

# CHAPTER 6

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## ALTERNATIVES ANALYSIS

### 6.1 INTRODUCTION

To comply with CEQA, the EIR must describe a reasonable range of alternatives to the proposed project, or to its location, that could feasibly attain the project's basic objectives, and must evaluate the comparative merits of each alternative (Public Resources Code section 21100; CEQA Guidelines, section 15126, subd. [d]). The identified alternatives must focus on eliminating any significant environmental effects of the proposed project or reducing them to a level of insignificance, even if the alternatives would be more costly or would to some degree impede the project's objectives (CEQA Guidelines, section 15126, subd. [d][3]). The CEQA Guidelines also indicate that the alternatives analysis must relate to the project as a whole, not to its various parts; the lead agency need not analyze specific alternatives to such parts. However, in this case, since the sales of the four plants could be logically severed from one another, the EIR does consider alternatives that deal specifically with individual power plants.

Under CEQA, the discussion of alternatives need not be exhaustive, and the requirement for the discussion of alternatives is subject to "the rule of reason." The selection and discussion of alternatives should be of a range and level of detail that fosters informed decision-making and informed public participation. An EIR need only address in detail alternatives that are "feasible," which means that they can be accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors (CEQA Guidelines section 15364). Particular factors to be taken into account in determining the feasibility of alternatives include site suitability, economic viability, infrastructural availability, general plan consistency, regulatory and jurisdictional limitations, and the likelihood of gaining control of alternative sites (CEQA Guidelines section 15126, subd. [d][5][A]). An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, section 15126, subd. [d][5]).

This chapter describes and analyzes alternatives to the proposed project specifically related to individual elements of the project as a whole. Except for the No Project Alternative, the alternatives address different ways of dealing with individual or grouped power plants. A detailed description of each of these alternatives and an analysis of each of their potential environmental impacts is contained within this chapter. The project analyzed in this EIR is the transfer of ownership of three fossil-fueled power plants and one geothermal power plant (comprised of 14 units at geographically separated sites) from PG&E to some other entity or entities. Logical alternatives to the sales of the plants would be to preclude their sale altogether

so that PG&E would continue to own the plants (the “no project” alternative) or to sell the plants in different groupings (or bundles). Those alternatives are evaluated in this chapter, as is sale of the Geysers geothermal units to the steam field operators. In addition to the alternatives for which environmental impacts are analyzed in the EIR, the CPUC identified and considered alternatives that were rejected because they were determined to be infeasible and/or did not meet the objectives of the project.

## **6.2 SUMMARY DESCRIPTION OF ALTERNATIVES**

This section lists and briefly describes the alternatives to the project, as well as alternatives that were considered but deemed infeasible.

### **6.2.1 ALTERNATIVES EVALUATED IN THIS EIR**

The following paragraphs briefly describe the alternatives; a more detailed description of each alternative begins in Section 6.3.1.

#### ***ALTERNATIVE ONE: NO PROJECT***

This alternative assumes that PG&E would continue its ownership of all of the power plants. As a consequence, the company could operate the plants at any level up to their Analytical Maximum capacities, but would more likely operate them as projected in Chapter 3 for the Baseline Scenario in 1999 and the 2005 No Project Cumulative Scenario, discussed herein.

#### ***ALTERNATIVE TWO: FOSSIL-FUELED POWER PLANT BUNDLING SCENARIOS***

The proposed project provides for the sale of three fossil-fueled power plants, with the Potrero Power Plant sold individually and the Contra Costa and Pittsburg Power Plants as bundled (they are linked because of environmental operating requirements). This alternative considers different groupings (or bundles) for the sale of the plants, as presented in two scenarios:

- 2A. All three fossil-fueled power plants (Contra Costa, Pittsburg, and Potrero) would be sold together to a single purchaser.
- 2B. Each of the three fossil-fueled power plants (Potrero, Contra Costa, and Pittsburg) would be sold separately to individual purchasers (i.e., Contra Costa and Pittsburg would not be bundled).

#### ***ALTERNATIVE THREE: SALE OF THE GEYSERS PLANT TO THE STEAM FIELD OPERATORS***

In this alternative, the Geysers Power Plant (all units) would be sold to the steam field operators. This alternative would allow for the fields to be operated in a coordinated fashion, potentially reducing “steam stacking” and its consequent environmental impacts. Steam stacking is caused

by the build-up of steam pressure in the pipelines when power plants are idled for maintenance or other reasons.

## 6.2.2 ALTERNATIVES CONSIDERED BUT DETERMINED TO BE INFEASIBLE

### ***GREEN POWER ALTERNATIVE FOR SAN FRANCISCO***

During the scoping process for this EIR, it was suggested that the power produced by the Hunters Point and Potrero Power Plants in San Francisco be replaced with non-polluting “green power” and then, if possible, that the two existing plants be retired. In the meantime, PG&E has agreed to retire the Hunters Point Plant when reliable replacement generation and/or transmission facilities become available, and the Hunters Point plant was withdrawn from the divestiture proposal. This discussion of the viability of green power replacing the generation facilities in San Francisco is included for informational purposes since the development of green power resources would not, in any event, be a true alternative to the sale of the Potrero Power Plant.

At present, the policy of the City and County of San Francisco’s Sustainability Plan is to develop a green power alternative. Green power is generally defined as that coming from non-polluting, renewable resources, such as wind, solar (thermal and photovoltaic), hydroelectric or geothermal power plants. Although biomass power plants, which burn residual crop waste (such as rice chaff) or methane produced by solid waste facilities, are considered renewable resources, they produce significant air emissions and thus are not considered in this discussion.

No green power facilities currently exist in San Francisco or on the San Francisco Peninsula. Replacing the two San Francisco power plants with renewable resources would therefore involve constructing renewable power plants in or near San Francisco, or constructing an additional transmission circuit over either the Oakland Bay Bridge or the Golden Gate Bridge or in a submarine cable across the Bay to connect with other renewable power sources. Siting green power facilities in the region in the near term is considered infeasible because of severe limitations for siting such facilities in a highly urbanized area, problems with geology and weather. Both alternatives (transmission across the Bay or siting new green power facilities) would involve extensive and very expensive land acquisition and permitting activities.

The National Wind Technology Center, a branch of the US Department of Energy, classifies potential wind farm resource areas from power class 1 through power class 7. Areas designated as class 4 or higher are considered as areas of potential wind farm development using advanced wind turbine technology under development today. Power class 3 areas may be suitable for future generation technology. The lands of San Francisco and San Mateo Counties are designated as power class 2 or 3, while the lands where present Bay Area wind farms are sited are designated as power class 6. In other words, neither San Francisco nor San Mateo Counties are considered suitable for wind power development using present technology.

Even if new wind power technologies were developed that would make construction of wind facilities on the San Francisco Peninsula feasible, the land acquisition needed for that construction would be extensive. Currently, more than 7,000 turbines are located in the wind farms of Alameda County, which comprise a total of 315.3 MW in generating capacity (California Energy Commission, 1998a). Offsetting the combined 786 MW capacity of the Hunters Point and Potrero Power Plants would require construction of at least 14,000 turbines, with each requiring about 10,000 square feet of land area.

However, even if wind farms could be developed on the San Francisco Peninsula or elsewhere for the purpose of replacing the Hunters Point and Potrero Power Plants, they still would probably not meet reliability requirements because wind resources are not always available. Therefore, in order to maintain reliability of the system, another form of backup power would have to be developed, such as combustion turbines fueled by hydrogen, or perhaps utility-scale fuel cells, such as those now used at a demonstration project in Santa Clara.

Similarly, neither San Francisco nor San Mateo Counties are considered suitable for solar thermal or photovoltaic power development because of their proximity to the Pacific Ocean. Currently, only the desert areas of Southern California and a small portion of the Central Valley region are considered suitable for solar power development in California. The temperature difference between the ocean and the inland valleys in warmer months produces low-lying stratus clouds (also called marine layer fog) that engulf much of the San Francisco Peninsula for much of the year. Also, the region is overcast or cloudy for much of the winter because of storm patterns in the Pacific. Even using the most advanced solar generating technology currently available, the total land needed to construct solar generating facilities capable of offsetting the Potrero and Hunters Point Power Plants would probably far exceed the open space available in the two counties.

There are no hydroelectric resources within the City and County of San Francisco. In general, such resources are extremely limited in the Bay Area region. The majority of hydropower resources are located in the Sierra Nevada and coastal mountain ranges. Much, if not virtually all, of the readily accessible resources have been developed, and the electrical capacity produced from such hydrological resources is currently utilized. There are essentially no further resources that could be developed to accommodate replacement of the power plants in San Francisco. The development of additional hydroelectric facilities would most likely have environmental constraints and impacts greater than those of the San Francisco plants now in service and the cost would be very high, if not prohibitive. In addition, hydroelectric power capacity, which relies on rainfall to replenish the resource, is variable due to weather conditions. Although not as variable as wind energy, there is still the potential for major swings in resource availability between wet and dry years. Therefore, even if hydroelectric power could be developed for the purpose of replacing the San Francisco power plants, reliability and load requirements might not be met as hydroelectric resources are not always available at the required capacities year round.

Currently, the only sources of green power in or near the Bay Area are a 2 megawatt (MW) fuel cell demonstration project in Santa Clara and the wind power farms in Alameda County near

Livermore (315.3 MW), in San Joaquin County near Tracy (291.16 MW), in Contra Costa County near Byron (37.55 MW), and in Solano County near Benicia (65 MW). Total wind generating capacity in the region is 709.01 MW, with all but 5 MW of that contracted to Pacific Gas & Electric; the remaining 5 MW is contracted to the Sacramento Municipal Utility District (SMUD) from a Solano County wind farm. By comparison, the total available generating capacity of the Hunters Point and Potrero Power Plants is 786 MW. Therefore, even if all of the green power sources in the greater San Francisco Bay Area were dedicated to serving San Francisco (and transmission lines were installed for that purpose), additional capacity would be needed to meet loads within the City.

Geothermal resources are extremely limited in the Bay Area, consisting of scattered thermal springs in Marin, Contra Costa, Alameda, Solano, Napa, Sonoma, and Santa Clara Counties (California Department of Conservation, 1984). These are all minor geothermal features with no potential for significant power generation. No part of the Bay Area is located within an area classified as a Known Geothermal Resource Area (KGRA). Known geothermal resources exist in other parts of the state. The nearest and most notable KGRA is the Geysers KGRA in northern Sonoma, Lake, Napa and Mendocino Counties. Power from that KGRA already is dispatched predominantly into the Bay Area and in part into San Francisco. PG&E at present owns the Geysers Power Plant, which supplied about 6.6 percent of the utility's total energy needs over the last five years. Conceivably, the City could contract with the new owners (if the Geysers plant is sold by PG&E as proposed) for the Geysers plant to become the primary source of power for the City. The entire capacity of the Geysers is 669 MW and would not replace the San Francisco power plants entirely. These units are very price sensitive as well and often are not producing power at capacities sufficient to address San Francisco's electrical requirements. However, the only way to meet a goal of shutting down the two San Francisco plants would be to construct a new transmission circuit or to build new generation facilities in or near the City.

In short, constructing renewable resource power plants on the San Francisco Peninsula of sufficient size to displace the power generated by the Hunters Point and Potrero Power Plants would be a difficult, expensive task with an uncertain outcome. A more feasible alternative would be to construct a transmission circuit across the Bay (for example, marine cable) to connect with renewable resource power plants in other areas of the state. That option would also be difficult and expensive to carry out. It is worth noting that in July, 1998, the City of San Francisco received \$1,643,794 of renewable energy grant funds from the California Energy Commission for two projects. One project would develop digester gas for electric power at the Southeast Treatment plant. The other project would develop electricity from a small hydroelectric facility using the Calaveras Reservoir pipeline. Neither of these projects will generate a substantial amount of electricity.

In the future, green power could potentially be a greater component than currently of the electrical generation system for the City of San Francisco and the Bay Area as a whole. At this time, however, the physical, geographic, economic and environmental barriers to such a project make its review too speculative to foster informed decision making for the project at hand.

### 6.3 MODELING RESULTS FOR ALTERNATIVES

Sierra Energy and Risk Assessment, Inc. (SERA) performed SERASYM™ modeling to provide information about the possible operational changes that could occur under Alternative 1 (No Project) and Alternative 3 (Geysers Plants Sold to Steam Field Operators). (SERASYM™ modeling results were also used to provide the basis for analyzing project-specific impacts in Chapter 4, Environmental Setting, Impacts and Mitigations, and cumulative impacts in Chapter 5, Cumulative Impacts.) Consistent with CEC demand forecasts (California Energy Commission, 1998b), the SERASYM™ modeling results assume electricity demands will increase throughout California in the future, either with or without divestiture. The model also assumes that, in certain areas (e.g., San Diego and San Francisco), additional electrical capacity will be needed to meet these future demands.

Table 6.1 presents capacity factor estimates for each of the four plants proposed to be sold under the 1999 and the cumulative 2005 scenarios. The assumptions used for modeling the 1999 Baseline and the 1999 Analytical Maximum and 2005 Cumulative Analytical Maximum scenarios are defined in Chapter 3, Approach to Environmental Analysis. The 2005 No Project (Alternative 1) modeling assumptions are those presented in Chapter 3, Approach to Environmental Analysis, for the 2005 Cumulative Analytical Maximum scenario, except that it was not assumed that PG&E would obtain natural gas at a very favorable price (an assumption used to model the Analytical Maximum scenarios). Instead, it was assumed that PG&E would operate in an economic dispatch mode. The 2005 cumulative No Project modeling assumptions assume (as discussed in detail in Chapter 5, Cumulative Impacts) that by 2005, the Hunters Point Power Plant in San Francisco would be replaced by new generation facilities (totaling 480 MW) located north of the Martin Substation. The modeling assumptions for Alternative 3 (Geysers Steam Owners) are the same as those for Alternative 1, except that the existing steam supply contracts would be inapplicable (because the contracting parties would be merged into one steam supplier/plant owner for each unit) and the price of steam to the plants would decline.

No modeling was done for Alternative 2 (Different Bundling Scenarios) because it was deemed unnecessary. Alternative 2A, the sale of all three of the fossil-fueled plants to one buyer, would lessen the tendency of new owners to operate toward the Analytical Maximum, compared to the project. Conversely, Alternative 2B, in which the three plants would be purchased by different owners, would increase the tendency of the new owners of the Contra Costa and Pittsburg plants to operate toward the Analytical Maximum, compared to the project. However, in no case would the individual operations of the plants exceed the Analytical Maximum for either of the years modeled.

Based on a review of Table 6.1, the following conclusions can be drawn:

- 1) The capacity factors for operation of the plants in 1999 under Alternative 1, the No Project Alternative of continued PG&E ownership of the plants, are identical to those of the 1999 Baseline.
- 2) With the exception of a slight decrease at the Potrero plant (largely due to new generation facilities to serve San Francisco), capacity factors for the plants under the No Project Alternative would increase by 2005. At the three fossil-fueled plants, the 2005 capacity

**TABLE 6.1**  
**PROJECTED ALTERNATIVES ANALYSIS POWER PLANT CAPACITY FACTORS<sup>a</sup>**

Plant	Unit	Type	Fuel	Net Capacity (MW) <sup>b</sup>	Capacity Factor by Case/Scenario/Analysis (percent)					
					1999 Baseline and Alternative 1 (No Project)	1999 Analytical Maximum (Project)	2005		1999 Alternative 3 (Geysers Steam Owners)	2005 Alternative 3 (Geysers Steam Owners)
							Cumulative Analytical Maximum <sup>c</sup> (Project)	2005 Alternative 1 (No Project)		
Potrero	3	ST	NG	207	41	76	64	34	43	34
	4	CT	DF	52	3	3	9	10	3	9
	5	CT	DF	52	2	2	8	8	2	8
	6	CT	DF	52	1	1	7	8	1	7
	Annual Plant Capacity				363 <sup>d</sup>	25	44	40	23	25
New 480 MW S.F. Plant		CC	NG	480	NA	NA	91	91	NA	90
Contra Costa	6	ST	NG	340	32	71	70	45	32	45
	7	ST	NG	340	40	88	69	46	40	46
	Annual Plant Capacity				680 <sup>d</sup>	36	79	70	46	36
Pittsburg	1	ST	NG	163	23	43	45	21	23	21
	2	ST	NG	163	23	69	70	36	23	36
	3	ST	NG	163	33	76	retired	retired	33	retired
	4	ST	NG	163	28	66	retired	retired	28	retired
	5	ST	NG	325	39	80	60	42	39	42
	6	ST	NG	325	40	87	76	47	40	47
	7	ST	NG	682	27	58	71	49	27	50
	Annual Plant Capacity				1984 <sup>d</sup>	32	68	56/67 <sup>e</sup>	36/43 <sup>e</sup>	31
Geysers	5	G	GS	39/39	68	58	82	87	94	93
	6	G	GS	39/39	68	58	81	86	94	92
	7	G	GS	38/37	72	65	85	89	91	95
	8	G	GS	38/37	73	64	86	89	91	95
	9	G	GS	32/32	54	47	73	80	88	89
	10	G	GS	32/32	54	47	73	80	87	89
	11	G	GS	56/56	46	36	94	94	93	95
	12	G	GS	39/39	76	65	85	89	90	92
	13	G	GS	73/69	95	94	95	95	94	95
	14	G	GS	61/61	81	70	87	90	92	93
	16	G	GS	73/69	94	94	94	94	94	95
	17	G	GS	47/47	78	70	89	92	94	95
18	G	GS	58/62	82	73	88	91	92	93	
20	G	GS	44/46	78	67	86	89	91	93	
Annual Plant Capacity				669/665 <sup>d</sup>	75	68	87	90	92	93

**TABLE 6.1 (Continued)**  
**PROJECTED ALTERNATIVES ANALYSIS POWER PLANT CAPACITY FACTORS<sup>a</sup>**

NOTE: The capacity factors were derived using the SERASYM™ unit-specific, California-wide data set, which was processed by the SERASYM™ production cost model to forecast plant operations.

UNIT TYPES:	CT combustion turbine	FUELS:	NG natural gas with residual oil backup	NA = not applicable
	ST steam turbine		DF distillate fuel oil	
	G geothermal steam		GS geothermal steam	
	CC combined cycle			

- a Capacity factor is the ratio (expressed as a percentage) of operations of a unit or plant to the rated capacity of the unit or plant.
- b Although the net capacity of Unit 7 at the Pittsburg Power Plant is listed as 720 MW in PG&E's PEA, other sources (including the Master Must-Run Agreement between PG&E and the ISO and the Bay Area Reliability Dispatch Requirements) identify the unit's maximum net capacity as 682 MW. Based on this information, the SERASYM™ model results used in this EIR reflect the 682 MW factor.  
 The net capacity of the Geysers Power Plant is actually 1,224 MW (see Table 2.1 in Section 2, Project Description). The net capacities shown here are the predicted capacities for the plant based on projected steam availability in 1999 and 2005, respectively.
- c This scenario reflects the replacement of PG&E's Hunters Point Power Plant in San Francisco with a new 480 MW power plant in combination with divestiture and other cumulative projects.
- d Net capacity for the entire plant.
- e The total net generating capacity of the Pittsburg Power Plant would decrease in the future due to the retirement of certain generating units. In order to meaningfully portray changes in generation, two annual plant capacity numbers are presented. The first number reflects the annual plant capacity factor based upon the current total net generating capacity of the plant (where all seven units are operational), which is 1,984 MW. The second number reflects the annual plant capacity based upon the combined net generating capacity of the units that are assumed to operate in 2005.

SOURCE: Sierra Energy and Risk Assessment, Inc., and ESA, 1998.

factors under the No Project Alternative would be substantially lower than those for the 2005 Analytical Maximum.

- 3) Under Alternative 3 (1999), the capacity factors of the fossil-fueled plants would be almost identical to Alternative 1. In both 1999 and 2005, the Geysers plant would have higher capacity factors than either Alternative 1 or the Analytical Maximum scenarios.

In general, the results show that under Alternatives 1 and 3, the fossil-fueled plants would operate considerably less than the Analytical Maximum in both 1999 and 2005. The renewable plants at the Geysers would operate more than the Analytical Maximum under both Alternatives 1 and 3, with the highest capacity factors under Alternative 3. Again, Alternatives 2A and 2B would affect the degree to which new owners would tend to increase operations, but would not alter the 1999 Analytical Maximum or the 2005 Cumulative Analytical Maximum.

## 6.4 ANALYSIS OF ALTERNATIVES

### 6.4.1 ALTERNATIVE ONE: NO PROJECT ALTERNATIVE

#### *DESCRIPTION OF THE ALTERNATIVE*

Under the No Project Alternative, PG&E (or a related corporate entity) would continue to own and operate the three fossil-fueled power plants in Contra Costa County and San Francisco, and the Geysers geothermal plant. PG&E could operate the facilities in any manner it desired within the constraints of its permits and the ISO must-run contract, or could potentially increase operations to the analytical maximum, much the same as a new owner could under the proposed project.<sup>1</sup> However, it is assumed in the analysis of this alternative that PG&E would operate the plants in 1999 as is defined for the 1999 Baseline Scenario condition, which assumes PG&E's continued ownership of the facilities. Modeling was also conducted for the 2005 No Project Alternative to predict to what degree PG&E would likely operate the plants if it retained ownership of them under the cumulative conditions described in Chapter 5. The Baseline Scenario is described in Chapter 3, and the capacity factor modeling results for the 1999 conditions and the 2005 No Project Alternative are presented in Table 6.1. It should be noted that the Bay Area Air Quality Management District (BAAQMD) may change Regulation 9, Rule 11, which currently allows the four Bay Area fossil-fueled plants (the three proposed for sale and the Hunters Point plant) to operate together so that overall NOx emissions do not exceed the permitted limits. PG&E would be required to comply with the rule as amended. The following summarizes assumed PG&E operations of each power plant.

#### **The Contra Costa and Pittsburg Power Plants**

Under the No Project Alternative in both 1999 and 2005, PG&E would continue to operate these two plants in tandem at certain times, pursuant to an agreement between PG&E and the U.S. Fish

<sup>1</sup> As noted in Chapter 3, once the plants are market-valued, PG&E could sell or otherwise transfer the power plants without CPUC approval. This analysis assumes that PG&E would retain and operate the plants.

and Wildlife Service, in order to reduce the entrainment of endangered species of fish in diversions of water for power plant cooling requirements and to meet water temperature limits as required in the NPDES permits. The two plants would continue to be classified as Must Run under this alternative and subject to on-call power delivery contracts from the ISO.

### **Potrero Power Plant**

Under the No Project Alternative in 1999, the Potrero Power Plant in San Francisco would continue to be operated by PG&E as in the 1999 Baseline Scenario. The plant would continue to provide power to the City, primarily when the demand exceeds the capacity of the transmission cable that supplies primary power to the City through the Martin Substation. Potrero would continue to be a Must Run plant. Like new owners under the project, PG&E would need to upgrade the air pollution control equipment on Potrero units in order to meet required BAAQMD air quality standards by 2002.

For the No Project Alternative in 2005, as with the proposed project, it is assumed that Hunters Point would be replaced with a plant or plants rated at 480 MW capacity to meet the projected demand for electricity in the City and County of San Francisco and to continue to meet the SFOC. This analysis is contained in Chapter 5, Cumulative Impacts. In the event that new generating facilities to serve the City of San Francisco were built on or near the Potrero plant site, cumulative impacts of this alternative would be similar to those described for the project in Chapter 5, Cumulative Impacts, although of a somewhat lesser magnitude given the lower projected capacity factors for the Potrero plant under this alternative.

### **The Geysers**

Under the 1999 and 2005 No Project Alternatives, PG&E's operation of the Geysers Power Plant would continue as under the 1999 Baseline Scenario and 2005 Cumulative Scenario. Near-term future operation would continue as at present, primarily in a load-following mode. For the No Project Alternative under 2005 cumulative conditions, it is assumed the capacity of the plant would be about 665 MW, as new sources of wastewater are introduced into the Geysers. Current operations are described in Chapter 2, Project Description. One of the most important determinants as to what level of electrical generation is possible from the Geysers plant has to do with the steam field capacity. There are two projects that would reinject water into the Geysers fields, impacting both steam field capacity and field longevity. The projects, the Southwest Geysers Effluent Pipeline and the Santa Rosa Effluent Pipeline, are described in detail and their cumulative impacts assessed in Chapter 5.

## ***IMPACTS***

### **Land Use and Planning**

Under the No Project Alternative, no change in land use would occur for any of the three fossil-fueled power plants in the 1999 and 2005 cases. The existing land uses would be continued indefinitely. No impact would result. At the Geysers, existing land uses would continue in 1999

and no impact would result. For the 2005 cumulative case, assuming sustained power production with injection of imported water from Santa Rosa and Lake County, the existing land use would be expected to continue in its present use for geothermal energy production for another 20-30 years. The land use impacts, and their level of significance, is expected to be the same as with the project.

### **Population and Housing**

Under the No Project Alternative, no substantial change in population or housing would occur for any of the power plants. As the existing land uses would be continued indefinitely, there would be no direct or indirect change in land available for development.

For the Potrero Power Plant and the two Contra Costa County plants, operations would continue as at present; therefore, no change in employment would be expected to result from the alternative. There would be no direct or indirect effect on housing related to PG&E's work force for those plants. For the No Project Alternative in 2005, there would be no change in employment at the Potrero plant or the plants in Pittsburg and Contra Costa and, therefore, there are no impacts.

At the Geysers plant, no change in current operations would occur for the 1999 case, and therefore no change in employment or housing would be expected. In the 2005 cumulative case, the plants would operate at somewhat increased power generation levels compared to 1999. This would not be expected to result in an increase in employment by PG&E or have any related effects on housing. Sustained and slightly elevated power generation would be expected to support the existing work force at PG&E's units, but would not likely result in an increase in employment. As a result, no effective change in housing would be expected to occur and there would be no significant impacts.

### **Geologic Problems**

Under the No Project Alternative, no change in geologic hazards would occur from those described in the existing setting at any of the power plant sites. The No Project Alternative assumes no changes in plant facilities. Hazards related to earthquakes would be unchanged and PG&E would retain responsibility for each plant's maintenance, insurance, post-earthquake repairs, etc. Therefore, this alternative would have less than significant impacts related to earthquake hazards.

At the Geysers plant in 1999, induced microseismicity, if any, would be expected to continue as at present without substantial change. In 2005, there would be some increase in micro-seismicity because of increased steam field capacity due to the wastewater injection projects and a modest increase in electrical generation. However, the impact would be less than significant. PG&E would likely continue its existing involvement in monitoring seismic activity associated with the Geysers' operation.

## Water

Under the No Project Alternative for 1999, no change in water supply and wastewater would occur from those described in the existing setting at any of the power plant sites. PG&E's diversions for power plant cooling water at the three fossil-fueled plants would continue without change and discharges would continue as in the past under the requirements of the National Pollutant Discharge Elimination System (NPDES) permits related to water quality and water temperature discharges. As no change to power plant facilities would occur, storm water discharges would continue as at present. PG&E's ongoing monitoring and reporting requirements for diversions at intakes and for discharges would be continued. Other monitoring programs, such as PG&E's support of the aquatic resources monitoring programs in the Delta and at the Geysers, would be continued.

Effects of the No Project Alternative for the 2005 cumulative case at the Potrero, Pittsburg and Contra Costa plants would be similar to those in 1999, and would not be significant.

At the Geysers, under the No Project Alternative in 2005 with sustained and increased resource production due to wastewater injection projects, the impacts on water resources and runoff would be approximately similar to that of existing conditions. Incident surface water would continue to be collected for use as injectate without change. Steam condensate at PG&E's power plant units would continue to be collected and used for injection, and this supply would increase commensurate with the imported water supply. Water quality conditions would continue essentially as at present. Potential accidental discharges of contaminants to streams would continue as a hazard for the life of the operations of both the steam fields and power plant. Because PG&E would maintain spill control and spill response plans, the impact would be held to an acceptable level of risk and is considered to be less than significant, as with the project.

## Air Quality

Under the No Project Alternative in 1999, as no change to power plant facilities or their operations would occur, no change in air emissions would occur from those described for the 1999 Baseline Scenario at any of the power plant sites. PG&E's air pollutant emissions at the three fossil-fueled plants would continue to be within requirements of the Clean Air Act and established caps on air emissions established by the BAAQMD. This would also apply under 2005 cumulative conditions to the No Project Alternative for the Potrero, Pittsburg and Contra Costa plants. Impacts of the No Project Alternative on air quality would be less than significant.

At the Geysers, under the 2005 cumulative case for the No Project Alternative, approximately existing power plant emission volumes at all operating PG&E power plant units would continue. Emissions would occur within established caps and regulations of the two air districts with regulatory authority. The impacts would be similar to those of the project, and would be less than significant.

## **Transportation and Circulation**

Under the No Project Alternative, since no change to PG&E's power plant facilities or their operations would occur for either the 1999 or the 2005 cumulative case, no change in traffic or circulation would occur from those described in the existing setting at any of the power plant sites.

## **Biological Resources**

Under the No Project Alternatives for 1999 and 2005, because no change to power plant facilities or their operations would occur that would potentially affect biological conditions, no change in effects on biological resources would occur from those described in the existing setting at any of the power plant sites. However, it should be noted the proposed Section 10 permit, once issued (see Chapter 4.7, Biological Resources) will change operations at the Contra Costa and Pittsburg plants. This change has the aim of protecting specific species.

For both the 1999 and 2005 cases, it is expected that PG&E would continue to operate its Pittsburg and Contra Costa plants in accordance with its NPDES permit requirements, including water quality and temperature restrictions on discharges, the Section 316(b) use of best technology available (BTA) for the cooling water intakes, and provisions of the Resource Management Plan that require coordinated commitment and dispatch and cooling water system operations during springtime at both plants to reduce impacts to striped bass and other fishes. It is also expected that PG&E would continue its role in monitoring of the aquatic environment and would continue to participate in the development of a multi-species Habitat Conservation Plan (HCP) in relation to biological effects of the operation of the two plants. The Memorandum of Understanding between PG&E and the California Department of Fish and Game would continue to be in effect. PG&E would continue its habitat enhancement and monitoring program at the Montezuma enhancement site. All of these elements and commitments are described in Section 4.7, Biological Resources, of this EIR, and it is assumed that PG&E would not change these under the No Project Alternative. Similarly, operation of the Potrero plant would be expected to continue without change under PG&E's continued ownership. No significant impacts to biological resources would result.

At the Geysers, under the 2005 case of sustained and increased steam production using imported treated wastewater, existing power plant operations would be continued over a period of 20 to 30 years and no power plant-related effects on biological resources or change in hazards to biological resources from plant operations compared to existing conditions would occur. Since PG&E would continue to operate with its spill prevention and response programs, the hazard would be within an acceptable level of risk. PG&E would continue to be responsible for any damages to terrestrial wildlife and aquatic resources and their associated habitats. Impacts would be less than significant.

## **Energy and Mineral Resources**

Under the No Project Alternative for the 1999 case, as no change to power plant facilities or their operations would occur, no change in energy production or use of mineral resources would occur

from those conditions described in the existing setting at the power plant sites. For the 2005 cumulative case, no change to power plant facilities or their operations would occur at the Pittsburg, Contra Costa and Potrero plants. PG&E would be expected to run its more efficient fossil-fueled units at higher capacity levels and use its less efficient units only when the capacity is needed (see Chapter 3 and Attachment C). This is a similar mode of operation to that currently existing, and would have a less than significant impact on energy and mineral resources.

At the Geysers, under the 2005 cumulative case of sustained and increased steam production using imported treated wastewater, PG&E's existing power plant operations and energy production would be sustained over a period of 20 to 30 years. This would have the substantial beneficial effect of displacing the need for using fossil fuels for equivalent power generation at PG&E's fossil-fueled power plants.

### **Hazards**

Under the No Project Alternative for 1999, as no change to power plant facilities or their operations would occur in 1999, no change from the existing conditions would occur for the use of hazardous materials, production of hazardous wastes or contamination with hazardous substances at the power plant sites. Since no sale of the plants would occur, PG&E would not be committed to undertake remediation of contaminated soils at its existing plant sites, unless otherwise required to do so for reasons unrelated to divestiture of those facilities. The project impact of advanced remediation would not occur. However, the No Project Alternative would not have the beneficial impact that advanced remediation would provide. The same is true for the fossil-fueled plants in 2005.

At the Geysers, under the 2005 cumulative case, with sustained and increased steam production using imported treated wastewater from Santa Rosa and Lake County, PG&E's existing power plant operations and energy production would be sustained over a period of 20 to 30 years. As with the project in 2005, this would continue the use of hazardous substances and the generation of increased hazardous wastes at the Geysers Power Plant. It would prolong the hazards of potential spills of hazardous substances and the associated impacts on people and the environment. However, the increase in time of plant operations would not be expected to significantly increase the impacts because PG&E would continue to operate the spill prevention and response programs and PG&E would continue to be responsible for any damages to terrestrial wildlife, aquatic resources, and their associated habitats. With PG&E continuing to maintain spill and response programs, impacts would be less than significant.

### **Noise**

Under the No Project Alternative in 1999, since no change to power plant facilities or their operations would occur, no change in noise would occur at any of the power plant sites. For the No Project Alternative in 2005, no changes to the Potrero, Pittsburg, and Contra Costa plants would occur; therefore, no change in noise would result.

At the Geysers, under the 2005 cumulative case, with sustained and increased steam production using imported treated wastewater from Santa Rosa and Lake County, existing power plant noise at all operating PG&E power plant units would be continued over a period of 20 to 30 years but within established regulatory controls. Both counties enforce noise standards, and PG&E uses equipment and applies noise abatement procedures to reduce noise effects of its operations to acceptable levels. Under sustained operations, the same equipment and same procedures would be continued for the life of the plants; therefore, the impact would be less than significant.

### **Public Services**

Under the No Project Alternative in 1999, since no change in PG&E's operation of any of the plants would be expected, no change from the existing conditions would occur for public service requirements. Similarly, no impact on public services is likely to result for the No Project Alternative in 2005 for any of the plants. As the existing land uses would be continued indefinitely and no substantial change in employment would result for those power plants, no indirect changes in public service requirements would occur. As there would be no change in the overall operation of the plants, PG&E would continue to provide revenue to the counties in which the plants are located, and would not impact current tax collections or the public services funded by such taxes.

### **Utilities and Service Systems**

Under the No Project Alternative for 1999, since no change in PG&E's operation of the plants would be expected, no change from the existing conditions would occur for utility and service systems. Similarly, no long-term impacts would be expected with respect to any of the plants under the No Project Alternative in 2005.

### **Aesthetics**

Under the No Project Alternative 1999 case and 2005 cumulative scenario, no change in land use would occur for any of the power plants. Thus, no change in the aesthetic environment would occur. The existing land uses and their associated visual landscapes would be continued indefinitely. No impact would result. Similarly, no long-term aesthetic impacts would be expected for the Potrero, Pittsburg, Contra Costa, or Geysers plants.

### **Cultural Resources**

Under the No Project Alternative in 1999, since no change in land use would occur for any of the plants, no change in the condition of cultural resources would occur. Under the No Project Alternative in 2005, the existing land uses and their associated cultural resources would be continued indefinitely at the Potrero, Pittsburg, Contra Costa, and Geysers plants. No impact would result.

## Recreation

Under the No Project Alternative, since no change in land use would occur for any of the power plants, no change in recreational opportunities would occur in 1999 or 2005. No impact would result.

### 6.4.2 ALTERNATIVE TWO: DIFFERENT POWER PLANT BUNDLING ALTERNATIVES

Two potential bundling scenarios are considered under this Alternative. The term “bundling” refers to plants being sold together to a single buyer. The Geysers are not considered in this alternative because they are already bundled for sale according to their relationship to specific steam fields, and the unique way in which different plants are manifold together for operational efficiency. The scenarios are outlined below in detail:

#### ***ALTERNATIVE 2A***

Under this scenario, the three Bay Area fossil-fueled power plants, Contra Costa, Pittsburg and Potrero, would be sold together as a bundle. This sale would provide one operator for the plants in much the same way that PG&E owns the facilities today. The project analysis assumes that each individual and distinct new owner of the power plants would have a tendency to operate the single plant they own at a level higher than PG&E has operated that plant in the past, partly because new owners would not have a portfolio of plants to draw from. Thus, under this alternative, it is presumed that if a single new owner were to purchase all three fossil-fueled plants, the tendency for new owners to increase generation would be lessened to some (perhaps small) extent, so that each plant would operate at the same or a slightly lower level than with the project because the new owner would have more of a “portfolio” of resources to draw from.

This alternative in and of itself would not necessarily allow the current “Bay Area bubble” Regulation 9, Rule 11 to remain in place. The BAAQMD could change the rule so as to eliminate the option for a new owner to operate the three plants under a single bubble. In that case, a new owner would still need to continue to provide pollution control upgrades to the plants. However, the BAAQMD might adjust Regulation 9, Rule 11 only moderately (i.e., the designation of utility to non-utility) in order to allow the new owner the ability to operate in a manner very similar to how PG&E now operates the power plants.

#### ***ALTERNATIVE 2B***

In this scenario, all plants would be offered for sale separately. The Contra Costa and Pittsburg plants would be unbundled and sold separately from one another. As with the project, the Potrero plant would also be sold separately from any others.

The unbundling of the Contra Costa and Pittsburg plants would probably result in the revocation of the NPDES permit, which governs the cycling of the two plants for reducing endangered fish cooling water entrainment, although this is not an absolute certainty. It is possible that the two

new owners (of Contra Costa and Pittsburg) could agree to act in concert in running the plants during the time of year that fish entrainment cycling is required (currently May-July). It is also possible that one owner might purchase both plants even if they were offered for sale separately. In that case, the plants could be (and would be, to the owner's benefit) operated under the existing permit. However, in lieu of either of these occurrences, the two new owners would be required to develop new operating permits that would satisfy fish and wildlife concerns. Each of the plants would retain their must run status with the ISO. Under this alternative, the Contra Costa and Pittsburg plants would be operated up to their analytical maximum capacities within the constraints of permits that would restrict seasonal intake of cooling water and establish air pollutant emission caps in new air permits. Currently, there is a three-month period where the plants operate in tandem for fish dispatch purposes, May to July. Thus, this analysis assumes that the Contra Costa and Pittsburg plants under separate owners would each have a greater tendency to operate at higher levels (closer to the analytical maximum) than under the project, because they would be owned and operated separately (in competition with each other) instead of being managed by a single entity. However, during the May-July period, the Contra Costa plant could be forced to operate at a lower level than it could under the project because the plant may have to satisfy more stringent permit requirements if it is not linked to the Pittsburg plant.

Under this alternative, the Potrero plant would operate in much the same manner as it would under the project.

## ***IMPACTS***

### **Land Use and Planning**

No impacts on land use and planning would occur under Alternative 2 for either of the different scenarios. All the plants would be retained in their present conditions.

### **Population and Housing**

**Alternative 2A** could result in coordinated operation of the power plants, similar to the way in which PG&E operates them at present. Therefore, no change in employment by the power plants likely would result, and there would be no impact on population and housing.

Under **Alternative 2B**, duplication could occur for some worker positions for operation and maintenance of the Contra Costa and Pittsburg power plants, as compared to current operations by PG&E. The work force could increase by a small amount, but would not have a significant impact on employment, population or housing in the affected communities.

### **Geologic Problems**

No impacts on geologic conditions would occur under **Alternative 2A** or **Alternative 2B**. All of the plants would be retained in their present conditions without modification of the geologic and soils environments.

**Alternative 2B** could result in small increases in employment at the plants, thereby exposing more people to the geologic hazards at those sites, principally earthquake hazards. Because of the small increase in employment and the nature of the hazards, the impact would be less than significant.

## Water

**Alternative 2A** could result in coordinated operation of the power plants similar to the way in which PG&E operates them at present. Power generation would likely be higher than under the 1999 Baseline/No Project scenario, but less than with the project. Therefore, the change in use of water resources by the plants or discharges from the power plants would be greater than the baseline, but less than under the project, and would be less than significant. As no change in land use would occur at the three sites, there would be no change in stormwater runoff.

Under **Alternative 2B**, the separate operation of the Contra Costa and Pittsburg plants could result in changes in water use and discharges to the Delta. The current coordinated operation would not necessarily be maintained by two different owners. It is possible that a coordinated operating plan could be developed that is similar to the way in which the plants are operated at present. However, the existing permits from the Regional Water Quality Control Board (RWQCB) and agreements developed with the Department of Fish and Game would have to be rewritten for each plant owner. If current coordinated operating modes and schedules were to be maintained, mutual cooperative operating agreements from both parties would have to be secured and entered into. This could possibly be a requirement for the sale and continued operation of both plants. This would allow the continuance of schedules for withdrawals of water from the Delta and discharges to those waters as currently occurs. In practice, coordination of the operating modes of the two plants to meet the current coordinated schedules would probably be more difficult and more costly to achieve than under a single owner. PG&E personnel would provide operational support for both plants for two years after the sale. This would assist the new owners in maintaining coordinated plant operations. The coordination of operations would have to occur under the general monitoring of the RWQCB and the California Department of Fish and Game. Thus, if it is assumed that a coordinated operation schedule can be developed, the impact to water resources (and aquatic biological resources) during these restricted periods would be similar to the project and would be less than significant.

In the event that no coordinated operation schedule were developed by the owners of the Contra Costa and Pittsburg plants, it is assumed that any change in use of water resources would require a permit from the State Water Resources Control Board (SWRCB), which would establish allowable criteria for beneficial use of the waters. Similarly, discharges would be regulated by the Regional Water Quality Control Board (RWQCB) to ensure that no impairment of water quality would result, especially for conditions affecting aquatic ecology of the discharge area. The impact of separate and uncoordinated operation of the plants on water quality would likely be significant, but could be mitigated through the imposition by the permitting agencies (SWRCB and RWQCB) of discharge or operational limitations to protect water quality and aquatic biological resources. Unless the new plant owners obtained new permits, they would be precluded from operating in an uncoordinated fashion and would be governed by the existing

permits and conditions. A monitoring and reporting program would also likely be established to ensure compliance with the permits; that would further ensure that the water resources and aquatic environment are not significantly impacted.

At times of the year other than those restricted by the coordination provisions of by the NPDES permit, with independent owners, plant output would be more likely to increase to the analytical maximum, and this would be expected to result in both larger intake volumes and greater discharges of warmed cooling water to the Delta. As with the project, such increases would fall within permit requirements and would be less than significant.

Water quality impacts under this alternative associated with the Potrero plant would be the same as with the project, and would be less than significant.

### **Air Quality**

Under **Alternative 2A**, the operation of all the plants would likely be less than with the project, but the level of significance of air quality impacts would not change. Thus, impacts would be less than significant, with the exception of a temporary significant and unavoidable impact related to consistency with the 1997 Clean Air Plan.

Under **Alternative 2B**, the operation of the Contra Costa and Pittsburg plants would likely be somewhat higher than with the project, and the Potrero plant would operate in a manner similar to the project. Overall, emissions could be higher than may actually occur with the project, but would be no higher than as described for the Analytical Maximum scenarios and would be within permitted levels. The levels of significance of impacts would be the same as with the project. Thus, impacts would be less than significant, with the exception of a temporary significant and unavoidable impact related to consistency with the 1997 Clean Air Plan.

### **Transportation and Circulation**

Under **Alternative 2A**, a small change in employment at the power plants (more than the baseline, but less than the project) could result. However, as traffic increases would be modest, no change in traffic generation would occur and the impacts would be less than significant.

Under **Alternative 2B**, there could be small increases in employment at the Contra Costa and Pittsburg Power Plants (slightly more than the project). Impacts on traffic and circulation systems would be less than significant.

### **Biological Resources**

**Alternative 2A** could result in coordinated operation of the power plants similar to the way in which PG&E operates them at present although it is likely that overall power generation and capacity use would increase, although such increase would be less than the project. Effects on water resources (from water use and discharges from the power plants) would be less than with the project, but more than under continued PG&E ownership. Effects on aquatic biological resources would similarly be more than would occur with the baseline, but less than with the

project, and would not be significant. No changes in land use at the three plants would occur, therefore, no changes in terrestrial biological resources would occur. As with the project, the sale of the plants could result in a delay of issuance of Section 10 permits. This would be significant, but would be mitigated by the mitigation measure set forth in Section 4.7, Biological Resources.

Under **Alternative 2B**, the separate operation of the Contra Costa and Pittsburg plants could result in changes in water use and discharges to the Delta. If coordination of plant operations did not occur as is required at present, significant increases in entrainment of fish larvae and smelts could result. Impacts on fishery resources in the Delta could occur, in turn affecting the overall population and health of those same fisheries; the impact would be potentially significant. However, it is likely that this condition could not persist long before preventative actions would be undertaken by the RWQCB, the Department of Fish and Game, and U.S. Fish and Wildlife Service to ensure that a coordinated operating plan were developed and implemented in a way that is similar to the way in which the plants are operated at present, or that operating limitations were placed on each plant individually to mitigate the impacts.

On the other hand, if a coordinated operation schedule were developed and the owners of the Contra Costa and Pittsburg plants were to operate in a coordinated fashion (as they do now), impacts on aquatic biological resources would be similar to those of the project, and would be less than significant.

At times of the year other than May-July, increased intake and warm water discharges (see preceding discussion under Water) would occur and potentially could affect aquatic biological resources, similar to (and possibly to a somewhat greater degree than) the project. Since the plants would operated under existing permits, this would not be significant. As with the project, the sale of the plants could result in a delay of issuance of Section 10 permits. This would be significant, but would be mitigated by the mitigation measure set forth in Section 4.7, Biological Resources.

The Potrero Plant would operate in a manner to the project and would therefore have similar impacts. These would be less than significant.

### **Energy and Mineral Resources**

Under both **Alternative 2A** and **Alternative 2B**, the three power plants would continue to use non-renewable fossil fuels to produce electricity. Under both alternatives, the plants would likely operate at a greater output (and attendant fuel consumption) level than PG&E's current energy production. Operations would likely be lower than the project under **Alternative 2A** and higher than the project under **Alternative 2B**. Operations would not exceed the analytical maximum plant capacities, however, and the plants would continue to be must-run facilities needed for system reliability. Energy would not be expended in a wasteful manner, and neither alternative would result in significant impacts.

As no change in physical facilities would occur, no impact to the use of non-renewable mineral resources would occur.

### **Hazards**

Under either **Alternative 2A** or **Alternative 2B**, no substantial changes in facilities, or land use would occur at the three power plants. New owners would likely run the facilities at a greater capacity level than would PG&E without divestiture (less than the project in **Alternative 2A** and more than the project in **Alternative 2B**). However, the increased use of any hazardous materials would be minimal and any impact would be less than significant.

There is the potential that remediation activities could be accelerated due to the sale of the plants. However, with proper worker-related safety procedures and adherence to established regulation of hazardous materials of the Department of Toxic Substance Control (DTSC) and the Occupational Safety and Hazard Administration (OSHA), and with implementation of the risk assessment mitigation measure identified for the project in Section 4.9, Hazards, the significant impact would be reduced to a less than significant level for both **Alternatives 2A and 2B**.

### **Noise**

Under **Alternative 2A**, there would be no change in facilities or land use at the power plants. Operations could decrease somewhat compared to the project. Noise could be higher than with the baseline but less than with the project, lessening impacts to sensitive receptors. As with the project, impacts would be less than significant.

Under **Alternative 2B**, noise could be higher than with the project. The exception would be at the Contra Costa Power Plant when operations are curtailed for a portion of the year, so that noise could actually decrease at that facility compared to the baseline, unless operations were coordinated between the Pittsburg and Contra Costa plants. Noise impacts at the Potrero Power Plant would be the same as for the project. Noise impacts under **Alternative 2B** would be less than significant.

### **Public Services**

Under **Alternative 2A**, no change in basic operation of the power plants would occur; therefore, no change in police, paramedic and fire control service needed for the power plants likely would result. Although there is no change in land use, a potential for a small increase in employment or population would occur at the three power plants, but this would create no significant impacts on social services, schools, library and public health services.

Under **Alternative 2B**, no change in basic operation of the power plants would occur; therefore, no change in police, paramedic and fire control service needed for the power plants likely would result. Operation of the plants under this scenario could involve a commitment of staff resources by the regulatory agencies, particularly the Department of Fish and Game and U.S. Fish and Wildlife Service, the Regional Water Quality Control Board, State Water Resources Control Board, and the BAAQMD, for preparing new permits and enforcing them. As ownership would

be divided, the effort for permitting, review of monitoring reports and follow-up enforcement actions could be increased. The less-than-significant fiscal impact could be offset entirely by collection of fees to support these services.

The possible small increase in work force from higher operations could result in a negligible (and less than significant) increase in demand for public services for schools, libraries, social services, health care, police and emergency response services for workers and their families.

Operations at the Potrero Power Plant would be the same as under the project and would not significantly impact public services.

### **Utilities and Service Systems**

Under **Alternative 2A**, operations would tend to be less than with the project, but greater than with continued PG&E ownership of the plants. No additional services would be needed. As with the project, no significant impact on utilities and service systems would result.

Under **Alternative 2B**, operations would tend to be greater than the project at the Contra Costa and Pittsburg plants, which could result in some small changes in utilities and services. However, no additional services would be needed. As with the project, no significant impact on utilities and service systems would result.

By splitting ownership of the plants, minor changes in some utilities could occur, e.g., communications. As these services are readily available already, the impact is less than significant.

As a small increase in work force could occur compared to baseline, a negligible increase in use of domestic water, sewage and solid waste generation may result.

### **Aesthetics**

As no substantial changes to the physical facilities of the three plants would occur, no impacts on the visual landscape and aesthetics would result from implementing either of the scenarios under Alternative 2. As with the project case, PG&E may install fencing to separate its transmission facilities from the power plants; this would likely result in a less than significant impact and would affect both scenarios under Alternative 2 equally.

### **Cultural Resources**

As no substantial changes to the physical facilities of the four plants would occur, no impacts on potentially present cultural resources would result from implementing any of the scenarios under Alternative 2. As with the project case, PG&E may install fencing to separate its transmission facilities from the power plant; footings for the fence posts possibly could encounter buried cultural resources. This significant impact could be mitigated through implementation of the proposed project mitigation(s) outlined in Section 4.14. The potential impact applies to both scenarios under Alternative 2.

## Recreation

Under **Alternative 2A**, no change in the land use would occur at the power plants, and therefore, no impact on recreational facilities or opportunities would occur. The change in operations at the plants would have no impact on recreation in the vicinity of each plant.

Under **Alternative 2B**, impacts on recreation could be indirect, as no recreational facilities are present at the plant sites. The indirect impact would result from the potential for fishery resources to be adversely affected by intake and increased discharges of warm water to the Delta by operating at higher generation, particularly during critical seasons. If fish populations were adversely affected, it could result in a decline in those fish species that are popular for sport fishing (as well as commercial fishing). The impact would likely be cumulative, as the decline in fishery resources in the Delta is linked to many causes. However, as noted in the preceding discussions under Water and Biological Resources, because the regulatory agencies would prepare new permits for the new owners of the plants, no significant impact is expected. The new permits would be targeted to preventing an impact on fishery resources, including those that figure into recreational fishing in the Delta.

### 6.4.3 ALTERNATIVE THREE: THE GEYSERS PLANTS ARE SOLD TO THE STEAM FIELD OPERATORS

This alternative assumes that the Geysers Power Plant would be sold to the operators of the steam fields. The steam field operators are UNT and Calpine. Unocal, NEC (a Japanese turbine producer) and Thermal Power Company (a subsidiary of Calpine) operate as an undivided partnership, called UNT, to supply steam to PG&E's Sonoma County units. Under this alternative, UNT would become the owner of the plants in Sonoma County and continue to operate the associated steam fields. Calpine supplies steam to PG&E's two Lake County units. Under this alternative, Calpine would become the owner of the units in Lake County. PG&E would also transfer to the new ownership existing contracts and obligations of the company. PG&E would retain its power transmission facilities, except as has been described in Chapter 2, Project Description, as being sold with the Geysers plant.

It is assumed in this alternative that the purchase of the plants by the steam field operators would provide for greater coordinated field and plant operations. This would lead to a significant increase in capacity utilization over the 1999 baseline and a greater capacity utilization over both the 1999 and 2005 Analytical Maximum scenarios (see Table 6.1). This may reduce environmental effects that are of concern, namely steam stacking. If the steam from the steam fields is not used continuously (i.e., when generating units are not operated consistently or at sufficiently high levels), steam stacking (the build up of steam pressure) can occur in the pipelines. The release of this pressure, known as a "puff," is potentially hazardous both in its intensity and because of its hydrogen sulfide content. Consistent utilization of the steam is one way to avoid stacking. The release of pressure occurs through the generating units, which have pollution abatement controls to remove hydrogen sulfide and other potentially toxic constituents in the steam. As owners of the generating units, the steam field operators would be uniquely

positioned to coordinate the operations of the units to maximize utilization of steam pressure and avoid stacking.

In addition, the current steam field operators and PG&E have entered into an agreement to inject effluent into the Geysers steam fields to stabilize field capacity and thus stabilize the delivery of steam for power to the plants. A pipeline has been built to provide wastewater to the Southeast Geysers field from Lake County, and a new pipeline is planned to accept Santa Rosa wastewater, with operations expected to begin in 2001. In combination, these pipelines will provide up to 19-20 million gallons per day (gpd) of effluent. Currently, some 6 million gpd are being piped up to the field and injected in the Southeast Geysers.

The current steam field operators have a contract to accept this effluent for injection for 25 - 30 years. If the power units were not operated continuously to withdraw the steam thus created (as well as that already occurring), steam stacking would occur more often, potentially leading to greater emissions. There is currently a contract between PG&E and the steam field operators to take steam that results from the Lake County effluent injection. Lake County has expressed concerns over the operations of a new plant owner (or owners), stemming from the sensitivity of County residents to environmental issues related to the proper operation of the plant, as well as concerns about the consequences if the re-injected wastewater were not used for power generation, causing unabated steam releases. Because the project analysis does not indicate that divestiture would result in any change related to steam stacking or steam releases, the project would not have any significant impacts in this regard. Therefore, this alternative would not be necessary to reduce project impacts. It may, however, beneficially reduce steam stacking and release events.

If the current steam field operators were to purchase PG&E's Geysers plant, they could operate the units and sell power in the direct access market place.

It is uncertain whether the CPUC has the authority to force PG&E to sell its facilities to particular buyers. However, given the right of first refusal held by the steam field owners to purchase the units and the possibility that sale of the Geysers Power Plant to the steam field owners could foreseeably result in environmental changes that differ from those analyzed in Chapter 4, this EIR explores the potential impacts associated with such an occurrence.

## ***IMPACTS***

### **Land Use and Planning**

Under this alternative, no substantial change in land use would occur for the Geysers plants and for the associated steam fields in either 1999 or 2005. As with the project, assuming sustained power production with injection of imported water from Santa Rosa and Lake County, land use would be expected to continue in its present use for geothermal energy production for another 20-30 years. The alternative would not likely lead to the construction of new plants by the steam field operators or significant modification of the existing units.

Increased generation could result in new make-up wells being installed in the steam fields if the reserves decline in a given area and the field pressures drop. This could increase the intensity of geothermal facilities in the area of land in which these facilities already exist but the impact on land use would be less than significant. However, the construction of new injection wells or production wells appears unlikely given the current over-development of the Geysers.

On the whole, this alternative would not result in a change in the overall land use in the Geysers. Geothermal development in the Geysers would continue as at present, and no significant impacts would occur.

### **Population and Housing**

Under this alternative, no substantial change in population or housing would occur. As the existing land uses would be continued indefinitely, there would be no direct or indirect change in land available for development.

At the Geysers plant, the potential to increase power production above current operations probably would induce only a negligible change in employment, as the existing work force would continue to operate the steam fields and plants. Worker requirements at the plant would be expected to remain the same. A minor increase in employment might be needed, but the overall impact would be less than significant. A negligible effect on available housing would be expected.

### **Geologic Problems**

Under this alternative, no change in geologic hazards would occur from those described for the project at the Geysers plant. Induced microseismicity would be expected to continue approximately as at present without substantial change. Assuming sustained steam production and power plant operation with increased imported water for deep injection, induced micro-seismic activity could be expected to continue at current levels for 25 to 30 years. Increased production to run the plant at higher levels may result in local increases in the frequency of micro-seismic events, perhaps at a level higher than the project. However, consistent with studies conducted for the Southeast Geysers Effluent Pipeline (ESA, 1994) and the Santa Rosa Wastewater Modified Geysers Recharge Project (Parsons et al, 1997), the impact would not be expected to result in hazards to people or property and, therefore, would be less than significant.

### **Water**

No changes in water supply or wastewater conditions would occur as a result of this alternative.

At the Geysers, with sustained and increased resource production using imported Lake County and Santa Rosa wastewater, the impacts on use of local water resources and runoff would be approximately similar to that of the proposed project. Incident surface water would continue to be collected for use as injectate without change. Steam condensate at the power plant units would continue to be collected and used for reinjection, and this supply would increase commensurate with the imported water supply. Water quality conditions would continue

essentially as at present. Potential accidental discharges of contaminants to streams would continue as a hazard for the life of the operations of both the steam fields and power plant. Running the units at higher levels would increase the risk of an upset condition. PG&E's spill control and spill response plans would likely be adopted by, or adapted to, the individual operators' requirements for the particular unit(s) they acquire. Thus, the impact would be held to an acceptable level of risk and is considered to be less than significant. In the long term, the steam field operators would assume much of PG&E's role and responsibility in monitoring. As the steam field operators already are participants in monitoring of water flow, water quality and aquatic resources at the Geysers, this would simply extend their participation and costs for these purposes.

### **Air Quality**

At the Geysers, assuming sustained and increased steam production using imported treated Santa Rosa and Lake County wastewater, existing power plant pollutant emission volumes at all operating PG&E units would be sustained over a period of 20 to 30 years. Emissions would occur within established caps and regulations of the two air districts with regulatory authority. The impact would be less than significant.

As noted earlier, if the steam is not used continuously, then steam pressure is built up in the pipeline and ultimately released. This release can be potentially hazardous both in its intensity as well as in the release of hydrogen sulfide. One way to avoid this is to maintain a consistent release of the steam. The steam field has been tapped in a manner to supply power to the existing units and therefore, if the units do not operate and accept steam then steam stacking can occur. In order to prevent this from happening, some volume of the steam must be routinely bled-off through the units that have pollution controls to safely utilize the steam and remove any potentially harmful toxic substances. Those units would not be changed as a result of this alternative. As mentioned earlier, the project is not expected to have any adverse impacts with respect to steam stacking. However, since the steam field owners could coordinate operations of the units with the steam fields, the potential for steam stacking could be reduced. Thus, this alternative may result in a beneficial impact on the environment.

### **Transportation and Circulation**

No change in traffic or circulation related to this alternative would occur from those described for the project, and thus no impacts would result. Existing power plant operations would be sustained over a period of 20 to 30 years and no change in truck or worker commute traffic would be expected.

### **Biological Resources**

Under this alternative, some additional units might be operated in a baseload manner, which could increase the hazards to biological resources from spills or other mishaps. On the whole, that increase would be expected to be less than significant and because the new operators would continue to operate with required spill prevention and response programs similar to those

currently implemented by PG&E, the hazard would be within an acceptable level of risk. The plant operators would be responsible for any damages resulting from plant operations and mishaps affecting terrestrial wildlife and aquatic resources and their associated habitats. PG&E would continue to be responsible for any damages related to its transmission system affecting terrestrial wildlife and aquatic resources and their associated habitats.

### **Energy and Mineral Resources**

Under ownership by the steam field operators, the assumption in this alternative is that the plant could be run at higher levels at least during some periods. However, with continuing wastewater reinjection in place, there would be no significant impacts as the Geysers is a renewable resource. Continuing to run the Geysers at current or higher generation rates would be a beneficial impact as it would displace non-renewable fuel (energy) use elsewhere.

### **Hazards**

As with the project, PG&E would be committed to undertake remediation of contaminated soils at its existing plant sites. With the sale of the Geysers plant, remediation activities could be advanced compared to when they would occur if PG&E were to retain ownership of the plants. This would be a beneficial impact of divestiture. However, the risks inherent in remediation would represent a significant impact. As with the project, this impact could be mitigated through the preparation and use of risk assessments.

Because operations would continue under established regulation of hazardous substances, the level of risk would be acceptable and, therefore, the impact is considered less than significant. A beneficial effect of this scenario could be the equivalent reduced need for use and generation of hazardous wastes at PG&E's fossil fuel power plants, as power generation at those plants may be displaced by equivalent production at the Geysers.

### **Noise**

Under this alternative, the level of noise would not be expected to increase, but the frequency of noise events could be increased compared to both the baseline and the project. It is assumed that the plant would continue to operate within established controls of noise. Noise was in the past a common complaint of residents in neighboring communities. However, both counties enforce local noise ordinances and PG&E uses equipment and applies noise abatement procedures to reduce noise effects of its operations to acceptable levels. Under this alternative, the same equipment and same procedures would continue for the life of the plants under the operation and maintenance of the steam suppliers; therefore, the impact would be less than significant.

### **Public Services**

Sustained and increased production at the Geysers would continue the existing demand on public services, but would not increase such demand in any considerable manner. The property assessment status might change with the sale of the plants to steam suppliers, essentially creating an integrated facility. Precisely how the expected tax revenue would change is unknown, but it

would not likely cause a decrease in public services or a need for additional services. The steam suppliers would maintain roads to the plant and continue to maintain the steam field access roads and contribute to support of county roads in the area. PG&E would continue to maintain its access roads for transmission facilities and contribute to support of county roads in the area.

### **Utilities and Service Systems**

No impact on water supply systems, sanitary/storm sewers, communications or natural gas systems would occur because these services are not provided at the Geysers. Prolonged operation of power plant and associated steam fields would continue the existing demand for waste disposal at least 20 to 30 years, but no more than would the project and to a less than significant degree.

### **Aesthetics**

As no change in land use would occur for the plant, no change in the aesthetic environment would occur. The existing land uses and their associated visual landscapes would be continued indefinitely. No impact would result.

### **Cultural Resources**

As with the project, to the extent that fences or roads could be necessary to separate PG&E's retained facilities from those sold, cultural resources could be disturbed. As with the project, cultural resource impacts could be mitigated through appropriate site investigations and resource recovery prior to disturbance. Impacts on ethnographic resources may be significant, depending on the location. Therefore, if cultural resources are uncovered during any minor construction activities, the impact is mitigable through implementation of the proposed project mitigation measure outlined in Section 4.14.

### **Recreation**

As no change in land use would occur at any of the units in the plant, no change in recreational opportunities would occur. The existing land uses and their associated visual landscapes would be continued indefinitely. Existing recreational use (primarily private hunting and fishing) would be continued without change. As the Geysers is closed to public access, no impact would occur on public recreation facilities or opportunities.

## **6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

Table 6.2 compares by topic area each of the alternatives with the project.

The environmentally superior alternative to the project is a combination of Alternative 2A, the bundling of Potrero, Contra Costa and Pittsburg and Alternative 3, the sale of the Geysers plant to the steam field operators. The bundling of the three fossil-fueled plants would have a tendency to lower overall generation of these plants compared to the project. The magnitude of the impacts would be less than with the project, but the levels of significance of the impacts

would be identical to the project. Under Alternative 3, the sale of the Geysers units to the steam field operators would allow for greater coordination of generating unit operations with steam field characteristics and may reduce steam stacking. In addition, the Geysers plant would operate at a higher capacity -- 92-93 percent versus 87 percent -- which would lower somewhat the need for power from non-renewable fuels. These two alternatives combined are considered to be the environmentally superior alternative.

**TABLE 6.2**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVES<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
<b>Land Use and Planning</b>					
4.1-1: The proposed project is consistent with adopted general plan policies, land use designations and zoning, and thus would not conflict with adopted environmental plans and goals of the community where it is located. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
4.1-2: The four power plants being considered for divestiture are existing land uses that would remain in the same locations. Therefore, the project would not disrupt or divide the physical arrangement of any established community. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
4.1-3: The project would not convert prime agricultural land to non-agricultural uses, or impair the agricultural productivity of prime agricultural land. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
<b>Population and Housing</b>					
4.2-1: The proposed project would not induce substantial growth or concentration of population. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
4.2-2: The proposed project would not displace a large number of people. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)

<sup>a</sup> Significance levels for the project and the alternatives reflect the levels of significance after all mitigation measures are applied.

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UKN = Unknown level of impact.

<sup>b</sup> This table presents a comparison of environmental impacts that were identified under the proposed project with each of the alternatives. Additional environmental impacts that would potentially occur under each the alternatives are presented in the text discussion.

**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
<b><u>Geologic Problems</u></b>					
4.2-3: Minor construction activities resulting from the project (e.g., fences and site remediation) could cause soil disturbance. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.3-2: Potential operational changes due to the transfer in ownership of the Potrero, Pittsburg, and Contra Costa Power Plants would not create geologic problems. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.3-3: The change in ownership of the Geysers should not affect the potential for the facility to induce microseismicity in the project area and vicinity. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (G)
4.3-4: The transfer in ownership of the Geysers should not increase the frequency and magnitude of major earthquakes. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
<b><u>Water</u></b>					
4.4-1: The divestiture of the power plants would involve only minor construction at the plants. Therefore, no significant impacts to water resources from construction activities are anticipated. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.4-2: The project could increase the amount of water used at, and discharged from, the plants. (Less than Significant)	NS	NS(L)	NS (L)	NS (G)	NS (E)

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**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
<b><u>Air Quality</u></b>					
4.5-1: The project may result in an increase in criteria air pollutant emissions in the affected air basins. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.5-2: The project may result in an increase in local concentrations of criteria air pollutants in the vicinities of the power plants. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	B
4.5-3: The project may lead to an increase in health risks in the vicinities of the power plants. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (L)
4.5-4: The project may result in the elimination of PG&E's existing voluntary FTP cleanup programs. Loss of these programs could result in nuisance effects, caused by FTP stains. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.5-5: Depending upon whether, and how, the BAAQMD modifies Regulation 9, Rule 11, the project may be inconsistent with regional air quality plans. (Significant)	S/UN	NS (L)	S/UN (L)	S/UN (G)	NS (L)
<b><u>Transportation and Circulation</u></b>					
4.6-1: The project could increase traffic generation. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.6-2: The potential minor increases in traffic would not increase traffic safety hazards. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)

<sup>a</sup> Significance levels for the project and the alternatives reflect the levels of significance after all mitigation measures are applied.

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**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
4.6-3: The potential minor increases in traffic from the project would not have an effect on emergency access and access to nearby land uses. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.6-4: The project could increase demand for on-site parking. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
<b><u>Biological Resources</u></b>					
4.7-1: Divestiture could result in an overall loss of important species or habitat if future owners were unaware of the presence and sensitivity of such biological resources. (Significant)	S/M	NS (L)	S/M (E)	S/M (E)	NS (L)
4.7-2: If the Section 10 Permits are not issued to PG&E prior to the close of the sale or to the new owner at closing, divestiture may delay the issuance of such permits. The delay caused by divestiture may result in impacts to protected species. (Significant)	S/M	NS (L)	NS (L)	S/M (G)	NS (L)
4.7-3: Divestiture may result in impacts to locally designated species of concern and other aquatic organisms. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
<b><u>Energy and Mineral Resources</u></b>					
4.8-1: The project would not conflict with adopted energy conservation plans. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (L)

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**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
4.8-2: The project would not promote wasteful or inefficient use of non-renewable resources. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	B
4.8-3: The project would not result in loss of availability of known mineral resources. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
<b>Hazards</b>					
4.9-1: Divestiture could advance the time at which existing hazards are remediated and therefore could advance a potential threat to worker safety or to public health should existing environmental contamination at the power plants be handled improperly. (Less than Significant)	NS (M)	NS (L)	NS (E)	NS (E)	NS (E)
4.9-2: Remediation of contaminated soils, groundwater, or building materials at the plant sites would likely occur sooner as a result of transfers of title than would be the case if the power plants were not sold. Remediation would eliminate potential future threats to public health or to the environment. (Beneficial)	B	NS (G)	B (E)	B (E)	B (E)
4.9-3: Divestiture could promote increased use of hazardous materials at the power plants. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.9-4: Divestiture could result in an increased frequency of accidents at the power plant sites. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.9-5: Divestiture could result in increased generation of hazardous waste at the power plants. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)

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**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
4.9-6: Divestiture could affect electromagnetic field strength at the power plants (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
<b>Noise</b>					
4.10-1: Minor construction activities that could be associated with transfer of ownership would temporarily increase noise levels above existing ambient levels in the project vicinities. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.10-2: Potential changes in operational activities by a new owner would generate noise levels above existing ambient levels in the project vicinities. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (G)
<b>Public Services</b>					
4.11-1: The project would not create the need for new or substantially altered fire, police, school or other government services. Therefore, the project would not have a significant environmental impact on public services. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.11-2: The combined sale of the Contra Costa and Pittsburg Power Plants in Contra Costa County would not create the need for new or substantially altered, fire, police, school, or other government services. Therefore, the project would not have a significant environmental impact on public services. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)

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**TABLE 6.2 (Continued)**  
**IMPACTS AND SIGNIFICANCE LEVELS OF THE PROJECT AND ALTERNATIVE<sup>a,b</sup>**

Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
4.11-3: The project may affect property tax revenues in the jurisdictions of the plants to be sold. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
<b>Utilities and Service Systems</b>					
4.12-1: The project would not result in the need for new or substantially altered electric power systems or supplies. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
4.12-2: Potential operational changes at the plants could increase the need for public water demand at the plants. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.12-3: The project could result in an increase in wastewater disposal to the public sanitary sewer systems and increase the need for wastewater treatment. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.12-4: The project could result in an increase in demand for solid waste services. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (E)
4.12-5: The project could increase the need for communications systems. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.12-6: The project would not result in the need for new or substantially altered natural gas systems or supplies. (Less than Significant)	NS	NS (L)	NS (L)	NS (G)	NS (L)

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Impact	Proposed Project	No Project	Alt. 2 Power Plant Bundling		Alt. 3 Geysers
			2a	2b	
<b><u>Aesthetics</u></b>					
4.13-1: Potential changes in operational activities by a new owner and minor construction activities would not produce new sources of light or glare in the project vicinity. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
4.13-2: The project would not result in the change or obstruction of scenic highway views or vistas open to the public or the creation of an aesthetically offensive site open to public view. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
<b><u>Cultural Resources</u></b>					
4.14-1: Minor construction activities associated with divestiture, such as fencing to separate the retained properties from the divested plant sites, could result in impacts to subsurface cultural resources. (Less than Significant)	NS (M)	NS (L)	NS (E)	NS (E)	NS (E)
4.14-2: The continued operation of the divested plants would not affect known cultural resources. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)
<b><u>Recreation</u></b>					
4.15-1: The project could minimally increase demand for neighborhood or regional parks or other recreational facilities. (Less than Significant)	NS	NS (L)	NS (E)	NS (E)	NS (E)
4.15-2: The project would not significantly affect existing or proposed recreational opportunities. (Less than Significant)	NS	NS (E)	NS (E)	NS (E)	NS (E)

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