CHAPTER 21
POWER PRODUCTION AND ENERGY

This chapter describes the power production and energy issues in the study area and potential changes that could occur due to implementation of the alternatives.

STUDY AREA

The study area is defined as the geographical area within which the large majority of potential impacts are expected. The study area for power production and energy issues is within the service areas of the Imperial Irrigation District (IID), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E), as shown in Figure 21-1.

REGULATORY REQUIREMENTS

Power production and energy issues are regulated by the federal and State governments. The Federal Energy Regulatory Commission regulates the transmission and wholesale sale of electricity in interstate commerce, and licenses and inspects hydroelectric projects.

The California Energy Commission (CEC), the primary energy policy and planning agency in the State, is responsible for forecasting energy trends, siting and licensing power plants, promoting energy efficiency through standards and programs for buildings and appliances, developing energy technologies and supporting renewable energy, and planning for and directing the State response to energy emergencies.

The California Independent System Operator Corporation is a not-for-profit public benefit corporation that is an impartial operator of the statewide wholesale power grid. This system was implemented to maintain reliability and connect energy suppliers with utilities that distribute energy along the long-distance, high-voltage power lines that connect California with adjacent states, Mexico, and British Columbia. The California Independent System Operator Corporation evaluates energy schedules in the so-called day-ahead and hour-ahead markets and allocates the available transmission capacity to support the implementation of these schedules.

HISTORICAL PERSPECTIVE

IID is the main power provider in the Imperial and Coachella valleys. IID entered the electrical power business in 1936 with construction of a diesel-generating plant near Brawley and hydroelectric facilities along the All-American Canal (IID, 2005a). As the demand for power increased in the Imperial Valley, IID expanded their power portfolio to include gas turbines, ownership interests in power plants outside the Imperial Valley, and connection of IID power facilities to the rest of the southeastern power grid (IID, 2005a).

DATA SOURCES

Historical and recent information for the Draft Programmatic Environmental Impact Report (PEIR) was collected from IID; Imperial County General Plan; SCE; SDG&E; the U.S. Department of the Interior, Bureau of Reclamation (Reclamation); the Salton Sea Authority; and CEC.

DATA LIMITATIONS

Historical information and future projections are limited by currently available information.

EXISTING CONDITIONS

Recent power projections and energy conditions for the Imperial and Coachella valleys are described below.

Electricity Providers

The main power utilities in the study area are IID, SCE, and SDG&E. The following section describes the service areas, power generation facilities, historical energy deliveries, and peak demand forecasts.

Imperial Irrigation District

IID provides energy on a wholesale and retail basis to more than 100,000 customers in Imperial, Riverside, and San Diego counties (IID, 2005b). IID obtains power from eight hydroelectric generation plants, one generating station, and eight gas turbines (IID, 2005a). IID hydroelectric plants are on the All-American Canal at Drops 1, 2, 3, 4, and 5. Other IID hydroelectric plants include the East Highline Turnout Plant and the Pilot Knob Plant. In 2004, IID generated about 254,232 kilowatt-hours of hydroelectric energy (Wilcox, 2005).

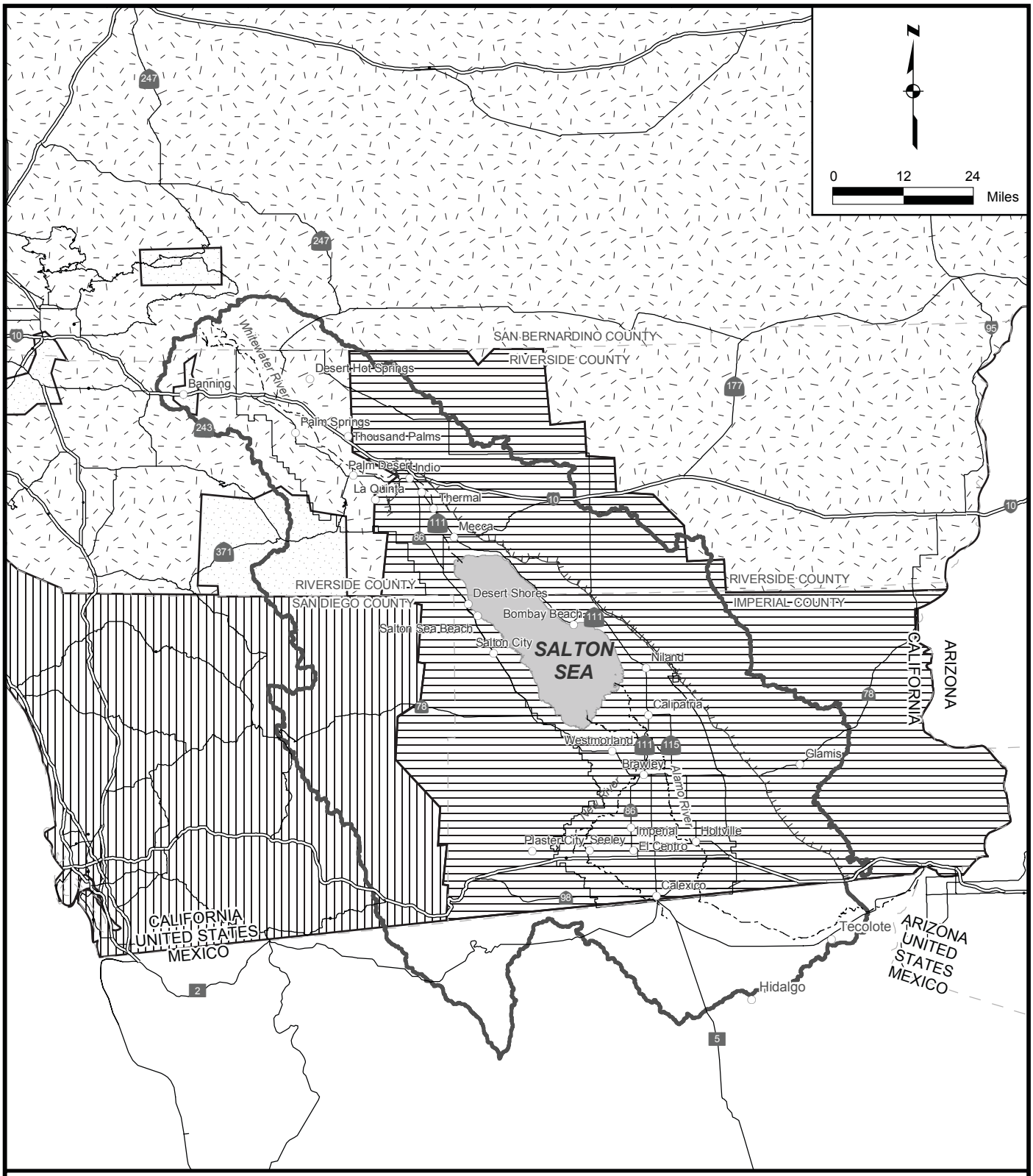
IID joined with Southern California Public Power Authority to purchase an ownership interest of 14.6 megawatts (Megawatt) in the Palo Verde Nuclear Generating Station in Arizona (IID, 2005a). IID also is a one-third participant with SCE and Arizona Public Service Company in a 75-Megawatt steam plant. IID contracted to receive power from local geothermal resources, including the CE Obsidian Energy LLC's Salton Sea Unit 6, from which IID has contracted for 85 percent of the plant output for 20 years following completion of the plant (CE Obsidian Energy LLC, 2002). IID also purchases power from the Western Area Power Administration and other power wholesalers.

The amount of energy delivered by IID from 1993 through 2004 is presented in Table 21-1.

Table 21-1
Historical Electrical Energy Delivered by Imperial Irrigation District

Year	Residential (Gigawatt-hours)	Commercial and Industrial (Gigawatt-hours)	Other (Gigawatt-hours)	Total (Gigawatt-hours)
1993	831	1,161	144	2,136
1994	884	1,231	155	2,270
1995	867	1,276	158	2,301
1996	942	1,273	168	2,383
1997	953	1,297	162	2,412
1998	984	1,140	230	2,354
1999	No data available.			
2000	No data available.			
2001	1,159	1,219	562	2,940
2002	1,144	1,209	377	2,730
2003	1,249	1,288	387	2,924
2004	1,328	1,360	377	3,065

Sources: Salton Sea Authority and Reclamation, 2000; IID and Reclamation, 2002; Wilcox, 2005.



LEGEND

- San Diego Gas and Electric
- Imperial Irrigation District
- Southern California Edison
- Other
- Salton Sea
- Salton Sea Watershed
- Rivers and Washes
- Interstate Highway
- Regional Highway
- Coachella Canal
- Towns and Cities
- County Boundary

FIGURE 21-1
POWER PRODUCTION AND ENERGY STUDY AREA

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Southern California Edison

SCE supplies energy to a 50,000-square-mile service area within central, coastal, and Southern California (Edison International, 2005). The SCE planning area includes retail and wholesale customers and customers served by energy service providers using the SCE distribution system to deliver electricity to end-users. SCE receives electrical energy from five main sources: the Big Creek Hydroelectric Facilities at Shaver Lake, California; Four Corners Generating Station at Fruitland, New Mexico; Mohave Generating Station at Laughlin, Nevada; Palo Verde Nuclear Generating Station at Wintersburg, Arizona; and San Onofre Nuclear Generating Station at San Clemente, California.

The amount of energy delivered by SCE from 1993 through 2004 is presented in Table 21-2.

San Diego Gas & Electric

SDG&E, a subsidiary of Sempra Energy, is a regulated public utility that supplies energy to portions of San Diego and Orange counties (SDG&E, 2002). The SDG&E planning area includes retail customers, wholesale customers served by the City of Escondido, and customers served by energy service providers using the SDG&E distribution system to deliver electricity to end-users. SDG&E operates nine hydroelectric power plants in San Diego County. SDG&E also purchases power from the Yuma Cogeneration Facility in Yuma, Arizona, which provides 50 Megawatt to SDG&E under a 30-year purchase agreement. SDG&E also has a 20 percent share of the 2,220-Megawatt San Onofre Nuclear Generating Station in San Clemente, California.

SDG&E is participating in development of a 300 Megawatt solar farm near Calexico. The 2,000 acre facility is projected to be completed by 2008. The facility may be expanded in the future to provide 600 Megawatt.

The amount of energy delivered by SDG&E from 1993 through 2004 is presented in Table 21-3.

Table 21-2
Historical Electrical Energy Delivered by Southern California Edison

Year	Residential (Gigawatt-hours)	Commercial and Industrial (Gigawatt-hours)	Other (Gigawatt-hours)	Total (Gigawatt-hours)
1993	23,362	45,798	11,892	81,051
1994	24,190	46,263	12,174	82,628
1995	24,097	47,043	11,542	82,682
1996	24,738	48,476	12,170	85,384
1997	25,270	49,953	12,987	88,210
1998	25,749	50,925	11,615	88,288
1999	25,726	53,291	11,630	90,646
2000	27,980	55,462	12,878	96,319
2001	25,970	52,302	12,674	90,948
2002	26,586	53,889	12,821	93,297
2003	28,426	54,493	11,868	94,787
2004	28,916	55,559	12,914	97,389

Note: These are the values reported by the CEC. Some totals could not add due to rounding.
Source: CEC, 2005a.

Table 21-3
Historical Electrical Energy Delivered by San Diego Gas & Electric

Year	Residential (Gigawatt-hours)	Commercial and Industrial (Gigawatt-hours)	Other (Gigawatt-hours)	Total (Gigawatt-hours)
1993	5,549	7,918	2,082	15,549
1994	5,729	7,980	2,082	15,791
1995	5,734	8,098	2,092	15,923
1996	5,935	8,431	2,072	16,437
1997	6,123	9,078	1,881	17,082
1998	6,319	9,174	2,137	17,630
1999	6,453	9,695	2,163	18,312
2000	6,513	10,672	2,110	19,295
2001	6,116	9,352	2,202	17,671
2002	6,326	9,479	2,154	17,959
2003	6,745	9,806	2,125	18,677
2004	7,074	10,505	2,048	19,627

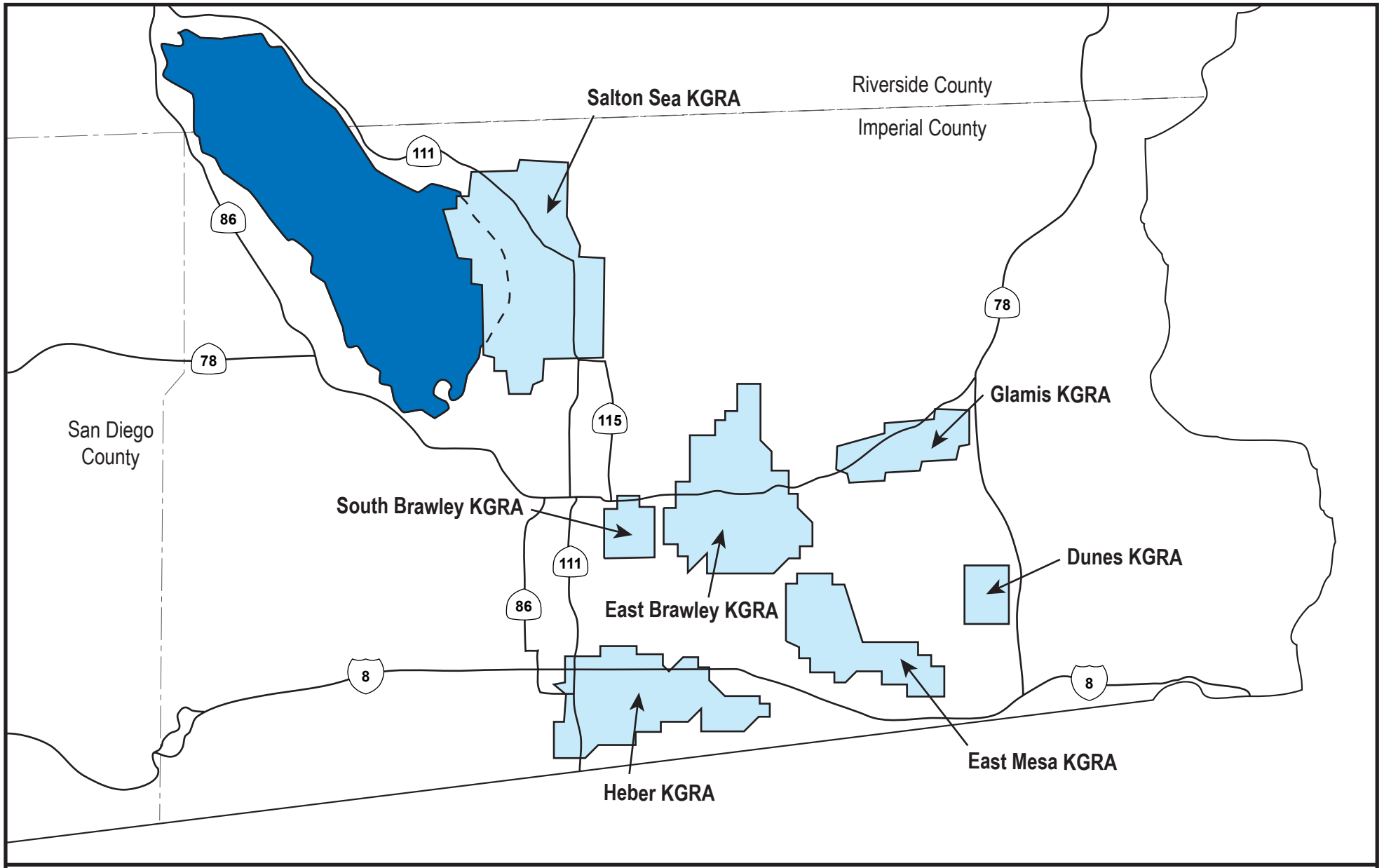
Note: These are the values reported by the CEC. Some totals could not add due to rounding.
Source: CEC, 2005a.

Geothermal Power

Imperial County has one of the larger geothermal resources in the world. There are seven known geothermal resource areas (KGRAs) in Imperial County: the Salton Sea, South Brawley, East Brawley, Heber, East Mesa, Dunes, and Glamis, as shown in Figure 21-2. A KGRA is an area in which the geology, nearby discoveries, competitive interests, or other indicators would, in the opinion of the Secretary of the Interior, engender a belief in those who are experienced in the subject matter that the prospects for extraction of geothermal steam or associated geothermal resources are good enough to warrant expenditures of money for that purpose (30 U.S.C. 1001). The Salton Sea KGRA includes areas under the Salton Sea and lands upgradient of the Salton Sea from about Bombay Beach to Calipatria. The other KGRAs in Imperial County are located to the southeast of the Salton Sea and are not likely to be affected by the alternatives; therefore, they are not discussed further.

Nine geothermal power plants in the Salton Sea KGRA are operated by the CalEnergy Operating Corporation (CalEnergy). Net power production of these facilities is shown in Table 21-4. Eight of these facilities (Vulcan, Hoch, Elmore, Leathers, and Salton Sea Units 1, 2, 3 and 4) are under contract to sell power to SCE under 30-year power purchase agreements. Salton Sea 5 and the CE Turbo plant (part of the Vulcan plant) sell most of the generated power to third parties (CalEnergy, 2005). Salton Sea Unit 6 is under contract to sell most of the power to IID. Additional geothermal plants are in the planning stages, including Salton Sea Units 7 and 8.

Another geothermal area exists in the northern Salton Sea watershed area near Desert Hot Springs in Riverside County, Desert Hot Springs Geothermal Field. There are no geothermal production wells or power plants in this area (CGS, 2002).



LEGEND

Known Geothermal Resource Areas (KGRA)

Highways

FIGURE 21-2
KNOWN GEOTHERMAL RESOURCE AREAS

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Table 21-4
Net Power Production for Existing Salton Sea Known Geothermal Resource Area

Plant Name	Net Power Production (Megawatts)	Startup Date
Del Ranch (Hoch)	38.0	1989
Elmore	38.0	1989
Leathers	38.0	1990
Vulcan/CE Turbo	44.0	1986/2000
Unit 1	10.0	1982
Unit 2	20.0	1990
Unit 3	49.8	1989
Unit 4	39.6	1996
Unit 5	49.0	2000
Unit 6	185	Construction not started
Total	511.4	—

Sources: CE Obsidian Energy LLC, 2002; CalEnergy, 2005.

California

California uses energy generated from many sources, including natural gas (40.8 percent), coal (21.3 percent), hydroelectric (16.5 percent), nuclear (12.8 percent), geothermal (4.8 percent), biomass (2 percent), wind (1.5 percent), and solar (0.3 percent) (CEC, 2005b). Energy delivered in California from 1993 through 2004 is summarized in Table 21-5. California also relies upon imported electricity from the Southwest and the Pacific Northwest. Surplus electricity from other Southwest states could be reduced in the future due to population growth in these states. The Pacific Northwest continues to have a surplus of electric generation capacity available for export. However, there is limited transmission access into California.

Table 21-5
Historical Electricity Consumption in California

Year	Residential (Gigawatt-hours)	Commercial and Industrial (Gigawatt-hours)	Other (Gigawatt-hours)	Total (Gigawatt-hours)
1993	68,424	122,136	36,871	227,431
1994	69,774	122,075	37,599	229,448
1995	69,770	125,243	35,311	230,323
1996	72,164	127,916	38,029	238,108
1997	73,547	133,289	39,303	246,140
1998	75,387	133,624	34,645	243,657
1999	76,482	138,161	37,909	252,552
2000	80,612	144,949	39,461	265,021
2001	75,916	134,823	39,502	250,241
2002	77,731	138,535	41,648	257,914
2003	82,196	140,169	41,103	263,468
2004	83,774	143,084	44,068	270,927

Note: These are the values reported by the CEC. Some totals could not add due to rounding.
Source: CEC, 2005a.

Generating Capacity in Mexico

Three 230-kilovolt international transmission lines connect power plants in Mexico to the SDG&E Imperial Valley Substation located in Imperial County.

The La Rosita Power Complex is located in Mexico near the United States-Mexico border about 10 miles west of Calexico. The complex consists of two natural gas-fired combined-cycle generating units. The first unit (La Rosita-1), owned by Energiá Azteca X, S. de R.L. de C.V., includes three 160-Megawatt gas turbines and one 270-Megawatt steam turbine, for a total generating capacity of 750 Megawatts. The second combined-cycle unit (La Rosita-2), owned by Energiá de Baja California, consists of one 160-Megawatt gas turbine and one 150-Megawatt steam turbine, for a total generating capacity of 310 Megawatts. The capacity of the entire La Rosita Power Complex is 1,060 Megawatts.

The electrical output of one gas turbine at La Rosita-1 and one-third (90 Megawatt) of the 270-Megawatt electrical output of the La Rosita-1 steam turbine are designated for export to the Untied States. In addition, at times, there could be as much as 40 to 50 Megawatt of additional output from the Energiá Azteca X, S. de R.L. de C.V. plant that would be available for export to the United States. The electrical output of La Rosita-2 is designated exclusively to the United States. Delivery of the electrical output of the export turbines is scheduled by the California Independent System Operator.

Sempra Energy Resources also operates a double-circuit, 230-kilovolt transmission line that extends from a natural gas-fired power plant in Mexico near the United States-Mexico border about 13 miles west of Calexico. The power plant consists of one natural-gas fired combined-cycle generating unit. The unit consists of two 170-Megawatt gas turbines and one 310-Megawatt steam turbine, for a nominal capacity of 650 Megawatts. The electrical output is exported to the United States.

Baja California Power, Inc. operates a double-circuit, 230-kilovolt transmission line from the La Rosita Power Complex to the United States.

ENVIRONMENTAL IMPACTS

Analysis Methodology

The impact assessment methodology used to support the power production and energy analysis presented in this chapter is based upon the projected level of demand that would be required related to construction and operations and maintenance activities.

Significance Criteria

The following significance criteria were based on CEQA and used to determine if changes as compared to Existing Conditions and the No Action Alternative would:

- Need for new or physically altered power facilities (including power plants and transmission lines), the construction of which could cause significant environmental impacts; and
- Result in the loss of access to a known geothermal resource area that would substantially affect existing and future resource extraction activities.

Application of Significance Criteria

Significance criteria have been applied to the alternatives considered in the PEIR. The following list summarizes the overall methodology in the application of the criteria to the alternatives:

- **New or physically altered power facilities, the construction of which could cause significant environmental impacts –** The need for new or altered power facilities would be related to changes in power generation demands or need to extend transmission lines as compared to existing facilities; and
- **Loss of access to a known geothermal resource area that would substantially affect existing and future resource extraction activities –** Risks to geothermal resources would be related to placement of components in Known Geothermal Resources Areas.

Summary of Assumptions

The assumptions related to the descriptions of the alternatives are described in Chapter 3. The specific assumptions related to the analysis of power production and energy resources are summarized in Table 21-6.

Table 21-6
Summary of Assumptions for Power Production and Energy Resources

Assumptions Common to All Alternatives	
1. Imperial Irrigation District would provide power to facilities located along the shoreline or in the Sea Bed. 2. Alternatives would not include new power generating facilities.	
Assumptions Specific to the Alternatives	
No Action Alternative and Alternatives 1, 2, 3, 4, 5, 6, 7, and 8	No additional assumptions were made.

Summary of Impact Assessment

The impacts shown in Table 21-7 assume implementation of the Next Steps to reduce the adverse impacts.

No Action Alternative

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, Pupfish Channels, and Salton Sea. The construction activities would be identical under the No Action Alternative-CEQA Conditions and the No Action Alternative-Variability Conditions. Therefore, impacts related to disturbance would be the same for both conditions.

Under the No Action Alternative, it is assumed that IID would provide electrical services to facility and construction sites around the shoreline and on the Sea Bed. It is also assumed that IID, SDG&E, and SCE would continue to provide reliable energy to existing and anticipated future users through planned existing, expanded, and new power plants and transmission lines, including future projects considered in the No Action Alternative, as described above and in Chapter 4.

A summary of the projected electrical consumption growth from 2004 to 2016 without the No Action Alternative facilities is presented in Table 21-8, including quantities for IID, the SCE planning area, the SDG&E planning area, and statewide based on the 2005 CEC Energy Demand report. Overall, electrical consumption is projected to increase steadily in the future.

Table 21-7
Summary of Benefit and Impact Assessments to Power Production and Energy Resources

Alternative	Basis of Comparison	Changes by Phase				Comments	Next Steps
		I	II	III	IV		
Criterion: New or physically altered power facilities, the construction of which could cause significant environmental impacts.							
No Action Alternative	Existing Conditions	L	L	L	L	Estimated annual demand of 10 Gigawatt-hour could be provided from existing and planned supplies. The demand would be greater than Existing Conditions. Transmission and distribution lines would need to be extended to facility locations.	Energy savings measures including conservation and use of alternative energy sources would be considered during project-level analyses. Transmission lines would need to be extended to the facility locations. Placement of the extended facilities would need to be evaluated in project-level analyses.
	No Action Alternative	NA	NA	NA	NA		
Alternatives 1 - 3 and 5 - 8	Existing Conditions	L	L	L	L	Estimated annual demand for could be provided from existing and planned supplies. The demand would be greater than Existing Conditions and No Action Alternative. Transmission and distribution lines would be required as described under No Action Alternative.	Same as No Action Alternative.
	No Action Alternative	L	L	L	L		
Alternative 4	Existing Conditions	L	L	L	L	Estimated annual demand could be provided from existing and planned supplies. The demand would be greater than Existing Conditions and less than No Action Alternative. Transmission and distribution lines would be required as described under No Action Alternative.	Same as No Action Alternative.
	No Action Alternative	O	O	O	O		
Criterion: Loss of access to a known geothermal resource area that would substantially affect existing and future resource extraction activities.							
No Action Alternative	Existing Conditions	B	B	B	B	Currently inundated lands in the Salton Sea KGRA would be partially exposed. However, Air Quality Management facilities would be located on a portion of the Exposed Playa.	Coordinate with geothermal industry to minimize conflicts between Air Quality Management and geothermal facilities. Air Quality Management measures may be reduced if geothermal industries become responsible for dust control near the generation facilities.
	No Action Alternative	NA	NA	NA	NA		
Alternatives 1 - 6 and 8	Existing Conditions	O	O	O	O	Water bodies and facilities would be located on the currently inundated areas of the Salton Sea KGRA.	Coordinate with geothermal industry as described under No Action Alternative. Reduce size of Saline Habitat Complex to provide corridors for geothermal
	No Action Alternative	L	L	L	L		

Table 21-7
Summary of Benefit and Impact Assessments to Power Production and Energy Resources

Alternative	Basis of Comparison	Changes by Phase				Comments	Next Steps
		I	II	III	IV		areas.
Alternative 7	Existing Conditions	B	B	B	B	Design includes corridor for geothermal development within Recreational Estuary Lake.	Same as No Action Alternative.
	No Action Alternative	B	B	B	B		

Legend for Types of Benefits or Impacts in Each Phase:
S = Significant Impact
O = No Impact
L = Less Than Significant
B = Beneficial Impact
NA = Not Analyzed

Table 21-8
Projected Electricity Consumption without the No Action Alternative Facilities

Planning Area	2004 (Gigawatt-Hours)	2016 (Gigawatt-Hours)
SCE	97,389	113,409
SDG&E	19,627	23,490
IID and Others in the Southern California Area	4,743	5,526
Statewide	270,927	313,397

Source: CEC, 2005a.

All of the alternatives would require power during construction and operations and maintenance for pumps, heating and cooling, lights, and other components, as summarized in Table 21-9. Estimated electrical power demands for each alternative are summarized in Table 21-10.

Table 21-9
Potential Electrical Power Demands for Components in the Alternatives

Component	Facilities and Equipment
All Components	Lighting and related minor uses during operations.
Sedimentation/Distribution Basins	Diversion structures.
Pupfish Channel	None.
Saline Habitat Complex	Temporary or permanent pumps to convey salt water into Saline Habitat Complex cells. Diversion structures, intake structures, control weirs, and outlet structures.
Air Quality Management using Water Efficient Vegetation	Pumping plants, filtration stations, and drainage pumping plants. Weirs, turnouts, and diversion structures. Irrigation system for plant nursery.
Air Quality Management using Brine Crust	Pumps to apply brine.
Brine Sink	None.
Air Quality Management Canal	Pumping Plants and valve operators.
Marine Sea Recirculation Canal	Pumping Plants, turnouts, and valve operators.
Tailwater Collection Canal	Pumping Plants and valve operators.
Marine Sea, Recreational Saltwater Lake, and Recreational Estuary Lake	Pumping Plants, turnouts, and valve operators.
Treatment Plants	Treatment process

Table 21-10
Power Demands for Operation of Alternatives

Alternative	Estimated Installed Demand (Megawatt)	Estimated Annual Demand (Gigawatt-hour)
No Action Alternative	5.2	10
Alternative 1 – Saline Habitat Complex I	8.5	16.1
Alternative 2 – Saline Habitat Complex II	10.2	18.7
Alternative 3 – Concentric Rings	13.0	27.2
Alternative 4 – Concentric Lakes	0.2	7.9
Alternative 5 – North Sea	13.5	25.6
Alternative 6 – North Sea Combined	14.0	29.8
Alternative 7 – Combined North and South Lakes	8.8	43.7
Alternative 8 – South Sea Combined	13.7	29.4

Transmission and distribution lines would be extended or expanded to serve the facilities along the shoreline or on the Sea Bed. Although the locations of these lines are not known at this time, the construction and operations and maintenance of these facilities could result in adverse impacts to biological or human resources and would be evaluated in detail in project-level analyses.

Under this alternative, Air Quality Management facilities would be located on a small portion of the lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 1 – Saline Habitat Complex I

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, Pupfish Channels, Saline Habitat Complex, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Saline Habitat Complex and Air Quality Management facilities would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 2 – Saline Habitat Complex II

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, Saline Habitat Complex, Shoreline Waterway, Saltwater Conveyance, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Saline Habitat Complex and Air Quality Management facilities would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 3 – Concentric Rings

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, First and Second rings, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area. Electrical use could increase if electric conveyor belts, vehicles, and engines are used to replace diesel and gas-powered equipment to move rock and other materials to and within the construction site. The additional energy needs were not estimated for this PEIR but would be considered in future project-level analyses.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, the First and Second rings and Air Quality Management facilities would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 4 – Concentric Lakes

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins; First, Second, Third, and Fourth lakes; and Brine Sink.

The estimated electricity demand would be less than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, First, Second, and Third lakes would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 5 – North Sea

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, Saline Habitat Complex, Shoreline Waterway, Saltwater Conveyance, Marine Sea, Marine Sea Recirculation Canal, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area. Electrical use could increase if electric conveyor belts, vehicles, and engines are used to replace diesel and gas-powered equipment to move rock and other materials to and within the construction site. The additional energy needs were not estimated for this PEIR but would be considered in future project-level analyses.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Saline Habitat Complex and Air Quality Management facilities would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 6 – North Sea Combined

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basin, Air Quality Management, Pupfish Channels, Saline Habitat Complex, Shoreline Waterway, Saltwater Conveyance, Marine Sea, Marine Sea Mixing Zone, Marine Sea Recirculation Canal, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area. Electrical use could increase if electric conveyor belts, vehicles, and engines are used to replace diesel and gas-powered equipment to move rock and other materials to and within the construction site. The additional energy needs were not estimated for this PEIR but would be considered in future project-level analyses.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Marine Sea Mixing Zone, Saline Habitat Complex, and Air Quality Management facilities would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Alternative 7 – Combined North and South Lakes

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basin, Air Quality Management using Protective Salt Flat on Exposed Playa below -255 feet msl, Exposed Playa without Air Quality Management above -255 feet msl, Saline Habitat Complex, Recreational Saltwater Lake, Recreational Estuary Lake, Marine Sea Recirculation Canal, IID Freshwater Reservoir, two Treatment Plants, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area. Electrical use could increase if electric conveyor belts, vehicles, and engines are used to replace diesel and gas-powered equipment to move rock and other materials to and within the construction site. The additional energy needs were not estimated for this PEIR but would be considered in future project-level analyses.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Saline Habitat Complex and the Recreational Estuary Lake would be located on a portion of the lands that are currently inundated and located in the Salton Sea KGRA. This alternative includes a corridor within the Saline Habitat Complex near the Alamo River for geothermal development and the extension of the Alamo River.

Alternative 8 – South Sea Combined

As described in Chapter 3, this alternative would involve construction and operations and maintenance activities for the Sedimentation/Distribution Basins, Air Quality Management, Saline Habitat Complex, Shoreline Waterway, Marine Sea, Marine Sea Recirculation Canal, and Brine Sink.

The estimated electricity demand would be greater than under the No Action Alternative, as shown in Table 21-10. The additional power demand would represent less than 1 percent of the projected demand in 2016 in the area that includes the IID service area. Electrical use could increase if electric conveyor belts, vehicles, and engines are used to replace diesel and gas-powered equipment to move rock and other materials to and within the construction site. The additional energy needs were not estimated for this PEIR but would be considered in future project-level analyses.

Transmission and distribution lines would need to be extended or expanded as described under the No Action Alternative.

Under this alternative, Saline Habitat Complex and Marine Sea would be located on lands that are currently inundated and located in the Salton Sea KGRA.

Next Steps

During project-level analyses, the use of energy savings measures and alternative energy sources would be considered. These measures also may include equipment that could increase electrical use but reduce fossil fuel use, such as electric conveyor belts or vehicles

To the extent possible, transmission and distribution lines and related facilities would be located to avoid significant environmental impacts. If avoidance is not possible, then measures could be incorporated into the facilities to reduce impacts.

During project-level analyses, the geothermal industry could participate in establishing locations of power generation and transmission facilities and the habitat and air quality management facilities that would result in minimal adverse impacts. These measures could include corridors for geothermal facilities or use of future technologies that would reduce impacts of the energy resource facilities on wildlife. To minimize conflicts with Air Quality Management facilities in areas with electrical generation facilities, the geothermal industry could be responsible for dust control on areas with power facilities.