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Socioeconomic Effects of Power Marketing Alternatives for the Central Valley and Washoe Projects: 2005 Regional Economic Impact Analysis Using IMPLAN

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SUMMARY

The Western Area Power Administration currently has power contracts with preference customers in its Sierra Nevada Customer Service Region (SNR). This power is generated at hydroelectric facilities that comprise the Central Valley Project and the Washoe Project (known hereafter as the CVP). All current contracts expire at the end of 2004, and Sierra Nevada will be developing a new marketing plan to take effect beginning in 2005. Results are developed for three SNR customer groupings. The "utility" group includes power scheduling utilities that sell to end-users., The "agriculture" group are customers that purchase power for farm irrigation. The "other" group are government agencies that are served by SNR directly.

This report summarizes the methods and conclusions of an economic analysis of the distributional effects of alternative actions that Sierra Nevada could take with its new marketing plan. These alternatives are summarized in the agency's Environmental Impact Statement (EIS), and this study directly supports the findings in the EIS.

The study evaluates the potential economic impacts projected to occur across the northern and central California area currently serviced by Sierra Nevada's customers. A standard input-output estimation approach was used to calculate impacts on regional output, labor income, and employment. The IMPLAN regional economic modeling system was used to develop regional models for the analysis. Individual regional models were developed for the overall area, the San Francisco Consolidated Metropolitan Statistical Area, the Sacramento Consolidated Metropolitan Statistical Area, the Redding Metropolitan Statistical Area, and the Bakersfield Metropolitan Statistical Area.

The analysis relies on information about the effect of Sierra Nevada's alternative actions on overall system power costs for the year 2005 developed by RW Beck and Associates (Beck and Associates 1996). This information is used as input to the 2005 benchmarked IMPLAN regional economic models. The resulting economic impact estimates are inextricably linked to this input information about changes in system power costs, and the estimates reported here are of similar relative magnitude to those estimates. The Beck analysis attempts to account for a fully deregulated retail electricity market projected to be in full operation during the 2005 study year.

The potential economic effects of Sierra Nevada's actions are extremely small in relation to the size of the economies potentially affected, and, although they are calculable, they are not significant and often difficult to separate from random error present in the models. Estimated employment effects range from about 200 new jobs to 600 job losses in the northern and central California study area, depending on the alternative. Alternatives calling for Sierra Nevada to offer the Central Valley Project-Washoe (CVP) hydroelectric resource as a peaked resource, and supplementing its resources with spot market energy purchases, result in generally neutral economic impacts. Alternatives calling for Sierra Nevada to make substantial purchases of power generated from current renewable resource technologies (solar, wind, geothermal) generally result in the most negative economic impacts. The SNR Preferred Alternative has a generally neutral economic impact. Increasing the CVP power allocations to the utility customer group or decreasing them to the other customer group tends to result in positive economic impacts.

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1.0 INTRODUCTION

The Western Area Power Administration (Western) was founded by the Department of Energy Organization Act of 1977 to market and transmit federal hydroelectric power in 15 western states outside the Pacific Northwest, which is served by the Bonneville Power Administration. Western is divided into four independent Customer Service Regions including the Sierra Nevada Region (Sierra Nevada), the focus of this report.

The Central Valley Project (CVP) and the Washoe Project provide the primary power resources marketed by Sierra Nevada. Sierra Nevada also purchases and markets power generated by the Bonneville Power Administration, Pacific Gas and Electric (PG&E), and various power pools. Sierra Nevada currently markets approximately 1,480 megawatts of power to 77 customers in northern and central California. These customers include investor-owned utilities, public utilities, government agencies, military bases, and irrigation districts.

All existing contracts for power delivery to these customers expire at the end of 2004. Sierra Nevada is developing a 2004 Power Marketing Plan to analyze options for renewing or replacing these contracts. To comply with the National Environmental Policy Act of 1969 (NEPA), Sierra Nevada is producing an Environmental Impact Statement (EIS) as part of the plan that establishes a range of power marketing alternatives and measures their environmental impacts.

A similar, concurrent study also happening in California's central valley involves the Central Valley Project Improvement Act (CVPIA). The CVPIA regulates water management in central California. It mandates 23 provisions for fish and wildlife restoration within the Central Valley Project's jurisdiction. The CVPIA requires that the U.S. Bureau of Reclamation file an EIS documenting environmental impacts of the CVPIA provisions. The CVPIA provisions may affect the baseline water resource conditions used to forecast hydroelectric generation potential for the alternatives to be analyzed in Sierra Nevada's 2004 EIS. Analysis in this report applies only to populations potentially affected by Sierra Nevada's actions.

This report will be used to supplement documentation on the socioeconomic characteristics of the population potentially affected by Sierra Nevada's 2004 Power Marketing Plan and will be directly cited in Sierra Nevada's EIS. Of specific concern is the need to appropriately and adequately document the existence of potentially affected socioeconomic resources in northern and central California. These resources include the population, industries, work force, and their interactions with each other. The report documents the specific socioeconomic impacts projected to occur under the various alternative courses of action Sierra Nevada could pursue with the 2004 Marketing Plan.

Economic impacts receive the greatest level of attention in the analysis, because they are recognized to lead to other related impacts such as shifts in population and population profile, changes in economic base, changes in tax revenue and associated government activities such as schools, and other sociological stresses. The alternative actions outlined by Sierra Nevada in their 2004 EIS are not likely to result in any significant economic impacts across the northern and central California region examined in this study. As a result, any sociological impacts that might result also are not likely to be significant.

1.1 Report Organization

This report is organized to follow the general format of a NEPA document, such as an EIS. Summary information describing the northern and central California region affected by Sierra Nevada's actions documents the socioeconomic resources to be considered for impact analysis. This supplementary information is followed by a description of methods used to estimate the economic impacts of Sierra Nevada's alternatives as presented in the 2004 EIS. These estimates of economic effects follow the description of methods and are put into context with the regional economies affected. Key modeling output is presented in the appendix.

1.2 Economic Regions

To adequately model possible economic impacts from Sierra Nevada's set of alternatives, the service area shown in Figure 1.1 was examined to identify the individual regional economies within. For economic impact analysis, the Sierra Nevada customers should be represented in the individual local economies where they reside. Sierra Nevada's alternatives may affect their utility customers who supply electricity to residential, industrial, and commercial consumers. Many farmers rely on water from irrigation districts who receive electricity from Sierra Nevada. Many government agencies acquire their electricity from Sierra Nevada, as well. Figure 1.2 traces these interactions between Sierra Nevada customers and the economies they affect. Stevens and Rose (1985) provide valuable guidance for determining an economic region of influence.

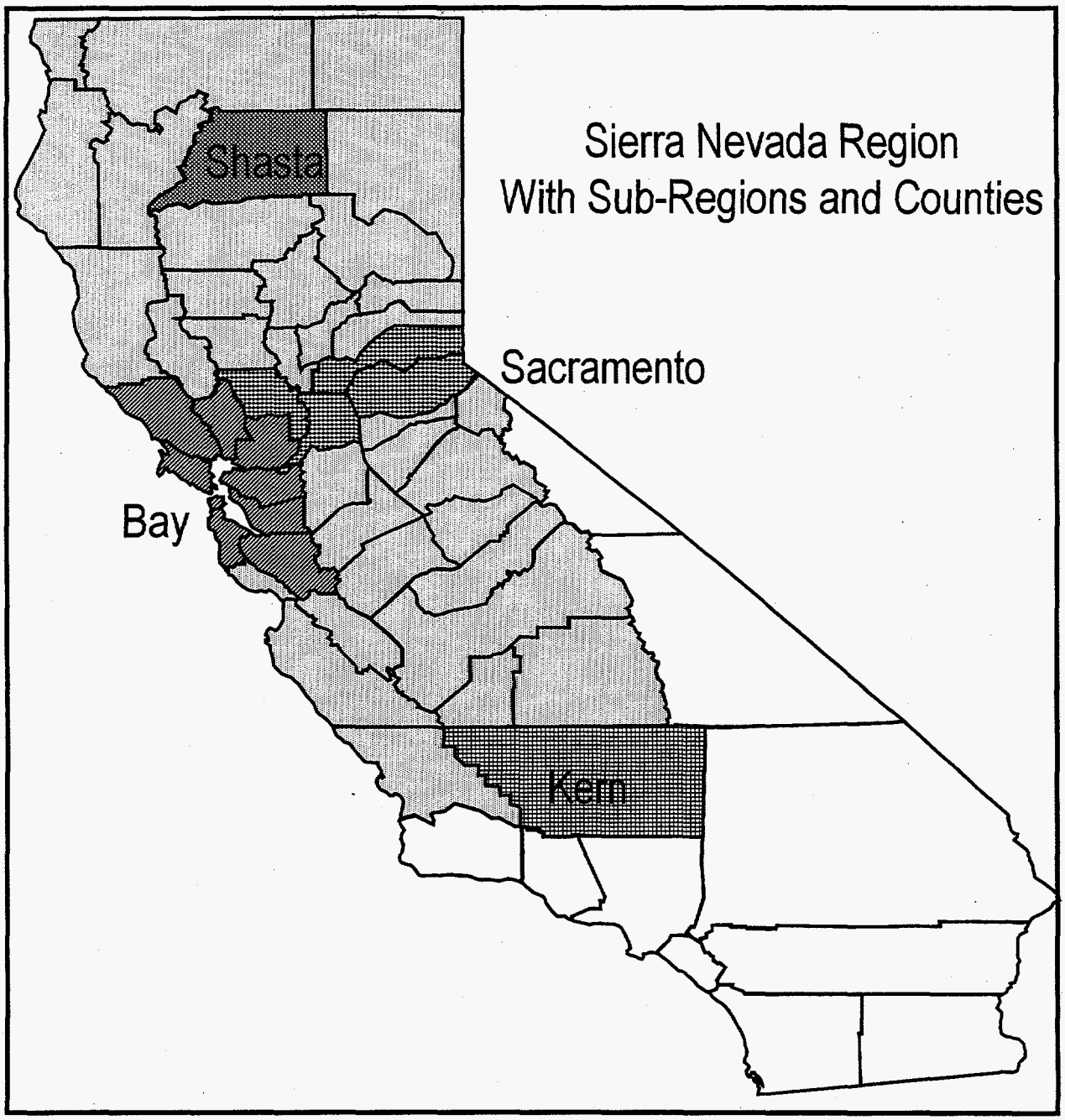

Figure 1.1. The Sierra Nevada Region Used In Socioeconomic Analysis

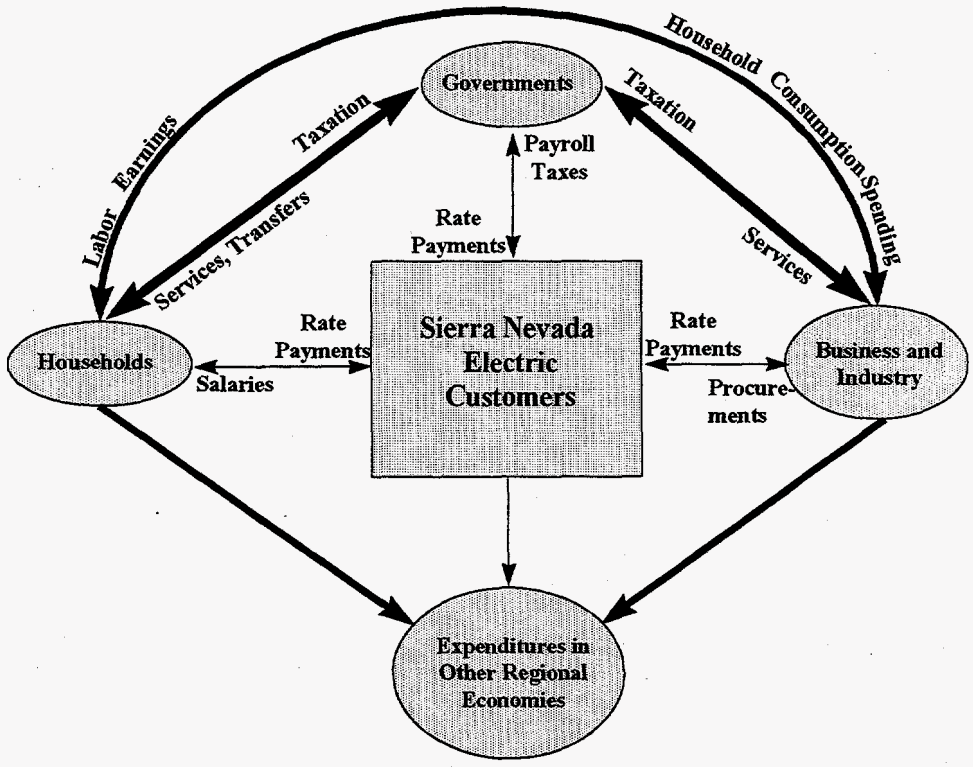

Figure 1.2. Financial Flows within a Regional Economy

Four regional economic models were developed for areas within Sierra Nevada's existing service area: the Bay Area region, the Sacramento region, the Kern region, and the Shasta region. The Bay Area regional model was developed using the same accounting definitions used by the Association of Bay Area Governments (ABAG 1993) for the San Francisco Consolidated Metropolitan Statistical Area. The Bay Area region is the dominant economy of Northern California. Nearly 70% of Sierra Nevada's government agency load and 40% of its utility load is located in the nine-county region. The Sacramento region encompasses the Sacramento Consolidated Metropolitan Statistical Area including El Dorado, Placer, Sacramento, and Yolo Counties. Over 40% of Sierra Nevada's utility load and over 11% of the government load reside in this region. The Kern County regional model was developed based on the Bakersfield Metropolitan Statistical Area. Nearly 30% of Sierra Nevada's agricultural load is consumed by several irrigation districts in Kern County. The Shasta County regional model was developed based on the Redding Metropolitan Statistical Area. Much of the CVP generation facilities are located in Shasta County, and over 12% of the end-use utility load resides there.

Economic impacts were estimated based on how Sierra Nevada markets hydroelectric power to its customers, who those customers are, and what regional economies they affect. Table 1.1 outlines how Sierra Nevada markets power to its customer groups and to the associated regions of the study. This level of regional detail is sufficient to analyze the breadth of alternatives in a manner that is representative of the regional economies in the service area and representative of the customer groups served by Sierra Nevada.

Table 1.1. Sierra Nevada Contracted Power (MW) by Customer Group and Region.

Economic Region	Agricultural	Federal & Other	State & Local	Utility	Total (MW)	Region % of Total
Kern County	32,974	500	0	0	33,474	2.3%
Other Areas	76,490	50,985	6,400	75,428	209,303	14.3%
Sacramento Metro	2,600	17,000	17,122	430,000	466,722	31.8%
San Francisco Bay	3,487	199,852	9,265	415,918	628,522	42.9%
Shasta County	0	0	0	127,450	127,450	8.7%
Total (MW)	115,551	268,337	32,787	1,048,796	1,465,471	
Customer% of Total	7.9%	18.3%	2.2%	71.6%		

Source: Sierra Nevada Customer Database.

1.3 Environmental Justice

Executive Order 12898 (Federal Register 59:32, pp. 7626-33), ordered each federal agency to make achieving "environmental justice" part of its mission. Specifically, agencies must appropriately and adequately document the existence of potentially affected low-income populations and minority populations. Official guidance for analyzing environmental justice issues has not been issued; however, other U.S. Department of Energy documents prepared to comply with NEPA include specific attention to whether impacts on these populations are disproportionate. Low-income and minority populations have been specifically identified within the Sierra Nevada service area and within each of the regional economies studied. Lester and Anderson (1995) provide full documentation of the population characteristics of the Sierra Nevada service area.

1.4 Sierra Nevada's Power Marketing Alternatives

In addition to the option to take no action, Sierra Nevada has outlined four other general alternative marketing philosophies. Under each option, R.W. Beck and Associates (1996) has analyzed several scenarios in detail. Sierra Nevada can operate the hydroelectric resources of the CVP-Washoe project in peaking mode, baseload mode, or some combination of the modes including purchasing additional electric resources. Sierra Nevada also could opt to feature purchases of power form renewable resources such as solar, geothermal, or wind technologies. Figure 1.3 depicts how peaking and baseloading electric resources work. Peaking means that resources are marketed to satisfy demand during the times of highest demand during the day. Baseloading implies running the hydroelectric system to produce a constant flow of electric capacity over the entire day. It is generally less costly to peak the hydroelectric resource than the other resources. The comparative costs of alternative resources allocations between peaking and baseloading drive the economic impact analysis. The SNR Preferred Alternative calls for marketing the CVP hydroelectric resource as a peaking resource and supplementing with power purchases on the economy spot market made as demand indicates.

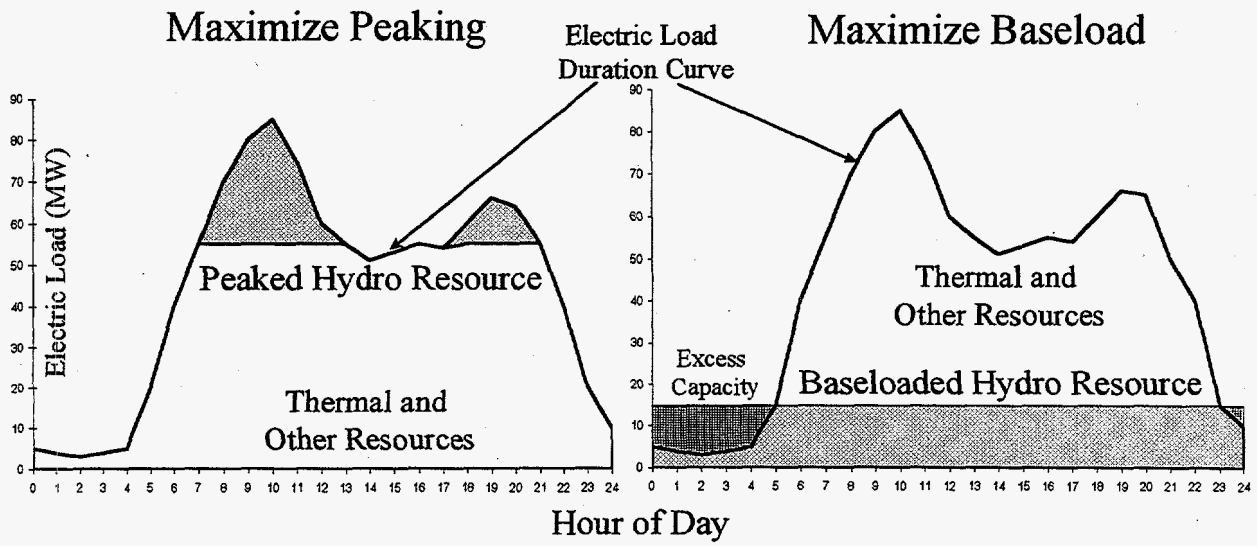

Figure 1.3 Hypothetical Electric Resource Peaking and Baseloading Examples

Sierra Nevada's EIS alternatives include scenarios under peaking and baseloading that include making market-driven purchases of additional resources that can be traditional thermal or hydro resources, or may be renewable resources such as wind, geothermal, solar, etc. The EIS alternatives also evaluate potential changes in the power allocations to Sierra Nevada's customers. SNR's power customers have been lumped into three groups for analysis purposes. The "utility" group includes power scheduling utilities that sell to end-users., The "agriculture" group are customers that purchase power for farm irrigation. The "other" group are civilian and military agencies that are served by SNR directly.

2.0 SOCIOECONOMIC RESOURCES

This section describes the study area in terms of its sociological resources. These resources include economic region descriptions, population characteristics and trends, and employment and industry status and trends. These resources were evaluated for the current time and for 2005, the year for which economic impacts were estimated. The approach used for 2005 employment and industry projections is described in greater detail in Chapter 3.

Location of the labor market was the principal measure used to identify economic regions in northern and central California. The Bureau of Economic Analysis (BEA 1995) provided estimates of labor flows by place of work and by place of residence at the individual county level. Stevens and Rose (1985) provide detailed guidance on identifying economic regions.

2.1 Northern and Central California

Lester and Anderson (1995) provide details of the population characteristics for the study area. Table 2.1 presents the racial breakdown of the study area population. The California Department of Finance, Demographic Research and Census Data Center (CDOF 1995) estimates the 1995 population of the Sierra Nevada service region at about 13,800,000, and projects that total will reach nearly 17 million by 2005 (CDOF 1994), the year for which economic impacts are estimated. Counties within the study area where the population of low-income individuals is greater than the average for the overall region are shown in Figure 2.1. Approximately 12% are below the study area poverty level. Figure 2.2 indicates counties with a minority population percentage greater than the study area average. Population projections to the year 2040 (Figure 2.3) show a decreasing trend in the white population share of total population, while Hispanic and black population shares are projected to increase steadily. Figure 2.4 depicts the regional shares of the study area 1995 population.

Table 2.1. Northern and Central California 1990 Population Characteristics

Race	Total Persons	% of Total
White	7,928,633	64.3%
Hispanic Descent*	2,244,879	18.2%
Asian, Pacific Islander	1,247,986	10.1%
Black	779,676	6.3%
Native American	112,268	0.9%
Other	19,189	0.2%
Total	12,332,631	

* People claiming Hispanic ethnic classification; classified separately from their stated race.

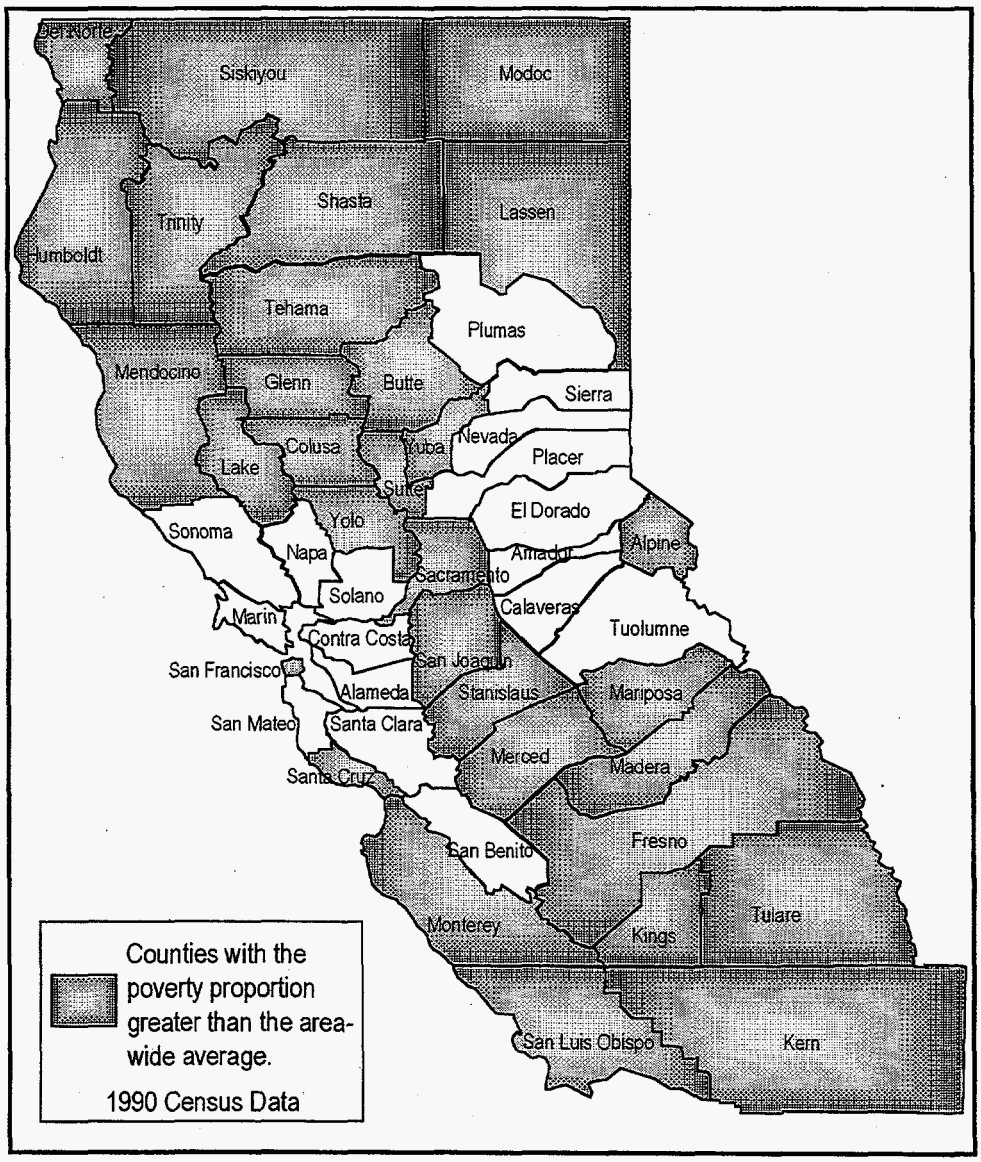

Figure 2.1. Northern and Central California Distribution of Low-Income Population, 1990

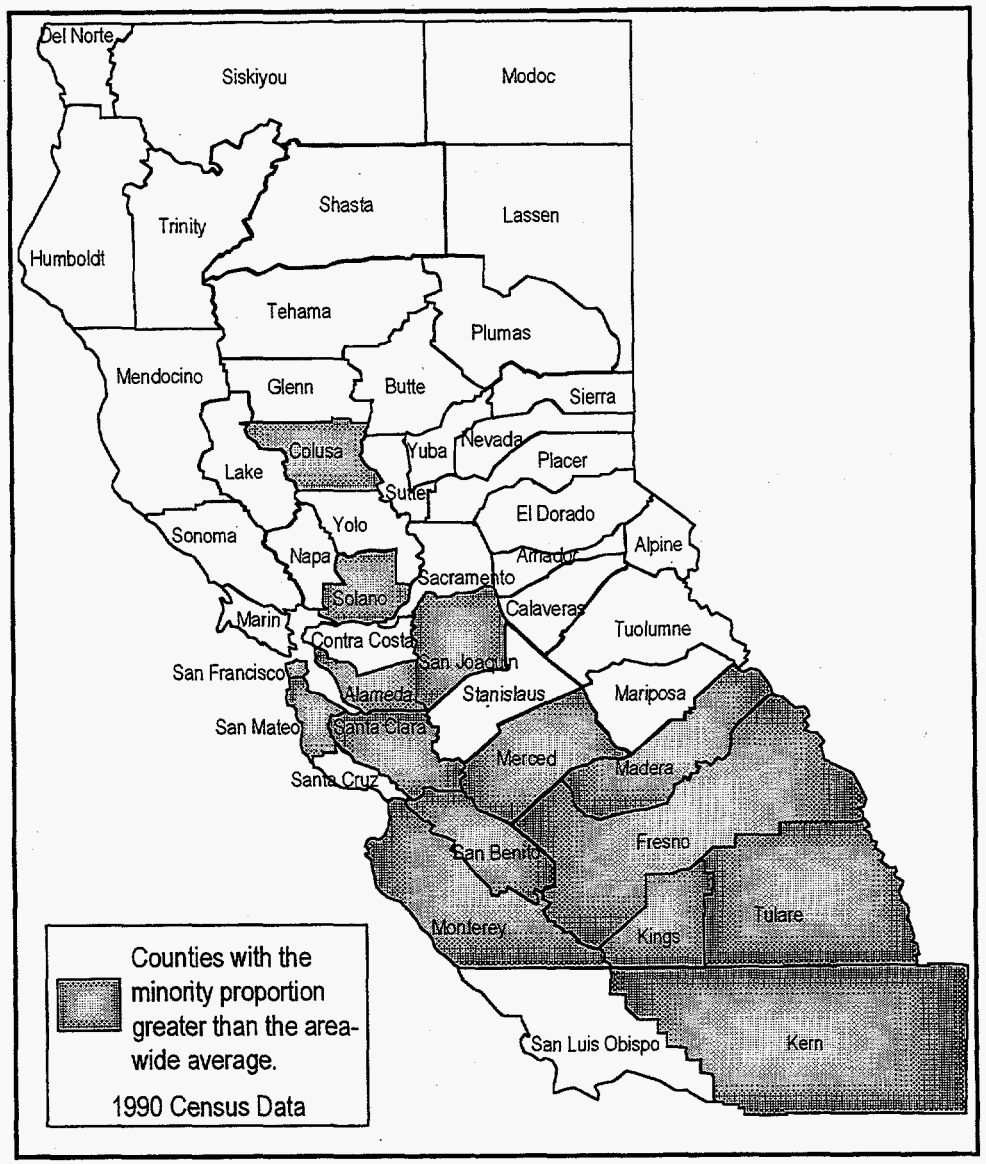

Figure 2.2. Northern and Central California Distribution of Minority Population, 1990

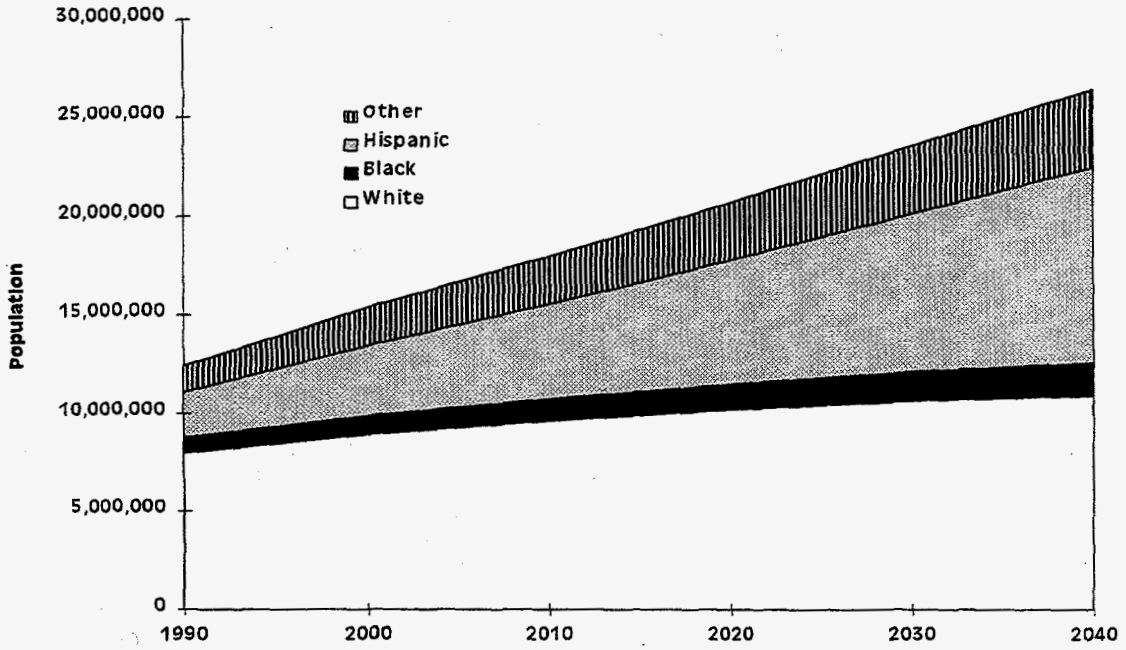

Figure 2.3. Northern and Central California Population Trend Projections, 1990-2040

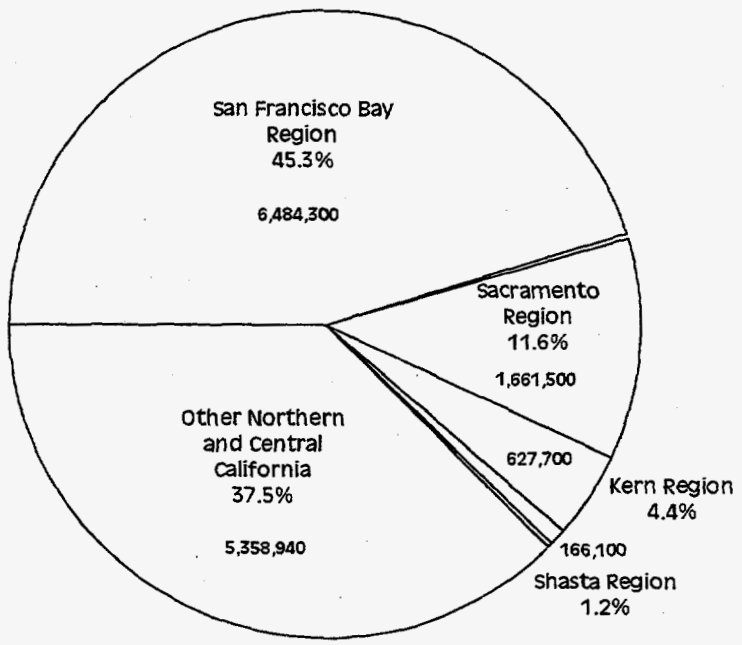

Figure 2.4. Northern and Central California 1995 Regional Population Distribution

Total employment in the study area reached 5.6 million in 1995 (BEA 1995). Since the beginning of the 90's the region experienced employment declines in all major sectors of the economy, with the exception of agriculture and the service industry. Figure 2.5 illustrates 1995 employment levels and forecasts baseline employment levels by industry for 2005, the year for which economic impacts of the alternatives are estimated.

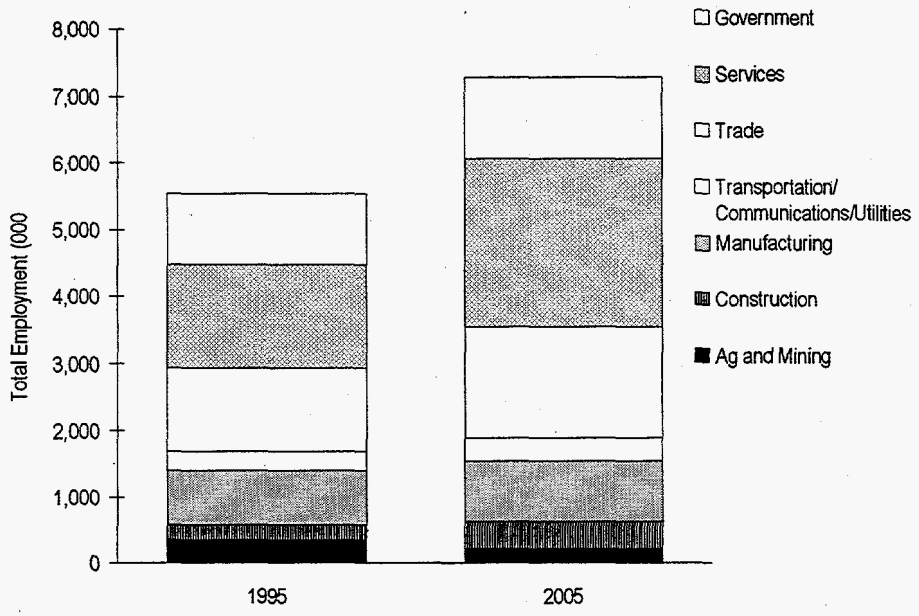

Figure 2.5. Northern and Central California 1995 and 2005 Total Employment

Total industrial output in the study area reached $519 billion in 1992. Projections for the year 2005 put total industrial output at $582 billion. In terms of total output, positive growth is projected in all major industries of the economy. Figure 2.6 compares total output by industry between 1995 and 2005.

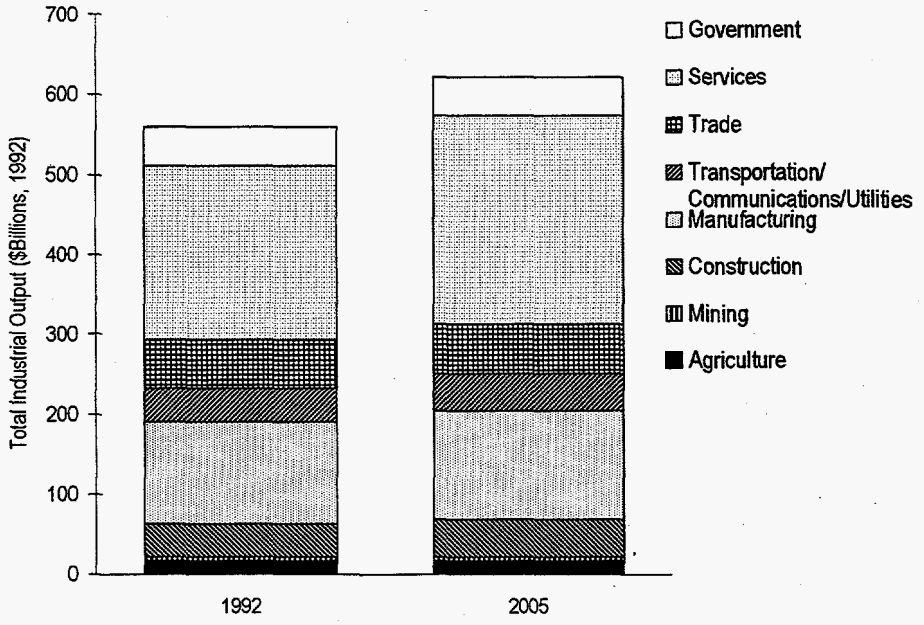

Figure 2.6. 1992 and 2005 Northern and Central California Total Industrial Output By Major Industry.

2.2 The Bay Area Economic Region

The Bay Area economic region is comprised of the San Francisco Consolidated Metropolitan Statistical Area, defined as nine counties by the US Department of Commerce, including Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The Bay Area economic region is of interest in this EIS because much of Sierra Nevada's hydroelectric power resources are consumed in the Bay Area and this region holds a good representation of Western's utility customers.

Lester and Anderson (1995) provide details of the population characteristics for the Bay Area region. The California Department of Finance (CDOF 1995) estimates the total population of Bay Area region to be approximately 6,464,000, and projects that total to reach more than 7 million by 2005 (CDOF 1994). Figure 2.7 depicts the Bay Area Region population trend. Table 2.2 presents the racial breakdown of the Bay Area Region population. Approximately 9% of the Bay Area Region population is below the study area poverty level.

Table 2.2. San Francisco Bay Region 1990 Population Characteristics

Race	Total Persons	% of Total
White	3,672,533	61.0%
Hispanic Decent*	899,243	14.9%
Asian, Pacific Islander	892,309	14.8%
Black	518,574	8.6%
Native American	31,347	0.5%
Other	9,571	0.2%
Total	6,023,577	

* People claiming Hispanic ethnic classification; classified separately from their stated race.

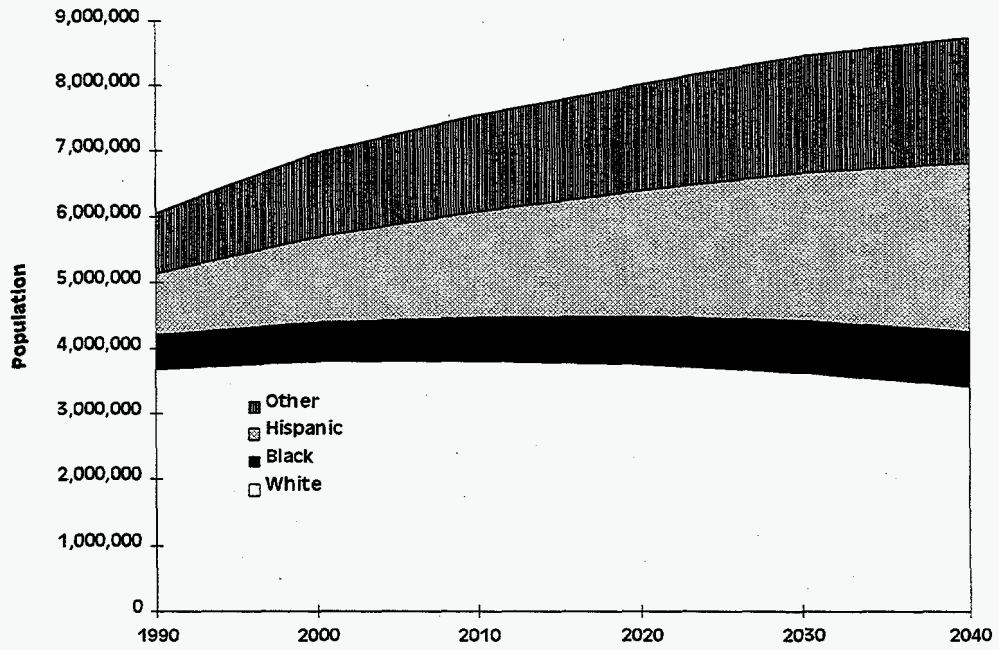

Figure 2.7 Bay Area Region Population Trend Projections, 1990-2040

The Bay Area economic region is second only to Los Angeles in economic size in the state of California. It is a large and industrially diverse economy, known principally as a world financial center and the original home of the personal computer manufacturing sector. As with most metropolitan economies, the Bay Area region serves as a dominant regional center for wholesale and retail trade and major services. Defense-based manufacturing and business services are also major industries. Figure 2.8 illustrates 1995 employment levels and forecasts baseline employment levels by industry for 2005, the year for which economic impacts of the alternatives are estimated. BEA (1995) projects that growth in the trade and service sectors to result in higher baseline employment in 2005, while the agriculture and manufacturing sectors will remain steady. In terms of total output, continued growth in the service industries will fuel overall growth in the region's total output. Figure 2.9 compares total output by industry between 1995 and 2005.

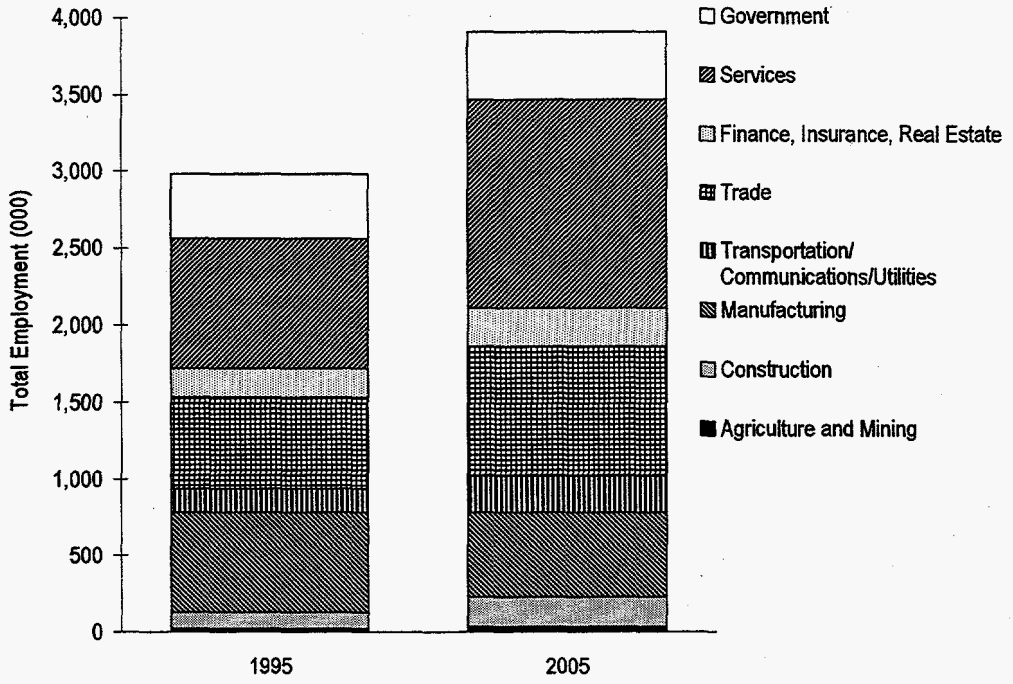

Figure 2.8 Bay Area Region 1995 and 2005 Employment by Major Industry

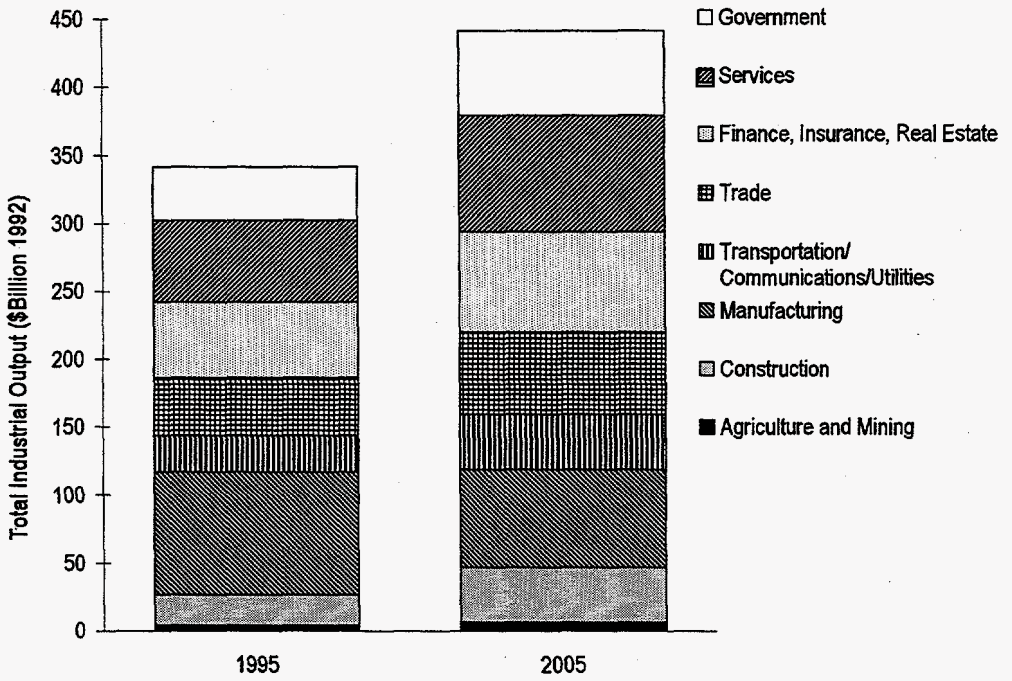

Figure 2.9 Bay Area Region 1992 and 2005 Total Industrial Output by Major Industry

Based on the 1990 Census, (BEA 1995) over 95% of the Bay Area Region workforce commutes to work from within the Bay Area region. Figure 2.10 shows the commuter influx and outflow to and from the Bay Area region in terms of the percentage of the Bay Area region workforce either entering from other regions or leaving to other regions to work. Other portions of Northern California appear to be the Bay Area region's most significant trading partner in the labor market, but only 1 to 2% of Bay Area region's workforce commutes to or from that region.

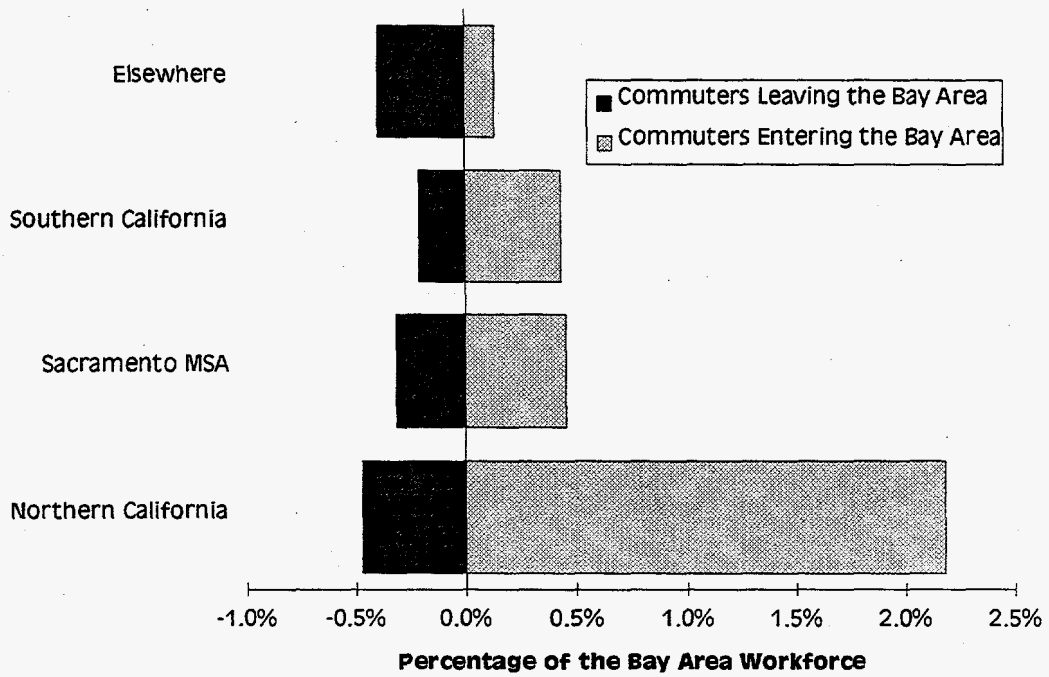

Figure 2.10 Bay Area Region Workforce Commuting by Region (1990 Census)

2.3 The Sacramento Economic Region

The Sacramento economic region covers El Dorado County, Placer County, Sacramento County, and Yolo County. The Sacramento region is the center of government in California, with over 25% of total employment in the government sector.

Lester and Anderson (1995) provide details of the population characteristics for the Sacramento region. The California Department of Finance (CDOF 1995) estimates the total 1995 population of Sacramento region to be approximately 1,662,000, and projects that total to reach nearly 2,200,000 by 2005 (CDOF 1994). Table 2.3 presents the racial breakdown of the Sacramento region population. Figure 2.11 depicts the Sacramento region population trend. Approximately 17% of the Sacramento region population is below the study area poverty level.

Table 2.3. Sacramento Region 1990 Population Characteristics

Race	Total Persons	% of Total
White	1,086,284	73.3%
Hispanic Decent*	168,111	11.4%
Asian, Pacific Islander	111,007	7.5%
Black	98,520	6.7%
Native American	15,466	1.0%
Other	1,714	0.1%
Total	1,481,102	

* People claiming Hispanic ethnic classification; classified separately from their stated race.

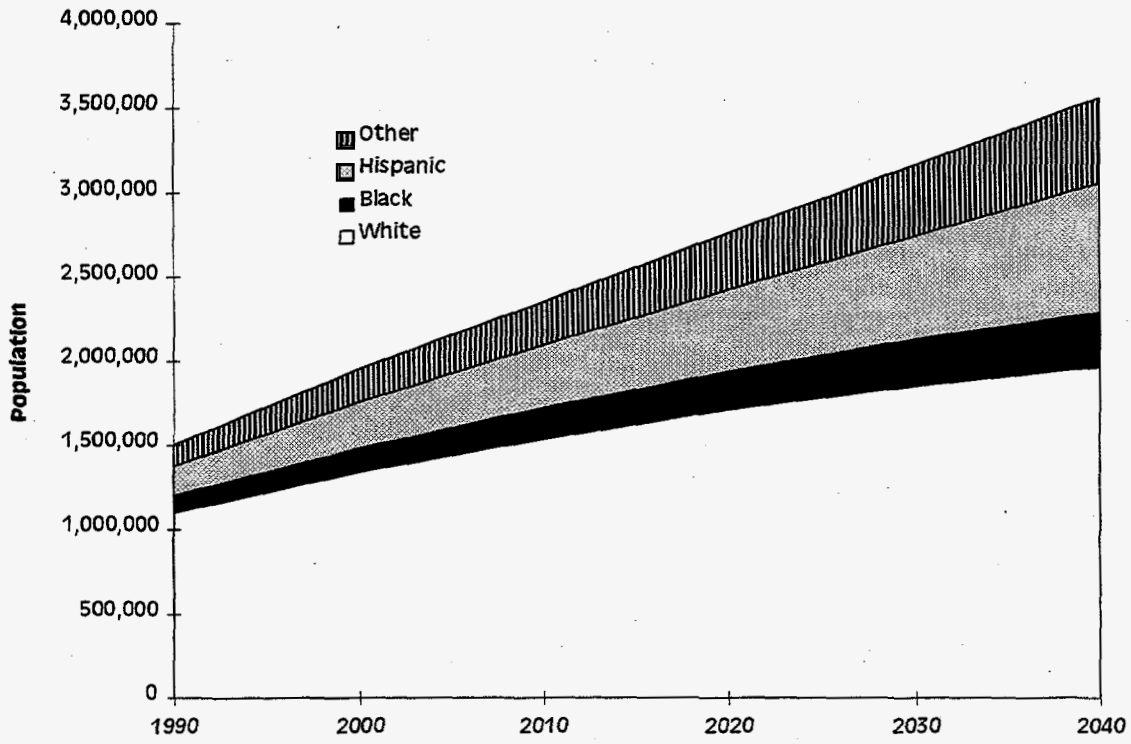

Figure 2.11 Sacramento Region Population Trend Projections, 1990-2040

The main industries in the Sacramento economic region are government, services, and trade. Over 80% of the work force is employed in these industries. The service sector employs over 35% with over 1/3 of that in the health, education, and social service sector, and another 1/3 in the business service sector. The trade sector employs over 20%. Figure 2.12 illustrates 1995 employment level and forecasts baseline employment levels by industry for 2005. BEA (1995) projects growth in the service industries, trade industries, construction industries, and transportation and communication industries to result in higher baseline employment in 2005, while the agriculture, manufacturing, and government sectors remain steady. In terms of total output, continued growth in the service industries will fuel overall growth in the region's total output. Figure 2.13 compares total output by industry between 1995 and 2005.

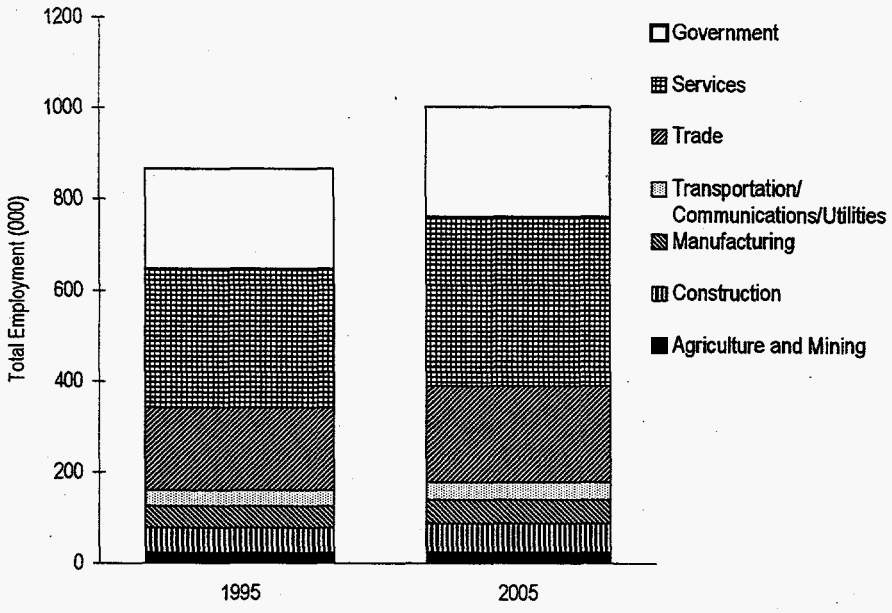

Figure 2.12. Sacramento Region 1995 and 2005 Employment by Major Industry

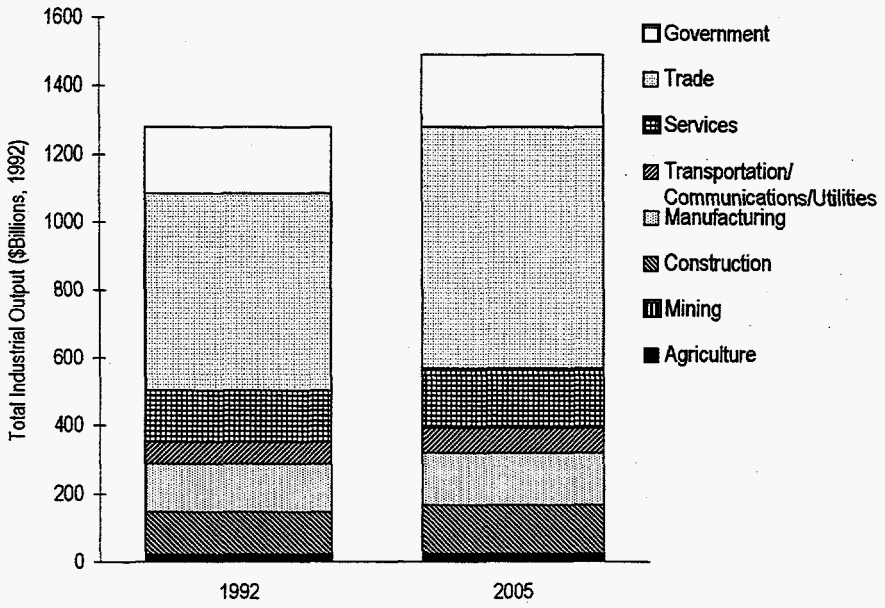

Figure 2.13. Sacramento Region 1992 and 2005 Total Industrial Output by Major Industry

Based on the 1990 Census, (BEA 1995) over 95% of the Sacramento workforce commutes to work from within the region. Figure 2.14 shows the commuter influx and outflow to and from the Sacramento area in terms of the percentage of the Sacramento workforce either entering from other regions or leaving to other regions to work. The Bay Area appears to be Sacramento's most significant trading partner in terms of labor market, but only 3 to 4% of Sacramento's workforce commutes to or from the Bay Area.

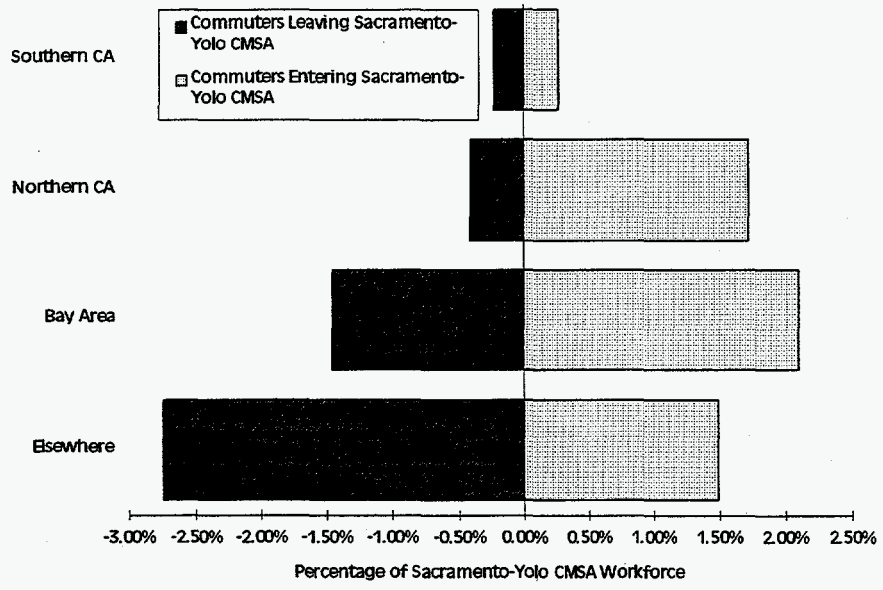

Figure 2.14. Sacramento Region Workforce Commuting by Area (1990 Census)

2.4 The Kern Economic Region

The Kern economic region is comprised of the Bakersfield Metropolitan Statistical Area, defined as Kern County, California, by the U.S. Department of Commerce. The Kern economic region is of interest because Sierra Nevada currently markets over 1/3 of its agricultural capacity to preference agricultural customers located in Kern County. Thus, potential economic impacts on agricultural customers in general can be highlighted by analyzing the Kern economic region.

Lester and Anderson (1995) provide details of the population characteristics for the Kern region. The California Department of Finance (CDOF 1995) estimates the total 1995 population of Kern region to be approximately 628,000 and projects that total to reach nearly 900,000 by 2005 (CDOF 1994), the year for which economic impacts are estimated. Table 2.4 presents the racial breakdown of the Kern County population. Figure 2.15 depicts the Kern County population trend. Approximately 17% of the Kern County population is below the study area poverty level.

Table 2.4 1990 Population Characteristics of the Kern County Region

Race	Total Persons	% of Total
White	342,300	63.0
Hispanic Descent*	150,558	27.7
Black	28,927	5.3
Asian, Pacific Islander	14,566	2.7
Native American	6,061	1.1
Other	1,065	0.2
Total	543,477	

* People claiming Hispanic ethnic classification; classified separately from their stated race.

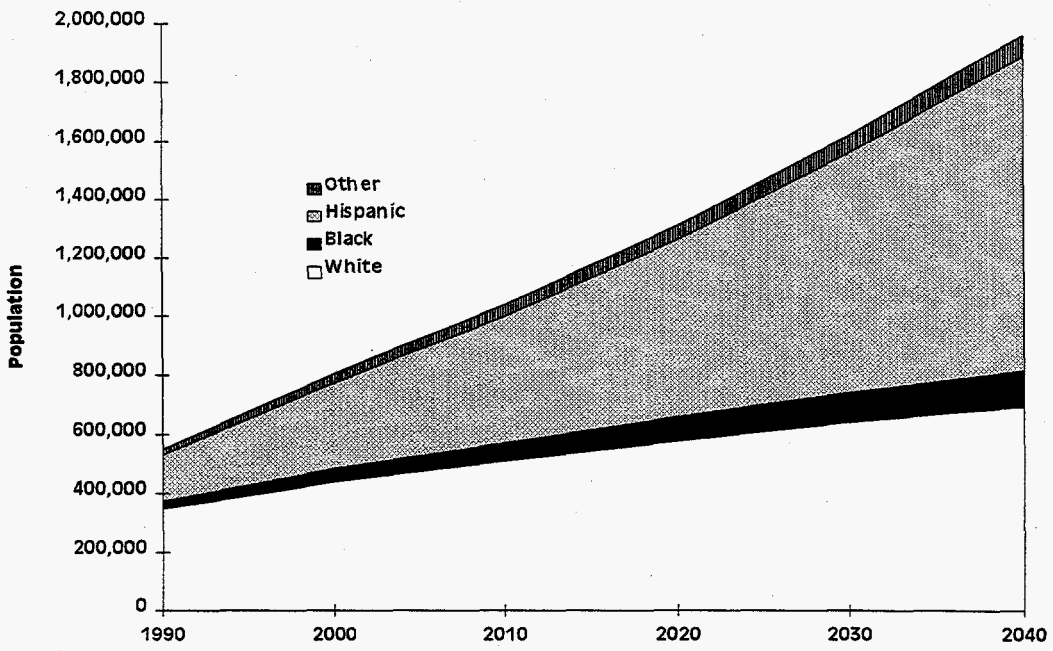

Figure 2.15. Kern County Population Trend Projections, 1990-2040

The Kern economic region is similar to other regional economies in the San Joaquin Valley. Its roots are firmly planted in agricultural production and food processing, while also maintaining strong petroleum and manufacturing industries. As with most metropolitan economies, the Kern region serves as a regional center for wholesale and retail trade and major services. Figure 2.16 illustrates 1995 employment levels and forecasts baseline employment levels by industry for 2005, the year for which economic impacts of the alternatives are estimated. BEA (1995) projects that growth in the transportation industry, service industries, and local government to factor into higher baseline employment in 2005, while the agriculture and manufacturing sectors remain steady. In terms of total output, continued growth in the service industries will fuel overall growth in the region's total output. Figure 2.17 compares total output by industry between 1995 and 2005.

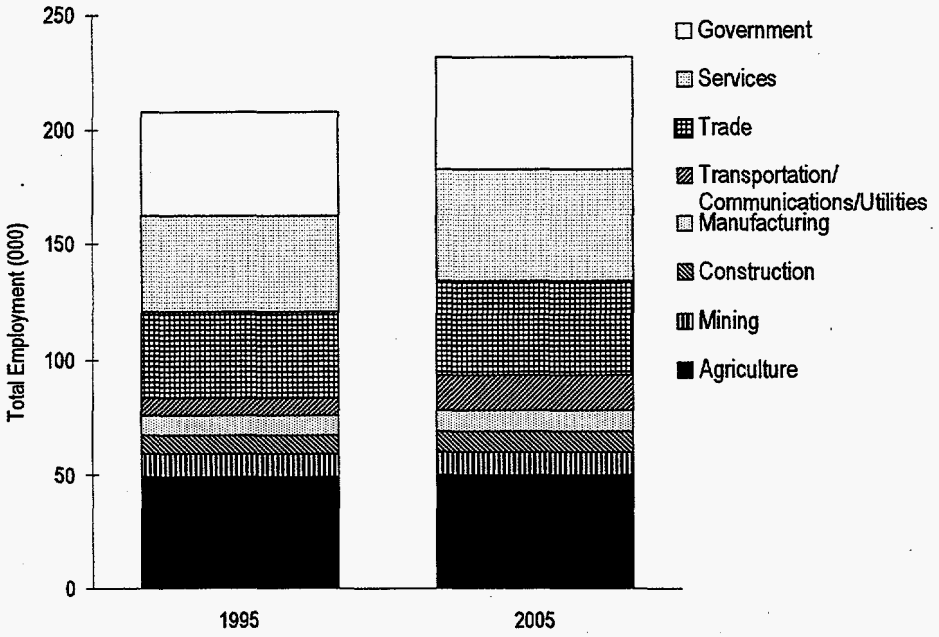

Figure 2.16. Kern County 1995 and 2005 Employment by Major Industry

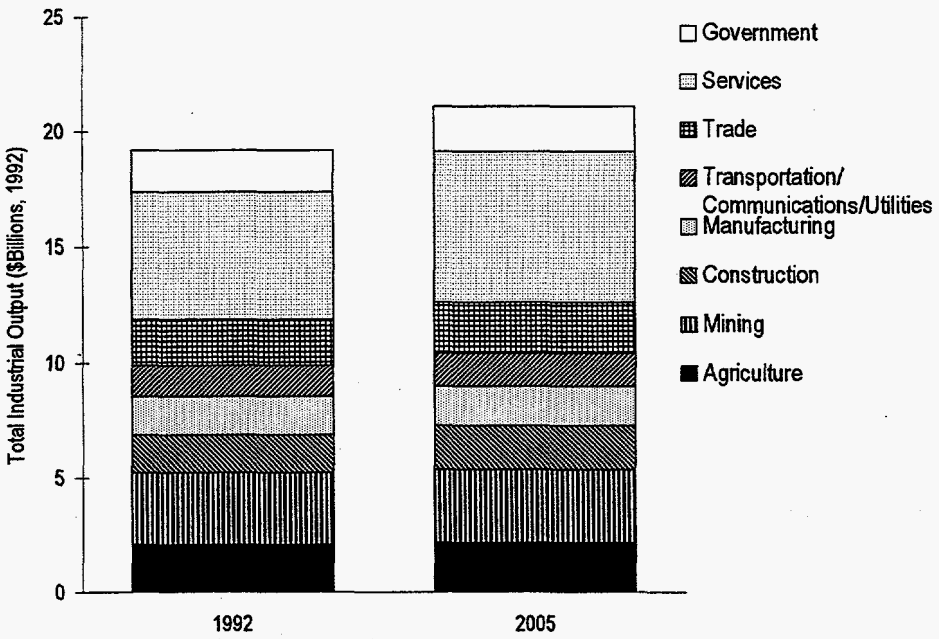

Figure 2.17. Kern County 1992 and 2005 Total Industrial Output by Major Industry

Based on the 1990 Census, (BEA 1995) over 90% of the Kern County workforce commutes to work from within Kern County. Figure 2.18 shows the commuter influx and outflow to and from Kern County in terms of the percentage of the Kern County workforce either entering from other regions or leaving to other regions to work. Los Angeles County appears to be the Kern region's most significant trading partner in terms of labor market, but only 3 to 4% of Kern County's workforce commutes to or from Los Angeles County.

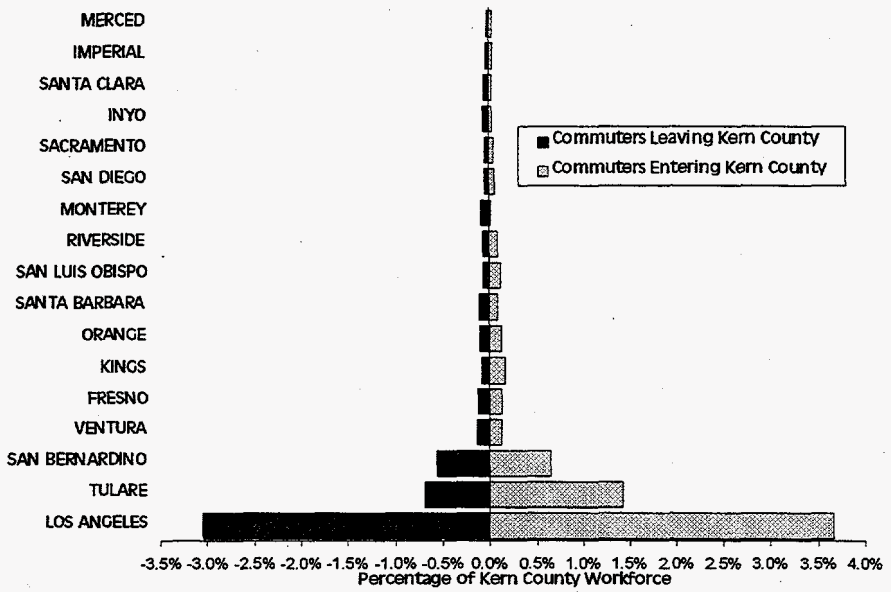

Figure 2.18. Kern County Workforce Commuting by County (1990 Census)

2.4.1 Focus Industry - Agriculture

Sierra Nevada's agriculture customers in Kern County draw nearly 1/3 of the agency's agricultural load. Irrigation districts use power primarily to pump irrigation water through canals and aqueducts for delivery to the individual farms making up a district. Alternatives under consideration by Sierra Nevada may impact these irrigation districts and the individual farmers, in turn. For this reason, particular attention is devoted to analyzing the agriculture situation in Kern County. Agriculture impacts considered do not account for any effects caused by actions resulting from implementation of the Central Valley Project Improvement Act (CVPIA). These actions are considered under the jurisdiction of the Bureau of Reclamation.

Kern County is located in the southern San Joaquin Valley and, in 1993, maintained approximately 800,000 irrigated acres; some 696,000 of these situated above useable ground water and the remaining 104,000 lying outside the ground water basin (Ulibarri et al. 1996). Agricultural water requirements across all crops produced in Kern County reached 2.7 million acre-feet in 1993, of which 862,100 acre-feet were supplied from ground water. Meanwhile, farmers applied nearly 2.2 million acre-feet of water to the eleven most significant crops. Table 2.5 lists the quantities of land acreage and water consumed by these crops, along with their levels of harvest, prices, and farm revenues.

Table 2.5. Irrigated Farming in Kern County, 1993

Crop Type	Quantity (tons)	Price (ton)	Revenue	Land (acres)	Water (acre-feet)
Citrus	541,760	$343	$185,695,000	34,835	117,568
Grapes	718,500	$552	$396,394,000	73,719	253,225
Cotton	182,750	$1,430	$261,455,000	277,488	922,646
Alfalfa Hay	604,000	$101	$60,963,000	78,568	337,842
Wheat	106,000	$108	$11,464,000	44,447	75,560
Barley	42,400	$97	$4,107,000	22,664	40,909
Tomatoes	136,600	$82	$11,112,000	5,025	17,588
Sugar Beets	335,000	$37	$12,244,000	9,779	31,537
Almonds	49,400	$3,860	$190,630,000	71,574	224,742
Pistachios	36,800	$2,683	$98,745,000	19,713	61,899
Carrots	1,510,000	$76	$114,988,000	45,290	126,812
TOTAL	---	---	$1.35 billion	683,102	2,210,328

Source: CDOA 1994. The water values were calculated on the basis of the model used in the present study.

Figures 2.19 and 2.20 highlight the total farm receipts and the total farm expenditures in Kern County in real terms from 1984 to 1993. These figures illustrate that market conditions and prevailing water conditions can cause significant year-to-year variation, especially in receipts, but less so in expenses.

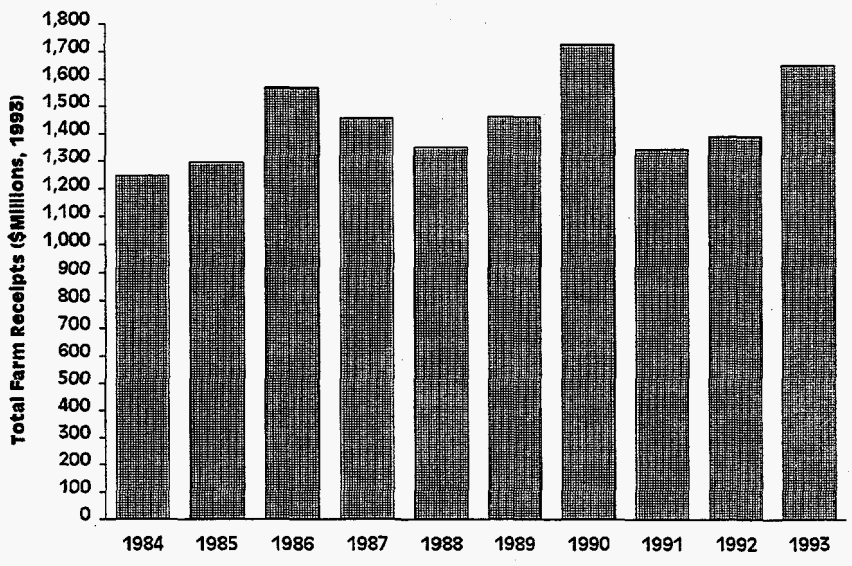

Figure 2.19. Kern County 1984-1993 Total Farm Receipts in 1993 Constant Dollars

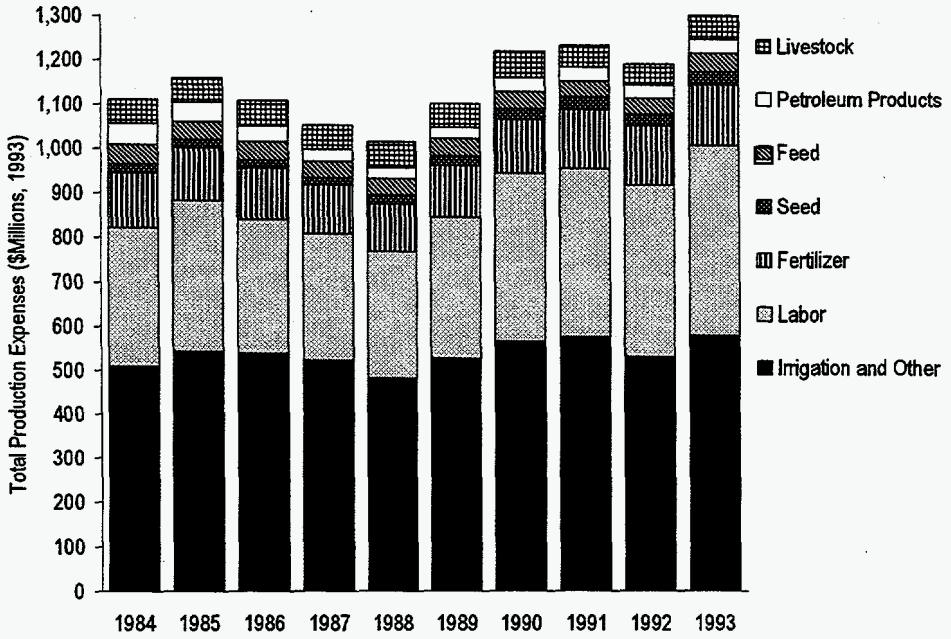

Figure 2.20. Kern County 1984-1993 Farm Expenses by Type in 1993 Constant Dollars

The farm sector is affected by the costs of energy used in both the distribution and application of irrigation water. This relationship between energy and water resources has come to the fore in recent policy discussions concerning the pricing of both water and electric power in the West, particularly in California and the Pacific Northwest. Here, the energy efficiency of agricultural water use is recognized as a vital step towards sustaining regional agricultural development.

The costs of irrigation water reflect a fixed standby charge levied on a per-acre basis regardless of the quantity of water used, and a variable water use charge, which covers the costs of energy consumed in the distribution of the irrigation water within the district. This energy component becomes more significant according to the number of pumping lifts required to convey the surface water to the irrigator. The Kern water model is covered in detail by Ulibarri et al. (1996).

2.5 The Shasta Economic Region

The Shasta economic region comprises the Redding Metropolitan Statistical Area, defined as Shasta County, California, by the U.S. Department of Commerce. The Shasta economic region is of interest because most of Sierra Nevada's hydroelectric power resources are generated there.

Lester and Anderson (1995) provide details of the population characteristics for the Shasta region. The California Department of Finance (CDOF 1995) estimates the total 1995 population of Shasta County to be approximately 166,000, and projects that total to reach more than 210,000 by 2005 (CDOF 1994). Table 2.6 presents the racial breakdown of the Shasta County population. Figure 2.21 depicts the Shasta County population trend. Approximately 14% of the Shasta County population is below the study area poverty level.

Table 2.6. Shasta County Region 1990 Population Characteristics

Race	Total Persons	% of Total
White	134,165	91.2%
Hispanic Descent*	5,401	3.7%
Native American	3,676	2.5%
Asian, Pacific Islander	2,632	1.8%
Black	1,094	0.7%
Other	68	0.0%
Total	147,036	

* People claiming Hispanic ethnic classification; classified separately from their stated race.

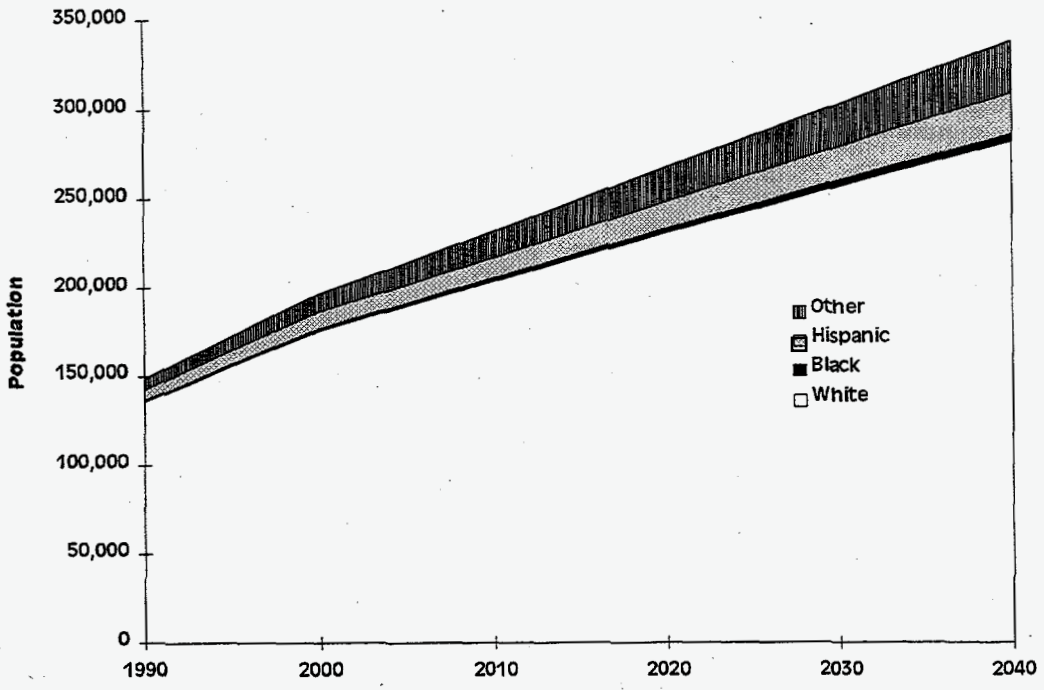

Figure 2.21. Shasta County Population Trend Projections, 1990-2040 (CDOF 1994)

The Shasta economic region is similar to regional economies in the Pacific Northwest. Its roots are firmly planted in wood products and paper processing industries. As with most metropolitan economies, the Shasta region serves as a dominant regional center for wholesale and retail trade and major services. Figure 2.22 illustrates 1995 employment levels and forecasts baseline employment levels by industry for 2005, the year for which economic impacts of the alternatives are estimated. BEA (1995) projects growth in the trade and service sectors to result in higher baseline employment in 2005, while the agriculture and manufacturing sectors remain steady. Continued growth in the service industries will fuel overall growth in the region's total output. Figure 2.23 compares total output by industry between 1995 and 2005.

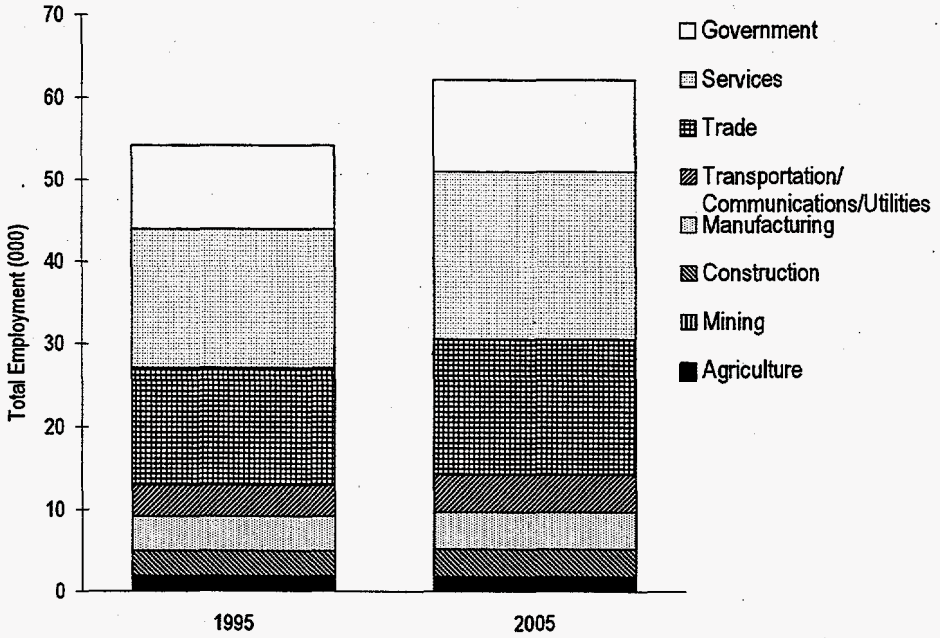

Figure 2.22. Shasta County 1995 and 2005 Employment by Major Industry

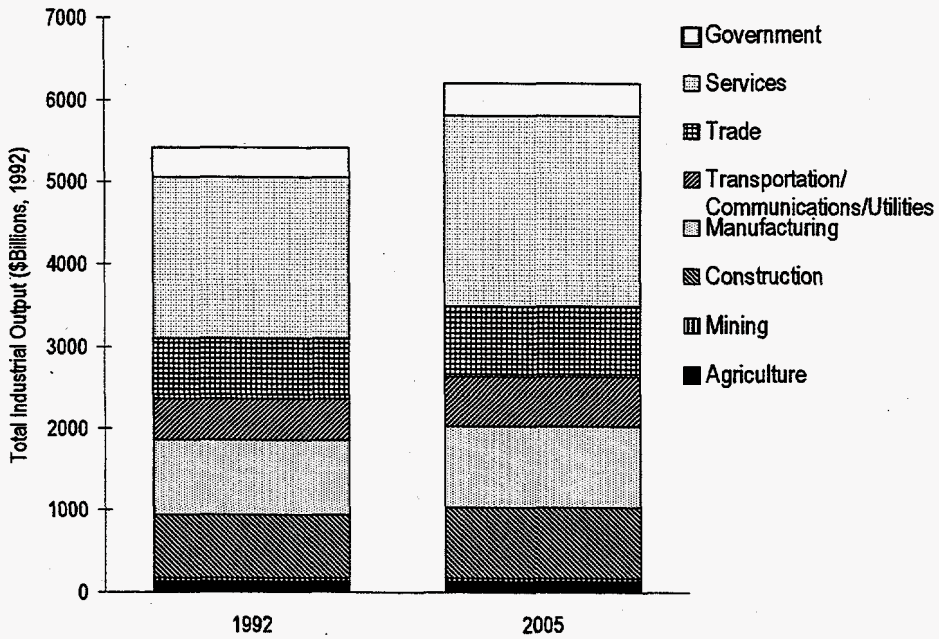

Figure 2.23. Shasta County 1992 and 2005 Total Industrial Output by Major Industry

Based on the 1990 Census, (BEA 1995) over 95% of the Shasta County workforce commutes to work from within Shasta County. This fact helps distinguish the Shasta economic region as a functional economic region based on the location of the labor market. Figure 2.24 shows the commuter influx and outflow to and from Shasta County in terms of the percentage of the Shasta County workforce either entering from other regions or leaving to other regions to work. Tehama County appears to be the Shasta region's most significant trading partner in terms of labor market, but only about 4 to 5% of Shasta County's workforce commutes to or from Tehama County.

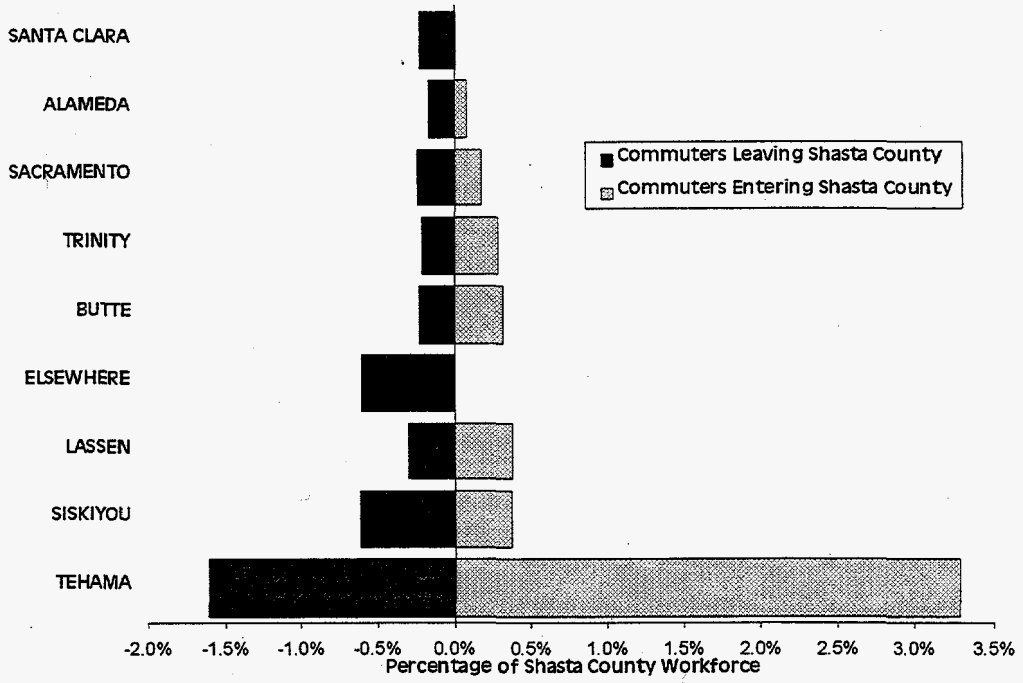

Figure 2.24 Shasta County Workforce Commuting by County (1990 Census)

3.0 METHODS

Economic impacts associated with Sierra Nevada's EIS alternatives were estimated using an input-output modeling framework. The methods described below form the currently dominant approach used for questions of economic impact and, more broadly, for questions concerning the economic equity of policy decisions. The approach involves combining data on expenditure flows associated with policy actions with a regionally customized input-output (I-O) model to make a deterministic calculation of impact to such economic measures as employment, income, and output, among many such measures. Figure 3.1 outlines the approach used for this study.

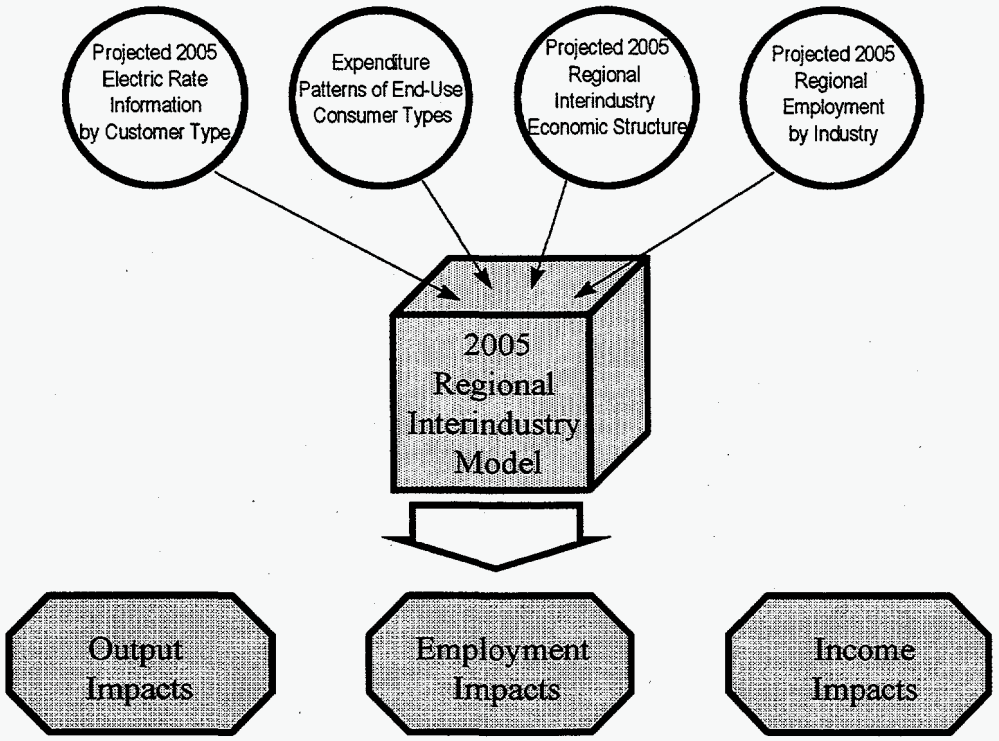

Figure 3.1. Modeling Process Used to Estimate 2005 Impacts

3.1 Economic Impact Modeling with IMPLAN

The regional economic modeling system, IMPLAN (IMpact analysis for PLANning), was used to measure the effects of Sierra Nevada's 2004 EIS alternatives. Originally developed by the US Forest Service, in cooperation with the Federal Emergency Management Agency, IMPLAN provides a framework for analyzing the economic impacts (changes in employment, output, income, etc.) from any number of economic shock scenarios. Examples include effects of public policy, new plant locations, tourism expenditures, plant closings, major events, or technology change.

A detailed discussion of the IMPLAN regional model is provided in MIG (1996). IMPLAN is a static, non-survey, input-output model which uses an adaptation of the 538-sector BEA national input-output transactions table otherwise known as the "national table." BEA derived this table based on information from its national income and product accounts (NIPA accounts) covering

the production and sales of all commodities. The most recent national table, which BEA released in 1994, represents the industrial technologies in-place in 1987. These values have been benchmarked to 2005 constant dollars using methods described below. IMPLAN provides the flexibility to update the 1987-level technology of any industry, as represented in the national table, to an improved representation of the technology currently being employed. Technology relationships represented in the input-output table are relatively stable over 10-15 year spans for most industries. Rapidly changing industries such as the computer industry are exceptions and should be evaluated in cases where they are affected by the economic impact scenario.

Detailed economic effects can be measured for the nation, state or group of states, or any single county or group of counties. Baseline economic data for all counties in the country are constantly updated and maintained by Minnesota IMPLAN Group, Inc. The heart of the IMPLAN system is the benchmark input-output table for the U.S. economy, maintained by the Bureau of Economic Analysis. IMPLAN can adapt that table to any region of the country using import and export information for that region. IMPLAN is an extremely flexible tool that allows locally collected or more recent economic data to override default values and permits a high level of customization of regional economic models.

Since IMPLAN is a static I-O model, the input proportions are fixed. This means that all responses to shocks are linear. No accounting is made for unemployed resources or excess capacity. Using static I-O models assumes that all resources required to satisfy an economic expansion are either immediately available within the study region or can be immediately imported. The IMPLAN model is initialized by a set of data on employment, output, value-added, final demand, personal consumption expenditures, sales, etc. (MIG 1996).

IMPLAN's economic impact formulation follows the Leontief inverse (Leontief 1936), more recently outlined in Miller and Blair (1985) among many others. Consider a matrix B with row elements, i, and column elements, j, where i=j. Represented in the rows are industry sales to purchasing industries. Represented in the columns are industry purchases from producing industries. Hence, any element, b_{ij}, represents the amount of industry i's production purchased by industry j. Dividing these industry by industry dollar flows through by the total industrial output of each industry, X_i, yields the industry direct coefficients matrix, A, with elements, a_{ij}, equating to the coefficient form of the b_{ij} elements described above. The A matrix embodies the interrelatedness between industries for a given, static, period of time. Over that time period, the coefficients represent the production technologies used in the economy being modeled. Economic impacts can be estimated for any economy in which the A matrix or direct coefficients matrix has been estimated using the formulation:

$$(I - A)^{-1} \cdot Y = X \qquad (1)$$

In this formulation, Y is a vector of industry final demand changes reflective of a given impact scenario. $(I - A)^{-1}$ is the total requirements matrix or multipliers matrix. X is the vector of resulting change in regional industrial output caused by the impact scenario. This calculation yields an estimate of the *direct and indirect effect* of an impact scenario on the industrial output of the affected region. To estimate the *induced* effects, other factors must be considered. Formulation of induced effects varies depending on whether the model is open or closed with respect to the final demand sectors (households, governments, investment, etc.).

I-O models are either open or closed models. If elements of final demand such as households, governments, investment, etc., have not been endogenized or mathematically included in the structure of the direct coefficients matrix, then the model is "open." A *closed* model attempts to capture the monetary flows among these elements to the other sectors of the economy by endogenizing them, or including them in the structure of the direct coefficients matrix, and therefore, also within the total requirements matrix. This results in making final demand and value-added a part of the structure of the economy and allows the induced effects to be calculated simply using Equation (1) above.

In the IMPLAN open model framework, the final demand and value-added components of the economy remain exogenous to the structure of the economy. Applying Equation (1) above will result in an estimate of the indirect effects of an impact scenario, but additional steps are needed to estimate the induced effects. The resulting vector, X, is the estimate of change in regional industrial output associated with the impact scenario. Each X_i is multiplied by a corresponding response coefficient, e_i, w_i, and g_i to estimate the economy's response in terms of employment (e), income (w), and government spending (g). Response coefficients simply are the value of the measure per unit of industry output. The employment response coefficient for any industry (i) is the number of jobs, $jobs_i$ divided by the industry output (expressed in millions), $output_i$: $jobs_i/output_i = e_i$. The calculation is identical for income and spending responses. When the flows are monetary (not employment), the cumulative response across industries is summed and multiplied by the region's household spending function or government spending function, as the case dictates. This results in vectors of new expenditures made by the households and governments of the region in response to the indirect effect of the impact scenario. These new expenditures make up subsequent impact rounds or monetary turnover in the regional economy and are treated as additional final demand impulses in the model. The process iterates until the resulting changes converge to near zero, and the total economic effect results.

To analyze economic impacts of a particular initiative using IMPLAN, we need to determine what would be the *net* change in "final demand," or purchases made within a regional economy, due to the effect of an economic impact scenario. This is accomplished by determining the expenditure profile of those potentially affected in the scenario.

As an example, increased power allocations from Sierra Nevada to electric utilities is one scenario reflected in the EIS alternatives. Suppose utility customers contract to receive an increased allocation of CVP-Washoe hydro power. This power may offset higher-cost resources the utility would have needed to supply the same power. The utility has reduced its cost of power and may elect to pass that savings on to the end-users of the power in the form of reduced rates or foregone increases. End-users such as manufacturing industries would become marginally more efficient by reducing their electricity costs and would be able to generate more output for the same amount of production inputs. Residential rate-payers could also benefit from the utilities passing along cost savings in the form of reduced rates. These savings are likely to be immediately spent in the retail sector. Potentially, Sierra Nevada's other and agriculture customers could have their power allocations reduced to increase the allocation to utility customers. This would serve to disproportionally increase the electricity costs to these customers, as they turn to an alternate source of power that is likely to be more expensive than CVP-hydro power. This means that agriculture customers would need either to spend more on electricity and less on other production inputs for each unit of output or reduce their output. Other customers (government agencies) would likely increase spending for power to cover the

increased power cost while reallocating spending within established budgets in other areas to compensate. If power costs were to rise dramatically, government agencies would be forced to find additional revenue to cover the cost increase.

In this hypothetical example, offsetting economic shocks are occurring. Given offsetting impacts, the overall impact is likely to be relatively small. However, in regions with relatively more other and agriculture customers than utility customers, economic impacts may be much more significant, as these customers are more significantly impacted than utility customers under the example posed.

These are the direct economic effects of an example alternative. The IMPLAN modeling system estimates the indirect and induced effects in the economy caused by the initial influence of the direct effects. These "total effects" have been estimated here for regional output, employment, and labor income.

3.2 Adjusting IMPLAN for 2005

The year of interest for Sierra Nevada is 2005. The year 2005 will be the first year that any of the 2004 EIS alternatives presented would go into effect. To adequately estimate potential economic impacts for 2005, several adjustments to regional economic models were necessary.

First, the 1992 baseline economic data on county-level employment, income, output, etc., supplied by the Minnesota IMPLAN Group (MIG 1995) had to be reviewed and benchmarked to 1995 county-level information from the State of California (CDOF 1995). This step involved aggregating the IMPLAN database to the equivalent of the 2-digit Standard Industrial Classification (SIC) system used by the Office of Management and Budget (OMB 1987). Next, each industry element of the IMPLAN database was divided by its equivalent 2-digit SIC industry employment value to create employment coefficients that would facilitate updating the entire database using superior employment data, while preserving the IMPLAN relationships among database elements. Next, a vector of "reconciled" employment was developed using a combination of information about 2-digit SIC employment from the State (CDOF 1995), IMPLAN, and County Business Patterns (Census 1995). The elements of the reconciled employment vector then were multiplied by the IMPLAN employment coefficients to generate an IMPLAN database updated to 1995.

The next step involved projecting the 1995 database to 2005. This was accomplished using the Regional Economic Information System (REIS) data projecting metropolitan area employment from 1990 to 2040 (BEA 1995). Projection increments included 1995, 2000, and 2005, which provided a referenceable benchmark period. The REIS projections of 1995 and 2005 industry employment were extracted for the metropolitan regions of interest to Sierra Nevada. Industry-specific scaling factors were calculated by simply dividing REIS 2005 projected employment by REIS 1995 levels. This resulted in a normalized scaling factor that could be applied to the benchmarked 1995 employment to correct the forecasts for actual 1995 employment and yield a revised estimate of 2005 projected employment by industry and region. The 2005 projected employment levels were inserted into the reconciled employment vector, and the IMPLAN database then updated to 2005, based on the employment coefficients discussed above.

With baseline data benchmarked to documented 2005 projections, the input-output structure also required updating to 2005. The 2005 interindustry relationships used were adapted from the Bureau of Labor Statistics 2005 Moderate Growth Scenario (BLS 1994). The 1987-based direct coefficients matrix for the national economy used by IMPLAN was replaced with the BLS 2005 U.S. matrix equivalent. Then the IMPLAN regionalization procedure was invoked to generate the appropriate regional matrices. To develop a regional model, IMPLAN essentially multiplies the row elements of the national direct coefficients matrix by a *regional purchase coefficient* (RPC) specific to the row industry. RPCs are an estimate of the difference between the regional industry and the national industry (Stevens et al. 1983). Specifically, the RPC value indicates the proportion of local commodity demand supplied by local production sources of that commodity. Stevens et al. (1983) provide the detailed derivation of the measure, and Pedersen and Chappelle (1993) discuss its limitations. In nearly all regions, some fraction of a given commodity is supplied by the local region and from the rest of the nation/world. It should be noted that IMPLAN RPC values were evaluated for 1995 benchmarking, but were not projected to 2005. This simplification will imply greater misrepresentation of regional economic measures in 2005 as the economic base of the affected region changes over the 1995-2005 period.

3.3 Allocating System Impacts to Economic Regions

The production cost analysis (Beck and Associates 1996) produced estimates of changes in 2005 system-wide (Northern California) electricity costs to Sierra-Nevada's agriculture, utility, and other customers based on the provisions of each alternative. This required that fixed costs such as debt service, reserve requirements, transmission costs, and other fixed costs associated with each of the alternatives be estimated and added to the operating costs. The estimate for the utility group of customers included costs such as distribution, administrative, and general, and any necessary capacity expansion/purchase costs. In the case of agriculture and other customers, Pacific Gas & Electric's primary and secondary distribution charges were estimated and added to the purchase power costs (Beck and Associates 1996). This information was adjusted for the economic impact analysis in two ways. First, the cost profile for each alternative was allocated to a specific economic region based on that region's share of capacity in each customer group (see Table 1.1). Once the system-wide electricity cost was allocated to the individual regions and customer classes, the expenditure profile of each customer class was used to allocate the cost effects to individual industries in the economy. Analysis of effects specific to agriculture customers was handled separately and is covered in detail by Ulibarri et al. (1996). Appendix A contains the detailed regional expenditure share functions for each customer group.

4.0 ECONOMIC IMPACT RESULTS

Results from the economic impact analysis of the alternatives include changes in output, employment, and labor income for the various economic regions. Because each region is considered independently in the analysis, simply summing impact across regions does not result in the total impact. Impacts also are estimated for the entire northern and central California economy taken together. In actuality, the individual regional economies are linked by trade flows and the labor market. For example, potential employment changes in one region may affect employment in neighboring regions as shifts occur when jobs are created or lost. These interactions are not estimated for the EIS, but the reader should bear them in mind when considering the results.

It is also important to consider the magnitude of the potential economic impacts reported. The economies of northern and central California and the individual regional economies considered are large, diverse, and relatively stable economies. Although the potential effects of Sierra-Nevada's actions are quantifiable in terms of output, employment, and income, the economic impacts are not significant when viewed in the context of the larger economies in which they could occur. Detailed results for specific regions and economic sectors are provided in Appendix B.

The associated economic impacts of the EIS alternatives are nearly indistinguishable in all cases and in all regions. The economic effects of the Preferred Alternative and all other alternatives are not significant, however some indication of their positive or negative direction is possible. The Preferred Alternative results in economic impacts that are generally neutral to slightly negative. Generally positive, but insignificant, economic impacts result from increasing the SNR power allocation to the utility customer group or reducing the allocation to the other customer group. Generally negative, but insignificant, economic impacts result from reducing the SNR power allocation to the utility customer group or from adopting an alternative favoring renewable resource purchases. Adopting an alternative that maximizes CVP hydro as a baseload resource also results in slightly negative, yet insignificant, economic effects. Any other alternatives considered are estimated to have neutral economic impacts across the regions considered. None of the EIS alternatives is estimated to impact the agriculture customer group, because the 2005 average power costs faced by this group fluctuate within a 1-cent/kwh range.

4.1 Customer Allocation Impacts

As part of the analysis, varying levels of capacity allocations to Sierra-Nevada's customer groups were imposed on the baseline generation and marketing scenario to estimate the economic impacts of making changes in the power allocations. Customer allocations were either doubled (or increased to the extent possible given transmission constraints), or eliminated to simulate the effects of changing the allocations. Results specific to each region are provided in the pertinent section to follow. Regional economic impacts of making changes to the customer allocations depend on the shares of Sierra-Nevada capacity marketed to the customer groups residing in the affected region. For example, Sierra-Nevada has no agriculture or other customers in Shasta County. Therefore, changing the allocations to agriculture or other customers only impacts Shasta County through the resulting effects on the utility allocation. There are no utility

customers in Kern County, but about 1/3 of Sierra-Nevada's agriculture capacity is marketed there. Changing the utility customers' allocations only affects Kern County through the resulting effects in the agriculture allocation. Note that increasing a particular customer group's allocation of Sierra-Nevada hydro power generally results in a lower cost of electricity for that customer group, and the reverse also is generally true.

In general, increasing the allocation to Sierra-Nevada's utility customers leads to the most positive economic impacts, while eliminating the allocation to that group results in the most negative economic effects of the allocation scenarios. This is true for regions with a significant share of Sierra-Nevada utility customer capacity. In Kern County, the agriculture allocation is the most critical in terms of economic impacts.

4.2 Environmental Justice Impacts

Across the alternatives and the affected economic regions, the economic impacts are generally not significant. The impacts are not disproportional across income or race groupings of the population. In the case of agriculture customers, the potential exists for impacts on employment and income to disproportionally affect low-income and minority farm labor. However, Sierra-Nevada's effect on electricity rates–and therefore water costs–is not likely to cause these types of impacts in any region modeled.

4.3 Northern California Economic Impacts

The potential economic effects of Sierra Nevada's actions are extremely small in relation to the size of the economy potentially affected, and, although they are calculable, they are not significant. Estimated employment effects range from about 200 new jobs to 600 job losses, depending on the alternative. Alternatives calling for Sierra Nevada to offer the CVP hydroelectric resource as a peaked resource, and supplementing its resources with spot market energy purchases, result in generally neutral economic impacts. Alternatives calling for Sierra Nevada to make substantial purchases of power generated from current renewable resource technologies (solar, wind, geothermal), generally result in the most negative economic impacts. The SNR Preferred Alternative has a generally neutral economic impact. Increasing the CVP power allocations to the utility customer group or decreasing them to the other customer group tends to result in positive economic impacts. Figures 4.1 through 4.3 illustrate the effects of the respective alternatives on the region's output, employment, and labor income.

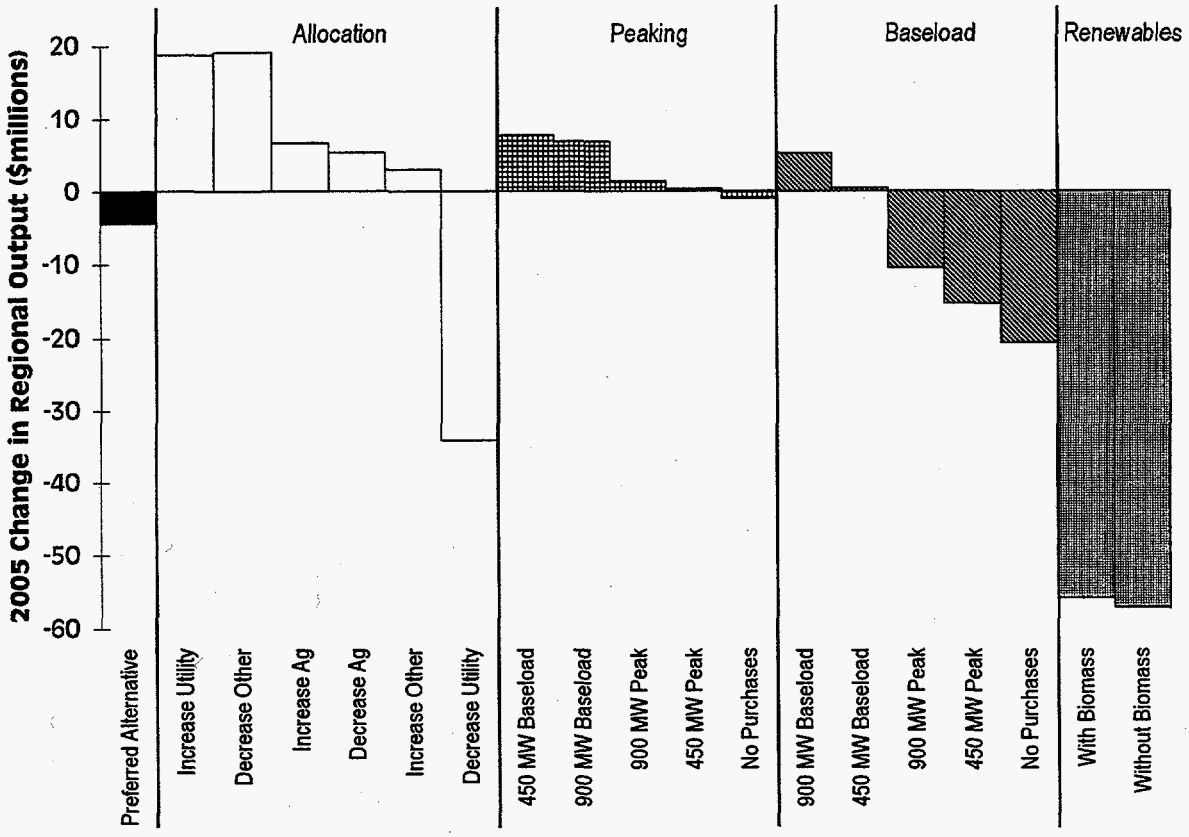

Figure 4.1. Northern and Central California 2005 Output Impacts by Alternative

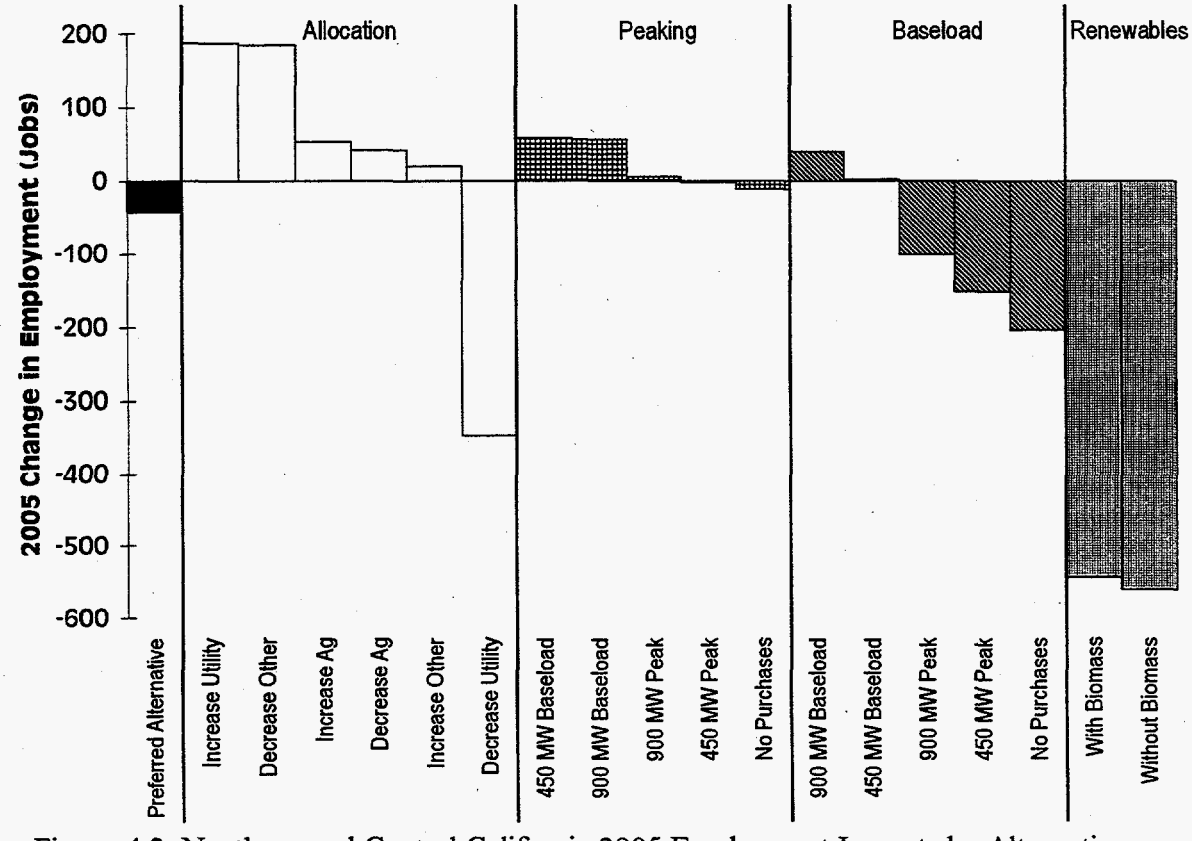

Figure 4.2. Northern and Central California 2005 Employment Impacts by Alternative

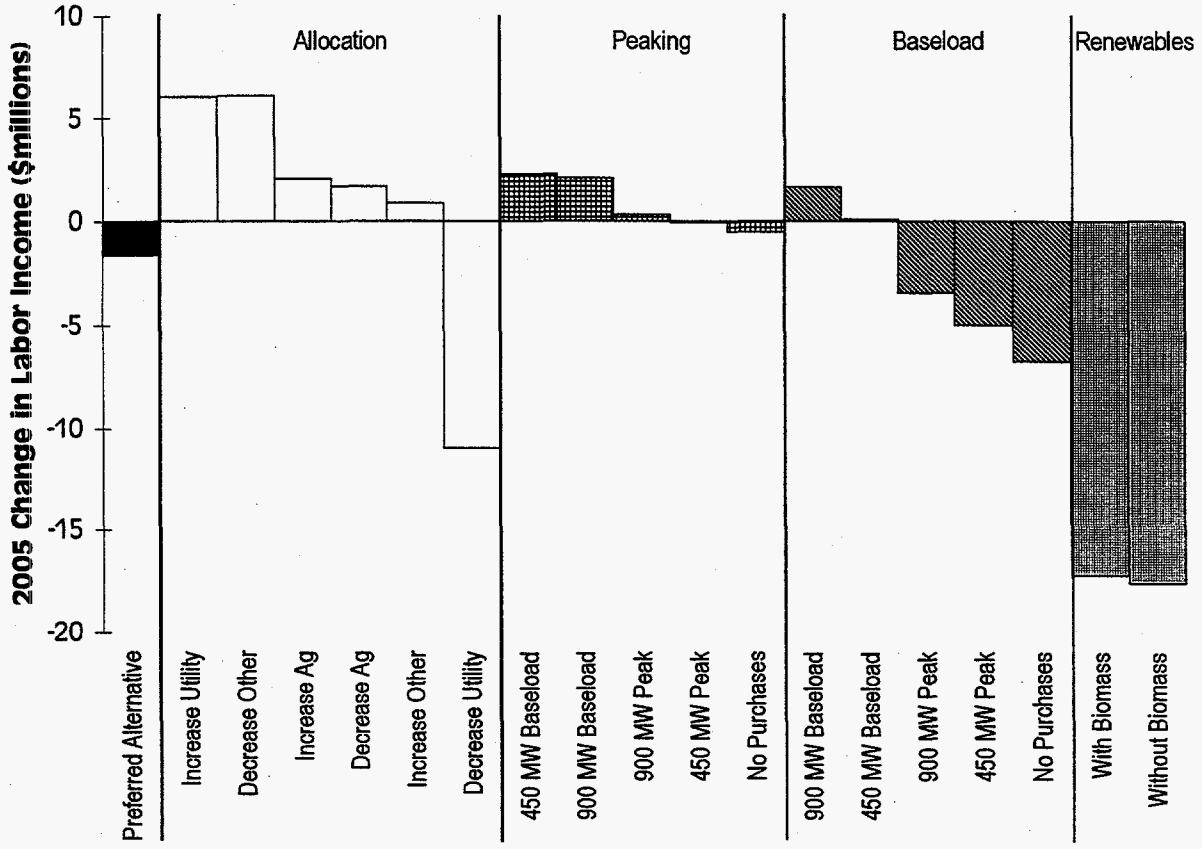

Figure 4.3. Northern and Central California 2005 Labor Income Impacts by Alternative

4.4 San Francisco Bay Area Economic Impacts

The potential economic effects of Sierra Nevada's actions are extremely small in relation to the size of the economy potentially affected, and, although they are calculable, they are not significant. Estimated employment effects range from about 250 new jobs to 100 job losses, depending on the alternative. Alternatives calling for Sierra Nevada to offer the CVP hydroelectric resource as a peaked resource, and supplementing its resources with spot market energy purchases, result in generally neutral economic impacts. Alternatives calling for Sierra Nevada to make substantial purchases of power generated from current renewable resource technologies (solar, wind, geothermal), generally result in the most negative economic impacts. The SNR Preferred Alternative has a generally neutral economic impact. Increasing the CVP power allocations to the utility customer group or decreasing them to the other customer group tends to result in positive economic impacts. Figures 4.4 through 4.6 illustrate the effects of the respective alternatives on the region's output, employment, and labor income.

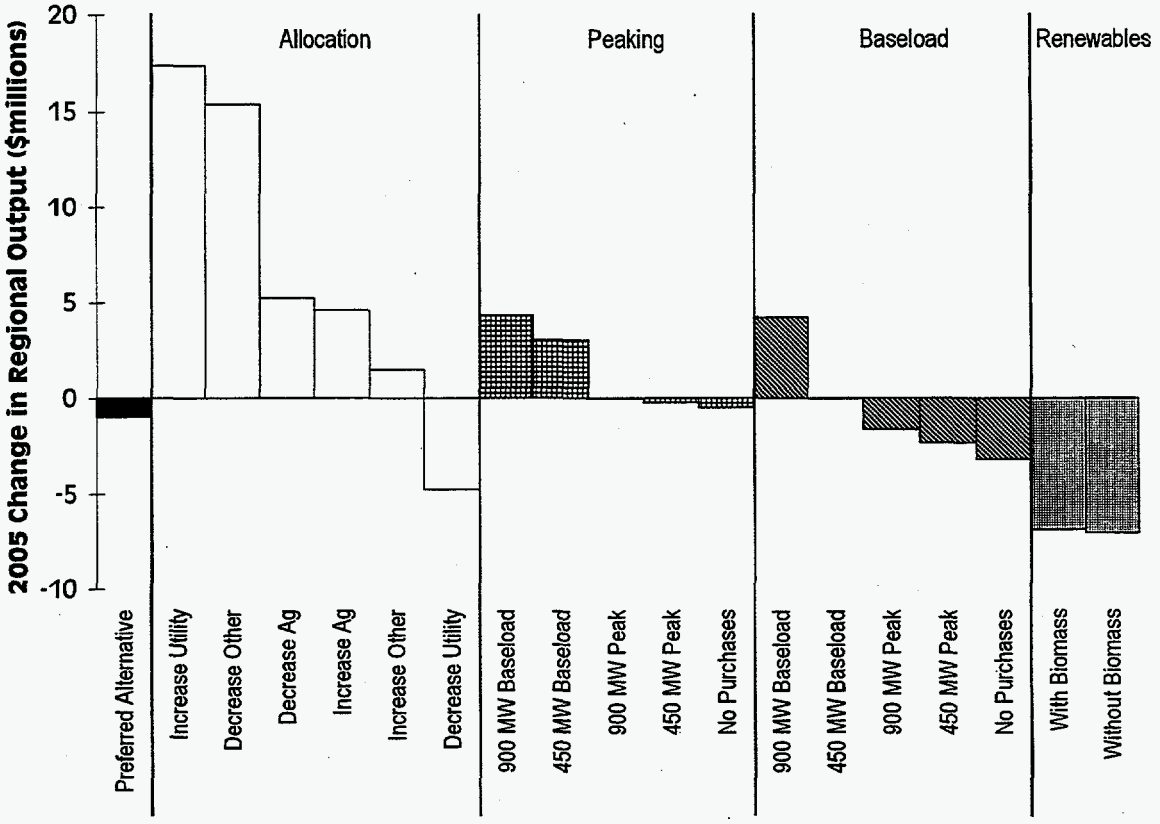

Figure 4.4. Bay Area Economic Region 2005 Regional Output Impacts by Alternative.

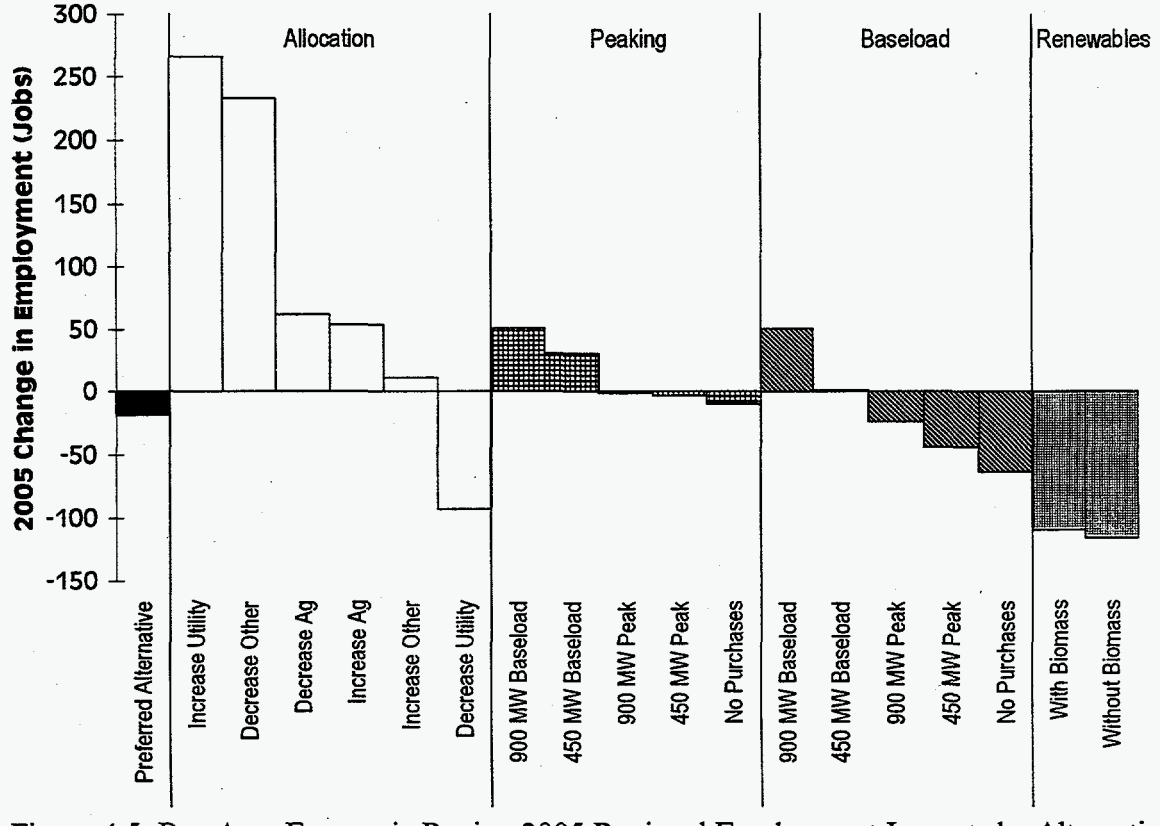

Figure 4.5. Bay Area Economic Region 2005 Regional Employment Impacts by Alternative

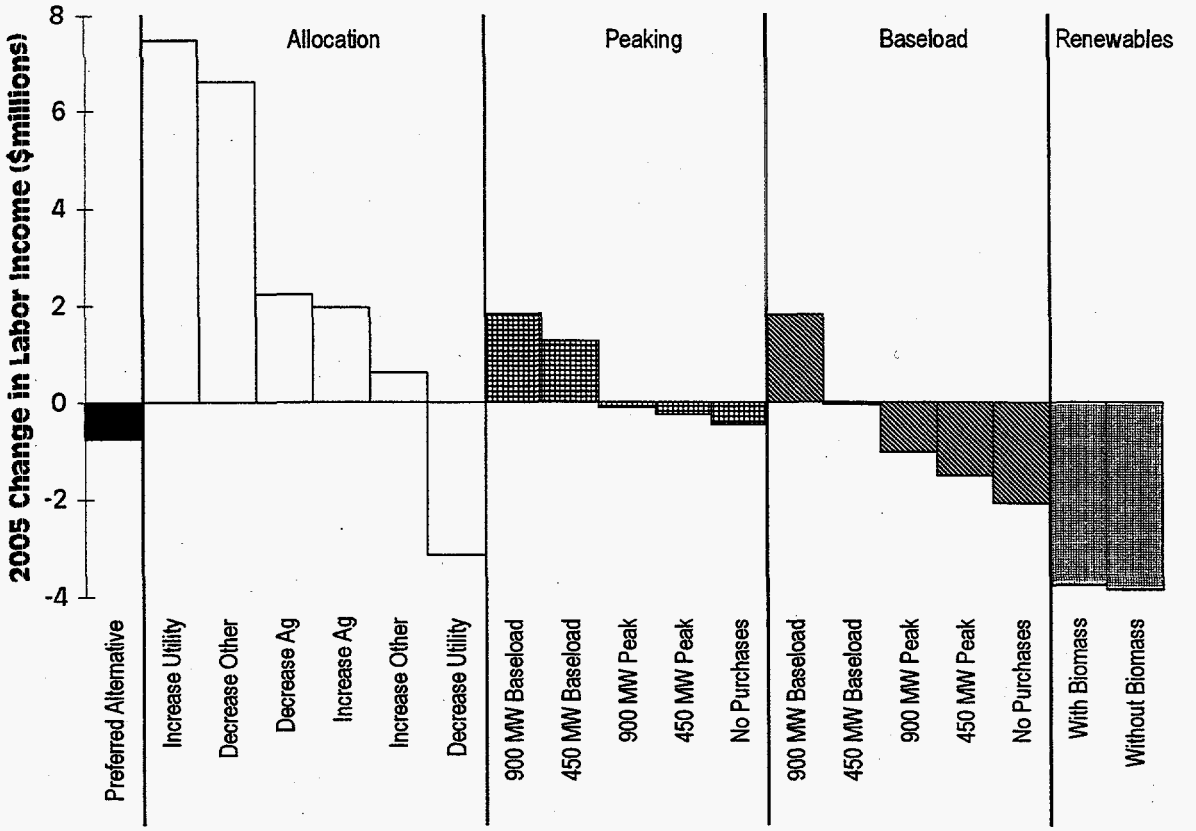

Figure 4.6. Bay Area Economic Region 2005 Regional Labor Income Impacts by Alternative

4.5 Sacramento Economic Impacts

The potential economic effects of Sierra Nevada's actions are extremely small in relation to the size of the economy potentially affected, and, although they are calculable, they are not significant. Estimated employment effects range from about 80 new jobs to 200 job losses, depending on the alternative. Alternatives calling for Sierra Nevada to offer the CVP hydroelectric resource as a peaked resource, and supplementing its resources with spot market energy purchases, result in generally neutral economic impacts. Alternatives calling for Sierra Nevada to make substantial purchases of power generated from current renewable resource technologies (solar, wind, geothermal), generally result in the most negative economic impacts. The SNR Preferred Alternative has a generally neutral economic impact. Increasing the CVP power allocations to the utility customer group or decreasing them to the other customer group tends to result in positive economic impacts. Figures 4.7 through 4.9 illustrate the effects of the respective alternatives on the region's output, employment, and labor income.

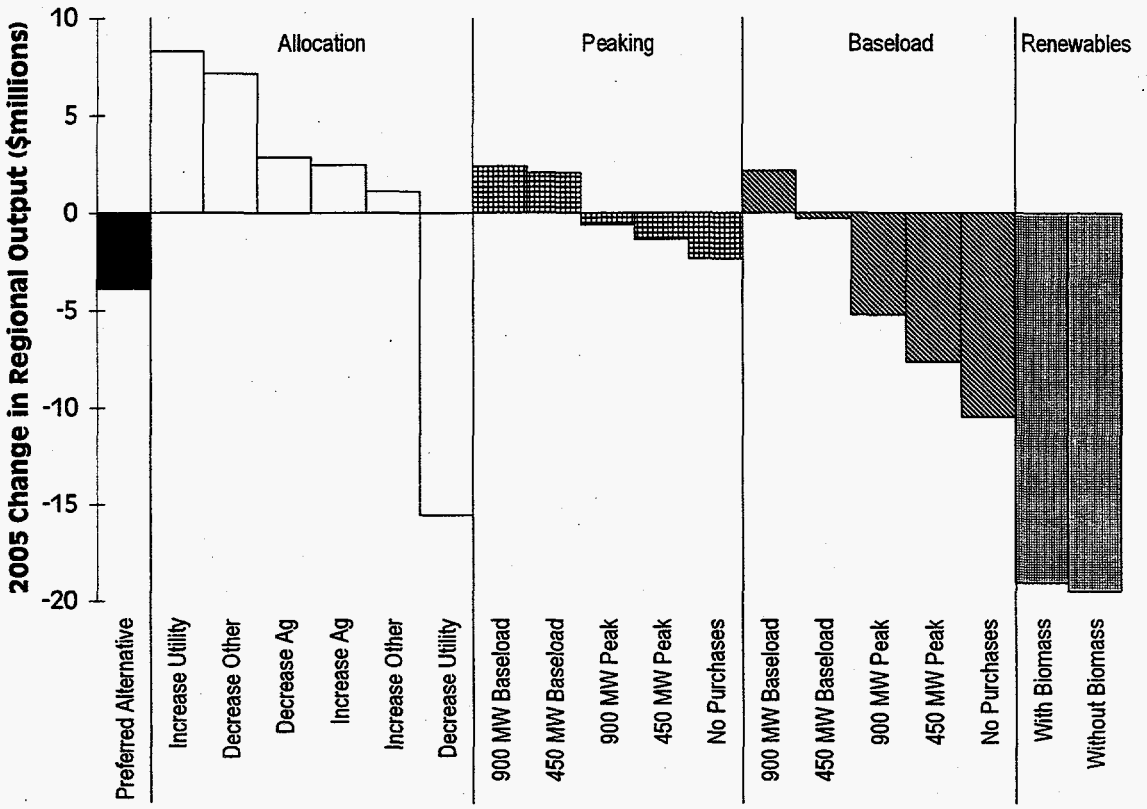

Figure 4.7. Sacramento Region 2005 Regional Output Impacts by Alternative

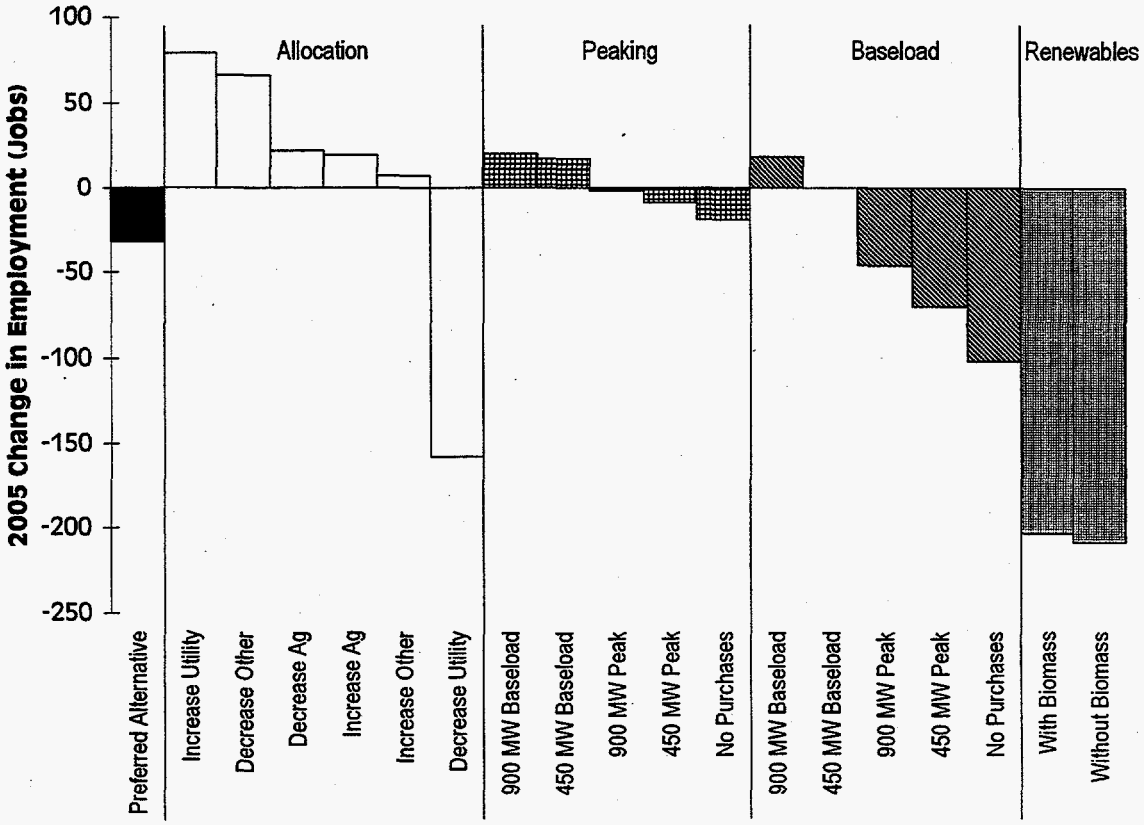

Figure 4.8. Sacramento Region 2005 Regional Employment Impacts by Alternative

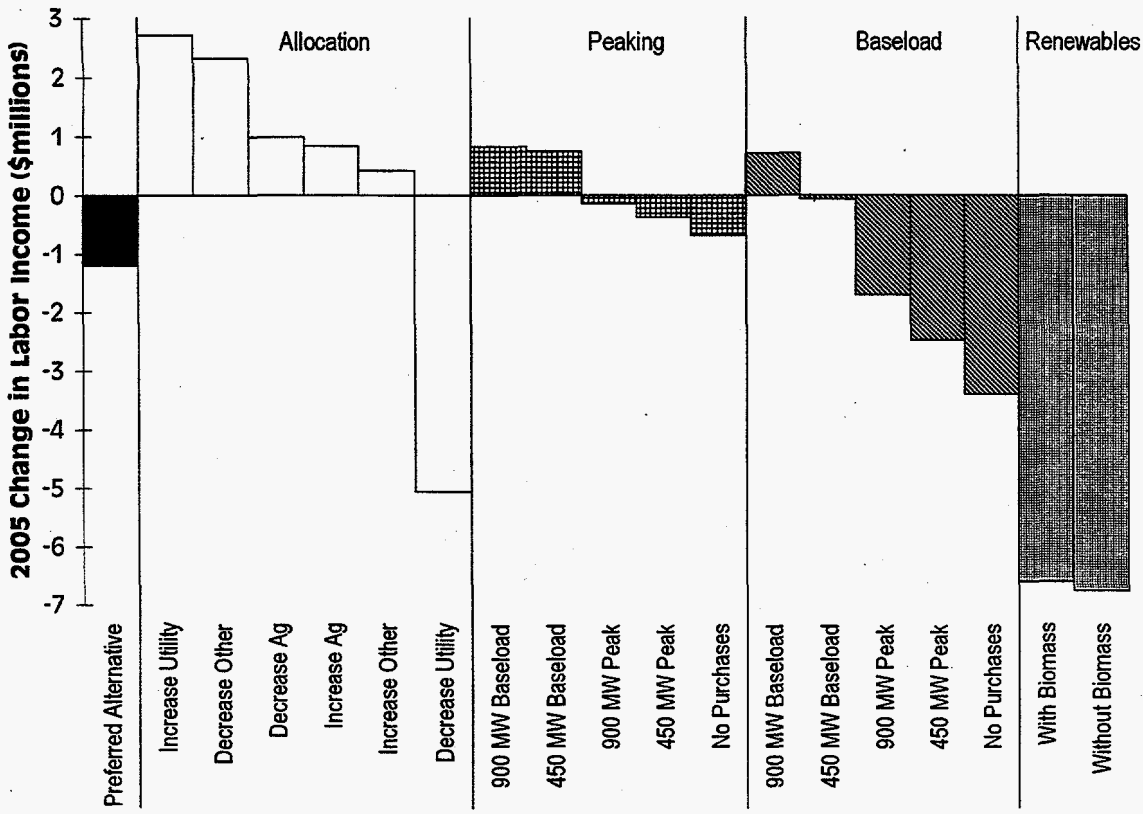

Figure 4.9 Sacramento Region 2005 Regional Labor Income Impacts by Alternative

4.6 Shasta County Economic Impacts

The potential economic effects of Sierra Nevada's actions are extremely small in relation to the size of the economy potentially affected, and, although they are calculable, they are not significant. Estimated employment effects range from about 30 new jobs to 70 job losses, depending on the alternative. Alternatives calling for Sierra Nevada to offer the CVP hydroelectric resource as a peaked resource, and supplementing its resources with spot market energy purchases, result in generally neutral economic impacts. Alternatives calling for Sierra Nevada to make substantial purchases of power generated from current renewable resource technologies (solar, wind, geothermal), generally result in the most negative economic impacts. The SNR Preferred Alternative has a generally neutral economic impact. Increasing the CVP power allocations to the utility customer group or decreasing them to the other customer group tends to result in positive economic impacts. Figures 4.10 through 4.12 illustrate the effects of the respective alternatives on the region's output, employment, and labor income.

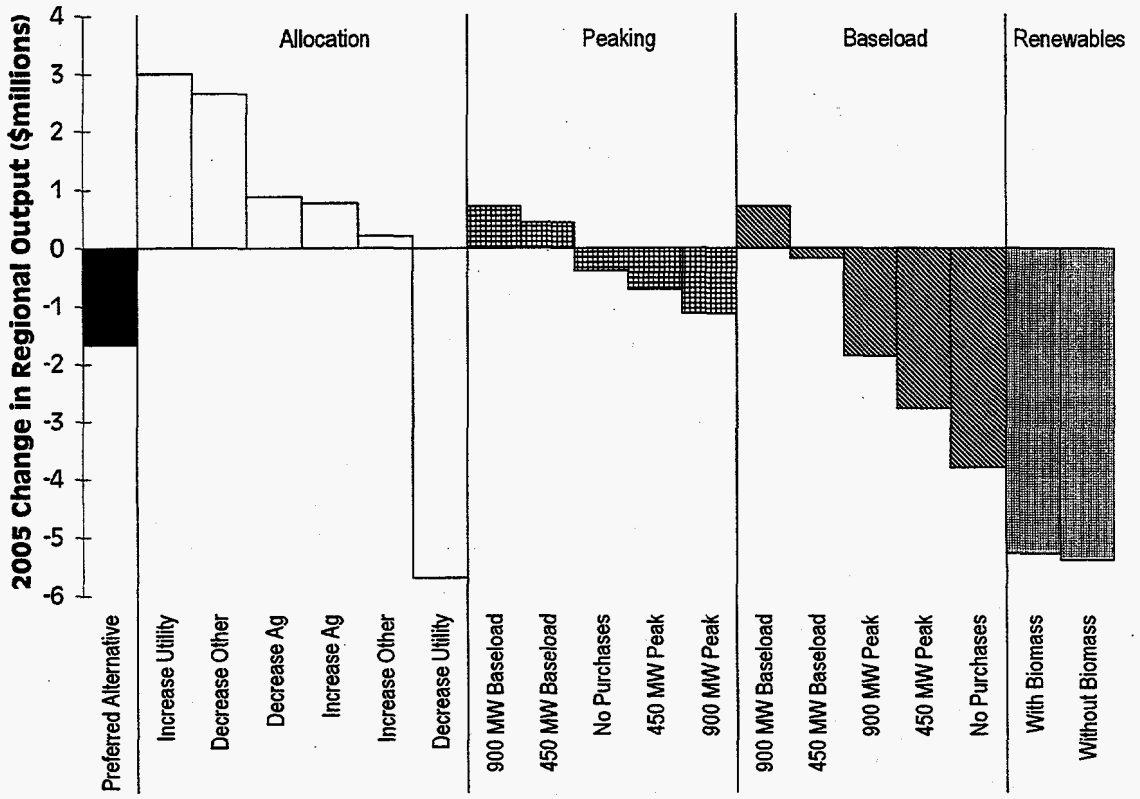

Figure 4.10. Shasta County Region 2005 Regional Output Impacts by Alternative

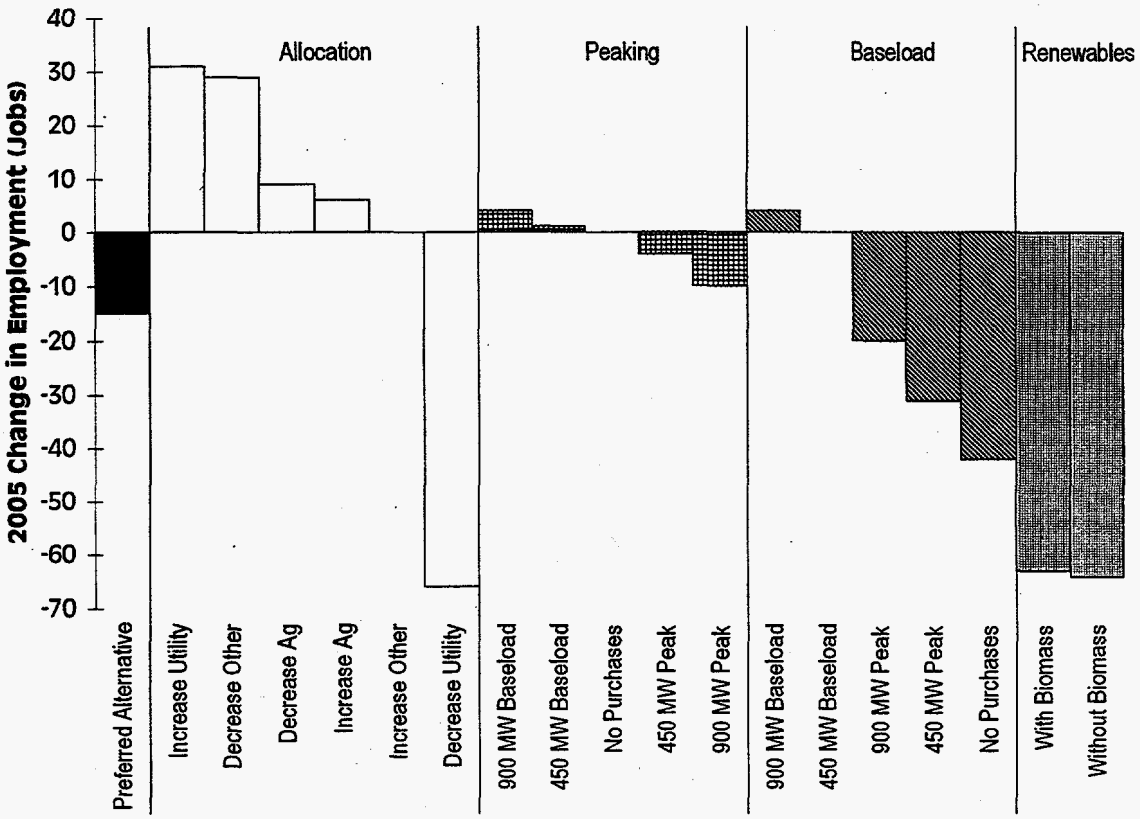

Figure 4.11. Shasta County Region 2005 Regional Employment Impacts by Alternative

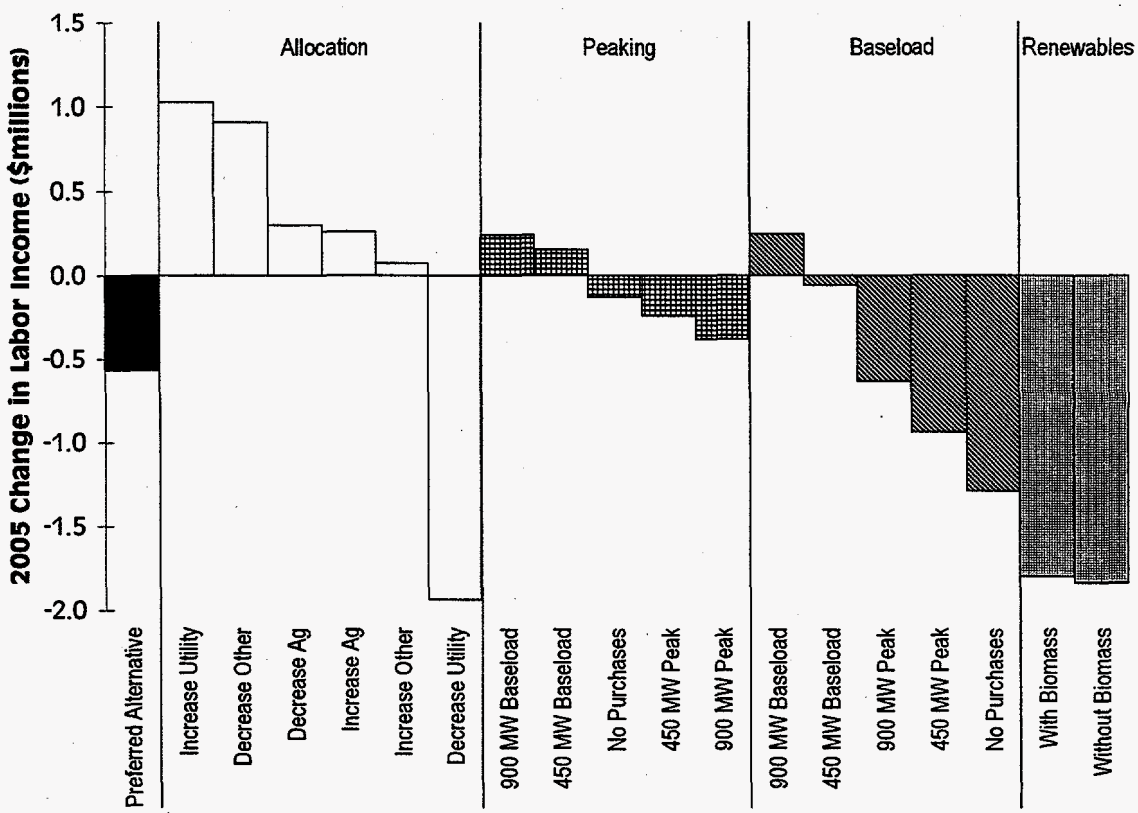

Figure 4.12. Shasta County Region 2005 Regional Labor Income Impacts by Alternative

4.7 Kern County Economic Impacts

Kern County and the Bakersfield metropolitan area were selected as an affected economic region because nearly one third of Sierra-Nevada's agriculture capacity is marketed to customers there. The Kern Region was selected to represent Sierra-Nevada's agriculture customers in general, based on the share of Sierra-Nevada agriculture capacity marketed there.

This section discusses the potential impacts of rate changes on irrigation costs and how these potential impacts affect the levels of crop production, land use, and profits. The sensitivity of these variables to changes in energy costs are described on the basis of a linear programming (LP) model of irrigated farming in Kern County (Ulibarri et al. 1996). By construction the model captures the potential impact of changes in Sierra-Nevada rates on the profitable use of land and water resources in crop production under various irrigation systems. Several key assumptions of the LP model are described by Ulibarri et al. (1996).

The potential electricity rates confronting irrigation district customers in the Kern County portion of the Sierra Nevada Customer Service Region range between 5 and 6 cents per kWh under the various 2004 EIS alternatives. Therefore, a conservative sensitivity analysis considers the impact of paying between 5 and 10 cents per kWh. This rate increment brackets all of the foreseeable electricity rates confronting irrigation district customers in the Kern County portion of the Sierra Nevada Region.

Table 4.1 shows that a 1-cent increase in Sierra-Nevada power costs (from 5 to 6 cents) would reduce crop profits by 1.8%. This percentage reduction in crop profits recognizes the continued production of submarginal crops. As previously noted, this range brackets the potential electricity rates confronting irrigation district customers; that is, 5 to 6 cents per kWh. Nevertheless, the impact of these potential rate escalations were estimated over the 5 to 10-cent range on the basis of 1-cent increments to provide a more conservative perspective of the potential impacts under the EIS alternatives.

Table 4.1 Net Impacts on Kern County Farm Profits by Crop Under Varying Sierra-Nevada Power Costs (Millions of 2005 $)

Crop	5¢/kwh	6¢/kwh	7¢/kwh	8¢/kwh	9¢/kwh	10¢/kwh
Citrus	79.26	78.88	78.52	78.15	77.79	77.41
		-0.5%	-0.9%	-1.4%	-1.9%	-2.3%
Grapes	144.69	143.60	142.50	141.39	140.30	139.20
		-0.8%	-1.5%	-2.3%	-3.0%	-3.8%
Cotton	91.17	87.61	84.05	80.48	76.94	73.37
		-3.9%	-7.8%	-11.7%	-15.6%	-19.5%
Alfalfa Hay	4.49	4.16	3.84	3.53	3.21	2.88
		-7.4%	-14.4%	-21.5%	-28.5%	-35.9%
Wheat	-0.95	-1.04	-1.11	-1.20	-1.27	-1.35
		-9.1%	-16.7%	-25.8%	-33.3%	-42.4%
Barley	-2.07	-2.13	-2.17	-2.23	-2.29	-2.33
		-2.8%	-4.9%	-7.6%	-10.4%	-12.5%
Tomatoes	4.15	4.08	4.00	3.93	3.84	3.77
		-1.7%	-3.5%	-5.2%	-7.3%	-9.0%
Sugar Beats	1.90	1.79	1.66	1.54	1.41	1.30
		-6.1%	-12.9%	-18.9%	-25.8%	-31.8%
Almonds	46.83	45.33	43.86	42.38	40.90	39.41
		-3.2%	-6.3%	-9.5%	-12.7%	-15.8%
Carrots	6.96	6.32	5.69	5.05	4.42	3.79
		-9.1%	-18.2%	-27.3%	-36.4%	-45.5%
Pistachios	83.78	83.38	82.97	82.56	82.18	81.73
		-0.5%	-1.0%	-1.5%	-1.9%	-2.4%
Total	460.20	451.97	443.82	435.59	427.44	419.18
% Change		-1.8%	-3.6%	-5.3%	-7.1%	-8.9%

Neither the land use nor the production levels deviate (in real terms) from their 1993 values as a result of the potential change in Sierra-Nevada costs (Ulibarri 1996). The scenarios are consistent with the impact on profits discussed above in that the power cost increases are reflected in production costs and reduced profit margins for all eleven crops.

Because crop revenues are not impacted, Sierra-Nevada's alternatives are not likely to result in direct or immediate changes in regional output, employment, or labor income. Although profits

are impacted, the crops continue to be profitable to produce under the alternative water cost structure. Farmers may seek to regain any lost profits over time by taking steps to offset any potential change in cost. Such offsets might include more efficient water delivery systems or mechanization that cuts labor costs. These potential responses were not accounted for in the 2005 economic analysis. The analysis also does not consider the effects of farm subsidy payments received by the farm sector to support the production of unprofitable crops.

5.0 CONCLUSION

The economic effects of operating the CVP to produce hydroelectric power for the Sierra Nevada Customer Services Region are generally indistinguishable in a fully deregulated wholesale and retail electricity market. The most cost-effective power marketing alternatives result in the most positive economic impacts in the regions studied. Pursuing an alternative designed to require purchases of renewable power resources like solar, wind, or geothermal, becomes uneconomical in an open electricity market. The higher costs associated with producing and delivering power from these resources lead to negative economic impacts. The analysis suggests that the Preferred Alternative of operating the hydroelectric system in peaking mode, with supplementary power purchased on the economy energy market, results in a neutral net economic impact. Because all of Sierra Nevada's potential alternatives will result in relatively modest influences in the economic regions studied, and because these regions are large and economically diverse, the resulting effects on output, employment, and labor income are not significant, when considering the uncertainties inherent in the underlying information sources supporting the analysis.

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APPENDIX A: CUSTOMER EXPENDITURE PATTERNS

SNR End-Use Customer Expenditure Profiles

	Industry Sector	Utility Residential Customers	Utility Commercial Customers	Utility Industrial Customers	Government Agency Customers	Agriculture Customers
1	Agriculture	0.0074	0.0053	0.0102	0.0015	0.0012
2	Mining	0.0001	0.0001	0.0011	0.0002	0.0072
3	Petroleum Industry	0.0194	0.1001	0.0811	0.1536	0.1733
4	Construction	0.0000	0.1336	0.0340	0.3720	0.0858
5	Food Processing	0.0697	0.0215	0.0143	0.0000	0.0002
6	Textiles & Apparel	0.0218	0.0028	0.0139	0.0006	0.0007
7	Wood Products	0.0077	0.0039	0.0826	0.0000	0.0708
8	Printing & Publishing	0.0069	0.0045	0.0044	0.0015	0.0003
9	Chemicals	0.0184	0.0144	0.1473	0.0176	0.0410
10	Leather & Footware	0.0042	0.0001	0.0077	0.0000	0.0000
11	Stone, Clay, & Glass	0.0012	0.0012	0.0110	0.0001	0.0013
12	Primary Metals	0.0000	0.0000	0.0099	0.0000	0.0023
13	Fabricated Metals	0.0022	0.0011	0.0105	0.0001	0.0076
14	Industrial Machinery	0.0006	0.0017	0.0202	0.0034	0.0136
15	Electronics	0.0011	0.0155	0.1033	0.0080	0.0053
16	Service Industry Machines	0.0003	0.0008	0.0045	0.0002	0.0054
17	Electrical Equipment	0.0095	0.0128	0.0220	0.0053	0.0088
18	Transportation Equipment	0.0321	0.0020	0.0069	0.0007	0.0012
19	Instruments	0.0027	0.0060	0.0100	0.0009	0.0028
20	Misc. Mfg.	0.0072	0.0002	0.0003	0.0001	0.0001
21	Transportation & Warehousing	0.0210	0.0504	0.0758	0.0276	0.0532
22	Communications	0.0204	0.0187	0.0064	0.0040	0.0033
23	Utility Services	0.0333	0.1090	0.0458	0.2664	0.1122
24	Trade	0.1345	0.0328	0.0902	0.0191	0.0886
25	Finance, Insurance, and Real Estate	0.2229	0.1466	0.0389	0.0410	0.1087
26	Lodging	0.0231	0.0069	0.0042	0.0021	0.0030
27	Business Services	0.0184	0.1319	0.0999	0.0451	0.1466
28	Eating & Drinking	0.0493	0.0206	0.0156	0.0138	0.0076
29	Repair Services	0.0222	0.0245	0.0175	0.0082	0.0415
30	Amusements	0.0175	0.1125	0.0006	0.0000	0.0003
31	Health & Social Services	0.2182	0.0060	0.0025	0.0014	0.0014
32	Government	0.0065	0.0124	0.0075	0.0053	0.0048
		1.0000	1.0000	1.0000	1.0000	1.0000

Bay Area End-Use Customer Expenditure Profiles

	Industry Sector	Utility Residential Customers	Utility Commercial Customers	Utility Industrial Customers	Government Agency Customers	Agriculture Customers
1	Ag-Forest-Fish	0.0043	0.0080	0.0014	0.0058	0.0051
2	Mining	0.0004	0.0191	0.0013	0.0032	0.0017
3	Residential Construction	0.0134	0.0018	0.0000	0.0000	0.0000
4	Non-residental Construction	0.0272	0.0477	0.0000	0.0000	0.0000
5	Public Construction	0.0513	0.0013	0.0000	0.0000	0.0000
6	Maitenance and Repair	0.0120	0.0321	0.0137	0.0025	0.0054
7	Food Products	0.0081	0.0007	0.0093	0.0089	0.0445
8	Textiles & Apparel	0.0007	0.0200	0.0039	0.0137	0.0275
9	Wood Products	0.0151	0.0011	0.0066	0.0362	0.0250
10	Printing & Publishing	0.0024	0.0013	0.0397	0.0137	0.0217
11	Chemicals	0.0096	0.0078	0.0103	0.0672	0.0417
12	Petroleum & Related	0.0055	0.0432	0.0572	0.0319	0.0610
13	Rubber & Leather	0.0123	0.1154	0.0103	0.0232	0.0260
14	Stone, Glass, Clay	0.0699	0.0009	0.0041	0.0533	0.0217
15	Primary Metals	0.0018	0.0393	0.0004	0.0555	0.0187
16	Fabricated Metals & Ordinance	0.0069	0.0104	0.0055	0.0511	0.0215
17	Nonelectrical Machinery	0.0209	0.1399	0.0070	0.0239	0.0112
18	Computers & Office Eq	0.0230	0.0106	0.0098	0.0300	0.0135
19	Electric Transmisson & Ind. Apparatu	0.0382	0.0000	0.0001	0.0018	0.0010
20	Household Appliances	0.0032	0.0006	0.0007	0.0038	0.0481
21	Communication Eq. except radio/TV	0.0374	0.0000	0.0086	0.0153	0.0084
22	Electronic Components & Eq	0.0162	0.0029	0.0097	0.0682	0.0264
23	Transportation Equipment	0.0036	0.0187	0.0320	0.0139	0.0373
24	Instruments	0.1194	0.0940	0.0484	0.0399	0.0330
25	Transportation Services	0.0018	0.0002	0.0246	0.0124	0.0162
26	Trucking & Warehousing	0.0106	0.0118	0.0447	0.0354	0.0298
27	Communications	0.2727	0.0000	0.0517	0.0203	0.0347
28	Utilities	0.0029	0.0000	0.0680	0.0307	0.0685
29	Wholesale Trade	0.0007	0.0176	0.0428	0.1345	0.0626
30	Retail Trade	0.0165	0.0444	0.0445	0.0434	0.0352
31	Finance, Insurance & Real Estate	0.0036	0.0077	0.2637	0.0675	0.1248
32	Hotels & Lodging	0.0069	0.0648	0.0007	0.0004	0.0038
33	Personal & Repair Services	0.0483	0.0661	0.0047	0.0020	0.0085
34	Business & Professional Services	0.0046	0.0117	0.1181	0.0855	0.0685
35	Amusement & Recreation Services	0.0047	0.0094	0.0311	0.0001	0.0168
36	Health Services	0.0810	0.1069	0.0105	0.0000	0.0166
37	Education & Research Services	0.0042	0.0106	0.0020	0.0005	0.0075
38	Government & Micellaneous	0.0387	0.0322	0.0129	0.0043	0.0060
		1.0000	1.0000	1.0000	1.0000	1.0000

Sacramento End-Use Customer Expenditure Profiles

	Industry Sector	Utility Residential Customers	Utility Commercial Customers	Utility Industrial Customers	Government Agency Customers	Agriculture Customers
1	Agriculture	0.0026	0.0071	0.0052	0.0103	0.3390
2	Mining	0.0002	0.0001	0.0001	0.0014	0.0000
3	Petroleum Industry	0.0092	0.0194	0.0128	0.0125	0.0236
4	Construction	0.0972	0.0000	0.1570	0.0616	0.0868
5	Food Processing	0.0071	0.0683	0.0105	0.0102	0.0534
6	Textiles & Apparel	0.0015	0.0216	0.0012	0.0057	0.0016
7	Wood Products	0.0047	0.0076	0.0029	0.0933	0.0084
8	Printing & Publishing	0.0061	0.0067	0.0061	0.0075	0.0013
9	Chemicals	0.0070	0.0182	0.0056	0.0589	0.0568
10	Leather & Footware	0.0001	0.0043	0.0000	0.0002	0.0000
11	Stone, Clay, & Glass	0.0005	0.0012	0.0006	0.0064	0.0002
12	Primary Metals	0.0002	0.0000	0.0000	0.0064	0.0002
13	Fabricated Metals	0.0397	0.0021	0.0009	0.0080	0.0005
14	Industrial Machinery	0.0044	0.0006	0.0016	0.0198	0.0071
15	Electronics	0.0238	0.0011	0.0134	0.0845	0.0008
16	Service Industry Machines	0.0008	0.0003	0.0003	0.0021	0.0000
17	Electrical Equipment	0.0205	0.0095	0.0055	0.0090	0.0025
18	Transportation Equipment	0.0432	0.0310	0.0018	0.0098	0.0008
19	Instruments	0.0346	0.0027	0.0014	0.0034	0.0006
20	Misc. Mfg.	0.0020	0.0070	0.0000	0.0001	0.0000
21	Transportation & Warehousing	0.0083	0.0201	0.0596	0.0727	0.0485
22	Communications	0.0055	0.0203	0.0329	0.0178	0.0075
23	Utility Services	0.0185	0.0355	0.1545	0.1102	0.0440
24	Trade	0.0362	0.1410	0.0546	0.1459	0.0979
25	Finance, Insurance, and Real Estate	0.0184	0.2279	0.1683	0.0665	0.0981
26	Lodging	0.0049	0.0221	0.0080	0.0066	0.0025
27	Business Services	0.1264	0.0177	0.0998	0.1015	0.0325
28	Eating & Drinking	0.0027	0.0471	0.0210	0.0201	0.0102
29	Repair Services	0.0028	0.0213	0.0217	0.0194	0.0325
30	Amusements	0.0003	0.0167	0.1154	0.0010	0.0224
31	Health & Social Services	0.0025	0.2118	0.0071	0.0045	0.0077
32	Government	0.4659	0.0063	0.0301	0.0224	0.0124
		0.9977	0.9966	1.0000	1.0000	1.0000

Shasta End-Use Customer Expenditure Profiles

	Industry Sector	Utility Residential Customers	Utility Commercial Customers	Utility Industrial Customers
1	Agriculture	0.0056	0.0042	0.0062
2	Mining	0.0000	0.0001	0.0006
3	Petroleum Industry	0.0214	0.0102	0.0109
4	Construction	0.0000	0.0860	0.0727
5	Food Processing	0.0613	0.0107	0.0088
6	Textiles & Apparel	0.0220	0.0043	0.0175
7	Wood Products	0.0076	0.0026	0.1238
8	Printing & Publishing	0.0078	0.0026	0.0031
9	Chemicals	0.0184	0.0033	0.0192
10	Leather & Footware	0.0044	0.0000	0.0010
11	Stone, Clay, & Glass	0.0012	0.0003	0.0026
12	Primary Metals	0.0000	0.0000	0.0000
13	Fabricated Metals	0.0014	0.0002	0.0020
14	Industrial Machinery	0.0005	0.0008	0.0136
15	Electronics	0.0006	0.0014	0.0101
16	Service Industry Machines	0.0002	0.0002	0.0015
17	Electrical Equipment	0.0011	0.0133	0.0129
18	Transportation Equipment	0.0331	0.0026	0.0050
19	Instruments	0.0007	0.0034	0.0099
20	Misc. Mfg.	0.0079	0.0000	0.0001
21	Transportation & Warehousing	0.0221	0.0694	0.0964
22	Communications	0.0209	0.0495	0.0240
23	Utility Services	0.0336	0.0802	0.1078
24	Trade	0.1518	0.0740	0.1860
25	Finance, Insurance, and Real Estate	0.2229	0.1638	0.0570
26	Lodging	0.0225	0.0122	0.0091
27	Business Services	0.0183	0.1300	0.1210
28	Eating & Drinking	0.0504	0.0270	0.0252
29	Repair Services	0.0221	0.0255	0.0214
30	Amusements	0.0179	0.1863	0.0013
31	Health & Social Services	0.2138	0.0101	0.0055
32	Government	0.0087	0.0258	0.0241
		1.0000	1.0000	1.0000

APPENDIX B: INDUSTRY-SPECIFIC MODEL OUTPUT

Northern and Central California 2005 Industry Output Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.036	0.050	-0.018	0.053	-0.004	-0.207	-0.003	-0.152	0.046	-0.104	0.176	-0.326	0.053	0.050	0.020	0.168	-0.420	-0.430	-0.068
2	Mining	0.011	0.006	0.009	0.002	0.007	0.010	0.003	0.006	0.000	0.004	0.000	0.004	0.002	-0.006	-0.001	0.009	-0.025	-0.026	0.011
3	Petroleum Industry	0.344	0.583	0.311	0.395	0.290	-0.553	0.109	-0.439	0.235	-0.319	0.683	-1.147	0.351	0.178	0.214	0.854	-3.500	-3.592	0.218
4	Construction	0.709	0.635	0.559	0.315	0.446	0.320	0.181	0.210	0.097	0.099	-0.118	0.364	0.235	0.187	0.345	-0.061	-3.129	-3.223	0.716
5	Food Processing	-0.175	0.265	-0.083	0.277	-0.013	-1.060	-0.012	-0.782	0.236	-0.533	0.909	-1.680	0.279	0.253	0.106	0.879	-2.211	-2.262	-0.339
6	Textiles & Apparel	-0.072	0.088	-0.037	0.096	-0.011	-0.386	-0.007	-0.284	0.084	-0.193	0.326	-0.605	0.097	0.092	0.036	0.310	-0.759	-0.777	-0.131
7	Wood Products	-0.045	0.231	0.002	0.214	0.040	-0.690	0.010	-0.519	0.172	-0.353	0.666	-1.206	0.211	0.121	0.058	0.738	-1.742	-1.783	-0.163
8	Printing & Publishing	-0.024	0.037	-0.011	0.038	-0.002	-0.147	-0.002	-0.108	0.033	-0.074	0.126	-0.233	0.039	0.035	0.015	0.121	-0.308	-0.315	-0.047
9	Chemicals	-0.273	0.487	-0.120	0.496	-0.002	-1.841	-0.014	-1.362	0.418	-0.928	1.606	-2.959	0.498	0.427	0.183	1.586	-3.980	-4.073	-0.563
10	Leather & Footware	-0.014	0.032	-0.005	0.031	0.002	-0.109	0.000	-0.080	0.025	-0.055	0.095	-0.174	0.031	0.027	0.013	0.093	-0.250	-0.255	-0.031
11	Stone, Clay, & Glass	-0.021	0.022	-0.011	0.025	-0.004	-0.104	-0.002	-0.076	0.022	-0.052	0.087	-0.162	0.025	0.024	0.009	0.083	-0.194	-0.198	-0.037
12	Primary Metals	-0.015	0.016	-0.008	0.018	-0.003	-0.075	-0.002	-0.055	0.016	-0.038	0.064	-0.119	0.018	0.016	0.006	0.062	-0.140	-0.143	-0.027
13	Fabricated Metals	-0.015	0.065	-0.001	0.060	0.009	-0.192	0.002	-0.144	0.047	-0.098	0.177	-0.322	0.058	0.043	0.022	0.184	-0.488	-0.499	-0.046
14	Industrial Machinery	-0.008	0.045	0.001	0.041	0.008	-0.129	0.002	-0.097	0.032	-0.066	0.122	-0.221	0.040	0.026	0.014	0.131	-0.334	-0.342	-0.029
15	Electronics	-0.194	0.184	-0.108	0.213	-0.042	-0.912	-0.022	-0.669	0.192	-0.454	0.754	-1.407	0.219	0.221	0.080	0.700	-1.673	-1.711	-0.331
16	Service Industry Machines	0.000	0.014	0.002	0.012	0.004	-0.035	0.001	-0.026	0.009	-0.018	0.035	-0.062	0.012	0.007	0.004	0.039	-0.102	-0.105	-0.006
17	Electrical Equipment	-0.048	0.090	-0.021	0.091	0.000	-0.333	-0.002	-0.246	0.076	-0.168	0.289	-0.533	0.091	0.080	0.035	0.283	-0.730	-0.747	-0.101
18	Transportation Equipment	-0.076	0.146	-0.032	0.147	0.001	-0.535	-0.003	-0.395	0.122	-0.270	0.463	-0.854	0.146	0.130	0.058	0.452	-1.181	-1.209	-0.160
19	Instruments	-0.011	0.055	-0.001	0.050	0.008	-0.157	0.002	-0.116	0.039	-0.080	0.139	-0.253	0.048	0.042	0.023	0.137	-0.410	-0.420	-0.037
20	Misc. Mfg.	-0.014	0.022	-0.007	0.022	-0.001	-0.086	-0.001	-0.063	0.019	-0.043	0.073	-0.135	0.023	0.021	0.009	0.071	-0.180	-0.184	-0.027
21	Transportation & Warehousing	-0.085	0.314	-0.016	0.293	0.039	-0.966	0.008	-0.719	0.234	-0.492	0.874	-1.594	0.288	0.226	0.114	0.893	-2.396	-2.453	-0.243
22	Communications	-0.057	0.098	-0.026	0.100	-0.001	-0.374	-0.003	-0.276	0.084	-0.188	0.321	-0.593	0.101	0.091	0.040	0.311	-0.807	-0.826	-0.115
23	Utility Services	0.499	0.588	0.413	0.344	0.350	-0.126	0.138	-0.118	0.162	-0.112	0.268	-0.374	0.284	0.194	0.280	0.357	-3.212	-3.302	0.441
24	Trade	-0.243	0.646	-0.078	0.624	0.051	-2.159	0.004	-1.604	0.510	-1.095	1.934	-3.540	0.619	0.492	0.231	1.964	-5.063	-5.183	-0.592
25	FIRE	-0.398	1.012	-0.135	0.981	0.071	-3.414	0.003	-2.534	0.803	-1.731	3.037	-5.564	0.974	0.795	0.374	3.054	-7.956	-8.144	-0.947
26	Lodging	-0.050	0.088	-0.022	0.089	-0.001	-0.332	-0.003	-0.245	0.075	-0.167	0.286	-0.528	0.089	0.080	0.035	0.279	-0.716	-0.733	-0.102
27	Business Services	-0.027	0.621	0.067	0.541	0.142	-1.582	0.043	-1.190	0.413	-0.817	1.518	-2.734	0.524	0.342	0.201	1.646	-4.481	-4.589	-0.299
28	Eating & Drinking	-0.101	0.202	-0.042	0.201	0.004	-0.728	-0.003	-0.538	0.167	-0.368	0.628	-1.157	0.201	0.182	0.084	0.608	-1.628	-1.666	-0.215
29	Repair Services	-0.006	0.157	0.017	0.137	0.036	-0.400	0.011	-0.301	0.105	-0.206	0.387	-0.697	0.132	0.083	0.048	0.424	-1.130	-1.158	-0.075
30	Amusements	-0.150	0.121	-0.086	0.147	-0.037	-0.656	-0.019	-0.481	0.135	-0.326	0.541	-1.011	0.153	0.154	0.051	0.502	-1.142	-1.167	-0.248
31	Health & Social Services	-0.418	0.614	-0.202	0.645	-0.037	-2.486	-0.031	-1.832	0.551	-1.248	2.122	-3.926	0.650	0.599	0.249	2.039	-5.147	-5.266	-0.803
32	Government	-0.021	0.057	-0.007	0.055	0.004	-0.189	0.000	-0.140	0.045	-0.096	0.166	-0.305	0.054	0.047	0.023	0.165	-0.447	-0.457	-0.052
	Totals	-1.034	7.589	0.304	6.752	1.355	-20.631	0.390	-15.377	5.204	-10.588	18.755	-34.053	6.546	5.258	2.977	19.081	-55.882	-57.241	-4.449

Bay Area 2005 Industry Output Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Ag-Forest-Fish	-0.009	0.019	-0.004	0.026	-0.001	-0.046	-0.001	-0.034	0.025	-0.023	0.102	-0.073	0.027	0.028	0.008	0.094	-0.089	-0.091	-0.016
2	Mining	-0.002	0.002	-0.001	0.003	-0.001	-0.010	0.000	-0.007	0.003	-0.005	0.010	-0.014	0.003	0.003	0.001	0.009	-0.016	-0.017	-0.004
3	Residential Construction	0.009	0.002	0.006	0.001	0.004	0.025	0.002	0.018	0.000	0.012	0.001	0.037	0.001	0.000	0.001	0.001	0.024	0.025	0.013
3	Non-residental Construction	0.014	0.015	0.010	0.016	0.007	0.022	0.003	0.016	0.013	0.010	0.050	0.033	0.016	0.018	0.008	0.044	-0.012	-0.012	0.016
3	Public Construction	0.056	0.059	0.042	0.048	0.032	0.059	0.013	0.042	0.034	0.025	0.104	0.094	0.045	0.055	0.036	0.082	-0.153	-0.158	0.063
3	Maitenance and Repair	0.016	0.046	0.012	0.059	0.010	0.011	0.004	0.007	0.055	0.004	0.221	0.015	0.062	0.070	0.023	0.195	-0.059	-0.061	0.017
4	Food Products	-0.074	0.130	-0.044	0.191	-0.021	-0.298	-0.010	-0.217	0.189	-0.147	0.781	-0.448	0.205	0.233	0.083	0.691	-0.493	-0.504	-0.117
4	Textiles & Apparel	-0.053	0.055	-0.032	0.081	-0.016	-0.201	-0.008	-0.147	0.080	-0.099	0.330	-0.302	0.087	0.099	0.027	0.292	-0.315	-0.322	-0.082
4	Wood Products	-0.059	0.057	-0.035	0.078	-0.017	-0.234	-0.008	-0.170	0.076	-0.115	0.307	-0.349	0.083	0.095	0.029	0.270	-0.386	-0.394	-0.093
4	Printing & Publishing	-0.036	0.027	-0.022	0.040	-0.012	-0.131	-0.005	-0.096	0.039	-0.065	0.162	-0.197	0.043	0.049	0.013	0.143	-0.199	-0.203	-0.055
4	Chemicals	-0.156	0.138	-0.094	0.199	-0.047	-0.594	-0.022	-0.433	0.195	-0.293	0.800	-0.893	0.212	0.239	0.067	0.709	-0.935	-0.955	-0.242
4	Petroleum & Related	0.012	0.110	0.014	0.138	0.015	-0.069	0.006	-0.051	0.128	-0.037	0.508	-0.106	0.143	0.162	0.056	0.448	-0.285	-0.292	0.000
4	Rubber & Leather	-0.036	0.024	-0.022	0.035	-0.011	-0.131	-0.005	-0.096	0.034	-0.065	0.139	-0.196	0.037	0.042	0.012	0.123	-0.200	-0.204	-0.055
4	Stone, Glass, Clay	-0.054	0.026	-0.034	0.039	-0.018	-0.188	-0.008	-0.137	0.039	-0.092	0.164	-0.281	0.042	0.048	0.012	0.145	-0.269	-0.274	-0.081
4	Primary Metals	-0.055	0.024	-0.034	0.037	-0.019	-0.188	-0.009	-0.137	0.037	-0.092	0.156	-0.282	0.040	0.046	0.011	0.137	-0.265	-0.271	-0.082
4	Fabricated Metals & Ordinance	-0.054	0.030	-0.034	0.045	-0.018	-0.193	-0.008	-0.141	0.045	-0.095	0.185	-0.289	0.048	0.055	0.015	0.163	-0.284	-0.290	-0.082
4	Nonelectrical Machinery	-0.029	0.026	-0.018	0.035	-0.008	-0.117	-0.004	-0.086	0.034	-0.058	0.138	-0.176	0.037	0.042	0.013	0.122	-0.192	-0.197	-0.047
4	Computers & Office Eq	-0.040	0.028	-0.024	0.040	-0.013	-0.145	-0.006	-0.106	0.040	-0.071	0.164	-0.217	0.043	0.049	0.013	0.144	-0.219	-0.224	-0.061
4	Electric Transmisson & Ind. Apparatus	-0.002	0.007	-0.001	0.008	0.000	-0.016	0.000	-0.012	0.007	-0.008	0.028	-0.023	0.008	0.010	0.004	0.024	-0.039	-0.040	-0.004
4	Household Appliances	-0.035	0.026	-0.021	0.038	-0.011	-0.131	-0.005	-0.096	0.037	-0.065	0.150	-0.196	0.040	0.046	0.013	0.132	-0.205	-0.209	-0.054
4	Communication Eq. except radio/TV	-0.012	0.022	-0.006	0.026	-0.002	-0.066	-0.001	-0.048	0.023	-0.033	0.089	-0.097	0.026	0.031	0.012	0.077	-0.137	-0.141	-0.022
4	Electronic Components & Eq	-0.088	0.050	-0.055	0.075	-0.029	-0.312	-0.013	-0.227	0.075	-0.153	0.311	-0.466	0.081	0.093	0.024	0.274	-0.454	-0.463	-0.133
4	Transportation Equipment	-0.051	0.074	-0.030	0.104	-0.014	-0.215	-0.007	-0.157	0.101	-0.107	0.410	-0.322	0.110	0.126	0.037	0.361	-0.373	-0.381	-0.082
4	Instruments	-0.069	0.060	-0.042	0.087	-0.021	-0.256	-0.010	-0.186	0.086	-0.126	0.353	-0.382	0.093	0.106	0.029	0.311	-0.395	-0.403	-0.106
5	Transportation Services	-0.057	0.090	-0.033	0.129	-0.016	-0.234	-0.008	-0.171	0.127	-0.116	0.522	-0.354	0.138	0.156	0.043	0.463	-0.394	-0.402	-0.091
5	Trucking & Warehousing	-0.080	0.085	-0.048	0.124	-0.024	-0.306	-0.011	-0.223	0.122	-0.151	0.505	-0.460	0.133	0.150	0.041	0.448	-0.481	-0.492	-0.125
5	Communications	-0.066	0.072	-0.040	0.106	-0.020	-0.248	-0.009	-0.180	0.105	-0.122	0.434	-0.371	0.114	0.130	0.035	0.383	-0.387	-0.395	-0.101
6	Utilities	1.573	-0.531	0.988	-0.851	0.545	5.307	0.248	3.862	-0.864	2.602	-3.615	7.938	-0.920	-1.056	-0.252	-3.192	7.333	7.487	2.332
7	Wholesale Trade	-0.189	0.173	-0.115	0.256	-0.059	-0.701	-0.028	-0.511	0.254	-0.345	1.049	-1.054	0.274	0.310	0.082	0.930	-1.072	-1.095	-0.291
7	Retail Trade	-0.135	0.907	-0.076	1.394	-0.032	-0.612	-0.016	-0.447	1.403	-0.304	5.845	-0.924	1.502	1.714	0.434	5.169	-1.088	-1.112	-0.226
8	Finance, Insurance & Real Estate	-0.312	0.389	-0.188	0.576	-0.095	-1.190	-0.045	-0.868	0.572	-0.587	2.363	-1.790	0.617	0.699	0.187	2.094	-1.870	-1.911	-0.485
8	Hotels & Lodging	-0.008	0.020	-0.004	0.028	-0.002	-0.037	-0.001	-0.027	0.027	-0.018	0.111	-0.055	0.030	0.034	0.010	0.098	-0.068	-0.070	-0.013
8	Personal & Repair Services	-0.033	0.073	-0.019	0.107	-0.008	-0.142	-0.004	-0.104	0.105	-0.071	0.433	-0.215	0.114	0.129	0.035	0.383	-0.250	-0.255	-0.054
8	Business & Professional Services	-0.196	0.226	-0.118	0.332	-0.059	-0.750	-0.028	-0.547	0.329	-0.370	1.358	-1.130	0.355	0.401	0.108	1.205	-1.180	-1.206	-0.306
8	Amusement & Recreation Services	-0.043	0.054	-0.026	0.079	-0.013	-0.165	-0.006	-0.120	0.079	-0.081	0.326	-0.248	0.085	0.097	0.026	0.288	-0.259	-0.264	-0.067
8	Health Services	-0.096	0.235	-0.055	0.342	-0.024	-0.420	-0.012	-0.307	0.337	-0.209	1.390	-0.633	0.365	0.415	0.114	1.230	-0.742	-0.759	-0.158
8	Education & Research Services	-0.036	0.083	-0.021	0.121	-0.009	-0.155	-0.004	-0.113	0.120	-0.077	0.494	-0.233	0.130	0.148	0.040	0.437	-0.271	-0.277	-0.059
9	Government & Miscellaneous	-0.006	0.090	-0.001	0.123	0.004	-0.081	0.001	-0.059	0.119	-0.041	0.482	-0.122	0.130	0.149	0.045	0.425	-0.216	-0.222	-0.019
	Totals	-0.491	3.026	-0.226	4.317	-0.025	-3.156	-0.027	-2.312	4.232	-1.589	17.357	-4.785	4.598	5.221	1.477	15.353	-6.895	-7.058	-0.970

Sacramento 2005 Industry Output Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.011	0.023	-0.004	0.023	0.001	-0.084	0.000	-0.062	0.019	-0.042	0.075	-0.138	0.023	0.018	0.008	0.077	-0.187	-0.191	-0.025
2	Mining	-0.001	0.001	-0.001	0.001	0.000	-0.004	0.000	-0.003	0.001	-0.002	0.003	-0.006	0.001	0.001	0.000	0.003	-0.006	-0.006	-0.002
3	Petroleum Industry	-0.039	0.032	-0.023	0.039	-0.010	-0.170	-0.005	-0.124	0.035	-0.084	0.135	-0.254	0.040	0.046	0.017	0.118	-0.302	-0.309	-0.064
4	Construction	-0.056	0.118	-0.024	0.114	0.001	-0.402	-0.002	-0.293	0.092	-0.203	0.320	-0.594	0.112	0.133	0.069	0.270	-0.938	-0.961	-0.116
5	Food Processing	-0.104	0.077	-0.061	0.095	-0.028	-0.431	-0.014	-0.314	0.087	-0.213	0.343	-0.644	0.099	0.113	0.041	0.299	-0.740	-0.757	-0.166
6	Textiles & Apparel	-0.035	0.024	-0.021	0.031	-0.010	-0.141	-0.005	-0.103	0.028	-0.070	0.112	-0.210	0.032	0.037	0.013	0.097	-0.238	-0.243	-0.055
7	Wood Products	-0.112	0.059	-0.068	0.083	-0.036	-0.411	-0.016	-0.299	0.080	-0.202	0.325	-0.614	0.088	0.101	0.030	0.286	-0.628	-0.641	-0.171
8	Printing & Publishing	-0.017	0.014	-0.010	0.017	-0.005	-0.074	-0.002	-0.054	0.015	-0.037	0.059	-0.111	0.017	0.020	0.008	0.051	-0.131	-0.134	-0.028
9	Chemicals	-0.079	0.049	-0.048	0.065	-0.024	-0.309	-0.011	-0.225	0.061	-0.152	0.246	-0.463	0.068	0.077	0.025	0.217	-0.498	-0.509	-0.124
10	Leather & Footware	-0.006	0.004	-0.004	0.005	-0.002	-0.024	-0.001	-0.018	0.005	-0.012	0.019	-0.036	0.006	0.006	0.002	0.017	-0.042	-0.042	-0.010
11	Stone, Clay, & Glass	-0.007	0.004	-0.004	0.005	-0.002	-0.026	-0.001	-0.019	0.005	-0.013	0.021	-0.039	0.006	0.007	0.002	0.018	-0.041	-0.042	-0.011
12	Primary Metals	-0.005	0.003	-0.003	0.004	-0.002	-0.020	-0.001	-0.014	0.004	-0.010	0.015	-0.029	0.004	0.005	0.001	0.014	-0.029	-0.030	-0.008
13	Fabricated Metals	0.003	0.016	0.004	0.012	0.005	-0.028	0.002	-0.021	0.008	-0.015	0.022	-0.040	0.011	0.014	0.010	0.016	-0.109	-0.112	-0.001
14	Industrial Machinery	-0.016	0.010	-0.009	0.013	-0.005	-0.061	-0.002	-0.044	0.012	-0.030	0.048	-0.091	0.013	0.015	0.005	0.042	-0.098	-0.101	-0.024
15	Electronics	-0.069	0.045	-0.041	0.058	-0.020	-0.272	-0.010	-0.198	0.054	-0.135	0.215	-0.406	0.060	0.070	0.024	0.187	-0.446	-0.456	-0.109
16	Service Industry Machines	-0.002	0.001	-0.001	0.002	-0.001	-0.008	0.000	-0.006	0.002	-0.004	0.006	-0.012	0.002	0.002	0.001	0.005	-0.014	-0.014	-0.003
17	Electrical Equipment	-0.015	0.020	-0.008	0.021	-0.003	-0.081	-0.001	-0.059	0.018	-0.041	0.064	-0.121	0.021	0.025	0.011	0.055	-0.166	-0.170	-0.027
18	Transportation Equipment	-0.038	0.047	-0.020	0.050	-0.006	-0.198	-0.003	-0.144	0.043	-0.099	0.157	-0.293	0.050	0.060	0.027	0.133	-0.403	-0.412	-0.067
19	Instruments	0.004	0.014	0.005	0.010	0.005	-0.019	0.002	-0.014	0.006	-0.010	0.015	-0.027	0.009	0.011	0.009	0.010	-0.088	-0.090	0.001
20	Misc. Mfg.	-0.009	0.007	-0.005	0.009	-0.002	-0.039	-0.001	-0.029	0.008	-0.020	0.031	-0.059	0.009	0.011	0.004	0.027	-0.070	-0.072	-0.015
21	Transportation & Warehousing	-0.110	0.073	-0.065	0.094	-0.032	-0.438	-0.015	-0.319	0.088	-0.216	0.348	-0.654	0.098	0.112	0.038	0.305	-0.725	-0.741	-0.173
22	Communications	-0.059	0.041	-0.035	0.051	-0.017	-0.237	-0.008	-0.172	0.048	-0.117	0.188	-0.353	0.053	0.062	0.021	0.164	-0.397	-0.405	-0.093
23	Utility Services	-0.172	0.143	-0.099	0.170	-0.044	-0.745	-0.021	-0.543	0.153	-0.370	0.591	-1.109	0.174	0.203	0.078	0.512	-1.330	-1.360	-0.280
24	Trade	-0.332	0.231	-0.196	0.291	-0.094	-1.344	-0.045	-0.979	0.270	-0.665	1.066	-2.006	0.303	0.349	0.121	0.931	-2.256	-2.306	-0.528
25	FIRE	-0.492	0.345	-0.290	0.433	-0.138	-1.995	-0.066	-1.454	0.402	-0.987	1.582	-2.977	0.450	0.520	0.182	1.381	-3.358	-3.433	-0.782
26	Lodging	-0.038	0.028	-0.022	0.035	-0.010	-0.158	-0.005	-0.115	0.032	-0.078	0.125	-0.235	0.036	0.042	0.015	0.109	-0.271	-0.277	-0.061
27	Business Services	-0.128	0.135	-0.070	0.150	-0.027	-0.618	-0.014	-0.451	0.131	-0.308	0.490	-0.918	0.152	0.178	0.076	0.420	-1.192	-1.220	-0.219
28	Eating & Drinking	-0.091	0.063	-0.054	0.079	-0.026	-0.367	-0.012	-0.268	0.074	-0.182	0.291	-0.548	0.083	0.096	0.033	0.254	-0.615	-0.629	-0.144
29	Repair Services	-0.055	0.038	-0.032	0.048	-0.015	-0.221	-0.007	-0.161	0.045	-0.110	0.176	-0.331	0.050	0.057	0.020	0.154	-0.371	-0.379	-0.087
30	Amusements	-0.064	0.038	-0.039	0.051	-0.020	-0.246	-0.009	-0.179	0.049	-0.121	0.195	-0.368	0.054	0.061	0.019	0.172	-0.391	-0.399	-0.100
31	Health & Social Services	-0.299	0.214	-0.176	0.267	-0.083	-1.222	-0.040	-0.891	0.247	-0.605	0.968	-1.822	0.277	0.322	0.114	0.842	-2.073	-2.119	-0.477
32	Government	0.114	0.153	0.095	0.090	0.080	-0.046	0.033	-0.035	0.041	-0.035	0.037	-0.046	0.073	0.099	0.102	-0.003	-0.853	-0.878	0.103
	Totals	-2.339	2.071	-1.330	2.416	-0.569	-10.441	-0.281	-7.611	2.162	-5.189	8.290	-15.555	2.473	2.874	1.125	7.182	-19.005	-19.440	-3.868

Shasta 2005 Industry Output Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.007	0.003	-0.004	0.004	-0.002	-0.024	-0.001	-0.017	0.004	-0.012	0.019	-0.036	0.005	0.005	0.001	0.017	-0.033	-0.034	-0.010
2	Mining	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	Petroleum Industry	-0.019	0.007	-0.012	0.012	-0.007	-0.064	-0.003	-0.046	0.012	-0.031	0.050	-0.095	0.013	0.015	0.004	0.044	-0.088	-0.090	-0.028
4	Construction	-0.073	0.029	-0.046	0.046	-0.025	-0.247	-0.011	-0.179	0.047	-0.121	0.195	-0.369	0.050	0.057	0.014	0.172	-0.342	-0.349	-0.108
5	Food Processing	-0.040	0.016	-0.025	0.025	-0.014	-0.136	-0.006	-0.099	0.026	-0.067	0.108	-0.204	0.027	0.031	0.008	0.095	-0.189	-0.193	-0.060
6	Textiles & Apparel	-0.016	0.006	-0.010	0.010	-0.005	-0.054	-0.002	-0.039	0.010	-0.026	0.042	-0.080	0.011	0.012	0.003	0.037	-0.074	-0.076	-0.023
7	Wood Products	-0.020	0.008	-0.013	0.013	-0.007	-0.069	-0.003	-0.050	0.013	-0.034	0.054	-0.103	0.014	0.016	0.004	0.048	-0.095	-0.097	-0.030
8	Printing & Publishing	-0.007	0.003	-0.004	0.004	-0.002	-0.022	-0.001	-0.016	0.004	-0.011	0.018	-0.034	0.005	0.005	0.001	0.016	-0.031	-0.032	-0.010
9	Chemicals	-0.015	0.006	-0.009	0.009	-0.005	-0.050	-0.002	-0.037	0.010	-0.025	0.040	-0.075	0.010	0.012	0.003	0.035	-0.070	-0.071	-0.022
10	Leather & Footware	-0.003	0.001	-0.002	0.002	-0.001	-0.009	0.000	-0.006	0.002	-0.004	0.007	-0.013	0.002	0.002	0.000	0.006	-0.012	-0.012	-0.004
11	Stone, Clay, & Glass	-0.001	0.000	-0.001	0.001	0.000	-0.003	0.000	-0.002	0.001	-0.002	0.003	-0.005	0.001	0.001	0.000	0.002	-0.005	-0.005	-0.001
12	Primary Metals	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	Fabricated Metals	-0.001	0.000	-0.001	0.001	0.000	-0.004	0.000	-0.003	0.001	-0.002	0.003	-0.006	0.001	0.001	0.000	0.003	-0.005	-0.005	-0.002
14	Industrial Machinery	-0.002	0.001	-0.001	0.001	-0.001	-0.006	0.000	-0.004	0.001	-0.003	0.005	-0.009	0.001	0.001	0.000	0.004	-0.008	-0.008	-0.003
15	Electronics	-0.001	0.001	-0.001	0.001	0.000	-0.005	0.000	-0.004	0.001	-0.002	0.004	-0.007	0.001	0.001	0.000	0.003	-0.007	-0.007	-0.002
16	Service Industry Machines	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	-0.001	0.000	-0.001	0.001	-0.002	0.000	0.000	0.000	0.001	-0.002	-0.002	-0.001
17	Electrical Equipment	-0.005	0.002	-0.003	0.003	-0.002	-0.018	-0.001	-0.013	0.003	-0.009	0.014	-0.027	0.004	0.004	0.001	0.013	-0.025	-0.026	-0.008
18	Transportation Equipment	-0.021	0.008	-0.013	0.013	-0.007	-0.070	-0.003	-0.051	0.013	-0.034	0.055	-0.104	0.014	0.016	0.004	0.049	-0.097	-0.099	-0.031
19	Instruments	-0.003	0.001	-0.002	0.002	-0.001	-0.009	0.000	-0.007	0.002	-0.005	0.007	-0.014	0.002	0.002	0.001	0.006	-0.013	-0.013	-0.004
20	Misc. Mfg.	-0.005	0.002	-0.003	0.003	-0.002	-0.016	-0.001	-0.012	0.003	-0.008	0.013	-0.025	0.003	0.004	0.001	0.011	-0.023	-0.023	-0.007
21	Transportation & Warehousing	-0.045	0.018	-0.028	0.028	-0.016	-0.153	-0.007	-0.111	0.029	-0.075	0.121	-0.228	0.031	0.035	0.008	0.107	-0.211	-0.216	-0.067
22	Communications	-0.032	0.013	-0.020	0.020	-0.011	-0.107	-0.005	-0.078	0.020	-0.053	0.085	-0.161	0.022	0.025	0.006	0.075	-0.149	-0.152	-0.047
23	Utility Services	-0.064	0.025	-0.040	0.040	-0.022	-0.217	-0.010	-0.158	0.041	-0.107	0.172	-0.325	0.044	0.050	0.012	0.152	-0.301	-0.307	-0.095
24	Trade	-0.128	0.051	-0.081	0.081	-0.044	-0.434	-0.020	-0.316	0.082	-0.213	0.343	-0.650	0.087	0.100	0.024	0.303	-0.601	-0.614	-0.191
25	FIRE	-0.204	0.081	-0.128	0.129	-0.071	-0.691	-0.032	-0.503	0.130	-0.339	0.546	-1.034	0.139	0.159	0.038	0.482	-0.957	-0.977	-0.303
26	Lodging	-0.019	0.007	-0.012	0.012	-0.006	-0.063	-0.003	-0.046	0.012	-0.031	0.049	-0.094	0.013	0.014	0.003	0.044	-0.087	-0.089	-0.027
27	Business Services	-0.074	0.029	-0.046	0.047	-0.026	-0.250	-0.012	-0.182	0.047	-0.123	0.198	-0.375	0.050	0.058	0.014	0.175	-0.347	-0.354	-0.110
28	Eating & Drinking	-0.041	0.016	-0.026	0.026	-0.014	-0.138	-0.006	-0.100	0.026	-0.068	0.109	-0.206	0.028	0.032	0.008	0.096	-0.191	-0.195	-0.060
29	Repair Services	-0.024	0.009	-0.015	0.015	-0.008	-0.080	-0.004	-0.058	0.015	-0.039	0.063	-0.120	0.016	0.019	0.004	0.056	-0.111	-0.113	-0.035
30	Amusements	-0.064	0.025	-0.040	0.040	-0.022	-0.215	-0.010	-0.157	0.041	-0.106	0.170	-0.322	0.043	0.050	0.012	0.150	-0.298	-0.305	-0.095
31	Health & Social Services	-0.128	0.050	-0.080	0.080	-0.044	-0.432	-0.020	-0.315	0.082	-0.212	0.342	-0.647	0.087	0.100	0.024	0.302	-0.599	-0.611	-0.190
32	Government	-0.062	0.024	-0.039	0.039	-0.021	-0.209	-0.010	-0.152	0.039	-0.102	0.165	-0.312	0.042	0.048	0.012	0.146	-0.289	-0.295	-0.092
	Totals	-1.123	0.443	-0.705	0.707	-0.388	-3.798	-0.177	-2.764	0.717	-1.862	3.000	-5.681	0.764	0.876	0.210	2.651	-5.260	-5.369	-1.666

Northern and Central California 2005 Industry Employment Impacts by Alternative (Full- and Part-time Jobs)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-1	1	0	1	0	-4	0	-3	1	-2	4	-8	1	1	0	3	-9	-10	-1
2	Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Petroleum Industry	1	1	1	1	0	0	0	0	0	0	1	-2	0	0	0	1	-6	-6	1
4	Construction	7	6	5	2	4	4	2	2	0	1	-2	4	1	1	3	-1	-30	-31	8
5	Food Processing	-1	0	0	1	0	-4	0	-3	0	-2	4	-7	1	1	0	4	-9	-10	-1
6	Textiles & Apparel	-1	0	-1	1	0	-5	0	-3	1	-3	5	-8	1	1	0	4	-11	-12	-1
7	Wood Products	0	1	0	1	0	-5	0	-3	1	-2	5	-8	1	1	0	5	-13	-13	-1
8	Printing & Publishing	0	0	0	0	0	-1	0	-1	0	0	1	-2	0	0	0	1	-2	-2	0
9	Chemicals	-1	1	0	1	0	-6	0	-5	1	-3	5	-10	1	1	0	5	-14	-14	-2
10	Leather & Footware	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-3	-3	0
11	Stone, Clay, & Glass	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
12	Primary Metals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	0
13	Fabricated Metals	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	0	0	-3	-3	0
14	Industrial Machinery	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-2	-2	0
15	Electronics	-1	1	-1	1	0	-5	0	-3	1	-2	4	-8	1	1	0	3	-10	-10	-2
16	Service Industry Machines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0
17	Electrical Equipment	0	0	0	0	0	-1	0	-1	0	-1	1	-3	0	0	0	1	-5	-5	0
18	Transportation Equipment	0	0	0	0	0	-2	0	-2	0	0	2	-3	0	0	0	2	-4	-4	0
19	Instruments	0	0	0	0	0	-1	0	0	0	0	1	-1	0	0	0	1	-3	-3	0
20	Misc. Mfg.	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	-2	-2	0
21	Transportation & Warehousing	-1	3	0	2	0	-8	0	-7	1	-4	8	-14	2	1	1	8	-22	-23	-2
22	Communications	0	0	0	0	0	-2	0	-1	0	-1	2	-3	0	0	0	2	-4	-5	0
23	Utility Services	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	-8	-8	1
24	Trade	-4	10	-1	10	0	-36	0	-27	8	-18	33	-61	10	7	4	34	-87	-89	-9
25	FIRE	-1	5	-1	5	0	-18	0	-14	4	-10	16	-31	5	4	2	16	-43	-45	-5
26	Lodging	-1	2	-1	2	0	-8	0	-6	2	-4	6	-13	2	2	0	6	-18	-18	-3
27	Business Services	0	10	1	9	2	-26	1	-19	6	-13	25	-44	8	5	3	26	-72	-75	-5
28	Eating & Drinking	-2	5	-1	6	0	-22	0	-15	4	-11	18	-33	6	5	2	17	-48	-49	-6
29	Repair Services	0	1	0	1	0	-3	0	-3	1	-2	3	-7	1	0	0	3	-11	-11	0
30	Amusements	-1	1	-1	1	0	-6	0	-4	1	-2	5	-9	1	1	0	4	-10	-10	-2
31	Health & Social Services	-6	9	-3	10	-1	-42	-1	-30	8	-21	36	-67	11	9	4	35	-88	-89	-13
32	Government	0	0	0	0	0	-1	0	-1	0	-1	1	-3	0	0	0	1	-5	-5	0
	Totals	-12	58	-2	56	6	-205	2	-152	40	-101	187	-347	53	41	20	184	-544	-560	-43

Bay Area 2005 Industry Employment Impacts by Alternative (Full- and Part-time Jobs)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Ag-Forest-Fish	0	0	0	0	0	-1	0	-1	0	0	2	-1	0	0	0	2	-2	-2	0
2	Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Residential Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Non-residental Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Public Construction	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	-1	-1	0
3	Maitenance and Repair	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	1	0	0	0
4	Food Products	0	0	0	0	0	-1	0	0	0	0	3	-1	0	0	0	2	-2	-2	0
4	Textiles & Apparel	-1	0	0	0	0	-2	0	-2	0	-1	4	-4	0	1	0	4	-4	-4	-1
4	Wood Products	0	0	0	0	0	-2	0	-1	0	-1	1	-2	0	0	0	1	-3	-3	-1
4	Printing & Publishing	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Chemicals	-1	0	0	0	0	-2	0	-1	0	-1	3	-3	0	0	0	2	-3	-3	-1
4	Petroleum & Related	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Rubber & Leather	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Stone, Glass, Clay	-1	0	0	0	0	-2	0	-1	0	-1	1	-3	0	0	0	1	-2	-3	-1
4	Primary Metals	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Fabricated Metals & Ordinance	0	0	0	0	0	-1	0	-1	0	-1	1	-2	0	0	0	1	-2	-2	-1
4	Nonelectrical Machinery	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Computers & Office Eq	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Electric Transmisson & Ind. Apparatus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Household Appliances	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-1	-1	0
4	Communication Eq. except radio/TV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	0
4	Electronic Components & Eq	-1	0	0	0	0	-2	0	-1	0	-1	2	-3	0	0	0	1	-3	-3	-1
4	Transportation Equipment	0	0	0	0	0	-1	0	0	0	0	2	-1	0	0	0	1	-1	-1	0
4	Instruments	0	0	0	0	0	-2	0	-1	0	-1	2	-2	0	0	0	2	-2	-3	-1
5	Transportation Services	0	0	0	0	0	-1	0	-1	0	-1	4	-2	0	1	0	4	-2	-3	-1
5	Trucking & Warehousing	-1	1	0	1	0	-3	0	-2	1	-1	5	-4	1	1	0	5	-4	-5	-1
5	Communications	0	0	0	0	0	-1	0	-1	0	-1	2	-2	0	0	0	2	-2	-2	0
6	Utilities	4	-2	3	-3	1	15	1	11	-3	7	-10	22	-3	-3	-1	-9	20	21	6
7	Wholesale Trade	-2	1	-1	3	-1	-7	0	-5	3	-3	10	-11	3	3	0	10	-11	-12	-3
7	Retail Trade	-2	21	-2	33	0	-14	0	-10	33	-7	140	-22	36	40	10	125	-25	-27	-5
8	Finance, Insurance & Real Estate	-1	2	-1	3	0	-6	0	-4	3	-3	13	-10	3	3	0	11	-10	-10	-2
8	Hotels & Lodging	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	-1	-1	0
8	Personal & Repair Services	0	0	0	1	0	-2	0	-2	1	0	6	-3	1	1	0	5	-3	-3	0
8	Business & Professional Services	-3	3	-2	5	-1	-12	0	-8	5	-5	21	-17	5	5	1	18	-18	-19	-4
8	Amusement & Recreation Services	0	0	0	0	0	-1	0	-1	0	0	2	-1	0	0	0	2	-1	-1	0
8	Health Services	-1	2	0	4	0	-6	0	-4	4	-2	21	-9	4	5	1	17	-10	-10	-1
8	Education & Research Services	0	1	0	2	0	-3	0	-1	2	-1	10	-5	2	2	0	9	-6	-6	-1
9	Government & Miscellaneous	0	1	0	2	0	-2	0	-1	2	0	11	-3	2	3	0	9	-4	-4	0
	Totals	-10	30	-3	51	-1	-64	1	-44	51	-24	266	-93	54	62	11	233	-109	-116	-19

Sacramento 2005 Industry Employment Impacts by Alternative (Full- and Part-time Jobs)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	0	0	0	0	0	-1	0	-1	0	0	1	-3	0	0	0	1	-3	-3	
2	Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Petroleum Industry	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	-1	-1	0
4	Construction	0	1	0	1	0	-3	0	-3	1	-1	3	-5	1	1	0	2	-9	-9	-1
5	Food Processing	0	0	0	0	0	-2	0	-1	0	0	1	-2	0	0	0	1	-3	-3	0
6	Textiles & Apparel	0	0	0	0	0	-2	0	-1	0	0	1	-2	0	0	0	1	-2	-2	0
7	Wood Products	-1	0	-1	1	0	-3	0	-2	1	-1	2	-4	1	1	0	2	-4	-4	-1
8	Printing & Publishing	0	0	0	0	0	-1	0	0	0	0	0	-1	0	0	0	0	-1	-1	0
9	Chemicals	0	0	0	0	0	-1	0	-1	0	-1	1	-2	0	0	0	1	-2	-2	0
10	Leather & Footware	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Stone, Clay, & Glass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Primary Metals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Fabricated Metals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Industrial Machinery	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	-1	-1	0
15	Electronics	0	0	0	0	0	-1	0	-1	0	-1	1	-2	0	0	0	1	-2	-2	-1
16	Service Industry Machines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Electrical Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	-1	0
18	Transportation Equipment	0	0	0	0	0	-1	0	0	0	0	0	-2	0	0	0	0	-2	-2	0
19	Instruments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Misc. Mfg.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Transportation & Warehousing	-1	1	-1	1	0	-4	0	-2	1	-2	4	-6	1	1	0	2	-7	-7	-1
22	Communications	0	0	0	0	0	-1	0	-1	0	0	1	-1	0	0	0	1	-2	-2	0
23	Utility Services	0	0	0	0	0	-1	0	-1	0	-1	1	-3	0	0	0	1	-4	-4	-1
24	Trade	-6	4	-3	5	-1	-23	-1	-17	5	-11	18	-35	5	5	2	16	-39	-40	-9
25	FIRE	-3	2	-1	2	-1	-10	0	-7	2	-5	7	-15	2	2	0	7	-17	-17	-3
26	Lodging	-1	0	0	0	0	-4	0	-2	0	-2	3	-6	0	0	0	2	-6	-6	-1
27	Business Services	-1	1	-1	2	0	-9	0	-7	1	-4	8	-14	2	3	1	6	-19	-20	-3
28	Eating & Drinking	-3	2	-1	2	-1	-11	0	-7	2	-5	8	-16	2	2	0	7	-18	-19	-4
29	Repair Services	0	0	0	0	0	-1	0	-1	0	-1	1	-3	0	0	0	1	-3	-3	-1
30	Amusements	-1	0	0	0	0	-2	0	-1	0	-1	1	-4	0	0	0	1	-4	-4	-1
31	Health & Social Services	-5	3	-3	4	-1	-20	0	-13	4	-9	16	-29	4	5	2	13	-34	-35	-8
32	Government	3	3	2	2	2	-1	1	-1	1	-1	1	-1	1	2	2	0	-19	-20	3
	Totals	-19	17	-9	20	-2	-102	0	-70	18	-46	79	-158	19	22	7	66	-203	-208	-32

Shasta 2005 Industry Employment Impacts by Alternative (Full- and Part-time Jobs)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Mining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Petroleum Industry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Construction	0	0	0	0	0	-1	0	-1	0	-1	1	-3	0	0	0	1	-3	-3	-1
5	Food Processing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Textiles & Apparel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Wood Products	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Printing & Publishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Leather & Footware	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Stone, Clay, & Glass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Primary Metals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Fabricated Metals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Industrial Machinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Electronics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Service Industry Machines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Electrical Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Transportation Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Instruments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Misc. Mfg.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Transportation & Warehousing	0	0	0	0	0	-1	0	-1	0	-1	1	-2	0	0	0	1	-2	-2	0
22	Communications	0	0	0	0	0	-1	0	0	0	0	0	-1	0	0	0	0	-1	-1	0
23	Utility Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Trade	-2	1	-1	1	0	-8	0	-6	1	-4	6	-12	1	2	0	6	-12	-12	-3
25	FIRE	-1	0	0	0	0	-4	0	-3	0	-2	3	-6	0	0	0	2	-5	-5	-1
26	Lodging	0	0	0	0	0	-1	0	-1	0	0	1	-2	0	0	0	1	-2	-2	0
27	Business Services	-1	0	-1	1	0	-5	0	-4	1	-2	4	-7	1	1	0	3	-7	-7	-2
28	Eating & Drinking	-1	0	0	0	0	-4	0	-3	0	-2	3	-6	0	1	0	3	-6	-6	-2
29	Repair Services	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	-1	-1	0
30	Amusements	-1	0	0	0	0	-3	0	-2	0	-1	2	-4	1	1	0	2	-4	-4	-1
31	Health & Social Services	-2	0	-1	1	0	-7	0	-5	1	-4	5	-12	2	2	0	5	-10	-11	-3
32	Government	-2	0	-1	1	0	-7	0	-5	1	-3	5	-10	1	2	0	5	-10	-10	-2
	Totals	-10	1	-4	4	0	-42	0	-31	4	-20	31	-66	6	9	0	29	-63	-64	-15

Northern and Central California 2005 Industry Labor Income Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.007	0.010	-0.004	0.011	-0.001	-0.041	-0.001	-0.031	0.009	-0.021	0.035	-0.065	0.011	0.010	0.004	0.034	-0.084	-0.086	-0.014
2	Mining	0.003	0.002	0.002	0.001	0.002	0.003	0.001	0.002	0.000	0.001	0.000	0.001	0.000	-0.002	0.000	0.003	-0.007	-0.007	0.003
3	Petroleum Industry	0.035	0.059	0.032	0.040	0.030	-0.056	0.011	-0.045	0.024	-0.032	0.070	-0.117	0.036	0.018	0.022	0.087	-0.357	-0.366	0.022
4	Construction	0.214	0.192	0.169	0.095	0.135	0.097	0.055	0.064	0.029	0.030	-0.036	0.110	0.071	0.056	0.104	-0.018	-0.946	-0.974	0.216
5	Food Processing	-0.028	0.042	-0.013	0.044	-0.002	-0.169	-0.002	-0.125	0.038	-0.085	0.145	-0.268	0.045	0.040	0.017	0.140	-0.353	-0.361	-0.054
6	Textiles & Apparel	-0.019	0.024	-0.010	0.026	-0.003	-0.104	-0.002	-0.077	0.023	-0.052	0.088	-0.163	0.026	0.025	0.010	0.084	-0.205	-0.210	-0.035
7	Wood Products	-0.012	0.060	0.001	0.055	0.010	-0.179	0.002	-0.135	0.045	-0.092	0.173	-0.313	0.055	0.031	0.015	0.191	-0.452	-0.462	-0.042
8	Printing & Publishing	-0.008	0.013	-0.004	0.013	-0.001	-0.050	-0.001	-0.037	0.011	-0.025	0.043	-0.079	0.013	0.012	0.005	0.041	-0.104	-0.107	-0.016
9	Chemicals	-0.053	0.094	-0.023	0.096	0.000	-0.357	-0.003	-0.264	0.081	-0.180	0.311	-0.573	0.096	0.083	0.035	0.307	-0.771	-0.789	-0.109
10	Leather & Footware	-0.003	0.008	-0.001	0.007	0.000	-0.026	0.000	-0.019	0.006	-0.013	0.023	-0.042	0.007	0.006	0.003	0.023	-0.060	-0.062	-0.007
11	Stone, Clay, & Glass	-0.007	0.007	-0.004	0.008	-0.001	-0.032	-0.001	-0.024	0.007	-0.016	0.027	-0.050	0.008	0.007	0.003	0.026	-0.060	-0.061	-0.011
12	Primary Metals	-0.003	0.003	-0.002	0.004	-0.001	-0.016	0.000	-0.012	0.003	-0.008	0.014	-0.026	0.004	0.004	0.001	0.013	-0.030	-0.031	-0.008
13	Fabricated Metals	-0.005	0.022	0.000	0.020	0.003	-0.066	0.001	-0.049	0.016	-0.034	0.061	-0.111	0.020	0.015	0.008	0.063	-0.167	-0.171	-0.016
14	Industrial Machinery	-0.003	0.017	0.000	0.015	0.003	-0.048	0.001	-0.036	0.012	-0.025	0.046	-0.083	0.015	0.010	0.005	0.049	-0.126	-0.129	-0.011
15	Electronics	-0.066	0.062	-0.036	0.072	-0.014	-0.308	-0.008	-0.226	0.065	-0.154	0.255	-0.476	0.074	0.075	0.027	0.237	-0.566	-0.579	-0.112
16	Service Industry Machines	0.000	0.004	0.001	0.003	0.001	-0.009	0.000	-0.007	0.003	-0.005	0.009	-0.017	0.003	0.002	0.001	0.011	-0.028	-0.028	-0.002
17	Electrical Equipment	-0.016	0.031	-0.007	0.031	0.000	-0.114	-0.001	-0.084	0.026	-0.057	0.099	-0.182	0.031	0.027	0.012	0.096	-0.249	-0.255	-0.034
18	Transportation Equipment	-0.015	0.029	-0.007	0.029	0.000	-0.108	-0.001	-0.080	0.025	-0.054	0.093	-0.172	0.029	0.026	0.012	0.091	-0.238	-0.243	-0.032
19	Instruments	-0.004	0.017	0.000	0.015	0.002	-0.049	0.001	-0.036	0.012	-0.025	0.043	-0.079	0.015	0.013	0.007	0.043	-0.128	-0.131	-0.011
20	Misc. Mfg.	-0.004	0.007	-0.002	0.007	0.000	-0.027	0.000	-0.020	0.006	-0.013	0.023	-0.042	0.007	0.006	0.003	0.022	-0.056	-0.057	-0.009
21	Transportation & Warehousing	-0.031	0.112	-0.006	0.105	0.014	-0.346	0.003	-0.258	0.084	-0.176	0.313	-0.571	0.103	0.081	0.041	0.320	-0.858	-0.879	-0.087
22	Communications	-0.020	0.034	-0.009	0.035	-0.001	-0.130	-0.001	-0.096	0.029	-0.066	0.112	-0.206	0.035	0.032	0.014	0.108	-0.281	-0.287	-0.040
23	Utility Services	0.080	0.094	0.066	0.055	0.056	-0.020	0.022	-0.019	0.026	-0.018	0.043	-0.060	0.045	0.031	0.045	0.057	-0.512	-0.527	0.070
24	Trade	-0.121	0.321	-0.039	0.310	0.026	-1.072	0.002	-0.797	0.253	-0.544	0.960	-1.758	0.308	0.244	0.115	0.975	-2.514	-2.574	-0.294
25	FIRE	-0.067	0.170	-0.023	0.165	0.012	-0.573	0.001	-0.425	0.135	-0.291	0.510	-0.934	0.163	0.134	0.063	0.513	-1.336	-1.367	-0.159
26	Lodging	-0.019	0.034	-0.009	0.035	0.000	-0.129	-0.001	-0.095	0.029	-0.065	0.112	-0.206	0.035	0.031	0.014	0.109	-0.279	-0.286	-0.040
27	Business Services	-0.013	0.304	0.033	0.265	0.070	-0.775	0.021	-0.583	0.202	-0.400	0.744	-1.340	0.257	0.167	0.098	0.807	-2.196	-2.249	-0.146
28	Eating & Drinking	-0.043	0.087	-0.018	0.086	0.002	-0.311	-0.001	-0.230	0.071	-0.157	0.268	-0.495	0.086	0.078	0.036	0.260	-0.696	-0.712	-0.092
29	Repair Services	-0.001	0.029	0.003	0.025	0.007	-0.073	0.002	-0.055	0.019	-0.038	0.071	-0.128	0.024	0.015	0.009	0.078	-0.207	-0.212	-0.014
30	Amusements	-0.062	0.050	-0.036	0.061	-0.015	-0.273	-0.008	-0.200	0.056	-0.135	0.225	-0.420	0.063	0.064	0.021	0.209	-0.475	-0.485	-0.103
31	Health & Social Services	-0.214	0.314	-0.104	0.330	-0.019	-1.273	-0.016	-0.939	0.282	-0.640	1.087	-2.011	0.333	0.307	0.128	1.045	-2.637	-2.698	-0.411
32	Government	-0.010	0.028	-0.003	0.027	0.002	-0.092	0.000	-0.068	0.022	-0.047	0.081	-0.148	0.026	0.023	0.011	0.080	-0.217	-0.222	-0.025
	Totals	-0.523	2.280	-0.052	2.093	0.316	-6.729	0.077	-5.005	1.650	-3.436	6.047	-11.024	2.046	1.672	0.887	6.102	-17.195	-17.609	-1.622

Bay Area 2005 Industry Labor Income Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Ag-Forest-Fish	-0.002	0.005	-0.001	0.007	0.000	-0.012	0.000	-0.009	0.007	-0.006	0.028	-0.020	0.007	0.008	0.002	0.025	-0.024	-0.025	-0.004
2	Mining	0.000	0.000	0.000	0.000	0.000	-0.002	0.000	-0.001	0.000	-0.001	0.002	-0.003	0.001	0.001	0.000	0.002	-0.003	-0.003	-0.001
3	Residential Construction	0.003	0.001	0.002	0.000	0.001	0.007	0.000	0.005	0.000	0.003	0.000	0.010	0.000	0.000	0.000	0.000	0.007	0.007	0.003
3	Non-residental Construction	0.005	0.006	0.004	0.006	0.003	0.008	0.001	0.006	0.005	0.004	0.018	0.012	0.006	0.007	0.003	0.016	-0.004	-0.005	0.006
3	Public Construction	0.012	0.013	0.009	0.011	0.007	0.013	0.003	0.009	0.008	0.006	0.023	0.021	0.010	0.012	0.008	0.018	-0.034	-0.035	0.014
3	Maitenance and Repair	0.006	0.017	0.004	0.021	0.003	0.004	0.001	0.003	0.020	0.001	0.079	0.005	0.022	0.025	0.008	0.070	-0.021	-0.022	0.006
4	Food Products	-0.013	0.022	-0.007	0.033	-0.004	-0.051	-0.002	-0.037	0.032	-0.025	0.134	-0.077	0.035	0.040	0.011	0.118	-0.084	-0.086	-0.020
4	Textiles & Apparel	-0.015	0.015	-0.009	0.022	-0.005	-0.055	-0.002	-0.040	0.022	-0.027	0.091	-0.083	0.024	0.027	0.007	0.080	-0.087	-0.089	-0.023
4	Wood Products	-0.017	0.017	-0.010	0.023	-0.005	-0.069	-0.002	-0.050	0.022	-0.034	0.091	-0.103	0.025	0.028	0.008	0.080	-0.114	-0.117	-0.027
4	Printing & Publishing	-0.012	0.009	-0.008	0.014	-0.004	-0.045	-0.002	-0.033	0.014	-0.022	0.056	-0.068	0.015	0.017	0.005	0.049	-0.069	-0.070	-0.019
4	Chemicals	-0.030	0.026	-0.018	0.038	-0.009	-0.113	-0.004	-0.083	0.037	-0.056	0.153	-0.171	0.040	0.046	0.013	0.135	-0.178	-0.182	-0.046
4	Petroleum & Related	0.001	0.008	0.001	0.010	0.001	-0.005	0.000	-0.004	0.009	-0.003	0.035	-0.007	0.010	0.011	0.004	0.031	-0.020	-0.020	0.000
4	Rubber & Leather	-0.010	0.007	-0.006	0.009	-0.003	-0.036	-0.001	-0.026	0.009	-0.018	0.038	-0.054	0.010	0.012	0.003	0.034	-0.055	-0.056	-0.015
4	Stone, Glass, Clay	-0.018	0.009	-0.011	0.013	-0.006	-0.062	-0.003	-0.045	0.013	-0.031	0.054	-0.093	0.014	0.016	0.004	0.048	-0.089	-0.091	-0.027
4	Primary Metals	-0.013	0.006	-0.008	0.009	-0.004	-0.045	-0.002	-0.033	0.009	-0.022	0.037	-0.067	0.010	0.011	0.003	0.033	-0.063	-0.065	-0.020
4	Fabricated Metals & Ordinance	-0.016	0.009	-0.010	0.013	-0.005	-0.057	-0.002	-0.042	0.013	-0.028	0.055	-0.086	0.014	0.016	0.004	0.048	-0.084	-0.086	-0.024
4	Nonelectrical Machinery	-0.011	0.010	-0.007	0.013	-0.003	-0.044	-0.002	-0.032	0.013	-0.022	0.051	-0.066	0.014	0.016	0.005	0.046	-0.071	-0.073	-0.017
4	Computers & Office Eq	-0.014	0.010	-0.009	0.014	-0.005	-0.052	-0.002	-0.038	0.014	-0.025	0.058	-0.077	0.015	0.018	0.005	0.052	-0.078	-0.080	-0.022
4	Electric Transmisson & Ind. Apparatus	-0.001	0.003	0.000	0.003	0.000	-0.005	0.000	-0.004	0.003	-0.003	0.010	-0.008	0.003	0.003	0.001	0.008	-0.014	-0.014	-0.001
4	Household Appliances	-0.011	0.008	-0.007	0.012	-0.003	-0.042	-0.002	-0.030	0.012	-0.021	0.048	-0.062	0.013	0.015	0.004	0.042	-0.065	-0.066	-0.017
4	Communication Eq. except radio/TV	-0.003	0.006	-0.002	0.007	0.000	-0.018	0.000	-0.013	0.006	-0.009	0.024	-0.026	0.007	0.008	0.003	0.021	-0.037	-0.038	-0.006
4	Electronic Components & Eq	-0.028	0.016	-0.017	0.023	-0.009	-0.097	-0.004	-0.071	0.023	-0.048	0.097	-0.145	0.025	0.029	0.008	0.085	-0.142	-0.145	-0.042
4	Transportation Equipment	-0.015	0.021	-0.008	0.030	-0.004	-0.061	-0.002	-0.045	0.029	-0.030	0.117	-0.092	0.031	0.036	0.011	0.103	-0.106	-0.109	-0.023
4	Instruments	-0.025	0.021	-0.015	0.031	-0.008	-0.091	-0.004	-0.067	0.031	-0.045	0.126	-0.137	0.033	0.038	0.010	0.111	-0.141	-0.144	-0.038
5	Transportation Services	-0.023	0.036	-0.014	0.053	-0.006	-0.095	-0.003	-0.070	0.052	-0.047	0.212	-0.144	0.056	0.063	0.018	0.188	-0.160	-0.164	-0.037
5	Trucking & Warehousing	-0.027	0.029	-0.016	0.042	-0.008	-0.103	-0.004	-0.075	0.041	-0.051	0.170	-0.155	0.045	0.050	0.014	0.151	-0.162	-0.165	-0.042
5	Communications	-0.023	0.025	-0.014	0.037	-0.007	-0.086	-0.003	-0.063	0.037	-0.043	0.151	-0.130	0.040	0.045	0.012	0.134	-0.135	-0.138	-0.035
5	Utilities	0.262	-0.089	0.165	-0.142	0.091	0.885	0.041	0.644	-0.144	0.434	-0.603	1.324	-0.153	-0.176	-0.042	-0.532	1.223	1.249	0.389
6	Wholesale Trade	-0.100	0.091	-0.061	0.135	-0.031	-0.370	-0.015	-0.269	0.134	-0.182	0.553	-0.556	0.144	0.163	0.043	0.491	-0.565	-0.577	-0.153
6	Retail Trade	-0.063	0.422	-0.036	0.649	-0.015	-0.285	-0.007	-0.208	0.653	-0.142	2.722	-0.430	0.700	0.798	0.202	2.408	-0.507	-0.518	-0.105
7	Finance, Insurance & Real Estate	-0.058	0.072	-0.035	0.107	-0.018	-0.220	-0.008	-0.160	0.106	-0.109	0.437	-0.331	0.114	0.129	0.034	0.387	-0.346	-0.353	-0.090
8	Hotels & Lodging	-0.004	0.010	-0.002	0.015	-0.001	-0.019	0.000	-0.014	0.014	-0.010	0.059	-0.029	0.016	0.018	0.005	0.052	-0.036	-0.037	-0.007
8	Personal & Repair Services	-0.008	0.018	-0.005	0.026	-0.002	-0.035	-0.001	-0.026	0.026	-0.017	0.107	-0.053	0.028	0.032	0.009	0.095	-0.062	-0.063	-0.013
8	Business & Professional Services	-0.097	0.112	-0.059	0.165	-0.029	-0.372	-0.014	-0.271	0.163	-0.183	0.673	-0.560	0.176	0.199	0.053	0.597	-0.585	-0.598	-0.151
8	Amusement & Recreation Services	-0.019	0.024	-0.012	0.035	-0.006	-0.073	-0.003	-0.053	0.035	-0.036	0.144	-0.110	0.038	0.043	0.011	0.128	-0.114	-0.117	-0.030
8	Health Services	-0.053	0.129	-0.030	0.188	-0.013	-0.231	-0.007	-0.169	0.186	-0.115	0.765	-0.348	0.201	0.229	0.063	0.677	-0.408	-0.418	-0.087
8	Education & Research Services	-0.016	0.037	-0.009	0.054	-0.004	-0.069	-0.002	-0.050	0.053	-0.034	0.220	-0.104	0.058	0.066	0.018	0.195	-0.121	-0.124	-0.026
9	Government & Miscellaneous	-0.006	0.083	-0.001	0.114	0.003	-0.075	0.001	-0.055	0.110	-0.038	0.445	-0.112	0.120	0.138	0.042	0.392	-0.200	-0.205	-0.017
	Totals	-0.461	1.265	-0.261	1.840	-0.109	-2.080	-0.055	-1.519	1.816	-1.034	7.480	-3.135	1.966	2.235	0.614	6.617	-3.755	-3.840	-0.768

Sacramento 2005 Industry Labor Income Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.002	0.004	-0.001	0.004	0.000	-0.015	0.000	-0.011	0.004	-0.008	0.014	-0.025	0.004	0.003	0.001	0.014	-0.034	-0.035	-0.004
2	Mining	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	-0.001	0.000	-0.001	0.001	-0.002	0.000	0.000	0.000	0.001	-0.002	-0.002	-0.001
3	Petroleum Industry	-0.007	0.006	-0.004	0.007	-0.002	-0.031	-0.001	-0.022	0.006	-0.015	0.024	-0.046	0.007	0.008	0.003	0.021	-0.054	-0.056	-0.012
4	Construction	-0.017	0.036	-0.007	0.034	0.000	-0.121	0.000	-0.088	0.028	-0.061	0.096	-0.179	0.034	0.040	0.021	0.081	-0.283	-0.289	-0.035
5	Food Processing	-0.013	0.009	-0.007	0.011	-0.003	-0.052	-0.002	-0.038	0.011	-0.026	0.041	-0.078	0.012	0.014	0.005	0.036	-0.089	-0.091	-0.020
6	Textiles & Apparel	-0.009	0.006	-0.005	0.008	-0.002	-0.036	-0.001	-0.026	0.007	-0.018	0.029	-0.054	0.008	0.009	0.003	0.025	-0.061	-0.062	-0.014
7	Wood Products	-0.032	0.017	-0.019	0.023	-0.010	-0.116	-0.005	-0.085	0.023	-0.057	0.092	-0.174	0.025	0.028	0.008	0.081	-0.178	-0.181	-0.048
8	Printing & Publishing	-0.006	0.005	-0.003	0.006	-0.002	-0.025	-0.001	-0.018	0.005	-0.013	0.020	-0.038	0.006	0.007	0.003	0.017	-0.045	-0.046	-0.010
9	Chemicals	-0.013	0.008	-0.008	0.010	-0.004	-0.050	-0.002	-0.036	0.010	-0.025	0.040	-0.074	0.011	0.012	0.004	0.035	-0.080	-0.082	-0.020
10	Leather & Footware	-0.002	0.001	-0.001	0.002	-0.001	-0.008	0.000	-0.006	0.002	-0.004	0.006	-0.012	0.002	0.002	0.001	0.006	-0.014	-0.014	-0.003
11	Stone, Clay, & Glass	-0.002	0.001	-0.001	0.002	-0.001	-0.008	0.000	-0.006	0.002	-0.004	0.006	-0.012	0.002	0.002	0.001	0.006	-0.013	-0.013	-0.003
12	Primary Metals	-0.001	0.001	-0.001	0.001	0.000	-0.004	0.000	-0.003	0.001	-0.002	0.003	-0.006	0.001	0.001	0.000	0.003	-0.006	-0.006	-0.002
13	Fabricated Metals	0.001	0.005	0.001	0.004	0.002	-0.009	0.001	-0.007	0.003	-0.005	0.007	-0.013	0.004	0.005	0.003	0.005	-0.035	-0.036	0.000
14	Industrial Machinery	-0.007	0.004	-0.004	0.005	-0.002	-0.026	-0.001	-0.019	0.005	-0.013	0.021	-0.039	0.006	0.007	0.002	0.018	-0.042	-0.043	-0.010
15	Electronics	-0.029	0.019	-0.017	0.024	-0.008	-0.113	-0.004	-0.082	0.023	-0.056	0.090	-0.169	0.025	0.029	0.010	0.078	-0.186	-0.190	-0.045
16	Service Industry Machines	-0.001	0.000	0.000	0.001	0.000	-0.002	0.000	-0.002	0.000	-0.001	0.002	-0.003	0.001	0.001	0.000	0.002	-0.004	-0.004	-0.001
17	Electrical Equipment	-0.004	0.005	-0.002	0.005	-0.001	-0.021	0.000	-0.015	0.005	-0.011	0.017	-0.031	0.005	0.006	0.003	0.014	-0.043	-0.044	-0.007
18	Transportation Equipment	-0.006	0.007	-0.003	0.008	-0.001	-0.031	-0.001	-0.023	0.007	-0.016	0.025	-0.046	0.008	0.009	0.004	0.021	-0.063	-0.065	-0.011
19	Instruments	0.001	0.004	0.002	0.003	0.002	-0.006	0.001	-0.005	0.002	-0.003	0.005	-0.009	0.003	0.004	0.003	0.003	-0.029	-0.029	0.000
20	Misc. Mfg.	-0.003	0.002	-0.002	0.003	-0.001	-0.013	0.000	-0.009	0.003	-0.006	0.010	-0.019	0.003	0.003	0.001	0.009	-0.022	-0.023	-0.005
21	Transportation & Warehousing	-0.041	0.027	-0.024	0.035	-0.012	-0.164	-0.006	-0.119	0.033	-0.081	0.130	-0.245	0.037	0.042	0.014	0.114	-0.271	-0.278	-0.065
22	Communications	-0.021	0.014	-0.012	0.018	-0.006	-0.084	-0.003	-0.061	0.017	-0.041	0.066	-0.125	0.019	0.022	0.008	0.058	-0.140	-0.143	-0.033
23	Utility Services	-0.023	0.019	-0.013	0.022	-0.006	-0.098	-0.003	-0.072	0.020	-0.049	0.078	-0.146	0.023	0.027	0.010	0.067	-0.175	-0.179	-0.037
24	Trade	-0.169	0.118	-0.100	0.148	-0.048	-0.684	-0.023	-0.498	0.138	-0.338	0.543	-1.021	0.154	0.178	0.062	0.474	-1.148	-1.174	-0.269
25	FIRE	-0.084	0.059	-0.050	0.074	-0.024	-0.341	-0.011	-0.249	0.069	-0.169	0.271	-0.509	0.077	0.089	0.031	0.236	-0.574	-0.587	-0.134
26	Lodging	-0.015	0.011	-0.009	0.014	-0.004	-0.061	-0.002	-0.045	0.012	-0.030	0.049	-0.091	0.014	0.016	0.006	0.042	-0.105	-0.108	-0.024
27	Business Services	-0.063	0.067	-0.035	0.074	-0.013	-0.306	-0.007	-0.223	0.065	-0.152	0.242	-0.454	0.075	0.088	0.037	0.208	-0.590	-0.603	-0.108
28	Eating & Drinking	-0.039	0.027	-0.023	0.034	-0.011	-0.158	-0.005	-0.115	0.032	-0.078	0.125	-0.236	0.036	0.041	0.014	0.109	-0.265	-0.271	-0.062
29	Repair Services	-0.010	0.007	-0.006	0.009	-0.003	-0.041	-0.001	-0.030	0.008	-0.020	0.032	-0.061	0.009	0.011	0.004	0.028	-0.068	-0.070	-0.016
30	Amusements	-0.026	0.016	-0.016	0.021	-0.008	-0.100	-0.004	-0.073	0.020	-0.049	0.080	-0.150	0.022	0.025	0.008	0.070	-0.159	-0.163	-0.041
31	Health & Social Services	-0.156	0.111	-0.092	0.139	-0.043	-0.636	-0.021	-0.463	0.128	-0.315	0.503	-0.947	0.144	0.167	0.059	0.438	-1.078	-1.102	-0.248
32	Government	0.099	0.133	0.083	0.079	0.070	-0.040	0.029	-0.030	0.036	-0.030	0.032	-0.040	0.064	0.086	0.089	-0.003	-0.741	-0.762	0.089
	Totals	-0.697	0.751	-0.380	0.829	-0.142	-3.402	-0.074	-2.480	0.721	-1.697	2.700	-5.054	0.839	0.984	0.419	2.318	-6.597	-6.751	-1.198

Shasta 2005 Industry Labor Income Impacts by Alternative ($Millions of 2005 dollars)

	Industry Sector	Preferred Alternative	Increase Utility Allocation	Decrease Other Allocation	Decrease Agriculture Allocation	Increase Agriculture Allocation	Increase Other Allocation	Decrease Utility Allocation	Maximize Peaking, 900 MW Baseload Market Purchases	Maximize Peaking, 450 MW Baseload Market Purchases	Maximize Peaking, No Purchases	Maximize Peaking, 450 MW Peaking Market Purchases	Maximize Peaking, 900 MW Peaking Market Purchases	Maximize Baseload, 900 MW Baseload Market Purchases	Maximize Baseload, 450 MW Baseload Market Purchases	Maximize baseload, 900 MW Peaking Market Purchases	Maximize Baseload, 450 MW Peaking Market Purchases	Maximize Baseload, No Purchases	Purchase 250 MW Renewable Resources With Biomass	Purchase 250 MW Renewable Resources Without Biomass
1	Agriculture	-0.002	0.001	-0.001	0.001	-0.001	-0.006	0.000	-0.004	0.001	-0.003	0.005	-0.009	0.001	0.001	0.000	0.004	-0.008	-0.008	-0.003
2	Mining	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	Petroleum Industry	-0.005	0.002	-0.003	0.003	-0.002	-0.016	-0.001	-0.012	0.003	-0.008	0.013	-0.024	0.003	0.004	0.001	0.011	-0.022	-0.023	-0.007
4	Construction	-0.025	0.010	-0.016	0.016	-0.009	-0.084	-0.004	-0.061	0.016	-0.041	0.066	-0.125	0.017	0.019	0.005	0.058	-0.116	-0.118	-0.037
5	Food Processing	-0.007	0.003	-0.005	0.005	-0.003	-0.025	-0.001	-0.018	0.005	-0.012	0.020	-0.037	0.005	0.006	0.001	0.017	-0.035	-0.035	-0.011
6	Textiles & Apparel	-0.006	0.002	-0.004	0.004	-0.002	-0.021	-0.001	-0.015	0.004	-0.010	0.016	-0.031	0.004	0.005	0.001	0.014	-0.028	-0.029	-0.009
7	Wood Products	-0.005	0.002	-0.003	0.003	-0.002	-0.018	-0.001	-0.013	0.003	-0.009	0.014	-0.027	0.004	0.004	0.001	0.012	-0.025	-0.025	-0.008
8	Printing & Publishing	-0.003	0.001	-0.002	0.002	-0.001	-0.009	0.000	-0.007	0.002	-0.005	0.007	-0.014	0.002	0.002	0.001	0.007	-0.013	-0.013	-0.004
9	Chemicals	-0.003	0.001	-0.002	0.002	-0.001	-0.009	0.000	-0.007	0.002	-0.005	0.007	-0.014	0.002	0.002	0.001	0.006	-0.013	-0.013	-0.004
10	Leather & Footware	-0.001	0.000	-0.001	0.001	0.000	-0.003	0.000	-0.003	0.001	-0.002	0.003	-0.005	0.001	0.001	0.000	0.002	-0.005	-0.005	-0.002
11	Stone, Clay, & Glass	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	-0.001	0.000	0.000	0.001	-0.001	0.000	0.000	0.000	0.001	-0.001	-0.001	0.000
12	Primary Metals	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	Fabricated Metals	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	-0.001	0.000	-0.001	0.001	-0.002	0.000	0.000	0.000	0.001	-0.002	-0.002	-0.001
14	Industrial Machinery	-0.001	0.000	-0.001	0.001	0.000	-0.003	0.000	-0.002	0.001	-0.001	0.002	-0.004	0.001	0.001	0.000	0.002	-0.004	-0.004	-0.001
15	Electronics	0.000	0.000	0.000	0.000	0.000	-0.002	0.000	-0.001	0.000	-0.001	0.001	-0.003	0.000	0.000	0.000	0.001	-0.002	-0.002	-0.001
16	Service Industry Machines	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	-0.001	-0.001	0.000
17	Electrical Equipment	-0.002	0.001	-0.001	0.001	-0.001	-0.007	0.000	-0.005	0.001	-0.004	0.006	-0.011	0.001	0.002	0.000	0.005	-0.010	-0.010	-0.003
18	Transportation Equipment	-0.004	0.002	-0.003	0.003	-0.002	-0.015	-0.001	-0.011	0.003	-0.007	0.012	-0.022	0.003	0.003	0.001	0.010	-0.021	-0.021	-0.007
19	Instruments	-0.001	0.000	-0.001	0.001	0.000	-0.003	0.000	-0.002	0.001	-0.002	0.003	-0.005	0.001	0.001	0.000	0.002	-0.004	-0.005	-0.001
20	Misc. Mfg.	-0.001	0.001	-0.001	0.001	0.000	-0.005	0.000	-0.003	0.001	-0.002	0.004	-0.007	0.001	0.001	0.000	0.003	-0.006	-0.007	-0.002
21	Transportation & Warehousing	-0.014	0.006	-0.009	0.009	-0.005	-0.048	-0.002	-0.035	0.009	-0.024	0.038	-0.072	0.010	0.011	0.003	0.034	-0.067	-0.068	-0.021
22	Communications	-0.010	0.004	-0.006	0.006	-0.004	-0.034	-0.002	-0.025	0.007	-0.017	0.027	-0.052	0.007	0.008	0.002	0.024	-0.048	-0.049	-0.015
23	Utility Services	-0.010	0.004	-0.006	0.006	-0.003	-0.033	-0.002	-0.024	0.006	-0.016	0.026	-0.049	0.007	0.008	0.002	0.023	-0.045	-0.046	-0.014
24	Trade	-0.060	0.024	-0.038	0.038	-0.021	-0.203	-0.009	-0.148	0.038	-0.099	0.160	-0.303	0.041	0.047	0.011	0.141	-0.281	-0.287	-0.089
25	FIRE	-0.025	0.010	-0.016	0.016	-0.009	-0.085	-0.004	-0.062	0.016	-0.041	0.067	-0.127	0.017	0.020	0.005	0.059	-0.117	-0.120	-0.037
26	Lodging	-0.007	0.003	-0.004	0.004	-0.002	-0.023	-0.001	-0.017	0.004	-0.011	0.018	-0.034	0.005	0.005	0.001	0.016	-0.032	-0.033	-0.010
27	Business Services	-0.033	0.013	-0.021	0.021	-0.012	-0.113	-0.005	-0.082	0.021	-0.055	0.089	-0.169	0.023	0.026	0.006	0.079	-0.157	-0.160	-0.050
28	Eating & Drinking	-0.016	0.006	-0.010	0.010	-0.006	-0.055	-0.003	-0.040	0.010	-0.027	0.044	-0.083	0.011	0.013	0.003	0.039	-0.077	-0.078	-0.024
29	Repair Services	-0.004	0.001	-0.002	0.002	-0.001	-0.012	-0.001	-0.009	0.002	-0.006	0.010	-0.018	0.002	0.003	0.001	0.009	-0.017	-0.017	-0.005
30	Amusements	-0.020	0.008	-0.012	0.012	-0.007	-0.067	-0.003	-0.049	0.013	-0.033	0.053	-0.100	0.013	0.015	0.004	0.047	-0.092	-0.094	-0.029
31	Health & Social Services	-0.065	0.026	-0.041	0.041	-0.023	-0.221	-0.010	-0.161	0.042	-0.109	0.175	-0.331	0.045	0.051	0.012	0.155	-0.307	-0.313	-0.097
32	Government	-0.051	0.020	-0.032	0.032	-0.017	-0.171	-0.008	-0.125	0.032	-0.084	0.135	-0.256	0.034	0.039	0.009	0.120	-0.237	-0.242	-0.075
	Totals	-0.383	0.151	-0.240	0.241	-0.132	-1.294	-0.060	-0.942	0.244	-0.635	1.023	-1.936	0.261	0.298	0.072	0.904	-1.793	-1.830	-0.568

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