (LEAPS) project, has already undergone extensive environmental review by the Federal Energy Regulatory Commission (FERC). The complete FERC record, comprising over 1,600 documents, including FERC's "Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F" (FEIS), may be found in FERC docket PN-11858. TNHC has requested rate-base treatment for the project at FERC in docket ER06-278-005.

The TE/VS Interconnect project has been designated as a critical Statewide transmission resource in the California Energy Commission's "Strategic Transmission Investment Plan."¹

1.1 Project Purpose and Need

TNHC has developed the TE/VS Interconnect project for the following four major reasons:

- **Maintain Reliability.** The TE/VS Interconnect project will enable the San Diego transmission system to satisfy the reliability requirements and criteria of the California Independent System Operator (CAISO), National Electric Reliability Council (NERC) and Western Electric Coordinating Council (WECC).
- **Promote Renewable Energy.** The TE/VS Interconnect project will provide California consumers more economical access to existing renewable energy resources throughout California, encourage the development of new renewable resources, and provide San Diego County will access for renewable resources.
- **Connect LEAPS Project.** The TE/VS Interconnect project will provide a high-voltage connection to the California grid for the FERC-licensed LEAPS project.

^{1/} California Energy Commission, Strategic Transmission Investment Plan, CEC-700-2007-018CTF, October 2007.

- **Reduce Energy Costs.** In addition to maintaining grid reliability and improving access to renewable energy resources, this cost-effective project will provide savings for California electricity customers under normal operating conditions. Savings will result from access to lower cost sources of power in the west and reduced reliance on older, less-efficient in-area generation.

1.2 Project Objectives

The Applicant's objectives for the TE/VS Interconnect include:

- Provide facilities that promote the region's attainment of minimum California Independent System Operator (CAISO), North American Electric Reliability Corporation (NERC), and Western Electricity Coordinating Council (WECC) reliability criteria through the planning horizon, including the criteria that there be no loss of load within the San Diego area under G-1/N-1 contingency conditions.²
- Provide transmission capability to statewide renewable resources into the San Diego area to assist in meeting or exceeding California's 20% renewable energy source mandate by 2010 and the Governor's proposed goal of 33% by 2020.
- Provide transmission facilities with a voltage level and transfer capability that allows for prudent system expandability to meet both anticipated short-term (2010) and long-term (2015 and beyond) load growth through contributing 1,000 MW in new import capability into the San Diego area (under G-1/N-1 contingency conditions).
- Reduce the above-market costs to San Diego area ratepayers associated with maintaining reliability.
- Improve regional transmission system infrastructure to provide for the delivery of adequate, reliable and reasonably priced energy supplies (including renewable supplies).
- Improve regional transmission system infrastructure through the expansion of the State's backbone system by interconnecting SDG&E's and SCE's existing high-voltage transmission systems.
- Implement the transmission elements of California's energy plans and assist the state in meeting its renewable energy objectives.
- Obtain electricity generated by diverse fuel sources and decrease the dependence on increasingly scarce and costly natural gas.
- Avoid, to the extent feasible, the taking and relocation of homes, businesses or industries, in the siting of the transmission line, substation and associated facilities.
- Develop and implement a financially feasible transmission interconnect project.
- Commence the transmission of electricity along the proposed transmission lines by the end of 2009.

1.3 Project Description

1.3.1 Transmission Facilities

The TE/VS Interconnect project is an approximately 30-mile long, 500-kV regional interconnection transmission line with a nominal design capacity of 1,500 MW. The TE/VS Interconnect project would connect SDG&E's existing 230-kV Talega-Escondido transmission

^{2/} This "G-1/N-1" standard requires a defined area system to withstand the simultaneous outage of its largest generating unit (G-1) and largest transmission interconnection (N-1), and be able to withstand the *next* most critical transmission outage without dropping load.

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line in northern San Diego County with SCE's existing 500-kV Valley-Serrano transmission line in western Riverside County. The interconnection with SDG&E would be between SDG&E's existing Talega and Escondido substations at a new substation near United States Marine Corps Camp Pendleton, identified herein as the Southern (Pendleton or Case Springs) substation. The interconnection with SCE would be at a point between SCE's existing Valley and Serrano substations at a new substation near Lee (Corona) Lake, identified herein as the Northern (Lake) substation. For most of its route alignment, the TE/VS Interconnect project would be located on federal lands located within the United States Marine Corps' Camp Pendleton and the United States Forest Service's Cleveland National Forest, Trabuco Ranger District.

Through these proceedings, the Applicant is seeking authorization from the California Public Utilities Commission (Commission) for the following transmission lines:

- Northern 500-kV transmission line. The proposed new Northern-Midpoint (Lake-LEAPS) transmission line constitutes an approximately 13-mile 500-kV transmission line segment extending northerly from the Applicant's proposed new Midpoint (LEAPS) substation to the Applicant's proposed new Northern (Lake) substation;
- Southern 500-kV transmission line. The proposed new Midpoint-Southern (LEAPS-Pendleton) transmission line constitutes an approximately 17-mile 500-kV transmission line segment extending southerly between the Applicant's proposed new Midpoint (LEAPS) substation and the Applicant's proposed new Southern (Pendleton or Case Springs) substation;
- Western 230-kV transmission line. The proposed upgrades to the approximately 10-mile 230-kV Talega-Southern (Talega-Pendleton) transmission line segment between the Applicant's proposed new Southern (Pendleton or Case Springs) substation and SDG&E's existing Talega substation; and
- Eastern 230-kV transmission line. The proposed upgrades to the approximately 37-mile 230-kV Southern-Escondido (Pendleton-Escondido) transmission line segment, including the relocation of an approximately 7.7-mile segment of an existing 69-kV line, extending between the Applicant's proposed new Southern (Pendleton or Case Springs) substation and SDG&E's existing Escondido substation.

In addition to those transmission facilities constructed by the Applicant, the following network upgrades will be constructed by SDG&E and SCE: (1) upgrades to SDG&E's existing 230-kV single-circuit Talega-Escondido transmission line in northern San Diego County; (2) upgrades to SDG&E's existing Talega and Escondido substations; (3) an approximately 47-mile long second (Talega-Escondido No. 2) 230-kV transmission line installed along existing support structures (already containing one 230-kV circuit) connecting SDG&E's Talega and Escondido substations; (4) approximately 8 miles of existing 69-kV transmission line removed from existing towers and installed on new wooden or steel poles within the existing SDG&E right-of-way; (5) upgrades in connection with reinforcing SCE's 115-kV system; (6) upgrades to SCE's existing Valley and Serrano substations; and (7) upgrades to SCE's existing Etiwanda generating station. These upgrades are described in more detail below. All substation modifications will occur in areas that are already graded and surfaced.

This project is unlike many projects presented for the Commission's consideration, in that it has already undergone extensive environmental review by the FERC. The documentation comprising FERC's environmental review record was subjected to extensive notification, public input, agency consultation, and third-party peer review. The over 1,600 documents comprising the federal environmental review record for the TE/VS Interconnect and LEAPS projects may be

accessed at the FERC e-library. Relevant environmental and scoping documents include, but are not limited to, the following:

- Initial Stage Consultation Document – Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858³;
- Final Application for Major Unconstructed Project – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858⁴;
- Final Application for License of Major Unconstructed Project - Response to FERC Deficiency Letter for the Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858⁵;
- Draft Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191D⁶; and
- Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F.⁷

1.3.2 Substations and Switchyards

Southern (Pendleton or Case Springs) Substation

The proposed Southern (Pendleton or Case Springs) 230-kV gas-insulated substation (GIS) is the southern interconnection for the proposed project. As indicated in SDG&E's December 15, 2006 interconnection facilities study,⁸ the proposed Southern (Pendleton or Case Springs) 500-kV/230-kV substation was modeled 14 miles from the SDG&E Talega 230-kV substation and 37 miles from the SDG&E Escondido 230-kV substation. The existing Talega-Escondido 230-kV line will loop into the Southern (Pendleton or Case Springs) switchyard.

The Southern (Pendleton or Case Springs) substation will be constructed with GIS technology and will approximately 33 acres. Land requirements for the installation of the switchyard facilities will include a wall or fence that encloses the switchyard land and provides for adequate access and working room, consistent with good engineering practices.

The connection from the Southern (Pendleton or Case Springs) 230-kV phase shifting transformers into the switchyard will include: (1) three air-to-gas transformer bank terminations; (2) overhead transformer leads; (3) ground grid interconnection; and (4) control junction box.

³/ Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Initial Stage Consultation Document – Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858, April 2001.

⁴/ Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Final Application for Major Unconstructed Project – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, February 2004.

⁵/ Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Final Application for License of Major Unconstructed Project - Response to FERC Deficiency Letter for the Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858, November 2004; Elsinore Valley Municipal Water District and The Nevada Hydro Company, Inc., Final Application for License of Major Unconstructed Project - Response to FERC Deficiency Letter for the Lake Elsinore Advanced Pumped Storage Project, Federal Energy Regulatory Commission, Project Number 11858, February 2005.

⁶/ Federal Energy Regulatory Commission, Draft Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191D, February 2006.

⁷/ Federal Energy Regulatory Commission, Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F, January 2007.

⁸/ San Diego Gas & Electric Company, Lake Elsinore Advanced Pumped Storage Project, Interconnection Facilities Study, Draft Report, December 15, 2006.

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The SDG&E 230-kV GIS switchyard facilities will include: (1) breaker and a half-bus design; (2) the initial 4-bay arrangement of the GIS will accommodate four transmission line positions, three bank positions, and one spare position and the ultimate arrangement will allow for a future fifth bay; (3) the GIS facilities will include 12-230-kV circuit breakers and the associated disconnect switches, ground switches, potential transformers, and gas-insulated bus; (4) two station service transformers; (5) three metering units; (6) required line synchronizing potential transformers; (7) all structures and foundations, busses, and equipment within switchyard fence; (8) a dedicated block wall control house, substation below grade conduits and cables, protection systems, supervisory control/telecommunications equipment, batteries and low voltage circuits (all the required protection, metering, telemetering, SCADA and communication equipment and systems); (9) ground grid; (10) lighting; (11) transmission line air to gas transitions into the GIS; and (12) air to gas transitions for the phase shifting transformer leads.

Northern (Lake) Substation

The proposed Northern (Lake) 500-kV substation is the northern interconnection for the proposed project. The complete substation occupies a plot of approximately seven acres and is located between the I-15 Freeway and the Temescal Canyon Road. To be able to keep jurisdictions clear, a line of demarcation will be made between the SCE and the TE/VS Interconnect project portions of the substation using walls, gates, and fences, where appropriate. A number of obstructions have been identified which will be removed or relocated by TNHC, including: (1) an underground 36-inch diameter water line that will be rerouted; (2) a telephone line which goes through the substation plot; (3) a microwave repeater station located in the south west corner of the plot; and (4) a microwave repeater station located on the Lake Elsinore side of the I-15 Freeway.

This substation will be a GIS configuration consisting of three bays of 1½ CB 500kV switchgear. Bays 1 and 3 are for the TE/VS Interconnect connection to the Valley-Serrano line and the TE/VS Interconnect project connection Bay 2 is for the SCE 115kV reinforcement project. All equipment is rated at 550kV, 4000A and 63kA. The building will be block built to SCE building standards. The seismic requirements for the equipment and building will be to high seismic level. Air conditioning and auxiliary service requirements will be defined by the GIS equipment.

Each bay of the substation will have its own dedicated control room. The GIS building will be a single one structure which will have a center wall which will act as the line of demarcation between the TNHC and SCE portions.

Midpoint (LEAPS) Substation

The midpoint substation will provide for enhanced reliability for the GIL portion of the project and will also provide two 115-kV distribution level circuits for the City of Lake Elsinore. One circuit is for the SCE Lake Elsinore Substation, the other is for the SCE Skylark Substation.

1.3.3 SDG&E System Upgrades

The following proposed network upgrades are excerpted from the Applicant's draft Large-Generator Interconnection Agreement (LGIA) with SDG&E.

Participating Transmission Owner's Reliability Network Upgrades

With regards to the loop-in of the existing Talega-Escondido 230-kV line, the Southern (Pendleton or Case Springs) switchyard will be located near existing Tower No. 163 (Z322651). The scope of work for the loop-in consists of Tower No. 163 removal, installation of four 230-kV anchor bolted dead-end steel poles, hardware, and conductors.

With regards to the replacement of the existing 69-kV over-stressed breakers at the Escondido and Penasquitos substations, the short-circuit analysis shows there are ten line positions and fourteen over-stressed breakers that need to be upgraded from 40kA to 50kA. Short-circuit constraints require the upgrading of the breakers for the following terminals at the Penasquitos and Escondido substations: ES 50, 684, 688, 6908, 696, and 72, and PQ 665, 666, 667, and 70.

Interconnection Customer's Delivery Network Upgrades

The thermal analysis performed in the facilities study indicates there are two SDG&E transmission line overloads caused solely by addition of the LEAPS project that require mitigation: Talega-Pendleton (Talega-Case Springs) and Pendleton-Escondido (Case Springs-Escondido) 230-kV lines.

The following delivery network upgrades are needed to mitigate these overloads: (1) bundle the existing line of the Talega-Pendleton (Talega-Case Springs) 230-kV No. 1 line to provide 912 MVA capacity; and (2) addition of a second Talega-Southern-Escondido (Talega-Pendleton or Case Springs-Escondido) 230-kV line, including additional upgrades at Escondido and Talega substations to accommodate the new terminal additions. The Talega-Southern (Talega-Pendleton or Case Springs) 230-kV portion of this line is to have a capacity of 912 MVA and the proposed Southern-Escondido (Pendleton or Case Springs-Escondido) 230-kV No. 2 line's capacity will be 456 MVA, including the installation of new facilities as part of the loop-in and accommodation of double circuit 230-kV transmission line (relocation of the existing 69-kV tie line from existing 230-kV towers for 7.6-mile segment of TL6932).

The following Escondido substation upgrades have been identified: (1) relocate bank 71; (2) modify the north and south buses to make room for a new bay addition; (3) install a new 230-kV breaker and a half bay to include 1-bank, 1-tie, and 1-line positions; (4) lot-support structures as required; (5) two 230-kV circuit breakers; (6) five 230-kV disconnect switches; (7) power and control wiring; (8) tie line protection; (9) metering; (10) SCADA and communication interface; and (11) re-route the existing 12-kV ducts to make room for bank 71.

The following Talega substation upgrades have been identified: (1) install a new 230-kV breaker and a half bay to include 1-line and 1-tie positions; (2) lot-support structures as required; (3) two 230-kV breakers; (4) four 230-kV disconnect switches; (5) power and control wiring; (6) tie line protection; and (7) SCADA and communication interface.

1.3.4 SCE System Upgrades

The following proposed network upgrades are excerpted from the Applicant's draft Large-Generator Interconnection Agreement (LGIA) with SCE.

Upgrades to Existing SCE Facilities

In connection with the Serrano substation, upgrade the Valley 500-kV line protection as needed to change the line to a new Lake 500 kV transmission line. In addition, replace the existing LFCB relay with a new SEL-311L line current differential relay and the modification of the existing D60 and L90 relays to change the existing transfer trip schemes from Valley substation to the Northern (Lake) substation. Finally, reconfigure the existing digital channel from Valley substation to Northern (Lake) substation and the modification of the existing SEL 2030 telecommunications processor with Ethernet to provide connection to the new SEL relay.

In connection with the Valley substation, upgrade the Serrano 500-kV line protection as needed to change the line to the new Lake 500 kV transmission line. Replace the existing LFCB relay with a new SEL-311L line current differential relay and the modification of the existing D60 and L90 relays to change the existing transfer trip schemes from Serrano substation to the Northern (Lake) substation. Reconfigure the existing digital channel from Serrano substation to the Northern (Lake) substation and the modification of the existing SEL 2030 telecommunications processor with Ethernet to provide connection to the new SEL relay. Replace six 31.5 kA 115-kV circuit breakers with new 40-kA rated circuit breakers and upgrade six 31.5-kA circuit breakers to 40 kA.

In connection with the Etiwanda generating station, replace the 2000A wave trap on the Vista 220-kV line position with 3000A-rated wave trap, with N-2 contingency rating of 3210A to support the maximum N-2 line loading of 3071A; replace 24 63-kA 220 kV circuit breakers with new 80-kA rated circuit breakers and upgrade the Etiwanda 220-kV switchyard to 80-kA rating. The scope of work for the switchyard upgrade has not yet been completed. It is expected that the following additional upgrades would be required: replacing 28 220-kV disconnect switches, 24 220-kV surge arresters, all line and bank vertical risers with tubular conductors, all 4/0 CU connectors to the ground grid with new 350 kCMIL ACSR, new sections of 350-kCMIL ACSR ground grid, and connect to the existing 4/0 CU grid.

In addition, telecommunications upgrades are also required at each location. This includes installing dual communication channels on separate routes to support the line protection relays on the new Northern (Lake)-Serrano and Northern (Lake)-Valley 500-kV transmission lines. It also includes installing a new microwave path from the Northern (Lake) substation to the existing Santiago Peak communication site. These upgrades will require: (1) at the Northern (Lake) substation, install new light wave, microwave (including dish antennas), channel equipment for 500-kV line protection communications tower, fiber optic cable, and DC system, plus new voice and data network infrastructure (operations phones, modem lines, LAN connections to relays, etc.); (2) at the Serrano substation, install new light wave and channel equipment for 500 kV line protection , plus incremental addition of voice and data network infrastructure (rack phones, modem lines, LAN connections to relays, etc.); (3) at the Valley substation, install new light wave and channel equipment for 500 kV line protection, plus incremental addition of voice and data network infrastructure (rack phones, modem lines, LAN connections to relays, etc.); (4) at the Santiago Peak communications site, install new microwave and dish antennas to link the Northern (Lake) substation to Serrano and Valley substations for 500-kV line protection; and (5) at the Mira Loma substation, install new light wave equipment to link the Northern (Lake) substation to Serrano substation for 500-kV line protection.

500-kV Connection between Valley-Serrano and Northern (Lake) Substation

To connect the TE/VS Interconnect project to the SCE grid, SCE's Valley-Serrano 500-kV line will be modified. This modification involves two single circuits starting between existing structures 16/1 and 15/3 on the existing right-of-way and the northern "A" frame dead end in the Northern (Lake) substation. The distance from the Northern (Lake) substation to the existing right-of-way is about 2.2 miles on private held land for an estimated total of 4.4 miles of new line. SCE will construct the line extension on two separate single circuit structures with about 150-foot separation on the same right-of-way.

The 500-kV GIS connection to the Valley-Serrano 500-kV overhead line (OHL) will use the first breaker and a half scheme. The gas-insulated switchgear will be located within a block building.

Northern (Lake) 500/115-kV GIS Substation

The new Northern (Lake) substation (500-kV, 115-kV tie option, and 13.8-kV station power) will be located north of the Interstate 15 (I-15) Freeway near SCE's existing 500-kV Valley-Serrano line and is the northern extent of the TE/VS Interconnect project.

The substation will be split into three parts: (1) 500-kV connection to the Valley-Serrano line; (2) 500-kV/115-kV SCE reinforcement project⁹; and (3) 500-kV connection to the LEAPS and/or TE/VS Interconnect projects' new OHL. The SCE 500-kV/115-kV reinforcement project is included as a component of the TE/VS Interconnect project. The connection to the SCE reinforcement project will be done using the second breaker and a half scheme. SCE's distribution system upgrades include two 560-MVA transformer banks from 500 kV to 115 kV. A total of seven bays of 115-kV GIS equipment will be provided to reinforce the following distribution loads: (1) 115-kV Loop 1-Skylark; (2) 115-kV Loop 2-Ivyglen 1; (3) 115-kV Loop 3-future 115-kV/12-kV; (4) 115-kV Loop-Ivyglen 2; (5) 115-kV Loop 5-future; (6) 115-kV Loop 6-Fogarty; (7) No. 1 Capacitor Bank 46.8 MVAR; and (8) No. 2 Capacitor Bank 46.8 MVAR. In addition, SCE will require additional expansion area for an ultimate plan build-out of nine bays at 115 kV with bussing at 5,000 amps and space for two additional 560-MVA transformers.

1.4 Lake Elsinore Advanced Pumped Storage Project

The LEAPS project is a proposed 500-MW pumped storage facility located near Lake Elsinore in Riverside County, California. The LEAPS powerhouse would connect into the grid over the TE/VS Interconnect project. The LEAPS project will be capable of providing 500 MW of electricity for up to 20 hours and of refilling at a pumping capacity of 600 MW. Storage capacity of the plant's proposed upper reservoir is 6,000-megawatt hours (MWh). The cycle efficiency is projected to be 83.3 percent, making the LEAPS project one of the most efficient pumped storage plants in the world.

As now proposed, the LEAPS project will have an installed generating capacity of 500 MW and pumping capacity of 600 MW, provided by two single-stage reversible Francis-type pump turbine units operating under an average net head of approximately 1,600 feet. The LEAPS

⁹/ In prior discussions between SCE and the CPUC, this facility has been identified as the Alberhill substation. For the purpose of this PEA, that nomenclature is not further utilized herein and the proposed reinforcement project is described as a component of the Northern (Lake) substation.

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project will firm up and store renewable energy, primarily wind energy,¹⁰ and will be one of the most efficient storage facilities in the country, rated at >82 percent net at the 500-kV primary levels. Every kilowatt (kW) of generated off-peak electricity stored will yield >0.82 kW of electricity delivered to the grid during on-peak periods. It will be an invaluable asset in California's efforts to utilize effectively its renewable resources.

1.5 Access to Renewable Energy Resources

The TE/VS Interconnect project will provide San Diego with access to renewable energy resources and will increase the depth of the pool of renewable suppliers able to provide renewable resources to SDG&E. For example, the TE/VS Interconnect project facilitates access for SDG&E consumers to electricity generated from renewable resources located north of San Diego, including wind resources in the Tehachapi area of Kern County, as well as wind and other renewable resources from the Pacific Northwest, other portions of the western United States, and Canadian. In addition, the TE/VS Interconnect project will allow San Diego area consumers access to the geothermal and other renewable energy resources generated within the Imperial Valley area of Imperial County. Imperial Valley resources can be delivered to the San Diego area, by means of the TE/VS Interconnect project, over either of two transmission lines now under development. First, the Los Angeles Department of Water and Power's (LADWP) "Green Path North" transmission project will link the Imperial Valley and Salton Sea area to the Los Angeles basin and to SCE's transmission network. In addition, the Imperial Irrigation District (IID) has approved construction of a new line into SCE's existing Devers substation (San Bernardino County). Transmission along either of these routes will allow renewable resources from Imperial Valley access into the San Diego market.

The proposed project will bring renewable energy resources to San Diego County from throughout California and the western United States, including Imperial County, by providing access to remote areas with the potential for significant development of renewable energy sources. The TE/VS Interconnect project is consistent with Senate Bill (SB) 1078 and California's "Energy Action Plan" (EAP), by providing San Diego consumers more economical access to the Imperial Valley, an area that is rich in renewable resource potential. By providing access to the San Diego marketplace, the TE/VS Interconnect project will encourage the development of such resources, thereby diversifying the State's resource mix and reducing its reliance on fossil-fueled generation.

1.6 Permitting Background

In addition to the application for a public convenience and necessity (CPCN), the Applicant is concurrently processing related applications for the following discretionary permits: (1) a FERC hydropower license for the LEAPS project and its associated transmission (and such other ancillary facilities as may be identified by FERC); (2) two United States Forest Service (USFS) special use permits (SUPs), including separate SUP applications for the TE/VS Interconnect and LEAPS projects; (3) two water quality certifications from the State Water Resources Control Board (SWRCB), including separate applications for the TE/VS Interconnect and LEAPS projects; and (4) two dredge and fill permit applications from the United States Army Corps of

^{10/} Pumped storage can minimize the system impact of integrating large volumes of intermittent wind resources into the power grid by absorbing electricity generation during high-wind periods that would otherwise cause operational problems for system operators. Pumped storage can be used in tandem with wind resources to shift delivery of wind energy from off-peak to on-peak period during the day and smooth out production spikes (Source: California Energy Commission, Integrated Energy Policy Report, CEC-100-2-5-007CMF, November 2005, p. 146).

Engineers (ACOE), including separate applications for the TE/VS Interconnect and LEAPS projects. TNHC will obtain other discretionary and ministerial permits and approvals as may be required for the project's approval, implementation, operation, and maintenance.

The LEAPS project is a traditionally licensed (18 CFR 4.38) federal hydropower project, licensed under the provisions of the Federal Power Act of 1920 (FPA), as amended and as codified in Chapter 12 of Title 16 of the United States Code (U.S.C.) Parts 791(a)-825(r), and FERC's rules and regulations.¹¹

The LEAPS project is the subject of a separate application by the Applicant (FERC Project No. 11858) to the FERC for a federal hydropower project license under the provisions of the Federal Power Act (FPA). In furtherance of that license application, FERC and the USFS have prepared a "Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F" (FEIS) which examines both the TE/VS Interconnect project and the LEAPS project. The TE/VS Interconnect is identified as "a 'stand alone' transmission line authorization."¹² Although identified as a "stand-alone" project, the FEIS examines both the TE/VS Interconnect and LEAPS projects as related, connected, and cumulative actions.

Based on the need to obtain separate permits and approvals from the USFS, the LEAPS project and its associated transmission lines are being jointly processed by FERC and the USFS. The USFS is acting pursuant to the provisions of Multiple Use-Sustained Yield Act and National Forest Management Act of 1976 (16 U.S.C. 472[a], 521[b], 1600, 1601-1614) and applicable Forest Service manuals, handbooks, and procedures.

Although FERC is empowered to license the "complete unit of development," the Applicant's concurrent processing of two separate applications (LEAPS and TE/VS Interconnect projects) is based, in part, on the Applicant's inability to foretell the precise nature of those federal entitlements and the possible statutory and/or regulatory limitations, if any, that may govern FERC's ability to fully license all aspects of the proposed project. With regards to transmission facilities, FERC could elect to or may be empowered to only license the LEAPS project's proposed "primary line" and certain other associated ancillary facilities.^{13,14} Alternatively, FERC could elect not to license or may be restricted from licensing that portion of proposed transmission line, ancillary facilities, and/or any additional size, capacity, or configuration greater than that required for the operation of the federally licensed powerhouse at its licensed pumping and generating capacity.

^{11/} With very few exceptions, FERC regulates all operating non-federal dams that generate electrical energy anywhere in the United States. FERC's jurisdiction extends to each dam that meets at least one of the following tests: (1) occupancy of federal public land; (2) regulation of a navigable stream; (3) use of surplus water or water power from a federal dam; or (4) if constructed after August 26, 1935, any effect on interstate commerce, including linkage of the project to the grid (16 U.S.C. 791a - 823c). This jurisdiction includes any dam that, in addition to electrical generation, also serves other functions, such as water supply or flood control.

^{12/} *Op. Cit.*, Final Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191F, pp. vii and xxi.

^{13/} FERC considers transmission facilities as being primary project facilities if: (1) they are necessary to get all of the project power to market; and (2) their continued existence is not assured because they are not necessary to serve utility system customers and not necessary to perform another obligatory power system function.

^{14/} Section 201 of the FPA establishes, in part, FERC's jurisdiction over the transmission of electric energy and the sale of electric energy at wholesale in interstate commerce. FERC also has jurisdiction over "all facilities used for such transmission or sale of electric generation," but not over facilities that are used for the generation of electric energy, used in local distribution, or for the transmission of electric energy consumed wholly by the transmitter.

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Running concurrently with the FERC-issued hydropower license is the USFS' separate federal SUP process (16 U.S.C. 797[b] and 823[b]; 63 FR 65950-65969). That process was initiated, in part, for the purpose of obtaining separate USFS authorization for any additional transmission lines, larger wire sizes, modified tower configurations, increased electrical capacity, and other ancillary facilities required to accommodate both the power flows associated with the pumped storage project and the increased power flows associated with the system interconnection and system upgrades, above and beyond those flows associated with or authorized under the federal hydropower license.

To the extent that FERC is unable or unwilling to issue a permit for any portion of the 500-MW pumped storage facility, 500-kV transmission lines, and/or 230-kV transmission line upgrades, the TE/VS Interconnect project is being processed through the USFS under an "application for transportation and utility systems and facilities on federal lands" (Standard Form 299).¹⁵ That application is for the "Talega-Escondido/Valley-Serrano 500-kV Interconnect Project (TE/VS Interconnect)," consisting of "a new single-circuit 500-kilovolt transmission line, rated at 1,500 megawatts or greater, extending approximately 30± miles between northern San Diego and southwestern Riverside Counties and will traverse the Trabuco Ranger District of the Cleveland National Forest."

The Energy Policy Act of 2005 (Public Law 109-58) (EPA 2005) "encourages deployment of transmission technologies and other measures to increase the capacity and efficiency of existing transmission facilities and improve the operation of the facilities." Under Section 1223(11), "pumped storage" is classified as an "advanced transmission technology," defined as a technology that increases the capacity, efficiency, or reliability of an existing or new transmission facility.

Since FERC has identified the LEAPS project as an "advanced transmission technology,"¹⁶ it may determine that it has the authorization to permit not only the 500-MW LEAPS project but also the 500-kV TE/VS Interconnect project and the 230-kV system upgrades as network upgrades. The LEAPS project would thus encompass all facilities, improvements, and other actions as may be required for the construction, operation, and maintenance of the pumped storage project, the regional interconnection, the associated system-wide upgrades, and such ancillary facilities as may be associated therewith.¹⁷

Because the CPUC does not have the jurisdiction to authorize the LEAPS project, TNHC does not seek a certificate of public convenience and necessity (CPCN) from the Commission for the LEAPS project. Instead, TNHC requests a CPCN only for the TE/VS Interconnect project.

¹⁵ Elsinore Valley Municipal Water District, Application for Transportation and Utility Systems and Facilities on Federal Lands, Standard Form 299, signed by Ronald Young, General Manager, June 23, 2003.

¹⁶ On November 17, 2006, FERC explicitly identified the LEAPS project as an "advanced transmission technology," in part, defining LEAPS as a transmission facility. FERC's actions may, either directly or indirectly, negate the differentiation between the two energy projects. Pending a final determination of how FERC's actions will be implemented, the LEAPS project and the TE/VS Interconnect project are discussed as separate projects herein.

¹⁷ It is noted that FERC and the state in which a FERC-licensed project is located generally do not share the final decision of any issues in a licensing proceeding (*First Iowa Hydro-Electric Cooperative v. Federal Power Commission*). Under the Commerce and Supremacy Clauses of the United States Constitution, the FPA preempts state law that would otherwise apply to FPA-licensed projects, except where the FPA reserves state authority over a specific issue (*Sayles Hydro Association v. Maughn*). The primary exceptions include: (1) water quality certification issued under Section 401(a) of the Federal Clean Water Act (CWA); (2) issuance and regulation of water rights necessary for project operation and to prevent injury to prior water rights (Section 27, FPA [16 U.S.C. 821]); (3) regulation of retail rates for electrical service (Section 16, FPA [16 U.S.C. 812]); and (4) authorization for a state or municipal agency to take over any licensed project, through a condemnation proceeding and on payment of fair market value (Section 14(a), FPA [16 U.S.C. 807a]).

1.7 Major Conclusions

Substantial relevant environmental analysis has been conducted at both the federal and State levels for the purpose of assessing the potential environmental impacts associated with the proposed project, including the analysis found in FERC's FEIS and in the Commission's "Draft Environmental Impact Report/Environmental Impact Statement – SDG&E Sunrise Powerlink Project, A.06-08-010"¹⁸ (Sunrise DEIR/DEIS).

FERC's FEIS represents an independent analysis of the proposed project and the potential environmental effects that may result from the project's approval, construction, operation, and maintenance. Because the findings of the FEIS reflect the independence of the federal agency with primary responsibility for entitling the LEAPS project and its associated transmission lines and system upgrades, the Applicant has elected to not modify or otherwise alter the contents or findings of the document. The Applicant accepts the project-specific analysis presented in the FEIS and the independent findings of the FERC and the USFS and has agreed to implement those environmental protection, mitigation, and enhancement measures (PM&Es) proposed for the project by the staffs of FERC, the USFS, and other permitting agencies with jurisdiction thereupon.

The proposed project's implementation will result in one or more significant or potentially significant unmitigable environmental effects. Based on the continuing existence of significant unmitigable environmental effects, the proposed project will necessitate, under CEQA, the preparation of an environmental impact report (EIR) or equivalent environmental documentation. Once certified, the "Final Environmental Impact Report/Final Environmental Impact Statement – SDG&E Sunrise Powerlink Project, A.06-08-010" (Sunrise FEIR/FEIS) could potentially serve to fulfill the proposed project's CEQA obligations. Under CEQA, based, in part, on the identification of the TE/VS Interconnect project as the environmentally "preferred" transmission alternative in the Sunrise DEIR/DEIS, upon certification, the Commission may be authorized to approve the TE/VS Interconnect project under those same proceedings either in-lieu of or in addition to the Sunrise Powerlink project.

1.8 Areas of Controversy

As identified with the environmental issues that have been raised in response to the two earlier "Notices of Preparation" (NOPs) that have been previously disseminated by the Elsinore Valley Municipal Water District and the comments received by FERC and USFS in their NEPA process, areas of controversy include comments concerning the potential need for the proposed project and the alternatives that could be implemented to respond to that need. Since a substantial portion of the proposed project is located on federal lands, an area of controversy is whether public lands should be utilized for the proposed endeavor, used for for-profit and privately operated activities, or retained exclusively for preservation, conservation, and wildlife protection. In addition, without disregarding other potential environmental impacts associated with the proposed project, an area of controversy deals with the visual impacts of transmission lines on the landscape and National Forest System lands.

¹⁸ California Public Utilities Commission (Aspen Environmental Group), Draft Environmental Impact Report/Environmental Impact Statement – SDG&E Sunrise Powerlink Project, A.06-08-010, January 2008.

1.9 Major Issues to be Resolved

Under CEQA, economic effects of a project shall not be treated as significant effects on the environment (14 CCR 15131). As such, while the Applicant and the CAISO remain in ongoing discussions concerning the estimated cost for certain system upgrades predicated by the increased power flows associated with the proposed transmission and pumped storage projects, those outstanding issues are neither addressed herein nor should be made a part of any CEQA analysis.

Until FERC issues the proposed hydropower license, the precise nature and extent of federal, State, and local entitlements cannot be determined. FERC may elect to license or may be precluded from licensing certain facilities, components, and other elements of the combined LEAPS-TE/VS project. Under the FPA, FERC's actions may preempt the need for the Applicant to secure other discretionary approvals that might otherwise be required absent that federal authorization. Although FERC's FEIS identifies the location of specific project facilities and the general alignment of the proposed transmission lines, pending the issuance of the federal hydropower license, FERC may elect to authorize any of the alternative facility locations and/or transmission alignments identified in the FEIS.

Similarly, for the purpose of CEQA compliance, the proposed project includes both the TE/VS Interconnect and the LEAPS projects as interrelated project components. Since FERC has identified the LEAPS project as an "advanced transmission technology," FERC may elect to include, as part of its own discretionary approval, all or some portion of the TE/VS Interconnect project presently included in the Applicant's CPCN application. Jurisdictional issues, if any, will likely be resolved as these proceedings progress.

1.10 Interagency Coordination and Public Outreach

The FERC record in docket P-11858 documents extensive outreach efforts, including public meetings conducted by FERC, the USFS, and by other public agencies for the expressed purpose of soliciting comments on the potential environmental impacts attributable to the TE/VS Interconnect and LEAPS projects.

1.10.1 Interagency Coordination

The Applicant has met with a wide range of federal, State, and local governmental agencies to discuss compliance obligations, to obtain each agency's comments, concerns, and recommendations, and to identify those discretionary permits and approvals that may be required from those agencies. Permit applications have been filed with and are being actively pursued with a number of agencies, including the State Water Resources Control Board (acting on behalf of the California Regional Water Quality Control Board, Santa Ana and San Diego Regions) and United States Army Corps of Engineers.

It is anticipated that the projects' biological opinion for the LEAPS and TE/VS Interconnect projects will be submitted by the United States Fish and Wildlife Service in February 2008.

1.10.2 Agencies/Organizations Associated with the Proposed Project

Presented in Table 3-8 (Discretionary Permits, Approvals, and Consultation) of the PEA is a listing of those agencies, organizations, and individuals that are or may be associated with the proposed project. The list includes: (1) the CPUC, acting in its capacity as the CEQA lead

agency; (2) the Applicant; (3) the State and regional environmental clearinghouses; (4) potential responsible agencies that will or may be required to take one or more discretionary actions concerning the proposed project and who may be required to utilize the CEQA lead agency's final EIR as part of their own independent deliberations; (5) other federal agencies from whom discretionary permits or approval will or may be required; and (6) trustee agencies having jurisdiction by law over those natural resources affected by the proposed project.

In preparing the list of potential responsible agencies, trustee agencies, and federal agencies, TNHC has attempted to be inclusive of all agencies from which discretionary permits and approvals will or may be required for the approval and implementation of any portion of the proposed project.

1.10.3 Public Outreach Efforts

Following FERC's acceptance of the TNHC's preliminary permit application for filing, the Applicant prepared an initial stage consultation document and conducted an initial scoping meeting on June 12, 2001 to solicit comments concerning the LEAPS project and its associated transmission facilities. Extensive notification occurred with each successive step in the FERC hydropower licensing and National Environmental Policy Act (NEPA) compliance processes. Commencing on March 19, 2001, a series of community outreach meetings were conducted by the Lake Elsinore Advanced Pumped Storage Oversight Committee (LEAPS/OC) and by the Lake Elsinore Advanced Pumped Storage Oversight Committee Technical Advisory Committee (LEAPS/TAC). The members of the LEAPS/OC and the LEAPS/TAC were appointed by the Board of Supervisors of the County of Riverside.¹⁹

Prior to the publication of the "Draft Environmental Impact Statement for Hydropower License – Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858, FERC/EIS-0191D" (DEIS), FERC released two separate scoping documents, dated August 5, 2004 and January 25, 2005, and conducted public scoping meetings on September 8-9, 2006.²⁰ Following the publication of the DEIS, FERC conducted additional scoping meetings on April 4-5, 2006. Each of those meetings was noticed as joint NEPA and CEQA scoping meetings. The FERC record includes evidence of extensive outreach efforts, noticing and notification, and public meetings conducted for the express purpose of soliciting comments on the potential environmental impacts attributable to the proposed project.

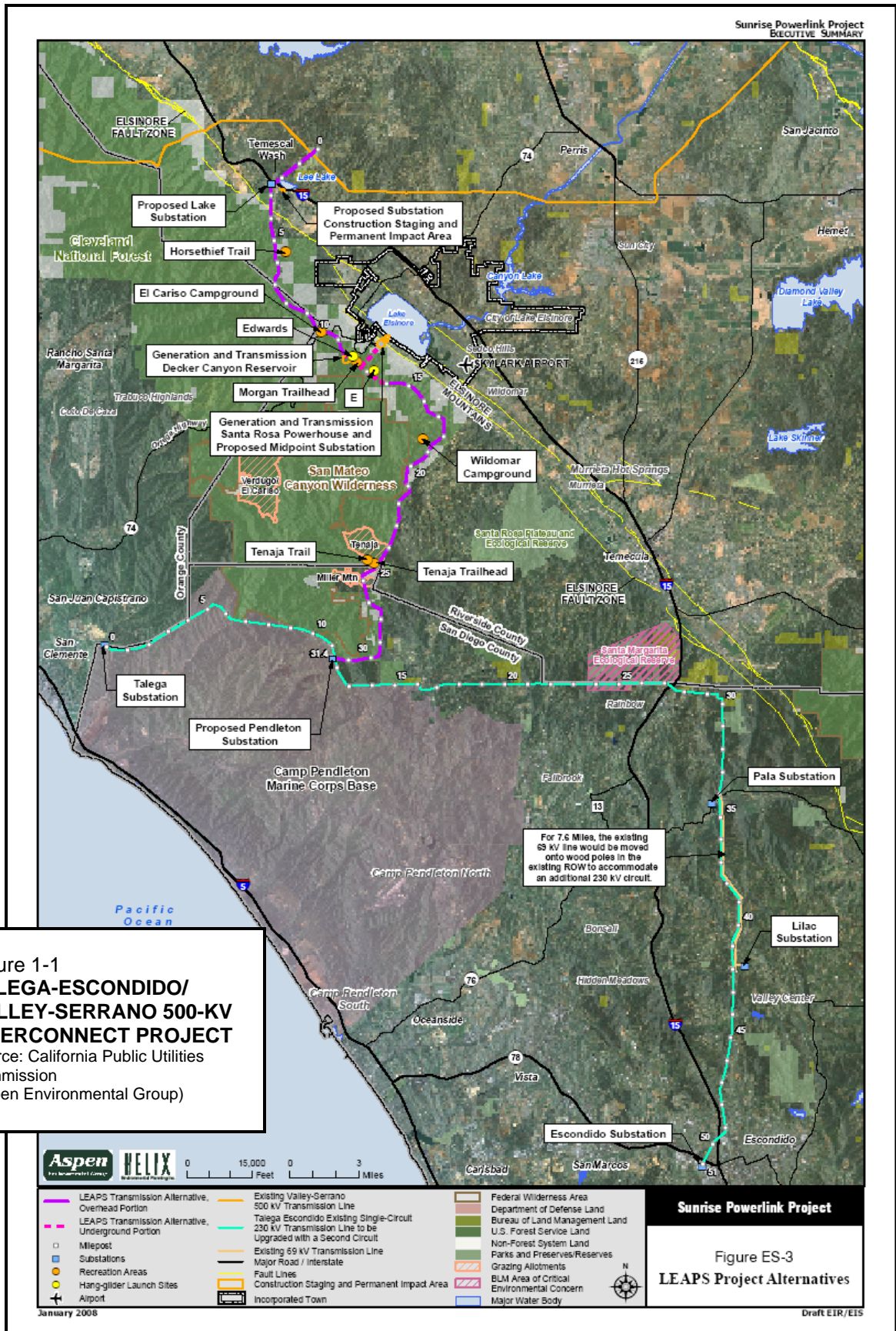
In addition, on September 13, 2004 and again on June 1, 2006, the Elsinore Valley Municipal Water District (EVMWD or District), disseminated two separate but similar "Notices of Preparation" (NOPs) for the purpose of soliciting comments on the proposed project. Although the CPUC has now accepted "lead agency" status under CEQA for both the TE/VS Interconnect project and for the LEAPS project, information about both projects has been previously and broadly disseminated and scoping activities have been conducted under CEQA.

¹⁹/ County of Riverside, District Agenda No. 3.1, Establishment of an Oversight Committee to Review Hydroelectric Plant Proposal – Lake Elsinore Area, December 15, 2000; County of Riverside, District Agenda 3.67, Modification of Oversight Committee Established to Review Hydroelectric Plant Proposal – Lake Elsinore Area, February 23, 2001.

²⁰/ As stipulated in Section 21083.9(d) of the PRC: "A scoping meeting that is held in the city or county within which the project is located pursuant to the National Environmental Policy Act (42 U.S.C. Sec. 4321 et seq.) and the regulations adopted pursuant to that act shall be deemed to satisfy the requirements that a scoping meeting be held for a project subject to paragraph (2) of subdivision (a) if the lead agency meets the notice requirements of subdivision (b) or subdivision (c)."

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