

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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In the Matter of the Application of )  
San Diego Gas & Electric Company )  
(U-902-E) for a Certificate of Public )  
Convenience and Necessity for the )  
Sunrise Powerlink Transmission Project )

Application No. 06-08-010  
(Filed August 4, 2006)

**INITIAL BRIEF OF  
THE NEVADA HYDRO COMPANY**

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November 9, 2007

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## SUMMARY OF RECOMMENDATIONS

For the reasons detailed in this initial brief, the Commission should find the record insufficient to reach a decision on the merits of the pending application. The base case used by San Diego Gas & Electric Company and its principal supporter, the California Independent System Operator Corporation, for analysis of the proposed Sunrise Powerlink project and alternatives to it is improper and, at least with respect to the proposed TE/VS transmission line, the methodologies and assumptions used in evaluating alternatives are flawed, as the following examples indicate:

- SDG&E's base case excluded TE/VS, even though it is expected to be constructed ahead of Sunrise. Omission of TE/VS from the base case is contrary to the CAISO's methodology upon which the CAISO Board relied and contrary to the Assigned Commissioner's Scoping Memorandum.
- Analysis of TE/VS as an alternative to Sunrise is materially flawed. TE/VS was assessed only in combination with LEAPS, a proposed pump storage facility, and then, without the benefits LEAPS would yield.
- SDG&E fails to address the timing and extent of reliability need for Sunrise, and fails to address the advantages of the TE/VS tie to SCE transmission.
- The CAISO's assertion that Sunrise will permit imports of renewables from Imperial Valley (a contention from which SDG&E largely refrained) rests on speculative and dubious renewable projects. TE/VS would offer a

new path, to the north, with access to Tehachapi wind and other renewable resources.

- The CAISO's contention that TE/VS would require \$1.8 million in upgrades was stunningly unsupported—its own witnesses ran away from the figure and other analyses betray it as unsupportable.
- TE/VS would reduce energy production costs for CAISO consumers by approximately \$14 million per year.

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The Nevada Hydro Company (“Nevada Hydro”) asserted in its opening statement that the record is inconclusive - that it shows merely “that the Sunrise Powerlink may or may not be a good project,” a result of “serious omissions” in the evidence presented by the project’s proponents. Tr. 139: 2-6 (Thompson, Nevada Hydro). The evidentiary hearing (over 18 hearing days during the ensuing three months) repeatedly underscored the failure of Sunrise’s proponents to make their case. In this initial brief, Nevada Hydro iterates and demonstrates that the record does not justify issuance of a CPCN. This brief is submitted pursuant to the Commission’s Rule 13.11 and the schedule established for this proceeding, and follows the outline prescribed by the Administrative Law Judge.

As further explained below, the principal fault is a fundamental error of methodology. Sunrise’s sponsor, San Diego Gas & Electric Company (“SDG&E”), and its supporter, the California Independent System Operator Corporation (“CAISO”), have incorrectly defined their base cases, and have constructed their proposed alternatives to Sunrise, and made economic and other assumptions in their evaluations of alternatives, that leave the Commission unable to assess accurately the value of reasonable, other means of meeting the objectives for which Sunrise is said to be proposed.

Inaccuracies and unreasonable assumptions in the treatment of Nevada Hydro's proposed Talega-Escondido/Valley-Serrano ("TE/VS") transmission line are a prime example of the failure of the Sunrise proponents to justify the issuance of a CPCN for the Sunrise project. As explained below, these and other record deficiencies are so manifest that SDG&E has failed to make its case.

## **I. INTRODUCTION**

Nevada Hydro is developing the Lake Elsinore Advanced Pumped Storage ("LEAPS") Project and the related TE/VS transmission facilities. TE/VS is a proposed 500 kV transmission line, approximately 28.5 miles in length, that would interconnect an existing, 230 kV transmission line owned by SDG&E between its Talega and Escondido substations in the northern portion of the SDG&E transmission system with an existing, 500 kV transmission line owned by Southern California Edison Company ("SCE") between its Valley and Serrano substations. Ex. No. N-1 at 2. The line is expected to cost approximately \$350 million (2006 dollars). *Id.* at 3. On October 9, 2007, Nevada Hydro filed with the Commission an application (A.07-10-005) for a CPCN authorizing construction and operation of the TE/VS line.

LEAPS is a proposed 500 MW pumped storage hydroelectric generating plant to be located at Lake Elsinore. The LEAPS facilities would be interconnected with and through the TE/VS line, which would traverse a portion of the Cleveland National Forest and other land in the vicinity of Lake Elsinore.<sup>1</sup>

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<sup>1</sup> The LEAPS plant will be capable of generating 500 MW for up to 12 hours and of refilling at a pumping capacity of 600 MW. Storage capacity of the plant's upper reservoir is 6,000 MWh. The cycle efficiency is 83.3%, making LEAPS one of the most efficient pumped storage plants in the world. Nevada Hydro's application for a permit to construct and operate the LEAPS plant is pending at the Federal Energy Regulatory Commission.

The TE/VS line is a significant and cost-effective alternative to Sunrise. TE/VS would provide a new, high-voltage transmission path for importing energy into the SDG&E system. Currently, the major transmission paths into the San Diego area are a set of 230 kV lines from the vicinity of the San Onofre substation to the north,<sup>2</sup> and a single, 500 kV circuit from the east, connecting the Miguel and Imperial Valley substations, known as the Southwest Power Link (“SWPL”). The TE/VS line would provide a new transmission path between SCE and SDG&E at the northern boundary of the SDG&E service area. In addition to increasing the transmission import capability of the SDG&E system to improve system reliability, this new northern connection would tie SDG&E, for the first time, into California’s 500 kV transmission links extending into the Pacific Northwest and Canada. Entirely apart from the diversity this would create, the location is away from existing transmission and its exposure to fire risk. TE/VS also would increase SDG&E’s access to competitive power supplies in the WECC region and to renewable generation under development north of San Diego, most prominently the wind-powered resources of the Tehachapi area.

Given the importance to the analysis of alternatives to the proffered facilities, and that TE/VS is a proffered alternative to Sunrise, it is particularly important that

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Nevada Hydro’s application is designated by FERC as Project No. 11858. The application includes a request for authority to construct the TE/VS line and the FERC Staff’s Final Environmental Impact Study issued in January 2007 evaluates the combined projects. Federal Energy Regulatory Commission Office of Energy Project, Final Environmental Impact Statement, Lake Elsinore Advanced Pumped Storage Project, FERC Project No. 11858 (Jan. 2007). However, because some parties have expressed or implied concerns that FERC may lack statutory authority to license TE/VS for operation on a stand-alone basis or for transmission of power other than that produced by LEAPS, Nevada Hydro has chosen to apply to this Commission for a CPCN under the California Public Utilities Code.

<sup>2</sup> The Western Electricity Coordinating Council (“WECC”) designates this as the South of Path 44 interface.

consideration of TE/VS costs and benefits rest upon accurate and competent evidence. SDG&E does not meet this standard. The analyses offered by the proponents systematically undervalue TE/VS (even by omission from the base case) and overstate its associated costs.

TE/VS is addressed and defined incorrectly for purposes of this proceeding. In their affirmative cases, Sunrise proponents evaluated an alternative that each called “LEAPS,” representing the LEAPS pumped storage generation and the TE/VS transmission line together. This approach suffers from two fundamental flaws. First, a proper economic analysis of Sunrise should have been premised on a base case that includes the TE/VS line. That was the basis on which the CAISO studied Sunrise in its CAISO South Regional Transmission Planning (“CSRTP”) stakeholder process,<sup>3</sup> the basis on which the CAISO’s management recommended approval of Sunrise to the CAISO board, and thus the basis on which the CAISO board approved Sunrise. It was also effectively a part of the Assigned Commissioner’s Scoping Memorandum of November 1, 2006, which required SDG&E and the CAISO to present evidence addressing how TE/VS and other planned transmission facilities would affect the timing of any need for the Sunrise project.<sup>4</sup> Nevertheless, for reasons that SDG&E and the CAISO never explained on this record, both the Sunrise proponents modified their base cases to exclude TE/VS when the time came to present evidence to this Commission.

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<sup>3</sup> See Ex. No. SD-2, App. I-1 (CAISO South Regional Transmission Plan for 2006) (hereafter “CSRTP Report”).

<sup>4</sup> See Assigned Commissioner and Administrative Law Judge’s Scoping Memo and Ruling, A.06-08-010, at 14 (Nov. 1, 2006) (“Scoping Memo”).

Second, even if SDG&E and the CAISO had offered reasons for omitting TE/VS from the base case, the explanation would have been hollow. In fact, neither examined TE/VS as a stand-alone project until the CAISO, apparently at the request of the Commission's Energy Division staff, did so in its Part V and rebuttal presentations. By contrast, Nevada Hydro presented evidence which demonstrated convincingly that combining the LEAPS and TE/VS projects for purposes of evaluating alternatives to Sunrise was indefensible. The LEAPS generation is not a direct substitute for Sunrise. It would not be located in the San Diego service area and, obviously, would not transmit energy to SDG&E load. See Ex. No. N-7 at 5-6.

Faced with the developing record, the CAISO conceded implicitly, in extensive "errata" that significantly modified its previous analyses of TE/VS both as an alternative and in combination with other potential alternatives, that its treatment of TE/VS was mistaken. Of course, the CAISO's late analyses using TE/VS as a stand-alone project do not remedy the unwarranted omission of TE/VS from the base case. Nevertheless, as Nevada Hydro will explain below, even if TE/VS is (though it should not be) treated solely as an alternative, rather than as an element of the base case, the evidence ultimately demonstrates that, relative to Sunrise, TE/VS is a lower-cost, and cost-effective, means of meeting SDG&E's reliability requirements and of providing SDG&E and its customers with energy cost savings.

Moreover, this conclusion would not be different even if the Commission largely accepted the CAISO's essentially speculative estimates of savings in the costs of procuring renewable resources that Sunrise purportedly would provide. In fact, the record shows that, even using the CAISO's highly questionable renewables-cost

estimating methodology, TE/VS in combination with the proposed Green Path North transmission project, would produce virtually the same levelized net benefit for ratepayers as the CAISO claims for Sunrise. Factoring out the CAISO's arbitrary substitution of an unsubstantiated, excessive cost estimate for TE/VS merely underscores the point.

For these and other reasons that Nevada Hydro explains below, the Commission should find that the record is insufficient to grant a certificate for the Sunrise project. A more prudent and economical course of action for SDG&E's and CAISO's ratepayers outside SDG&E (who bear about 90% of the cost of any new, high-voltage transmission project) would be to rely on TE/VS to meet the near-term reliability requirements of the SDG&E system. This approach would allow critical time (until at least 2015, even if TE/VS increases SDG&E's import capability by only 500 MW) to determine whether more generation will be built near the SDG&E load center, how successful California's new, aggressive demand response and solar initiatives will be, and whether the nascent Stirling solar thermal generation technology that SDG&E hopes Sunrise will advance will be commercially viable.

## **II. PROCEDURAL HISTORY**

Omitted.

## **III. STANDARD OF REVIEW**

This proceeding arises from SDG&E's application under section 1001 of the California Public Utilities Code ("Code") for a "certificate that the present or future public convenience and necessity require or will require . . . construction" of the Sunrise project. Cal. Pub. Utils. Code § 1001. Section 1002(a) of the Code requires the Commission to consider several enumerated factors before issuing a certificate and section 1002.3 explicitly requires consideration of cost-effective alternatives to the applicant's proposal. Section 1005(a) authorizes the Commission to grant or deny a certificate, or to grant such a certificate subject to "such terms and conditions . . . as in its judgment the public convenience and necessity require." Id. 1005(a).

The applicant, here SDG&E, bears the burden of proving that the proposed certificate is warranted. Pac. Gas & Elec. Co., D.91-04-071, 39 CPUC2d 615, 1991 Cal. PUC LEXIS 223, at \*16-\*17 (1991); MHC Acquisition One, L.L.C., D.98-12-077, 84 CPUC2d 210, 1998 Cal. PUC LEXIS 921 (1998). That burden includes the burden of establishing that the proposed project is cost-effective. See Cal. Pub. Utils. Code § 701.1(a) (legislative declaration that "a principal goal of electric and natural gas utilities' resource planning and investment shall be to minimize the cost to society of the reliable energy services that are provided by natural gas and electricity").

## **IV. PROJECT DESCRIPTION AND SCOPE**

Omitted.

## V. NEED FOR THE PROJECT

### A. Analytical Baseline (Scoping Memo at 12-15)

A properly developed baseline (or base case, as it generally is called in the record) for analysis of the proposed Sunrise project must include the proposed TE/VS line. See Ex. No. N-1 at 7-8. This point is fully developed in subsection A.4 below.

**1. Analysis Period (id. at 13).**

Omitted.

**2. Consistency with Prior Rulings and Decisions (id.)**

Omitted.

**3. Energy Efficiency, Demand Response, and Onsite Generation Additions (id. at 13-14).**

Omitted.

**4. Generation and Transmission Additions (id. at 14).**

The Scoping Memo stated that SDG&E’s evidence supporting the need for its project must identify as part of the analytical baseline “all approved or planned additions to the transmission system in and to the Project Area.”<sup>5</sup> This, both SDG&E and the CAISO failed to do. Because the record omits analysis of the benefits of Sunrise if TE/VS is constructed first, i.e., with TE/VS included in the base case against which the benefits of Sunrise are assessed, it is fundamentally deficient.

In this respect, both SDG&E and CAISO departed from the framework on which the CAISO board’s approval of the Sunrise project was based. The CAISO evaluated the

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<sup>5</sup> Scoping Memo at 14. The “Project Area” is defined as SDG&E’s “service territory and the regions that supply imported power to the SDG&E service territory in California, the inland Southwest, and Mexico.” Id. at 12.

proposed Sunrise project in its CSRTP in 2006. CSRTP was a publicly noticed, stakeholder process through which the CAISO proposed to evaluate the economics of and reliability need for three large transmission projects, the Tehachapi transmission project, Sunrise, and “LEAPS,” defined as a “500kV transmission line project . . . that would connect SCE’s transmission system with that of SDG&E[ ].”<sup>6</sup> The first project for which formal analysis was completed was Sunrise, concerning which the CAISO staff produced a detailed report in August, 2006. Id.

The CAISO staff’s report states that their study treated both LEAPS-TE/VS and the Tehachapi projects as part of the baseline, i.e., that both of the other projects would be built before Sunrise. CSRTP Report at 25-26. This particularly made sense with respect to TE/VS. As Mr. Wait explained in his testimony for Nevada Hydro, TE/VS was originally conceived as an alternative route for the Valley-Rainbow Interconnect project that SDG&E proposed in 2000. Ex. No. N-1 at 4.<sup>7</sup> Valley-Rainbow was a proposed 500 kV transmission line that would have connected SCE’s Valley substation and a proposed new Rainbow substation in the northern part of the SDG&E system. Id.<sup>8</sup>

The CAISO staff reported to the CAISO board in March 2001 that TE/VS would be the “functional equivalent” of Valley-Rainbow. Ex. No. N-3 at 4. Accordingly, they recommended, and the CAISO board adopted, a resolution “Find[ing] that a 500 kV Project, such as the Valley-Rainbow project, is needed (without selecting a preferred

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<sup>6</sup> CSRTP Report at 1.

<sup>7</sup> See also id. at 6 (citing 2002 screening analysis which identified TE/VS as an alternative to Valley-Rainbow through the Cleveland National Forest).

<sup>8</sup> TE/VS would connect to the SDG&E system at a new substation in Camp Pendleton, rather than at the location of the proposed Rainbow substation. Id.

near-term alternative and without regard to routing) to address the identified reliability concerns of the San Diego and southern Orange county portion of the ISO grid.” Ex. No. N-4. Noteworthy in the present context is that the board did not link its need finding with a particular project or route; instead, it determined there is a need for “a 500 kV Project” like Valley-Rainbow – and thus, also like TE/VS, the “functional equivalent” of Valley-Rainbow.

Accordingly, in the CSRTP, the CAISO staff evaluated the economic benefits of Sunrise not only on the assumption that it would be the only project built, but also under the premise that TE/VS (and the Tehachapi lines) would be constructed before Sunrise. See, e.g., CSRTP Report at 11, 38. This was appropriate; the staff included in the base case “[m]ajor 230kV and above voltage transmission projects that have been approved by the CAISO Board.” Id. at 27. TE/VS certainly falls in that category, based on the CAISO board’s non-specific 2001 finding of a need for SDG&E to have a 500 kV transmission link to the north.

Unaccompanied by explanation or valid reason, for this proceeding the CAISO appears to have rejected the approach upon which its own board relied in favor of a new approach it did not offer to its board. Here, the CAISO treats TE/VS solely as an alternative and, at least until effectively directed otherwise in its Part V testimony,<sup>9</sup> only as a single project comprised of Nevada Hydro’s proposed transmission line and the LEAPS pumped storage plant. The CAISO’s lack of explanation why it removed TE/VS from its base case is telling: the revised methodology is unsupportable from the

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<sup>9</sup> See Ex. No. I-5.

standpoint of proper analysis. The only basis for the change can be that the data resulting from the revised methodology creates the appearance of support for Sunrise.

SDG&E likewise excluded TE/VS from its base case without explaining why. Instead, like the CAISO in its initial testimony, SDG&E purported to evaluate an alternative comprised of LEAPS and TE/VS together. This approach is flawed of itself, as Nevada Hydro will explain in Section VI below.

Finally, both SDG&E and the CAISO avoided the Scoping Memo's directive that they evaluate how TE/VS, clearly a "planned addition[] to the transmission system in and to the Project Area, . . . might affect the timing of the need for the proposed project."<sup>10</sup> Instead, the only testimony SDG&E offered regarding the effect of TE/VS on the timing of any need for Sunrise was its speculation that completion of LEAPS-TE/VS in 2008 would not be feasible. Ex. No. SD-14 at 19.

Even if true, that claim is immaterial. What matters is whether TE/VS foreseeably will be in service by 2010, the earliest time SDG&E asserts, that Sunrise is required. Nevada Hydro's evidence that its development is on track to place TE/VS in service in 2009 is unrefuted (Ex. No. N-1 at 3-4) as underscored by its recent filing of its CPCN application.<sup>11</sup> The project's addition to the California Energy Commission's ("CEC's") Strategic Transmission Investment Plan further emphasizes the error of SDG&E's position.<sup>12</sup> Moreover, SDG&E's own evidence shows that, even if TE/VS added just 500

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<sup>10</sup> Scoping Memo at 14.

<sup>11</sup> Application of The Nevada Hydro Company for a Certificate of Public Convenience and Necessity for the Talega-Escondido/Valley-Serrano 500 kV Interconnect, Application 07-10-005 (Oct. 9, 2007).

<sup>12</sup> See CEC, Final Committees Report, *Strategic Transmission Investment Plan*, CEC-700-2007-018-CTF, at 7-8, 105-08 (Oct. 2007).

MW of incremental import capability for SDG&E,<sup>13</sup> TE/VS would meet SDG&E's reliability need through 2015. 13 Tr. 1698-99 (Strack, SDG&E); Ex. No. N-14. At the 1000 MW of additional import capability that Nevada Hydro claims for TE/VS, there would be no local capacity deficit until 2020, also according to SDG&E's own analysis.

Id.

In short, construction of TE/VS would defer the need for additional transmission investment on the SDG&E system for at least eight years, and perhaps for as long as thirteen years. Additional to the value of this deferral is the reduced capital cost of TE/VS. TE/VS would cost only a fraction of the cost of Sunrise: \$380 million (2010 \$)<sup>14</sup> vs. \$1,265 million.<sup>15</sup> Obviously, if a choice of only one new transmission line were to be made, TE/VS would be the better, smarter investment for SDG&E ratepayers.

#### **5. Load Growth Scenarios (id. at 15).**

Omitted.

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<sup>13</sup> In fact, TE/VS will increase SDG&E's import capability by 1,000 MW. See Ex. No. N-7 at 6.

<sup>14</sup> Nevada Hydro estimated the capital cost of TE/VS at \$350 million in 2006 dollars. Ex. No. N-1 at 3. Though both SDG&E and the CAISO contrived multiple ways to inflate that cost excessively, the CAISO's witness Orans ultimately acknowledged that, if the Commission put aside those contrivances (as it should), the proper amount for comparison purposes here is the 2006 dollar estimate, inflated by 2% per year to 2010 dollars. See Tr. 2406 (Orans, CAISO). The \$350 million estimated cost of TE/VS, inflated by 2% per year for four years is approximately \$378.8 million.

<sup>15</sup> Ex. No. SD-5 at V-9.

**B. Project Costs**

**1. Cost Estimates**

**2. Cost Cap**

Omitted.

**C. Reliability**

As noted above, SDG&E claims a need for additional local capacity in its service area in 2010 as further justification for Sunrise. While Nevada Hydro does not dispute that additional transmission capability and/or local generation will be needed in San Diego in the coming years, the issue is not some generality of need but the details of the timing and extent to which load growth and/or retirement of local generation will create a “reliability deficit.” The details, which neither SDG&E nor the CAISO present, are needed in order sensibly to plan transmission additions to increase SDG&E’s transmission import capability. Without these details, the assertion or intuitive conclusion is insufficient to justify construction or cost.

This analytical deficiency is underscored by SDG&E and the CAISO’s disregard for another important aspect of system planning: integration of the high-voltage transmission grid. Although SDG&E stressed that it has only two 500 kV connections to the Western electric grid,<sup>16</sup> it has proposed – and the CAISO has wholeheartedly endorsed – a project that would not provide a new connection to the “outside world” for SDG&E’s customers. In contrast, TE/VS would better integrate SDG&E with the CAISO grid, providing a new, direct, 500 kV connection between the SDG&E and SCE systems. Both SDG&E and the CAISO acknowledged the benefits of a new transmission

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<sup>16</sup> See, e.g., *id.* at I-5 – I-6.

line like TE/VS, both in tandem with Sunrise and standing alone. See Tr. 2113:7-2115:3 (Sparks, CAISO); Tr. 659:7-660:5 (Brown, SDG&E).

An additional matter not addressed at the hearing but no less important, the recent California fires underscore the need for import capability to the north, away from existing transmission links. TE/VS would be to the north while Sunrise would be in the same area as the Southwest Power link. Recent events in California emphasize the criticality of this factor.

#### **D. Access To Renewables**

SDG&E asserts that providing access to renewable generation resources is one of three justification bases for Sunrise. SDG&E also asserts that construction of Sunrise will facilitate the development of new renewable generation resources in the Imperial Valley. Its general assertions notwithstanding, however, SDG&E never claims or demonstrates that SDG&E needs Sunrise to meet California's renewable portfolio standard, or that Sunrise will lower its or the state's cost of acquiring renewable resources. Presumably, SDG&E would have made these contentions if the record supported them.

By startling contrast, the CAISO claims enormous benefits for Sunrise related to acquisition of renewables, asserting that Sunrise will enable California to meet its renewables portfolios standard ("RPS") objective at substantially lower costs than it would experience without Sunrise. It is sufficient here to note that the divergence between the positions of SDG&E and the CAISO leaves uncertain the role of renewables procurement costs in the evaluation of Sunrise. Because SDG&E does not claim such benefits, its application should stand or fall based on costs and benefits unrelated to acquisition of renewables. On the other hand, the CAISO has devoted enormous

resources to an effort to create a forecast of renewables procurement costs at an almost staggering level of detail, a projection that evolved into the linchpin of its contention that the benefits of Sunrise outweigh its costs. The CAISO's entire analysis, however, rests upon the premise –unproven and speculative – that renewable resources will be developed in the Imperial Valley.

SDG&E's reliance on the 2005 report of the Imperial Valley Study Group ("IVSG") is misplaced. The Imperial Irrigation District ("IID"), SDG&E's putative partner and expected owner of the Imperial Valley transmission facilities associated with Sunrise, reported that it has not received generation interconnection requests sufficient to justify the investment required to build the anticipated transmission upgrades. Ex. No. ID-1 at 6. IID's Mr. Montano further testified that the locations and timing of proposed renewable generation in the Imperial Valley have been much different from the IVSG forecast. Tr. 2671 (Montano, IID). Other intervenors provided extensive evidence that the Stirling engine-based solar thermal generation for which SDG&E has contracted and which Sunrise could carry is a promising, but, at best, nascent technology that probably will remain far from commercially viable when SDG&E wants to complete and begin operation of the Sunrise line. See, e.g., Ex. No. C-3. Finally, CAISO's renewables cost projections are highly uncertain at best, and fairly described as speculative. Nevada Hydro will elaborate on these uncertainties in Section VII.A.3 below.

Nevada Hydro takes no position on whether or how improved access to renewable generation or more economical procurement of renewables should be weighed as measures of the need for Sunrise. But if those factors are to be considered elements of the claimed need for Sunrise, the record supports no finding that they yield any benefit

here. Without reliable record evidence that renewable resources will be developed in the Imperial Valley, there is no basis for any finding that Sunrise would enhance imports of renewable energy.

The Commission should observe two final aspects of the evidence as it relates to access to renewable resources. First, it is undeniable that TE/VS would not offer direct access to renewable generation for SDG&E. Nevertheless, the TE/VS line would provide SDG&E with a new path for importing energy from the north, and thus with indirect, but still valuable, access to Tehachapi wind resources and other renewable generation resources north of San Diego.<sup>17</sup> Second, to the extent that encouraging development of renewable generation in the Imperial Valley is an objective of the Sunrise project, TE/VS together with the proposed Green Path North project would offer a reasonable, lower-cost and cost-effective alternative that would achieve substantially the same amount of Imperial Valley development. Nevada Hydro will discuss this evidence in Section VI.A.7.

**VI. ALTERNATIVES (id. at 14-15, and Cal. Pub. Utils. Code §§ 1002.3, 1003 (c), (d))**

**A. Transmission**

**1. Path 44 Upgrades**

Omitted.

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<sup>17</sup> See, e.g., CS RTP Report at 48. SDG&E may attempt to refute this rather obvious proposition by repeating its observation that it has received no bids from Tehachapi wind resources in response to its recent requests for offers of new generation resources. But that can hardly be surprising, since there currently is no high-voltage transmission path into SDG&E that would provide Tehachapi generators with economical (i.e., reasonably uncongested) transmission service to facilitate sales to SDG&E at competitive prices.

**2. Mexico Light**

Omitted.

**3. Second SWPL**

Omitted.

**4. Talega-Escondido/Valley-Serrano**

The record demonstrates that TE/VS is likely to be completed earlier than Sunrise and would satisfy SDG&E's local capacity needs at least through 2015, and probably beyond the end of the 10-year analysis period for this proceeding, which ends in 2020. The TE/VS line's benefits in terms of better grid integration and the operational advantages of the phase shifting transformers Nevada Hydro will install at its Camp Pendleton substation supplement the project's other favorable attributes.

Nevada Hydro's testimony that TE/VS will be in service late in 2009 is unrefuted and unquestioned.<sup>18</sup> The CAISO did not even question that evidence. And all SDG&E could muster was its speculative assertion, noted earlier, that purported uncertainties about the regulatory status of TE/VS would make a 2008 in-service date unlikely. Ex. No. SD-14 at 19. Notably, any merit to that contention is nullified by Nevada Hydro's filing of a CPCN application. More importantly, of course, since the objective of the Sunrise project is to bring incremental capacity to SDG&E beginning in 2010, Nevada Hydro's proposed 2009 in-service date undeniably means that TE/VS will provide incremental capacity to SDG&E before Sunrise.<sup>19</sup>

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<sup>18</sup> Ex. No. N-1 at 4.

<sup>19</sup> Reasons to doubt SDG&E's ability to complete Sunrise by its proposed in-service date of June 2010 compound this conclusion. SDG&E itself has questioned whether the delay in the draft environment impact report resulting from the Assigned Commissioner's Ruling of July 28, 2007, would prevent completion of Sunrise in the time frame SDG&E

How much incremental transmission import capacity TE/VS would provide or, more precisely, the cost of upgrades to the SDG&E system claimed to be necessary to accommodate such increased capability, is contested. But the Commission must not allow that controversy to distract it from a crucial, undisputed fact: TE/VS would increase SDG&E's import capability under G-1/N-1<sup>20</sup> conditions by 500 MW with no significant upgrades to the SDG&E system. That evidence, in turn, leads to another critical, and also undisputed, finding: the 500 MW increase in SDG&E's G-1/N-1 import capability that TE/VS would provide is, of itself, enough to meet SDG&E's local capacity needs, after the retirement of South Bay, through 2015. The importance of these facts compels an explanation of the evidence establishing them.

The CAISO's witness Mr. Sparks acknowledged that 500 MW of incremental imports to SDG&E from TE/VS under G-1/N-1 conditions can be accomplished with no significant upgrades to the SDG&E transmission system. See Ex. No. I-2 at 74. Indeed, in that scenario, the witness found only "some small problems that the CAISO assumed to have been fixed," all of them at the subtransmission level. Id.; 16 Tr. 2156:10-23 (Sparks, CAISO).<sup>21</sup>

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proposed. See San Diego Gas & Electric Company's Motion to Clarify Assigned Commissioner's Ruling and for a Schedule Adjustment, A.06-08-010, at 3-4 (Aug. 16, 2007). Further, as of the close of the Phase I evidentiary hearing, SDG&E still had not reached an agreement with IID regarding construction of the elements of the project to be located in Imperial County, particularly the important, new San Felipe substation, which SDG&E did not include in its CPCN application. 19 Tr. 2644 (Montano, IID); Ex. No. SD-5 at Chap. V, Section B (Proposed Scope).

<sup>20</sup> G-1/N-1 represents the system conditions when the largest generator and the largest transmission facility are out of service at the same time.

<sup>21</sup> Mr. Sparks went on in his testimony to assert that "further import increases would overload three large transmission lines," and referred to another portion of his testimony, where he summarized his "San Diego import limit analysis." Id. Cross-examination revealed, however, that the "overload [of] three large transmission lines" that Mr. Sparks

SDG&E's local capacity requirement analysis, in turn, establishes that the 500 MW of incremental G-1/N-1 import capability from TE/VS would satisfy SDG&E's local capacity needs through at least 2015. Exhibit No. N-14, a table from SDG&E's workpapers, shows that incremental imports from TE/VS of 795 MW would fulfill SDG&E's local capacity needs through 2019. 13 Tr. 1698-99 (Strack, SDG&E). The same data establish that incremental imports of 500 MW, rather than 795 MW, would meet local capacity requirements through 2015.<sup>22</sup>

In fact, TE/VS would increase SDG&E's G-1/N-1 import capability by 1,000 MW or more, as its witnesses testified (not merely the 500 MW discussed above). See Ex. No. N-7 at 6. Indeed, Mr. Depenbrock explained that he has evaluated the high-voltage components of the SDG&E system and found it possible for TE/VS to provide 1,000 MW of additional import capability with no overloads under G-1/N-1 conditions. 17 Tr. 2346 (Depenbrock, Nevada Hydro). This testimony, plus other undisputed evidence, including the CAISO's acknowledgment that TE/VS would provide 500 MW

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claimed were purportedly found when incremental imports from TE/VS exceeded 500 MW. See 16 Tr. 2138:9-2139:6, 2140:23-2141:27, 2142:3-7 (Sparks, CAISO) (establishing that none of the overloads described in the four-bullet summary of the import limit analysis in Ex. No. I-2 at 75-76 occurred at 500 MW incremental imports from TE/VS). Moreover, there is no indication that Mr. Sparks used the capabilities of the phase shifting transformers that Nevada Hydro will install at its substation interconnecting with the SDG&E system to resolve overloads by re-directing flow from TE/VS. See Ex. No. N-7 at 3; 17 Tr. 2344-47 (Depenbrock, Nevada Hydro).

<sup>22</sup> The simplest way of determining this is to examine the net surplus/deficiency of capacity shown for each year in the bottom line of the chart in Exhibit No. N-14. Because the difference between 795 and 500 is 295, 500 MW of incremental import capability is sufficient to avoid a net deficit so long as the amount on the net surplus/deficiency line of N-14 is equal to or greater than 295. That is true for every year shown on the exhibit through 2015. Another way to demonstrate the same point would be to substitute 3000 MW for 3295 MW on the line labeled "San Diego Area N-1 Import Capability." Again, SDG&E's workpaper data show there would be a net capacity surplus in each year through 2015.

of incremental, G-1/N-1 import capability without material upgrades to the SDG&E system, disposes of SDG&E's claim that it found a need for \$1.8 billion in upgrades to accommodate 795 MW of incremental imports from TE/VS. See Ex. No. SD-14 at 25-26. In this particular respect, SDG&E's testimony and claim should be discredited.

More specifically, SDG&E's assertion that TE/VS upgrades would cost \$1.8 billion is dramatically inconsistent with the CAISO's analyses. For example, a 2004 CAISO study found that TE/VS and Sunrise each could increase SDG&E's G-1/N-1 import capability by approximately 750 MW with comparable, relatively minor upgrades to the SDG&E system. See Ex. No. N-6 at 13, 17 (3600 MW import cases for "ISEP" (Sunrise) and "LEAPS" (TE/VS), respectively). In the instant case, as just discussed, the CAISO testified that TE/VS could increase imports by 500 MW with virtually no transmission upgrades.

The inconsistencies of SDG&E's position are manifest. As SDG&E would have it, Sunrise now can provide 1,000 MW of incremental, G-1/N-1 imports with essentially the same, or even fewer, upgrades than the CAISO found to be needed for 750 MW of incremental imports in 2004, yet 795 MW of additional, G-1/N-1 imports from TE/VS would require enormous upgrades at an aggregate cost of approximately \$1.8 billion. Ex. No. SD-14 at 25-26. SDG&E never explains how just 45 MW more import from TE/VS than the CAISO found in 2004 to require only modest upgrades has transformed to a \$1.8 investment requirement. SDG&E did not challenge the CAISO's finding in this case that 500 MW G-1/N-1 incremental imports from TE/VS could be accomplished with virtually no transmission-level upgrades at all, yet offers no explanation why an additional increment of 295 MW (i.e., going from 500 MW to 795 MW of incremental imports)

from TE/VS supposedly would require an investment greater than the estimated cost of TE/VS and LEAPS combined.<sup>23</sup>

Furthermore, SDG&E's failed to support its estimates of upgrade costs. First, SDG&E witness Ms. Brown, who introduced the \$1.8 billion claim in her supplemental testimony (Ex. No. SD-14 at 25-26), never identified any of the upgrades or why they would be needed. She also disavowed any knowledge of how SDG&E developed any of its system upgrade cost estimates. See 3 Tr. 358-362 (Brown, SDG&E). Ms. Brown's abandonment of her own testimony should be enough, standing alone, to convince the Commission to give SDG&E's upgrade estimates no weight.

Second, if any doubt could remain, Mr. Yari, the SDG&E witness on whom Ms. Brown tried to pin responsibility for the upgrade cost estimates, likewise proved unable to document or explain the \$1.8 number. See 6 Tr. 819-28 (Yari, SDG&E). Mr. Yari also admitted that SDG&E's own engineers questioned whether two of the upgrades SDG&E alleged to be needed in connection with TE/VS were proper or least-cost solutions to "problems" SDG&E's studies supposedly identified. 6 Tr. 840 (Yari, SDG&E).<sup>24</sup> Moreover, all of the upgrade costs are "conceptual" estimates, which are intended to be higher than actual costs of construction. 6 Tr. 852-53 (Yari, SDG&E).

The relevant evidence, taken as a whole, permits but one conclusion: that SDG&E's estimates of the upgrades needed to accommodate incremental imports from TE/VS are unsubstantiated and should be disregarded.

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<sup>23</sup> The estimated cost of TE/VS is \$350 million and the cost of LEAPS is estimated at \$750 million, for a total of \$1.1 billion (2006 \$). See Ex. No. N-1 at 3.

<sup>24</sup> Interestingly, those two items together comprised about \$1.2 billion, or two-thirds, of the purported \$1.8 billion tab. Id.

Finally, the CAISO's claim that incremental imports greater than 500 MW from TE/VS would overload, and thus require upgrades to "three large transmission lines," Ex. No. I-2 at 74, also deserves no weight, as now explained (the CAISO assigned no costs to these purported requirements).

The "three large transmission lines" that the CAISO says would be overloaded if incremental TE/VS imports exceeded 500 MW are identified in the first two of the three bulleted paragraphs at the top of page 76 of Exhibit No. I-2.<sup>25</sup> In the first paragraph on page 76, the CAISO asserts that adding a fourth San Onofre-San Luis Rey 230 kV line to correct an overload of the three existing lines would be "challenging" because, in part, a new right-of-way would be needed. Use of the subjective, non-factual, term "challenging," can convey a false impression that the required upgrade would be costly or difficult. In fact, though, one set of SDG&E's 230 kV towers traversing the entire 18 miles between San Onofre and San Luis Rey is double-circuit towers that now carry only one line.<sup>26</sup>

The other two claimed overloads, referenced in the second bulleted paragraph, are equally dubious. They are not overloads under G-1/N-1 conditions. Instead, they are overloads found when the system is operating at G-1/N-1 and a third contingency, or outage, is taken. 15 Tr. 2119-20 (Sparks, CAISO). The CAISO did not and cannot justify this approach to its import analyses.

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<sup>25</sup> CAISO witness Sparks acknowledged that the bulleted paragraph at the bottom of page 75 does not involve an overload. 16 Tr. 2138:9-2139:6 (Sparks, ISO). The third of the three bulleted paragraphs on page 76 relates to subtransmission issues. Id. 2156:10-23 (Sparks, ISO).

<sup>26</sup> Ex. No. N-13 at 2 (SDG&E response to UCAN data request no. 5, question 7).

The CAISO's grid planning criteria and WECC reliability criteria require conformance with G-1/N-1, i.e., having sufficient generation plus import capability to meet 1-in-10-year peak load when the system's largest generator and largest transmission facility are out of service.<sup>27</sup> Both sets of criteria state that, in any multiple contingency situation other than G-1/N-1, involuntary load-shedding is acceptable.<sup>28</sup> Mr. Sparks confirmed that the reliability deficit analysis the CAISO presented in its testimony determined only whether SDG&E will have sufficient generation plus import capability to meet 1-in-10-year peak load when the system's largest generator and largest transmission facility are out of service, no more. 16 Tr. 2131-35 (Sparks, CAISO). He also acknowledged that a system that has sufficient generation capacity plus transmission import capability to meet its 1-in-10 peak load under G-1/N-1 conditions is in compliance with NERC, WECC and CAISO reliability planning criteria. Id. at 2130-31 (Sparks, CAISO).

Mr. Sparks nevertheless defended the CAISO's "G-1/N-1 plus" approach as appropriate for an LCR, or local capacity requirement, evaluation. See, e.g., Tr. 2135 (Sparks, CAISO). It is unnecessary to argue that claim, however, because it is beside the point. The CAISO's written testimony on its reliability evaluations never purports to apply any criteria other than G-1/N-1. Nothing in those planning criteria either requires or describes the "G-1/N-1 plus" standard that the CAISO used in its import analysis for TE/VIS. See CSRTP Report at 30-31. Because there is no justification for the CAISO's application of unduly strict, unstated criteria in its assessments for this case, the

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<sup>27</sup> See CSRTP Report at 30-31.

<sup>28</sup> Id.; 16 Tr. 2139-40 (Sparks, CAISO).

Commission should disregard the CAISO's claim at page 76 of Exhibit No. I-2 that more than 500 MW of incremental imports from TE/VS would overload the San Luis Rey-Mission #1 and #2 lines.

**5. Southern Route Alternatives**

Omitted.

**6. Coastal Route Alternatives**

Omitted.

**7. Others.**

In its assessment of alternatives to Sunrise, the Commission should give careful consideration to the final, amended results of the CAISO's net benefits computations for the alternative that the CAISO still calls "Green Path+LEAPS." In fact, however, the alternative is modified in this presentation to exclude the costs of the LEAPS pumped storage plant, so the economic analysis reflects only the combined transmission costs of TE/VS and Green Path North (referred to here as "TE/VS+Green Path"). The CAISO's revised rebuttal testimony shows a net levelized benefit for TE/VS+Green Path that is very comparable to the result for Sunrise: \$45 million per year for TE/VS+Green Path vs. \$52 million per year for Sunrise. See Ex. No. I-6 at 42, Table 6.

The Commission should not overlook, however, that the result shown in Table 6 for TE/VS+Green Path is based on the CAISO's unjustified use of an inflated cost estimate of \$536 million for TE/VS. See 16 Tr. 2143:21 – 2145 (Sparks, CAISO); Ex. No. N-21. As the CAISO's witness Dr. Orans confirmed, to remove the effect of that excessive cost estimate for TE/VS, the Commission should subtract \$12 million from the

amount shown on line 16 of Table 6 and should add \$12 million to line 17, the net levelized benefit. 17 Tr. 2407-09 (Orans, CAISO).

Making that correction indicates that TE/VS+Green Path would have an estimated levelized net benefit of \$57 million per year, compared with the \$52 million per year the CAISO estimated for Sunrise. Thus, the CAISO's own analysis, when modified appropriately, supports Nevada Hydro's view that TE/VS offers a cost-effective and economical alternative to Sunrise.

**B. Non-Wires**

**1. AMI**

Omitted.

**2. Other Demand Response**

Omitted.

**3. Energy Efficiency**

Omitted.

**4. In-Area Combined Cycle Generation**

Omitted.

**5. In-Area Peaking Generation**

Omitted.

**6. In-Area Renewables (Wind, PV, Biomass, other)**

Omitted.

**7. Out-of-Area Renewables (North of SONGS)**

Omitted.

**8 Out-of-Area Renewables (Imperial Valley and Mexico)**

Omitted.

**9. LEAPS**

Both SDG&E and the CAISO included in the alternatives to Sunrise that they evaluated a project they called “LEAPS.” In both instances, this alternative project was comprised of both the TE/VS transmission line and the LEAPS pumped storage generation units. See Ex. No. SD-14 at 23-25. However, neither the CAISO nor SDG&E explained why TE/VS combined with LEAPS, rather than TE/VS alone, are properly presented as an alternative to Sunrise.

In fact, for purposes of comparisons with Sunrise, the LEAPS pump storage facility is not a necessary component of TE/VS. Sunrise is a transmission only project that will bring power into the SDG&E load area. Therefore, appropriate alternatives to Sunrise are new or re-powered local generation that could be substituted for Sunrise’s incremental import capability or other transmission projects that would increase imports in the SDG&E load area. The LEAPS facility will be located near Lake Elsinore, outside SDG&E’s service area. Ex. No. N-1 at 2. Therefore, for proper analysis, LEAPS cannot be substituted, for reliability purposes, for local San Diego generation or for transmission import capability into the San Diego load area. Ex. No. N-7 at 5-6 (Deppenbrock).

The CAISO compounded this error in its affirmative case by bundling both LEAPS and TE/VS with the proposed Green Path North transmission facilities to form a single, alternative project that it called “Green Path+LEAPS.” The CAISO never clearly

explained why it constructed this alternative, and there is no interdependence between Green Path and either LEAPS or TE/VS that could justify combining them. See Ex. No. N-7 at 3-5 (Depenbrock); Ex. No. N-9 at 4-5 (Auclair). In short, the CAISO’s hypothetical, “Green Path+LEAPS” project has no validity as an alternative to Sunrise from either an economic or a system planning perspective.

The absence of any economic or other justification for combining Nevada Hydro’s projects with each other or with Green Path suggests that the CAISO included LEAPS in its cost-benefit assessments solely to inflate the cost of the alternatives it chose with which to compare the cost of Sunrise. Thus, in its Part II testimony, the CAISO pegged the capital cost of “Green Path+LEAPS” at \$1.5 billion. Ex. No. I-2 at 42. However, the transmission components of that combination, i.e., the Green Path lines and TE/VS, would have a combined cost of only \$ 577 million. Id.<sup>29</sup> Properly enumerating TE/VS only would reduce the cost of the alternative to just \$350 million, more than 75% less than the CAISO used. Id.

Moreover, when pushed by the Energy Division to evaluate alternatives including TE/VS without the LEAPS generation, the CAISO then used a higher capital cost for TE/VS, \$536 million, rather than the \$350 million estimate by Nevada Hydro on which the CAISO itself previously relied. See Ex. No. I-6 at 22; Ex. No. N-21. But before making the change, the CAISO had never questioned the validity of Nevada Hydro’s estimate and did not ask Nevada Hydro to update or confirm that estimate.

Finally, even if either there could be any justification for including the cost of the LEAPS facility in cost evaluations of TE/VS as an alternative to Sunrise, SDG&E and

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<sup>29</sup> This represents \$350 million for TE/VS, plus the CAISO’s allocated cost for Green Path of \$226.8 million. See id. Table 3.6.

the CAISO's assessments are nevertheless defective because they exclude the benefits of LEAPS. See Ex. No. N-9 at 5-7 (Auclair, referring to CAISO Part II testimony, second errata). Economic analyses that include costs but not benefits obviously are of no probative value and deserve no weight.

The CAISO made some effort to correct this in errata to its rebuttal testimony. See Ex. No. I-6 at 76-80. Included in that material was an estimate of economic benefits due to LEAPS' ability to shift energy production from off-peak to peak hours, i.e., to consume power produced at lower, off-peak prices for pumping to fill the project's upper reservoir. Id. Yet, the CAISO still ignored other benefits that LEAPS would provide, such as mitigation of "over-generation" (by consuming off-peak energy production for pumping that otherwise may be in excess of load) and integration of wind and other intermittent generation resources. Id. at 79. The CAISO also took away more than it gave when it likewise changed its methodology for estimating local capacity requirement ("LCR") savings in its Part V testimony. See Ex. No. I-5 at 5-6. Nevada Hydro will elaborate on the errors in that revision of the CAISO's approach in Section VII.A.2 below.

**10. Others**

Omitted.

**C. Combined Wires/Non-Wires Alternatives**

**1. UCAN**

Omitted.

**2. DRA**

Omitted.

**3. SBRP**

Omitted.

**4. TNHC**

For the reasons explained in Section VI.B.9 above, Nevada Hydro contends that it is inappropriate to include the LEAPS generation in alternatives to Sunrise, because LEAPS is neither local generation for SDG&E nor a transmission facility.<sup>30</sup> Therefore, a combination of Nevada Hydro's TE/VS transmission and LEAPS pumped storage projects should not be among the alternatives the Commission considers in this proceeding.

**5. Others**

Omitted.

**D. Delay In The Online Date For The Project**

**1. CAISO**

Omitted.

**2. DRA**

Omitted.

**3. UCAN**

Omitted.

**4. Others**

Omitted.

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<sup>30</sup> While it is true that pumped storage in general and LEAPS in particular is deemed to be "advanced transmission technology" under section 1223 of the Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005), the LEAPS pumped storage plant does not transmit power from one location to another. Therefore, LEAPS is not a substitute for the additional bulk transmission capability that TE/VS or Sunrise would provide.

**E. OTHER**

Omitted.

**VII. ECONOMICS**

**A. Cost/Benefit Analysis**

**1. Production Cost Savings**

Nevada Hydro established, based on the CAISO's own base case model and assumptions and 1,000 MW of incremental import capability, that the TE/VS line would reduce energy production costs for CAISO consumers by approximately \$14 million per year. Ex. No. N-11 at 4-12. TE/VS thus satisfies the cost savings element of TEAM.

**2. Reliability Cost Savings**

There are a number of flaws and questionable assumptions underlying the CAISO's evaluation of the reliability cost benefits of Sunrise and alternatives. In its early testimony, one of the principal errors of concern to Nevada Hydro was a direct result of the CAISO's attribution of only 500 MW of incremental import capability to TE/VS. In fact, the savings in RMR costs and other reliability benefits for SDG&E's customers would be the same for Sunrise and TE/VS, because both would add the same amount of incremental import capacity. See Ex. No. N-9 at 31-32.

In addition, the CAISO valued non-local, non-renewable generation acquired for resource adequacy at zero cost. Id. at 21-27.<sup>31</sup> UCAN witness Mr. Marcus demonstrated

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<sup>31</sup> The CAISO claimed in its rebuttal testimony that Nevada Hydro's witness Mr. Auclair misunderstood their analysis. Ex. No. I-6 at 23:13-16. However, when asked in discovery to identify the portions of its previous testimony that the CAISO believes demonstrate that it in fact had attributed a cost to non-local, non-renewable resources, it referred to Tables 4.3 and 4.4 of its Part II testimony. Ex. No. I-2 at 49, 52; see Tr. 2410:14 – 2411:2 (Orans, CAISO). Both of those tables, however, identify costs only for renewable, non-local generation, not non-renewable, non-local resources.

that SDG&E assumed that all non-local RA capacity would be free of charge. Ex. No. U-4 at 69-70, 169-70. He further established that SDG&E contradicted its own obviously erroneous assumption with its claim that no Encina units will be retired as a result of Sunrise providing access to 1000 MW of non-local RA resources because the non-local RA price will be higher than the marginal cost of keeping Encina on-line. Ex. No. SD-15 at 10 (Kruger).

Conceding some errors, the CAISO substantially revised its reliability benefits methodology in its Part V testimony. See Ex. No. I-5 at 4-6, 9-10. However, as the same time, it also broadened the scope of its LCR perspective to encompass the effects of Sunrise and alternatives on LCR needs in the Los Angeles LCR area, as well as in San Diego. From this change, new anomalies arose.

For example, the CAISO's new approach is based on the assumption that although new transmission projects in the San Diego area reduce the San Diego area LCR, the same projects also increase the LA area LCR by exactly equivalent amounts. However, the CAISO's explanation of why a 1 MW reduction in the San Diego area LCR supposedly would lead to a 1 MW increase in the LA Basin LCR is simply implausible. The CAISO's logic is explained in its rebuttal testimony in the context of a 350 MW increase in imports into San Diego on Path 44. See Ex. No. I-5 at 56. According to that testimony, the 350 MW reduction in San Diego LCR associated with that increase in transmission imports would lead to the mothballing of 350 MW of San Diego area generation. Id.

The CAISO made a similar assertion regarding the effects of additional transmission imports into SDG&E via TE/VS: "This (TE/VS) alternative reduces the

LCR in San Diego by 500 MW, *and the 500 MW generation reduction in San Diego increases the LCR in the LA Basin by 500 MW.*” Ex. No. I-5 at 12:7-9 (emphasis added). The CAISO elsewhere explained its assumed “generation reduction in San Diego”:

CAISO analysis has shown that the addition of [TE/VS] would reduce the San Diego area LCR requirement by 500 MW, and the CAISO analysis also assumes that this LCR reduction would cause 500 MW of additional generation in the San Diego area to be temporarily mothballed until load growth was sufficient to drive up LCR contract prices to cover the plants' fuel and variable operating costs. This reduction of generation in San Diego would increase the LCR requirements in the LA Basin by approximately 500 MW. These studies have shown that the San Diego area generation has approximately the same effectiveness as the LA Basin generation on reducing flow on the South of Lugo constraint which dictates the LCR requirements in the LA Basin.

Ex. No. N-22. It also identified why its offsetting LCR changes makes little sense:

We have assumed that the mothballed plants would not be available to sign contracts to meet the LCR needs of the LA Basin. If the mothballed generators in the SDG&E area were available to provide capacity support to the LA Basin . . . , then they could be used to meet the increased LCR requirement in the LA Basin.

Id.

On cross-examination, CAISO witness Mr. Sparks confirmed that the CAISO's new LCR analysis is simply arbitrary. According to the witness, the CAISO assumed that, in the event LCR requirements are reduced in San Diego when a new transmission line is built, an equivalent amount of generation capacity in San Diego will no longer be under RA contracts with the CAISO and, therefore, will essentially become invisible to the CAISO. 14 Tr. 1969:7-1970:5 (Sparks, CAISO). In other words, he acknowledged,

the CAISO's LCR analysis assumes the generation in San Diego is turned off "whether or not the units are [in fact] mothballed." 14 Tr. 1970 (Sparks, CAISO).

Though clearly illogical, the CAISO's revised LCR analysis at least had the same effect on all transmission alternatives. The same is not true of the CAISO's claim that additional Imperial Valley (IV) renewable generation will reduce the LA area LCR.

According to the CAISO, each megawatt of IV generation that qualifies as RA capacity qualifies as LCR capacity for the LA area. See Ex. No. I-6 at 24; Ex. No. I-5 at 10. This approach favors any resource (transmission) plan that can access Imperial Valley generation. For example, since Sunrise would provide connections for IV renewables, the CAISO credits it with benefits for reducing LA LCR. The Green Path North project, the CAISO says, also would reduce the LA LCR for the same reason as Sunrise. Green Path, however, is attributed a smaller benefit based on the CAISO's assumption that Sunrise would lead to more extensive development of IV resources than would Green Path. See Ex. No. I-5 at 10 (Table 1.B).

There are two questionable aspects to this approach. First, in order for IV generation to reduce the LCR for LA, the Imperial Valley and the LA Basin must be in the same LCR area. This seems counterintuitive and the CAISO has not justified this implicit assumption.

Second, the CAISO asserts that each megawatt of IV generation capacity provides a .75 MW LCR benefit for LA because the CAISO assumed that 1 MW of solar thermal generation capacity would provide .7 MW of RA-qualified capacity, while IV geothermal would be 100% RA capacity. Ex. No. I-6 at 26. The weighed average of the solar and

geothermal capacity that the CAISO projects equates to .75 MW of RA-qualified capacity for each megawatt of installed IV renewable capacity, according to the CAISO.

But the solar element of the CAISO's weighted-average RA-qualifying capacity factor for IV renewable generation is questionable, at best. The CAISO based its assumed 70% capacity factor for IV solar thermal generation on the performance of solar power towers, a fundamentally different, and commercially established, solar thermal generation technology from the unproven, dish-Stirling technology for which SDG&E has contracted. Ex. No. N-23; 16 Tr. 2125-2127 (Sparks, CAISO).

The Commission, therefore, should weigh the CAISO's reliability benefits projections very carefully. Though presented authoritatively, the CAISO's analysis is in many respects based on assumptions that are unexplained and, in some instances, seemingly illogical.

### **3. Renewable Cost Savings**

The CAISO predicts that Sunrise will provide significant savings in the costs of procuring renewable resources to meet California's RPS goals, relative to the base case (no project) and alternative cases. The Commission again should understand, however, that this aspect of the CAISO's analysis reflects many assumptions heaped on assumptions. The uncertainty in such an analysis literally multiplies as the joint probabilities of each material assumption are factored. In the end, it is difficult to know whether the outcome is worthy of a decision-maker's confidence.

The CAISO compounds this concern in some important ways. For example, a basic premise of the CAISO's original renewables procurement cost assessment was that 50% of potential renewable resources in the WECC that would be located outside

California would be unavailable, either because they would not be constructed as projected or, if built, the capacity would be sold into other markets. Ex. No. I-2 at 62. However, the CAISO made no similar assumption about what portion of projected California renewable generation might not be developed. See Ex. No. N-7 at 11. More tellingly perhaps, when confronted with lower overall net benefits results for Sunrise after corrections to its analyses in its Part V and rebuttal testimony, the CAISO suddenly found it plausible that as much as 75% of out-of-state renewables would become unavailable. Ex. No. I-6 at 44-45.

It is thus difficult to view the CAISO's renewable procurement cost analysis as worthy of the weight the CAISO seems to place on it. The CAISO's emphasis may be understandable in the light of the extent to which its cost-benefit results depend on the RPS component of its studies. Nevertheless, it is difficult to overlook that SDG&E, the applicant here, has not claimed that Sunrise will reduce renewable procurement costs or that it is necessary to achieve RPS goals. Purported renewable procurement benefits therefore cannot be a foundation for a certificate for the Sunrise project.

**4. Other Savings**

Omitted.

**5. Project Costs**

Omitted.

**6. Results**

Omitted.

**B. Risk And uncertainty**

Omitted.

**VIII. CONSIDERATIONS UNDER CAL. PUB. UTILS. CODE § 1002 and G.O. 131-D**

**A. Community Values**

Omitted.

**B. Recreational And Park Areas**

Omitted.

**C. Historical And Aesthetic Values**

Omitted.

**D. Influence On The Environment**

Omitted.

**E. EMF Measures**

Omitted.

**F. Other Factors Relating To The Safety, Health, Comfort And Convenience Of The Public**

Omitted.

**G. Cal. Pub. Utils. Code § 625 Concerning Eminent Domain**

Omitted.

**IX. OTHER ISSUES**

Omitted.

**X. CONCLUSION**

For the reasons explained above, the present record does not support issuing a certificate for the Sunrise project.

Nevertheless, there is a clear need to increase transmission import capability into SDG&E's load area. The record demonstrates that TE/VS would meet that need at a

lower cost, at an earlier time than Sunrise, and with substantially lesser community, recreational and other non-economic impacts.

Respectfully submitted,



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November 9, 2007

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## CERTIFICATE OF SERVICE

I hereby certify that pursuant to the California Public Utilities Commission's Rules of Practice and Procedure, I have served a true copy of **INITIAL BRIEF OF THE NEVADA HYDRO COMPANY** to all parties on the service list for Application No. 06-08-010. Service was completed by overnight mail delivery to: Docket Clerk, Docket Office, Room 2001, California Public Utilities Commission, 505 Van Ness Avenue, San Francisco, California 94102 and by overnight mail delivery or first class mail in accordance with the Assigned Commission and Administrative Law Judge's Scoping Memo and ruling of November 1, 2006, and to all parties on the official service list in the proceeding via electronic mail or first class mail for those for whom an electronic mail address is not provided.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 9th day of November, 2007 at Washington, D.C.

A handwritten signature in cursive script, reading "Amelia Y Rivera". The signature is written in black ink and is positioned above a horizontal line.

Amelia Y Rivera

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