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Environmental Ranking of other Transmission Projects and Alternatives

2. New In-Area Renewable Generation Alternative

Description: 1,000 MW of wind, solar thermal, solar photovoltaics, and biomass/biogas in San Diego County (see Figure ES-2).

Rationale for Ranking: Has 34 significant, unmitigable impacts resulting from substantial ground disturbance and visual impacts in and adjacent to recreation areas. No effects on National Forest System lands; visual impact of hypothetical Borrego Springs solar thermal facility would indirectly affect surrounding Anza-Borrego Desert State Park wilderness areas. Requires 47 miles of new transmission lines (with 1,600 acres of permanent habitat loss).

3. LEAPS Transmission-Only Alternative

Description: 32 miles of new 500 kV transmission line primarily on National Forest land in Riverside and Orange Counties; 48-mile upgraded 230 kV line in existing corridor; new substation, switching station (see Figure ES-3). Meets two of three major project objectives; does not provide direct access to the transmission grid for new renewable resources in the Imperial Valley.

Rationale for Ranking: Shortest transmission alternative. Has 30 significant, unmitigable impacts to visual resources, recreation, land use, and historic facilities. Substantially greater wildfire risk than non-wires alternatives. Highly visible in Cleveland National Forest, through northern Lake Elsinore, and at crossings of Interstate 15. Much shorter length of new transmission line compared to other transmission alternatives results in reduced impacts when compared to other transmission alternatives in biological and cultural resources, air and water quality, and visual resources.

4. Environmentally Superior Southern Route (SWPL) Alternative

Description: Interstate 8 Alternative with Modified Route D Alternative (and three route options). 110 miles total (104 miles overhead; 5.9 miles underground; see Figure ES-4). Meets all major project objectives including reliability with respect to fire risk and collocation with SDG&E's existing Southwest Powerlink (SWPL), and allows for future transmission system expansion. Would encourage development of renewable generation in Imperial Valley with additional impacts.

Rationale for Ranking: Has fewer (32) significant, unmitigable impacts than the Environmentally Superior Northern Route Alternative; substantially shorter than Northern Route Alternative or Proposed Project; avoids Anza-Borrego Desert State Park and cultural resources of regional concern; crosses 16 miles of National Forest land but within acceptable land use zones and proposed Section 368[1] utility corridor. Collocated with existing 500 kV Southwest Powerlink for only 36 miles, in area of low fire risk.

5. Environmentally Superior Northern Route Alternative

Description: Proposed Project (75 miles) plus 8 alternatives (64 miles) replacing proposed segments, with 85 miles overhead and 54 miles of underground 230 kV transmission line (see Figure ES-3). Meets all major project objectives. Would encourage development of renewable generation in Imperial Valley with additional impacts.

Rationale for Ranking: Has 39 significant, unmitigable impacts. Requires extensive undergrounding to minimize visual impacts in scenic areas. Located underground through Anza-Borrego Desert

[1] Energy Policy Act of 2005, Section 368, required designation of federal energy corridors. This alternative includes a corridor identified in West-wide Energy Corridor Draft Programmatic EIS, published by the Department of Energy in November 2007.

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State Park, requiring extended construction time and higher cost. Future transmission system expansion would likely require overhead transmission lines through the Park.

6. Proposed Project

Description: Route defined by SDG&E: 150 miles total (141 miles overhead; 9 miles underground 230 kV). One new substation; 4 substation upgrades; reconductor segment (see Figure ES-1). Meets all major project objectives. Would encourage development of renewable generation in Imperial Valley, with additional impacts.

Rationale for Ranking: Has 50 significant, unmitigable impacts. Greatest overall length of new transmission. New 500 kV line creates numerous direct impacts within Anza-Borrego Desert State Park including de-designation of State Wilderness, degradation of views and recreational opportunities, and impacts on Traditional Cultural Properties. Severe visual effects in Santa Ysabel Valley.

7. LEAPS Generation and Transmission Alternative

Description: 32 miles of new 500 kV transmission line primarily on National Forest land in Riverside and Orange Counties; 48-mile upgraded 230 kV line; new substation, switching station. New powerhouse, pumping/generation turbines, and reservoir. Meets two of three major project objectives.

Rationale for Ranking: Has 44 significant, unmitigable impacts. Generation facilities affect Forest land and City of Lake Elsinore, including residences and a school. Tailrace structure crosses Willard Fault; risk of dam and dike failure. Generation component causes loss of public access to over 100 acres of Forest land.

No Project/No Action Alternative. The No Project/No Action Alternative scenario includes a menu of likely development actions (with both generation and transmission components) that are considered to be more likely to occur in the absence of the Proposed Project. Most of these actions are also components of the alternatives ranked first, second, and third in the list above. The No Project/No Action Alternative would have fewer impacts than those of the Proposed Project, the Southern Route Alternative, and the LEAPS Generation and Transmission Alternative, and impacts equivalent to the alternatives ranked first, second, and third above. Only about 1,000 MW of in-basin generation or transmission import capacity would be required to replace the Proposed Project, so any one of the three top ranked alternatives would provide adequate resources. However, they may or may not all meet all three major project objectives, including provision of direct access to the transmission grid for new renewable resources in the Imperial Valley.

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A. Introduction

On November 2, 2005, San Diego Gas & Electric Company (SDG&E) filed with the Bureau of Land Management (BLM) a Right-of-Way (ROW) Grant application. On December 14, 2005, SDG&E submitted to the California Public Utilities Commission (CPUC) an application for a Certificate of Public Convenience and Necessity (CPCN), and subsequently, on August 4, 2006, submitted an amended application accompanied by its Proponent's Environmental Assessment (PEA) for the Sunrise Powerlink (SRPL) Transmission Line Project (Proposed Project).

The California Public Utilities Commission identifies the SRPL Project as Application A.06-08-010 (formerly A.05-12-014). This Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) has been prepared by the CPUC as Lead Agency under the California Environmental Quality Act (CEQA) and the U.S. Department of the Interior, BLM under the National Environmental Policy Act (NEPA) to inform the public and to meet the needs of local, State, and federal permitting agencies to consider the project proposed by SDG&E (or "the Applicant").

The project proposed by SDG&E is described briefly below, and in detail in Section B of this EIR/EIS. **This EIR/EIS does not make a recommendation regarding the approval or denial of the project; it is purely informational in content, and will be used by the CPUC and BLM in considering whether to approve the Proposed Project or any of the alternatives analyzed in this EIR/EIS.**

This EIR/EIS evaluates and presents the environmental impacts that are expected to result from construction and operation of SDG&E's proposed Sunrise Powerlink project, and presents recommended mitigation measures that, if adopted, would avoid or minimize many of the significant environmental impacts identified. In accordance with CEQA and NEPA requirements, this EIR/EIS also identifies alternatives to the Proposed Project (including the No Project Alternative) that could avoid or minimize significant environmental impacts associated with the project as proposed by SDG&E, and evaluates the environmental impacts associated with these alternatives. Based on this environmental impact assessment, as well as the relative sensitivities of impacts in the study region, this EIR/EIS identifies the Environmentally Superior Alternative as required by CEQA. BLM has decided not to identify an Agency Preferred Alternative in the Draft EIR/EIS, as allowed by BLM's NEPA guidelines (BLM Manual 1790-1, Ch. V(B)(4)(c)).

The contents of this Draft EIR/EIS reflect input by government officials, agencies, nongovernmental organizations, and concerned members of the public during the two EIR/EIS scoping periods following the CPUC's publication of the Notice of Preparation (NOP) of an EIR/EIS (September 15, 2006) and the BLM's publication of the Notice of Intent (NOI; August 31, 2006). During these comment periods, several public involvement activities were completed: distribution of the NOP by mail, publication of the NOI in the Federal Register, and two scoping meeting notices, establishment of an Internet web page and a telephone hotline, 15 public scoping meetings (seven in October 2006 and eight in February 2007), and meetings with a number of affected local jurisdictions (see details in Section I). Consultation with agencies and tribal governments also continued after the formal scoping periods ended. In addition, notices regarding alternatives to be evaluated in the EIR/EIS were mailed in March and May of 2007.

This section is organized as follows: Section A.1 summarizes the SRPL Project as proposed by SDG&E; Section A.2 outlines the purpose and need for the Proposed Project as defined by SDG&E; Section A.3 explains the process of electricity procurement and resource adequacy planning as overseen by State

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agencies; Section A.4 describes the region's electric system and presents information related to the need for the Proposed Project; Section A.5 describes renewable generation in the Imperial Valley; Section A.6 describes agency use of the EIR/EIS, and includes a brief description of the CPUC, BLM, and other agencies' processes for consideration of project approval; and Section A.7 presents a Reader's Guide to this EIR/EIS, explaining how it is organized.

A.1 Overview of Proposed Project

SDG&E proposes to construct a new 91 miles, 500 kilovolt (kV) electric transmission line from Imperial Valley Substation (in Imperial County, near the City of El Centro) to a new Central East Substation (in central San Diego County, southwest of the intersection of County Highways S22 and S2) and a new 59 miles 230 kV electric transmission line that includes both overhead and underground segments from the new Central East Substation to SDG&E's existing Peñasquitos Substation (in the City of San Diego). Section B presents a detailed description of the Proposed Project; the general location is illustrated in Figure ES-1 in the Executive Summary and in Figure B-1 in Section B. Each of the components of the Proposed Project is described below.

Imperial Valley Link

- The easternmost segment of the project would consist of 60.9 miles of the route, including the entire Imperial County portion and a few miles in San Diego County.
- Land ownership within the 61 miles Imperial Valley Link is primarily private (28.4 miles) and BLM land (31.4 miles). Land uses along the Imperial Valley Link include agriculture (13.5 miles), open space and recreation (46.2 miles) and undeveloped private property.
- The SRPL in the Imperial Valley Link would require construction of a total of 205 new 500 kV towers with an average height of 160 feet.
- The Imperial Valley Link would require that SDG&E obtain a new 200-foot Right of Way (ROW), and would require construction of 49.4 miles of new access roads.
- The Imperial Valley Link also includes upgrades to the existing SDG&E Imperial Valley Substation to accommodate the termination of the new 500 kV transmission line.

Anza-Borrego Link

- The Proposed Project would include 22.6 miles through the Anza-Borrego Desert State Park (ABDSP).
- The entire Anza-Borrego Link would be located within ABDSP. The project as proposed in the Park would be located on 50.2 acres of land designated as State Wilderness, requiring the de-designation of that land from wilderness status. The Anza-Borrego Link would follow much of an existing ROW within the Park. The ROW is generally 100 feet wide, but the project would require that SDG&E obtain at least an additional 50 feet of ROW from the State Park. While existing access roads would be used along most of the Anza-Borrego Link, eight miles of new access roads would be required.
- Within the Park, a total of 141 new 500 kV towers would be constructed at an average height of 130 feet. The existing 92 kV (east of Narrows Substation) and 69 kV (west of Narrows Substation) lines would be installed underground along SR78 or would be added to the 500 kV towers as an "underbuild." The existing wood poles would be removed.

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Central Link

- The project within the Central Link would be 27.3 miles long, including 7.4 miles of 500 kV line and 19.9 miles of 230 kV line.
- Land ownership along the Central Link is: Vista Irrigation District (8.7 miles), private property (11.1 miles), and SDG&E (0.1 miles). The route would pass adjacent to the Santa Ysabel Reservation and just outside of the Cleveland National Forest and San Felipe Hills Wilderness Study Area (BLM). Land uses along the Central Link include undeveloped open space (22 miles), agriculture (5.1 miles), roads (0.3 miles), and park land (0.2 miles).
- The Central Link would include portions of both the 500 kV and 230 kV transmission lines, and the proposed new Central East Substation. Thirty five new 500 kV lattice towers would average 160 feet tall, and 123 new 230 kV towers would average 120 feet tall. The 500 kV line would follow SDG&E's existing 69 kV transmission line ROW through Grapevine Canyon for approximately four miles, where the existing 69 kV circuit would be removed from the wood poles and attached (underbuilt) to the 500 kV structures through this segment.
- The double-circuit 230 kV line would parallel a rebuilt 69 kV transmission line that is currently located along SR79 for approximately nine miles, where the existing 69 kV circuit would be relocated and placed on new tubular steel poles within the SRPL ROW. The existing 69 kV poles would be removed along these nine miles.
- New ROW would be required in the Central Link ranging from 200 to 300 feet in width, and construction of 36.4 miles of new access roads would be required.
- The proposed Central East Substation, requiring approximately 106 acres of disturbance, would be located on a parcel owned by SDG&E. The substation would include the 500 kV and 230 kV transmission lines and 500/230 kV transformer banks.

Inland Valley Link

- The 25.5 miles route in this area would begin southwest of Santa Ysabel, pass south of central Ramona, and end at the existing SDG&E Sycamore Canyon Substation on the north edge of Marine Corps Air Station Miramar.
- Land ownership in the Inland Valley Link includes SDG&E ROW (16.9 miles), BLM (1.2 miles), Department of Defense – Marine Corps Air Station (MCAS) Miramar (0.7 miles), Vista Irrigation District (0.1 miles), San Diego County (1.1 miles), and private (6.1 miles). Land use in this link includes undeveloped open space (13.1 miles), agricultural land (1 mile), recreation (7 miles) and public streets in residential areas (through which the route would pass for 4.2 miles underground in roads).
- New 230 kV towers would average 120 feet tall, and would include 125 double-circuit 230 kV tubular steel poles with lattice structures being used in areas where limited vehicle access would require helicopter construction. In addition, two tubular steel cable poles would be located at each end of the underground segment south of Ramona to transition between overhead and underground segments, each supporting conductors for a single 230 kV circuit.
- Much of the Inland Valley Link would parallel an existing 69 kV transmission line, but 13 miles of new ROW would need to be acquired, ranging from 60 to 200 feet in width. Nearly 8 miles of new access roads would be required.

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Coastal Link

- A new, 13.6 miles single-circuit 230 kV transmission line would be constructed from the existing Sycamore Canyon Substation in Rancho Peñasquitos and terminate at the existing Peñasquitos Substation in the Torrey Hills area of the City of San Diego. An existing 138 kV line on H-frame structures would be relocated onto the new 230 kV towers, and the existing H-frame towers would be removed.
- Land ownership in the Coastal Link includes: SDG&E ROW (11.8 miles), private property (0.1 miles), City of San Diego (1.4 miles), and Department of Defense – MCAS Miramar (0.3 miles). Land use in this link includes commercial (0.1 miles) open space and parks (11.2 miles), utilities and transportation (1.8 miles) and residential (0.4 miles). The Coastal Link would traverse 1.6 miles of Los Peñasquitos Canyon Preserve.
- The Coastal Link would require construction of 48 new structures averaging 120 feet tall.
- The Coastal Link would include modifications to the existing Sycamore Canyon and Peñasquitos Substations. The Sycamore Canyon Substation would be modified to accommodate termination of three new 230 kV transmission circuits. The Peñasquitos Substation would be modified to accommodate one new 230 kV circuit.
- Approximately 0.4 miles of new access roads would be required in this segment.

Other System Upgrades

- A reconductor[1] of the existing Sycamore Canyon to Elliot 69 kV transmission line would be required.
- The San Luis Rey Substation would be modified with the addition of a third 230/69 kV transformer and a 230 kV, 69 Mega Volt Ampere Reactive (MVAR) shunt capacitor.
- The South Bay Substation would be modified with the addition of a 69 kV, 50 MVAR shunt capacitor.

Future Transmission System Expansion

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

Connected Actions and Indirect Effects

The CPUC and BLM have determined that four projects are so closely related to the Proposed Project as to be considered "connected actions" under NEPA. These four projects are the Stirling Energy Systems solar facility, two components of the IID 230 kV transmission system upgrades, the Esmeralda–San Felipe Geothermal Project, and the Jacumba 230/500 kV Substation (see Figure B-1, Section B). One

[1] Reconductoring is the installation of new, higher capacity conductors, generally on existing towers (some new towers would be required when existing towers cannot support the greater weight of the new conductors).

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additional project, a wind project in northern Mexico's La Rumorosa area, under contract to meet Southern California Edison's renewable requirements, is considered as an "indirect effect" of the Proposed Project.

A.2 Purpose and Need for the Proposed Project

SDG&E explains that it developed the Sunrise Powerlink Project for three major reasons (1) to bring renewable energy resources to San Diego County from Imperial County by providing access to remote areas with the potential for significant development of renewable energy sources; (2) to improve electric reliability within the San Diego area by providing additional transmission during peak loading and for the region's growing economy; (3) and to reduce congestion and power supply costs of delivering electricity to ratepayers (SDG&E, 2006a).

A.2.1 SDG&E's Project Objectives

As stated by SDG&E (in PEA Section 3.1), the eight objectives for building the SRPL are to:

1. Ensure SDG&E's transmission system satisfies minimum California Independent System Operator (CAISO), North American Electric Reliability Corporation (NERC), and Western Electricity Coordinating Council (WECC) reliability criteria throughout the planning horizon of the Long-Term Resource Plan (LTRP) and beyond, including the requirement that there be no loss of load within the San Diego area under G-1/N-1 contingency conditions.[2] Avoid siting the Proposed Project parallel to Southwest Powerlink (SWPL) for long distances especially avoiding areas with fire history or fire potential.

2. Provide a transmission facilities with a voltage level and transfer capability that (a) allows for prudent system expandability to meet both anticipated short-term (2010) and long-term (2015 and beyond) load growth through a total San Diego area import capability of at least 4,200 MW (all lines in service) and 3,500 MW (under G-1/N-1 contingency conditions) and (b) supports regional expansion of the electric grid.

3. Provide transmission capability for Imperial Valley renewable resources for SDG&E customers 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.

4. Reduce the above-market costs associated with maintaining reliability in the San Diego area while mitigating the potential exercise of local market power, particularly the costs associated with inefficient generators such as the South Bay and Encina Power Plants.

5. Improve regional transmission system infrastructure to provide for the delivery of adequate, reliable and reasonably priced energy supplies and implement the transmission elements of state and local energy plans.

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[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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6. Obtain electricity generated by diverse fuel sources and decrease the dependence on increasingly scarce and costly natural gas.

7. 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.

8. Minimize the need for new or expanded transmission line ROW in urban or suburban areas of the SDG&E service territory already traversed by multiple high voltage transmission facilities and, to the extent feasible, assist in implementing local land use goals.

A.2.2 CPUC and BLM Objectives

Having taken into consideration the eight objectives set forth by SDG&E above, the CPUC and BLM identified the following three basic project objectives:

- Basic Project Objective 1: to maintain reliability in the delivery of power to the San Diego region.
- Basic Project Objective 2: to reduce the cost of energy in the region.
- Basic Project Objective 3: to accommodate the delivery of renewable energy to meet State and federal renewable energy goals from geothermal and solar resources in the Imperial Valley and wind and other sources in San Diego County.

A.2.3 Purposes of the Proposed Project

The application for the Proposed Project (A.06-08-010, formerly A.05-12-014) includes SDG&E's statement of the Purpose and Need. For informational purposes, a summary of the statement is copied here. SDG&E states that the Sunrise Powerlink Project would:

- **Maintain Reliability**. The project will enable the San Diego transmission system to satisfy the grid reliability requirements of the California Independent System Operator ("CAISO"). Without the project, SDG&E and the CAISO project a reliability deficiency in the San Diego area starting in 2010. The project will continue to allow SDG&E and other Load Serving Entities ("LSEs") within the San Diego service area to reliably serve their customers during periods of unusually high energy demand in the event of critical overlapping generation and transmission contingencies. Regulations, industry standards and good business practice require planning for the reliable operation of the electric transmission grid under adverse weather and system conditions.
- **Promote Renewable Energy**. Consistent with Senate Bill ("SB") 1078 and the State's Energy Action Plan ("EAP"), Sunrise will provide California consumers more economical access to the Imperial Valley, an area that is rich in renewable resource potential. Further, it will encourage the development of such resources thereby diversifying the State's resource mix and reducing its reliance on fossil-fueled generation. Similarly, Sunrise will also provide access for renewable wind resources development in the southeastern portions of San Diego County.
- **Reduce Energy Costs**. In addition to maintaining grid reliability and improving access to renewable energy resources, this cost-effective project will provide $552 million per year in net energy savings for California electricity customers under normal operating conditions. These savings will come in the form of reduced energy costs and congestion savings resulting from increased access to lower cost sources of power in the desert southwest and reduced reliance on older, less efficient in-

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area generation. All customers in the CAISO control area will share in these benefits. Indeed, the CAISO confirms that these benefits enable Sunrise to pay for itself (SDG&E, 2006a).

A.3 Procurement and Resource Adequacy

The CPUC reviews and approves plans for California's investor-owned utilities (IOU's) to purchase energy. The procurement and resource adequacy programs, described in Section A.3.1, establish policies and utility cost recovery for energy purchases; ensure that the utilities maintain a set amount of energy above what they estimate they will need to serve their customers (called a reserve margin); and implement a long-term energy planning process.

The CPUC also reviews and adopts IOU plans for obtaining renewable energy. Each California electrical company is required each year to obtain a minimum amount of electricity from renewable energy resources, with the goal of reaching procurement equal to 20 percent of total retail sales by 2010. These requirements are described in Section A.3.2.

A.3.1 CPUC Requirements for Procurement and Resource Adequacy

The CPUC oversees multiple proceedings related to procurement and resource adequacy[3] by reviewing and approving plans made by the utilities to purchase energy and establishing policies and utility cost recovery for energy purchases. The aim is to ensure that the utilities maintain a set amount of available energy above the forecast levels needed to serve their customers (called a reserve margin), and to implement a long-term energy planning process.

In the December 16, 2004 CPUC Decision (D.) 04-12-048, the CPUC approved the long-term procurement plan (LTPP) submitted by SDG&E in July 2004 (R.04-04-003). SDG&E was found to have full resources through 2009, except for procuring sufficient renewables to meet the Renewable Portfolio Standard levels.

At a conceptual level, the proposed Sunrise Powerlink Project was included in the 2004 LTPP. The configuration approved by the CPUC as part of the 2004 LTPP included a new 500 kV line following a general east-west direction to interconnect the Imperial Valley Substation with SDG&E's existing 230 kV grid. Another north-south 500 kV line as proposed as part of the Lake Elsinore Advanced Pumped Storage Project (LEAPS) was also defined conceptually in the 2004 LTPP.

A new 2006 process for long-term procurement plans initiated with Rulemaking (R.) 06-02-013, which is the CPUC's effort to integrate its procurement policies with review of periodically updated procurement plans provided by the utilities. The LTPP proceeding is the successor to R.04-04-0031 and R.01-10-024. On July 20, 2006, the Commission adopted decisions D.07-06-029, which established a cost allocation methodology for new resource contracts, and D.07-06-031, which resolved additional resource adequacy implementation issues and further refined the definition of a standard tradable resource adequacy capacity product. On August 10, 2006, the Energy Division released the 2007 Resource Adequacy Guide and reporting templates.

[3] Resource adequacy is defined as the ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.