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**ASSESSMENT OF PETROLEUM INDUSTRY ECONOMIC IMPACT  
TO THE STATE OF CALIFORNIA**

**CONTRACT NO. AT1101-07  
ECON BENEFITS**

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*Prepared for:*

**WESTERN STATES PETROLEUM ASSOCIATION**

*Prepared By:*



*Buenos Aires – Calgary – Dubai – Houston  
London – Moscow – Singapore*

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## I. INTRODUCTION

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Purvin & Gertz, Inc. (PGI) was contracted by Western States Petroleum Association (WSPA) to conduct a state-wide study of the economic impact of the petroleum industry in California. The purpose of the study was to collect and analyze publically available employment, wage and tax revenue data for the petroleum industry so that the significance of the petroleum industry to the California economy can be fully characterized. This document will serve as a source of information for WSPA and its members, who are engaged in discussions with concerned citizens, local governments, and state lawmakers.

This study was conducted using standard methodologies for determining employment and earnings impacts to a regional economy consistent with prior economic studies contracted by WSPA and performed by others. This study used publically available employment, wage, and earnings data to establish the petroleum industry's direct impact to the local and state economy. In addition, indirect employment, wage and earnings impacts were determined. These indirect factors reflect the economic impact to non-petroleum industry businesses that provided goods and services as a result of the petroleum industry. The indirect economic impact was estimated from the petroleum industry's direct impact based on multipliers generated by the Bureau of Economic Analysis (BEA) for the petroleum industry in California.

The tax revenues paid by the industry through its businesses, employees and customers was also collected or determined from publically available information and included in this study. These tax revenues consist of income taxes, sales and use taxes, environmental taxes and fees, property taxes and energy usage taxes and surcharges. It should be noted that utility usage tax revenues, which can be a key component of tax revenue to city and county governments, are not included in this report. Very little public information was available on these tax payments, which are most often associated with the refining segment of the industry. In addition, utility consumption data for refineries in the state of California was not available, which would have allowed estimation of these tax payments. It should also be noted that property tax information was also omitted from this report, as the data collection was deemed infeasible based on the large number of locations represented by the industry.

The majority of the data in this study was collected by county. Where data for individual counties was not available, the total state numbers were allocated to individual counties using appropriate industry activity information, such as refinery throughputs, capacities or oil and gas production data. The county results were then aggregated into regional and state-wide results for analysis. The regions identified by WSPA and used for this study were as follows:

- Southern California: - Imperial, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties
- Central Valley/Northern California - Kern, Tulare, Fresno, Kings, Merced, Stanislaus, San Joaquin, Sacramento, Sutter, Yuba, Yolo, Colusa, Glenn, Butte, Tehama, and Shasta counties

- San Francisco Bay Area - San Francisco, Alameda, Contra Costa, Solano, San Mateo, Santa Clara, Marin, Sonoma, and Napa counties
- Central Coast - Ventura, Santa Barbara, San Luis Obispo and Monterey counties

The results in this report are presented for the entire state of California and by major California region.

This report has been prepared for the sole benefit of WSPA and its members. Any third party in possession of the report may not rely upon its conclusions without the written consent of WSPA or Purvin & Gertz. Possession of the report does not carry with it the right of publication. Purvin & Gertz conducted this analysis and prepared this report utilizing reasonable care and skill in applying methods of analysis consistent with normal industry practice. All results are based on information available at the time of review. Changes in factors upon which the review is based could affect the results. **THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

Some of the information on which this report is based has been provided by others. Purvin & Gertz has utilized such information without verification beyond that specifically noted. Purvin & Gertz accepts no liability for errors or inaccuracies in information provided by others.

## II. METHODOLOGY

This section provides a review of statistical data sources and the approach used to develop the economic analysis.

This study was conducted using available public data for employment, wages, earnings, and taxes. A majority of the data was retrieved through various state agencies, but it should be noted that some limitations existed and that independent estimates were applied by PGI where necessary. While the majority of the data was collected by county, there were some instances the desired information was only available for the entire state. In these cases, independent analysis was conducted to allocate the data to individual counties. A discussion of the methods used to estimate or allocate the necessary data is provided in the paragraphs below.

### PETROLEUM INDUSTRY

The majority of the information for this report was collected using North American Industry Classification System (NAICS) codes. The NAICS code system is used by almost all U.S. data collection and reporting entities to categorize industry information by major and minor industry. Several levels of coding are available, with simple 2-digit codes denoting major industries (such as 32 for manufacturing) while 6-digit codes refer to a more detailed segment of the industry, (such as 32411 for petroleum refining). This allows collection of similar industry subsectors into a single category while providing the granularity of specific industries. The petroleum industry information for California was collected using both major and minor NAICS codes as shown in the following table.

PETROLEUM INDUSTRY NAICS CODES	
NAICS Code	Description
211	Oil and Gas Extraction
213111	Drilling Oil and Gas Wells
213112	Support Activities, Oil/Gas Operations
32411	Petroleum Refineries
324191	All Other Petroleum and Coal Products
32511	Petrochemical Manufacturing
333132	Oil and Gas Field Machinery & Equipment
4247	Petroleum Merchant Wholesalers
447	Gasoline Stations
486	Pipeline Transportation

These NAICS codes represent the different segments of the petroleum industry including:

- Oil and Gas Production – the segment of the industry that explores, drills, and produces oil and gas in the state of California. This segment includes any activities that directly support this segment as well as the production of machinery used in the drilling and production processes.
- Midstream – the transportation related part of the industry consisting of pipeline networks that transport crude to refineries and products to market.
- Downstream/Petroleum Refining – the segment of the industry associated with converting crude oil into transportation fuels and other products. It also includes any direct support activities related to the refining process.
- Petrochemical Manufacturing – the segment of the industry which processes intermediate petroleum products from the refining segment into petrochemicals.
- Petroleum Marketing – the segment of the business associated with the sale of petroleum products, including sales into both the wholesale markets as well as to the retail markets.

These segments represent the petroleum supply chain from the extraction of oil and gas to the sale of finished gasoline at retail locations. Each segment provides economic benefit to the state of California in the form of direct employment, indirect employment, and tax revenues.

## **DATA AND ANALYSIS**

Several sources of data were used for the generation of this study. The sources used include:

- U.S. Department of Labor – Bureau of Labor Statistics (BLS)
- U.S. Commerce Department – Bureau of Economic Analysis (BEA)
- U.S. Census Bureau
- U.S. Energy Information Administration (EIA)
- U.S. Internal Revenue Service (IRS)
- U.S. Department of Transportation
- International Energy Agency (IEA)
- California Franchise Tax Board (FTB)
- California Energy Commission (CEC)
- California Department of Transportation (Caltrans)
- County Tax Assessors Offices for several California counties
- Smith Services (Rig Count Data)

## EMPLOYMENT AND WAGES (WAGE AND SALARY)

The employment and wage data for this study was obtained from the Quarterly Census of Employment and Wages (QCEW), which is available on the BLS website. The QCEW Program is a joint effort between the U.S. Department of Labor and the state of California's Employment Development Department and is used as an input to other Federal and State programs, including the BEA wage and salary component of personal income. The QCEW is a database of employment and wage information for workers covered by California's unemployment insurance program and is the only source of data, outside of the main U.S. census program conducted every 5 years, to provide detailed industry data down to the 6-digit NAICS level barring disclosure limitations.

Because of the specific level of industry identified at the 6-digit NAICS code level, certain county and even state data may represent a very small population of competitors, making disclosure of this data tantamount to releasing a single competitor's information. In these cases, the BLS suppresses publication of the county or state's data for that industry to prevent this disclosure. As less specific 5-digit and 4-digit codes are employed and the specific industry data is collected into broader industries with larger populations, the data is added back into the totals provided the concern for single company disclosure is sufficiently mitigated.

Of the nine NAICS codes used, four of which were 6-digit codes, only about 13% of the retrieved data was suppressed. The data suppression mechanism provides for identification of all counties with activity, but does not indicate the amount of activity for the suppressed counties. In an effort to distribute the unallocated amount, various outside sources were employed to determine how much of the unallocated employment or wages should be attributed to each suppressed county.

The outside information used for the employment and wages allocation was available in the public forum and varied depending on the nature of the industry associated with the suppressed data. The outside sources used for the allocation are shown in the next table.

ALLOCATION DATA FOR SUPPRESSED INFORMATION		
NAICS Code	Description	Allocation Data Used
211	Oil and Gas Extraction	CEC Oil and Gas Production Data
213111	Drilling Oil and Gas Wells	Smith Rig Count Data
213112	Support Activities, Oil/Gas Operations	Smith Rig Count Data
32411	Petroleum Refineries	CEC Energy Almanac Refining Data
324191	All Other Petroleum and Coal Products	CEC Energy Almanac Refining Data
32511	Petrochemical Manufacturing	Estimated using QCEW Data from the BLS
333132	Oil and Gas Field Machinery & Equipment	CEC Oil and Gas Production Data
4247	Petroleum Merchant Wholesalers	Vehicle Miles Traveled Data from Caltrans
447	Gasoline Stations	No Data Suppressed
486	Pipeline Transportation	Pipeline and Hazardous Materials Safety Administration

Using these additional data sources, it was possible to allocate the unallocated employment and wage data to the suppressed counties. One item to note about the data is a discrepancy that was discovered in the data retrieved for NAICS code 447 (Gasoline Stations). When the data for the individual counties was combined into a total state number, a shortage of 251 jobs and almost \$20 million in salary and wages was found when compared to the retrieved total state numbers. Since these totals only represented 0.3% of the total direct employment and wage impact from the petroleum industry, they were excluded from the analysis.

## **TOTAL EARNINGS**

The wage and salary data provided in the QCEW does not tell the entire story of total income earned in California as a result of the petroleum industry. Supplements to the wage and salary portion of employee compensation include additional non-direct compensation such as employer contributions for government social insurance and employee pension plans, as well as contributions to employee insurance funds. Proprietor income must also be considered, which consists of income earned by the owners of a business. Supplements to wage and salary as well as proprietor income must be added to the wage and salary data from the QCEW to reflect the total impact to income provided by the petroleum industry. The resulting total of wage and salary, supplements to wage and salary, and proprietary income is designated as earnings and reported by the BEA.

Unfortunately, earnings information from the BEA is not available for all 6-digit NAICS codes and data suppression is used to prevent disclosure of individual company data as it was for the QCEW. In addition, the earnings data is reported by the employee's home location (county), as opposed to the wage and salary data from QCEW, which is reported by the county of the employer. Rather than add additional data allocation into the study and shifting the data origin from the employer to the employee, a state-wide multiplier was generated using the available earnings and QCEW wage and salary data for the appropriate NAICS code. This multiplier allowed calculation of estimated earnings for each county and region from the QCEW wage and salary data for each specific NAICS code in the study. It also allowed estimation by difference of supplements to wage and salary plus proprietor income combined for each county and region.

It should be noted that the amount of earnings transferred between counties due to differences in residence between employee and employer should be minimal. As an example, the earnings for NAICS code 211 (Oil & Gas Extraction) transferred outside of the wage and salary reporting areas was less than 2% of the total. This seems reasonable as most employees will live in the same county as their employer, and most petroleum industry proprietors will tend to locate their businesses near concentrations of similar businesses.

As a result of using this methodology, the generated earnings data for each NAICS code will most likely not match any available earnings data from the BEA for an individual county. However, the earnings data at the state level will match available state totals for the NAICS codes used in this study.

## INDIRECT EFFECTS

The economic impact of an industry on the regional economy is more than just the direct effects of employment, earnings, and revenue generated by the industry. The existence of an industry has additional economic impacts through the businesses that support the industry as well as the businesses supported by the spending of the industry's employees. This additional economic stimulus provides jobs (with their associated wages) as well as income generated by these businesses.

These additional economic impacts are referred to as indirect effects and are determined using multipliers, which are factors provided by the U.S. Census Bureau to estimate indirect economic impacts. Several multipliers are available representing effects on economic output, earnings, employment, and value added. The multipliers are categorized by NAICS code and apply to specific geographical regions. The multipliers used in this analysis were for employment and earnings effects from the petroleum industry in the state of California and are shown in the following table.

<b>PETROLEUM INDUSTRY MULTIPLIERS</b>			
<b>NAICS Code</b>	<b>Description</b>	<b>Multiplier</b>	
		<b>Employment</b>	<b>Earnings</b>
211	Oil and Gas Extraction	5.3998	2.4777
213111	Drilling Oil and Gas Wells	3.8605	2.9549
213112	Support Activities, Oil/Gas Operations	2.9867	2.4094
32411	Petroleum Refineries	9.0343	3.4558
324191	All Other Petroleum and Coal Products	5.0682	3.1530
32511	Petrochemical Manufacturing	7.1751	4.3122
333132	Oil and Gas Field Machinery & Equipment	3.7576	2.8803
4247	Petroleum Merchant Wholesalers	2.6536	2.0708
447	Gasoline Stations	1.6961	2.1208
486	Pipeline Transportation	5.6564	2.9780

The multipliers are multiplied times the direct impact provided by the industry to determine the total economic impact to the region. For instance, the Oil and Gas Extraction segment of the industry has an employment multiplier of 5.3998 and an earnings multiplier of 2.4777. This indicates that if an NAICS code 211 business provides 1 direct job to the region, it actually results in 5.3998 total jobs for the region, 1 direct job provided by the business and 4.3998 jobs in other businesses and industries to support the business and to provide goods and services to its employees outside of the workplace. Likewise the earnings multiplier indicates that for every \$1 earned by employees and proprietors in the NAICS code 211 industry, \$2.4777 total earnings are realized in the region including the \$1 earned directly from the business and \$1.4777 earned through the indirect impacts of the business.

## TAX REVENUES

The petroleum industry contributes to several state revenue streams including income and sales taxes. The contribution of the petroleum industry to these tax revenues is analyzed in this study. A list of the tax revenues impacted by the petroleum industry through its businesses, its employees and its consumers is shown in the next table as well as the source used to obtain or calculate the tax revenue.

<b>PETROLEUM INDUSTRY TAX IMPACTS</b>	
<b>State Revenue Stream</b>	<b>Data Source</b>
Personal Income Taxes	Estimated from Earnings and CA tax rates
CA Corporate Income Taxes - Oil and Gas	Estimated from CEC Energy Almanac and FTB Annual Report
CA Corporate Income Taxes - Refining	Estimated using IEA margin data and the CEC Energy Almanac
Fuel Excise Taxes	FTB Annual Report
Property Taxes	Not Included
Underground Storage Tank Fees	FTB Annual Report
Oil Spill Prevention Taxes	FTB Annual Report
Natural Gas Surcharge	FTB Annual Report
Federal Income Tax - Personal	Estimated from earnings and US average tax rate
Federal Income Tax - Corporate	Estimated from CEC Energy Almanac, EIA data and average US corporate tax rates

The state personal income taxes were estimated using the average earnings per employee and the state income tax rate brackets from the FTB for 2009. The average earnings per employee for the industry were determined from the total salaries and wages paid to petroleum industry employees and the total number of petroleum industry employees. FTB statistics were used to determine the percentage of married versus single filings for application of the tax brackets to calculate the taxes paid per industry (direct) employee.

A similar calculation was performed for the indirect employee state income taxes. The average earnings per indirect employee were determined from the total salaries and wages paid to indirect employees and the total number of indirect employees. Then FTB statistics were used to determine the percentage of married versus single filings for application of the tax brackets to calculate the taxes paid per indirect employee.

The corporate income taxes paid to California by the oil and gas segment were estimated as a portion of the total income tax paid by the NAICS code 21 industries from the FTB Annual Report for 2009. The total state corporate income tax paid by NAICS code 21 was allocated between the oil and gas industry and the mining industry based on estimated total revenue. The oil and gas industry corporate income taxes were then allocated by county using CEC oil and gas production statistics.

The 2009 corporate income taxes paid to California by the refining segment were estimated from IEA refining margin data. The refining margins published by the IEA reflect the margin per barrel of crude oil a refinery realizes after all feedstock costs and operating costs are subtracted. The IEA publishes several different margins representing different refinery configurations. Using the configurations for each of the California refineries obtained from the Oil and Gas Journal refining survey, a margin was assigned to each refinery for 2009.

The 2009 margin per barrel for each refinery was then multiplied by the estimated 2009 barrels of throughput from the EIA to calculate the total refinery margin, which was used as a proxy for income. The average corporate tax rate for California was then applied to the refinery margin (income) to estimate the California taxes paid in 2009.

Federal taxes were also estimated for the study but not included in the benefits to California. The federal personal income taxes were estimated from adjusted employee earnings and average tax rates from the IRS. The adjusted employee earnings consisted of the total employee earnings (including both direct and indirect) less the personal income taxes paid to the state of California.

The federal oil and gas corporate taxes were estimated using 2009 oil and gas production data from the CEC Energy Almanac, crude and gas pricing for 2009 from the EIA, and average federal tax rates by industry from the IRS for 2009. The federal corporate taxes for the refining segment were estimated using the same refining margin and throughput data used for the state corporate income tax calculation and the average 2009 federal tax rate for the industry from the IRS.

It should be noted that property taxes are not included in the results. While it is recognized that property tax payments by the petroleum industry do represent a significant income to the state of California, it was not feasible to collect or determine the property taxes for the entire industry. The petroleum industry consists of a large number of locations including oil and gas exploration and production sites, refineries, terminals, pipelines, retail gasoline stations, etc. Therefore, property taxes were excluded from the study although it is recognized that they are a source of income to the state.

## **PETROLEUM INDUSTRY STATISTICS**

A few pertinent petroleum industry statistics are also presented in this report to provide some background on the petroleum industry for each county and region. The 2009 oil and gas production for California from the CEC is presented as well as an estimate of the associated revenues. The revenues were calculated from the production data using average 2009 oil and gas pricing from the EIA.

For the refining segment of the industry, the refining throughputs are shown based on EIA data. The total calculated refining margin and average crude margin are also shown which were used to estimate the refining corporate income taxes paid as discussed in the previous section.

### III. STUDY RESULTS

The state of California and its major regions benefit from the existence of the petroleum industry through impacts to the state and regional economies and tax revenues realized by the state. The results for 2009 are presented here for the state of California and for each of its four major regions. They include both direct economic impacts realized from the industry directly, and indirect economic impacts realized by other industries in the region.

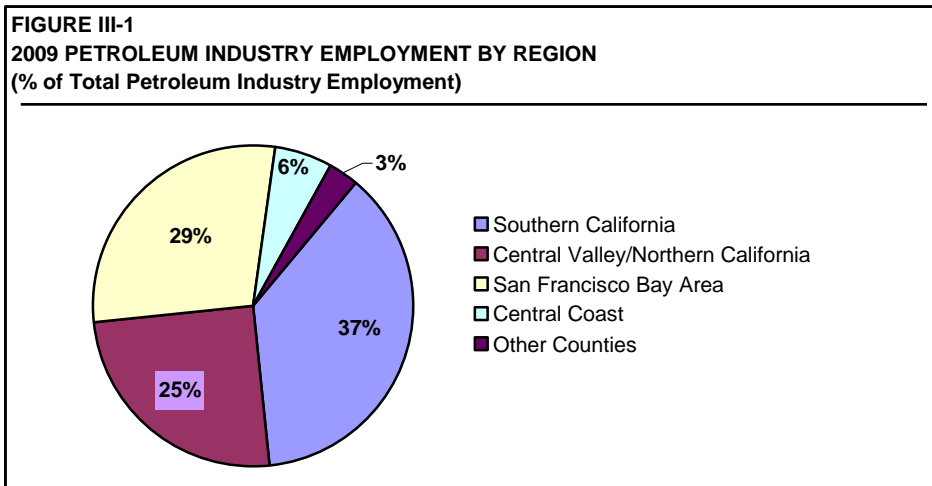
#### CALIFORNIA

The impact of the petroleum industry to the state of California in 2009 is summarized in Table III-1 at the end of this section. The industry provides about 95,000 jobs to the state directly through its various operations including upstream (oil and gas exploration and production), midstream (crude and product pipeline distribution), manufacturing (oil refining and petrochemical production), and trade (wholesale and retail marketing). In addition to these jobs, it is estimated that the multiplier effect contributes an additional 238,000 jobs to the state, resulting in a total employment contribution of about 333,000 jobs. This represents about 1.6% of the total workforce in the state of California.

<b>STATE OF CALIFORNIA</b>	
<b>2009 Petroleum Industry Employment Impact</b>	
<b>Segment</b>	<b>Employment</b>
Upstream	18,297
Midstream	2,947
Manufacturing	16,165
Trade	57,451
<b>Total Direct</b>	<b>94,860</b>
<b>Total Indirect<sup>(1)</sup></b>	<b>238,108</b>
<b>Total Impact</b>	<b>332,968</b>

<sup>(1)</sup> Multiplier Effect

The majority of the petroleum industry employment impact in 2009 was provided through the retail sector (gasoline station employees), with large contributions from the petroleum refining sector and the oil and gas sector as well. The petroleum industry provided varied employment opportunities with some amount of employment available in all counties and regions in the state. A breakdown of total petroleum industry direct and indirect employment by geographical region is shown in Figure III-1.



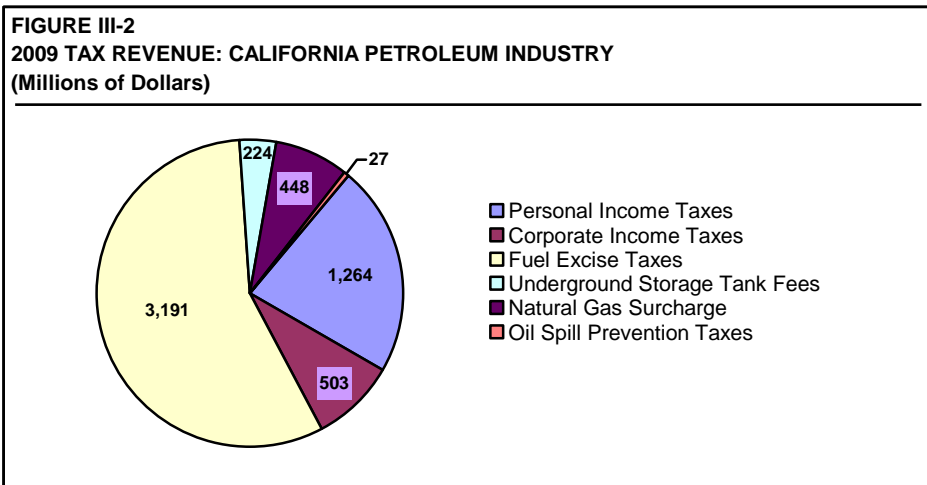
The direct and indirect wages from the petroleum industry are estimated at \$17.2 billion for 2009, with the combination of the oil and gas extraction segment and refining segment accounting for 73% of the total. Combined direct and indirect earnings provided by the petroleum industry in California are estimated at \$39.3 billion.

**STATE OF CALIFORNIA**  
**2009 Petroleum Industry Wages and Earnings**

Segment	\$ Millions
Upstream	2,356
Midstream	260
Manufacturing	2,072
Trade	1,659
<b>Total Direct Income</b>	<b>6,347</b>
Total Indirect Income <sup>(1)</sup>	10,887
<b>Total Wage Income</b>	<b>17,234</b>
Supplemental/Proprietor Income	22,023
<b>Total Earnings</b>	<b>39,257</b>

<sup>(1)</sup> Multiplier Effect

In addition to the economic benefit provided by petroleum industry employment and other income, the state also received approximately \$5.7 billion in revenue in 2009 through taxes and fees paid by petroleum industry corporations, employees and consumers. This represents about 5.5% of the total revenue for the state in 2009. A breakdown of the various revenue streams received as a result of the petroleum industry by California in 2009 is shown in Figure III-2.



## SOUTHERN CALIFORNIA

The petroleum industry has a large presence in Southern California, especially in the petroleum refining segment. Roughly 60% of the California refining industry (almost 1 million barrels per day) resides in this region with most of it concentrated in Los Angeles County. In addition, Southern California is home to the city of Los Angeles, which is the largest city in the state with almost four times the population of the next largest city (San Diego). As a result, Southern California receives the largest contribution in employment and provides the largest contribution of tax revenue from the petroleum industry. A summary of the petroleum industry impact to Southern California for 2009 is shown in Table III-2 at the end of this section.

Due to the large population in Southern California, it accounted for over half of the state gasoline station employment in California for 2009. The large refining capacity in the region represented 36% of the California refining industry employment while 25% of the oil and gas segment jobs in California were located here. As a result, the Southern California region was responsible for over 42% of the total direct petroleum industry employment in the state in 2009.

<b>SOUTHERN CALIFORNIA</b>	
<b>2009 Petroleum Industry Employment Impact</b>	
<b>Segment</b>	<b>Employment</b>
Upstream	4,533
Midstream	1,266
Manufacturing	5,489
Trade	28,733
<b>Total Direct</b>	<b>40,021</b>
Total Indirect <sup>(1)</sup>	84,120
<b>Total Impact</b>	<b>124,141</b>

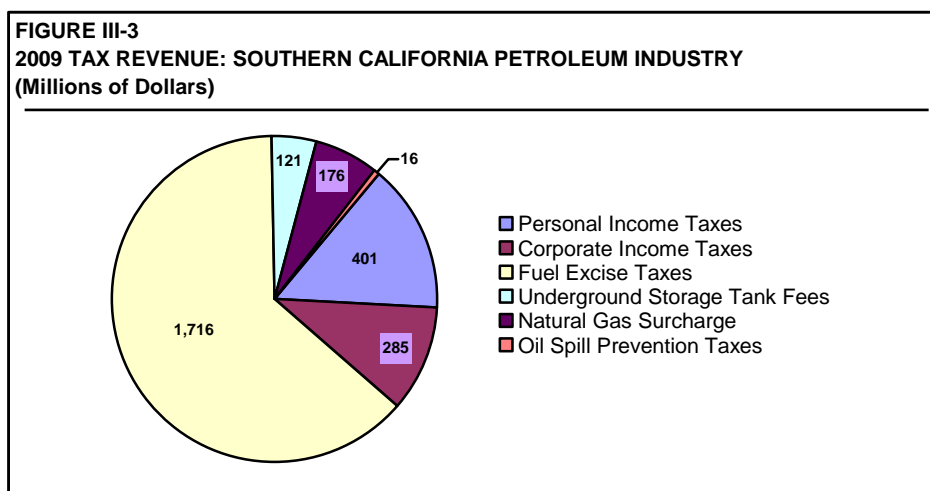
<sup>(1)</sup> Multiplier Effect

The direct and indirect wages from the petroleum industry to Southern California are estimated at \$5.8 billion, with the combination of the oil and gas extraction segment and refining segment accounting for 62% of the total. Combined direct and indirect earnings provided by the Southern California petroleum industry in 2009 are estimated at \$14.4 billion.

<b>SOUTHERN CALIFORNIA 2009 Petroleum Industry Wages and Earnings</b>	
<b>Segment</b>	<b>\$ Millions</b>
Upstream	547
Midstream	116
Manufacturing	673
Trade	850
<b>Total Direct Income</b>	<b>2,185</b>
<b>Total Indirect Income<sup>(1)</sup></b>	<b>3,619</b>
<b>Total Wage Income</b>	<b>5,804</b>
<b>Supplemental/Proprietor Income</b>	<b>8,609</b>
<b>Total Earnings</b>	<b>14,413</b>

<sup>(1)</sup> Multiplier Effect

In addition to the economic benefit provided by petroleum industry employment, Southern California provided approximately \$2.7 billion in revenue to the state through taxes and fees paid by petroleum industry corporations, employees and consumers located in the region. A breakdown of the various state revenue streams received in 2009 as a result of the petroleum industry in Southern California is shown in Figure III-3.



## CENTRAL VALLEY/NORTHERN CALIFORNIA

The Central Valley/Northern California region is home to the vast majority of the oil and gas extraction segment of the petroleum industry in California. Kern county alone was responsible for about 75% of the total oil production and 60% of the total gas production in California in 2009. As a result, the Central Valley/Northern California region of the state realized significant employment from the petroleum industry that year. A summary of the 2009 petroleum industry impact to the Central Valley/Northern California region is shown in Table III-3 at the end of this section.

The oil and gas extraction segment was a major contributor to employment in the region and the state, accounting for about 25% of the total California employment impact from the petroleum industry for 2009. The other major contributor was the retail segment, with gas stations providing 38% of the total direct employment impact to the region. Total employment provided in the Central Valley/Northern California region was about 83,000 in 2009

<b>CENTRAL VALLEY/NORTHERN CALIFORNIA 2009 Petroleum Industry Employment Impact</b>	
<b>Segment</b>	<b>Employment</b>
Upstream	10,374
Midstream	817
Manufacturing	2,395
Trade	11,606
Total Direct	25,193
Total Indirect <sup>(1)</sup>	57,631
Total Impact	82,824

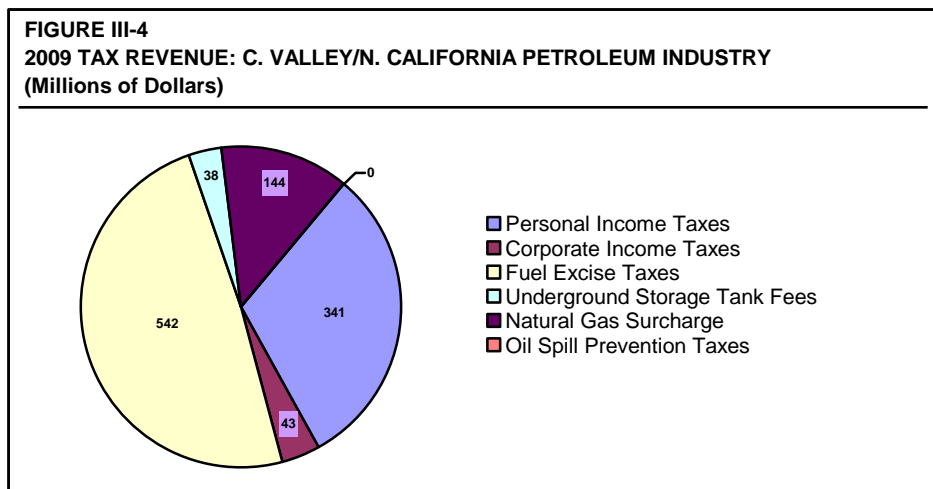
<sup>(1)</sup> Multiplier Effect

The direct and indirect wages from the petroleum industry to the Central Valley/Northern California region in 2009 are estimated at \$4.5 billion, with the oil and gas extraction segment accounting for 66% of the total. Combined direct and indirect earnings provided by the petroleum industry in the Central Valley/Northern California region are estimated at \$9.7 billion for 2009.

<b>CENTRAL VALLEY/NORTHERN CALIFORNIA 2009 Petroleum Industry Wages and Earnings</b>	
<b>Segment</b>	<b>\$ Millions</b>
Upstream	1,184
Midstream	69
Manufacturing	221
Trade	299
Total Direct Income	1,773
Total Indirect Income <sup>(1)</sup>	2,732
Total Wage Income	4,506
Supplemental/Proprietor Income	5,157
Total Earnings	9,663

<sup>(1)</sup> Multiplier Effect

In addition to the economic benefit provided by petroleum industry employment, the state also received approximately \$1.1 billion in revenue through taxes and fees paid by petroleum industry corporations, employees and consumers. A breakdown of the various revenue streams received by California in 2009 as a result of the Central Valley/Northern California petroleum industry is shown in Figure III-4.



### SAN FRANCISCO BAY AREA

The San Francisco Bay Area is home to 42% of the refining capacity in California and has a fairly high population. As a result, the San Francisco Bay Area realized significant employment from the refining segment of the California petroleum industry in 2009, as well as a large share of the retail gasoline station jobs in the state. A summary of the 2009 petroleum industry impact to the San Francisco Bay Area is shown in Table III-4 at the end of this section.

The refining segment employment contribution to the region represented 42% of the total petroleum industry employment in the San Francisco Bay Area in 2009. The other major contributor was the retail segment, with gas stations providing 43% of the total direct employment impact. Total employment provided in the San Francisco Bay Area is estimated at about 97,000 for 2009

<b>SAN FRANCISCO BAY AREA</b>	
<b>2009 Petroleum Industry Employment Impact</b>	
<b>Segment</b>	<b>Employment</b>
Upstream	828
Midstream	229
Manufacturing	8,069
Trade	10,257
<b>Total Direct</b>	<b>19,383</b>
Total Indirect <sup>(1)</sup>	77,476
<b>Total Impact</b>	<b>96,859</b>

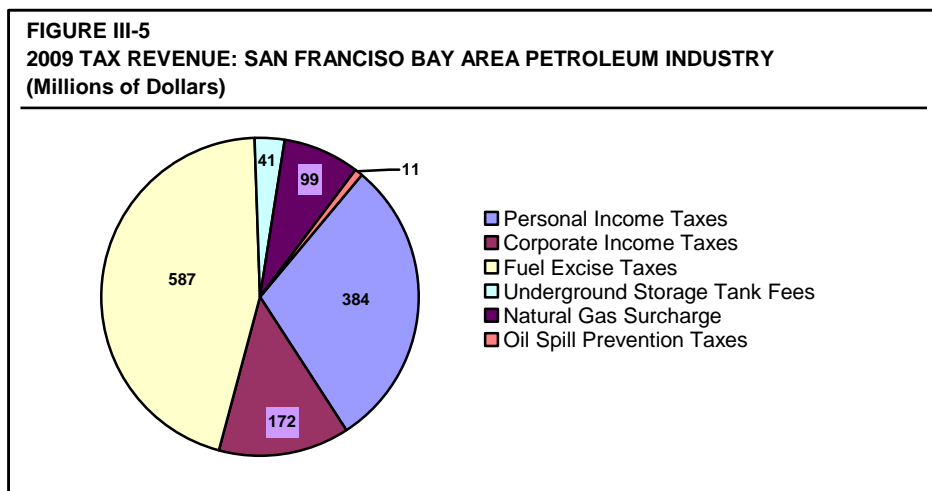
<sup>(1)</sup> Multiplier Effect

The direct and indirect wages from the petroleum industry to the San Francisco Bay Area in 2009 are estimated at \$5.2 billion, with the refining segments accounting for 75% of the total. Combined direct and indirect earnings provided by the petroleum industry in the San Francisco Bay Area are estimated at \$10.7 billion for 2009.

<b>SAN FRANCISCO BAY AREA 2009 Petroleum Industry Wages and Earnings</b>	
<b>Segment</b>	<b>\$ Millions</b>
Upstream	195
Midstream	19
Manufacturing	1,148
Trade	315
<b>Total Direct Income</b>	<b>1,677</b>
Total Indirect Income <sup>(1)</sup>	3,491
<b>Total Wage Income</b>	<b>5,169</b>
Supplemental/Proprietor Income	5,520
<b>Total Earnings</b>	<b>10,688</b>

<sup>(1)</sup> Multiplier Effect

In addition to the economic benefit provided by the San Francisco Bay Area petroleum industry employment, the state also received approximately \$1.3 billion in revenue through taxes and fees paid by petroleum industry corporations, employees and consumers. A breakdown of the various revenue streams received by California in 2009 as a result of the San Francisco Bay Area petroleum industry is shown in Figure III-5.



## CENTRAL COAST

The Central Coast of California has the smallest contribution from the petroleum industry, with only 8% of the total oil and gas extraction activity and a very small refining presence in Santa Barbara County. However, despite its only receiving a modest amount of the total industry impact, the petroleum industry was still a major employer in the region in 2009. A summary of the petroleum industry impact to the Central Coast region is shown in Table III-5 for 2009 at the end of this section.

The oil and gas extraction and retail segments of the industry combined to provide 74% of the total employment impact from the petroleum industry in the Central Coast in 2009. A total employment of 6,000 direct jobs was provided through the industry resulting in a combined direct and indirect employment impact of about 19,000 jobs for the region in 2009

<b>CENTRAL COAST 2009 Petroleum Industry Employment Impact</b>	
<b>Segment</b>	<b>Employment</b>
Upstream	2,117
Midstream	464
Manufacturing	187
Trade	3,115
Total Direct	5,884
Total Indirect <sup>(1)</sup>	13,354
Total Impact	19,238

<sup>(1)</sup> Multiplier Effect

The direct and indirect wages from the petroleum industry to the Central Coast region in 2009 are estimated at \$1.3 billion, with the oil and gas segment accounting for 67% of the total. Combined direct and indirect earnings provided by the petroleum industry in the Central Coast region are estimated at \$3.2 billion for 2009.

<b>CENTRAL COAST 2009 Petroleum Industry Wages and Earnings</b>	
<b>Segment</b>	<b>\$ Millions</b>
Upstream	353
Midstream	41
Manufacturing	25
Trade	103
Total Direct Income	522
Total Indirect Income <sup>(1)</sup>	778
Total Wage Income	1,300
Supplemental/Proprietor Income	1,911
Total Earnings	3,211

<sup>(1)</sup> Multiplier Effect

In addition to the economic benefit provided by the Central Coast petroleum industry employment, the state also received approximately \$307 million in revenue through taxes and fees paid by petroleum industry corporations, employees and consumers. A breakdown of the various revenue streams received by California in 2009 as a result of the Central Coast petroleum industry is shown in Figure III-6.

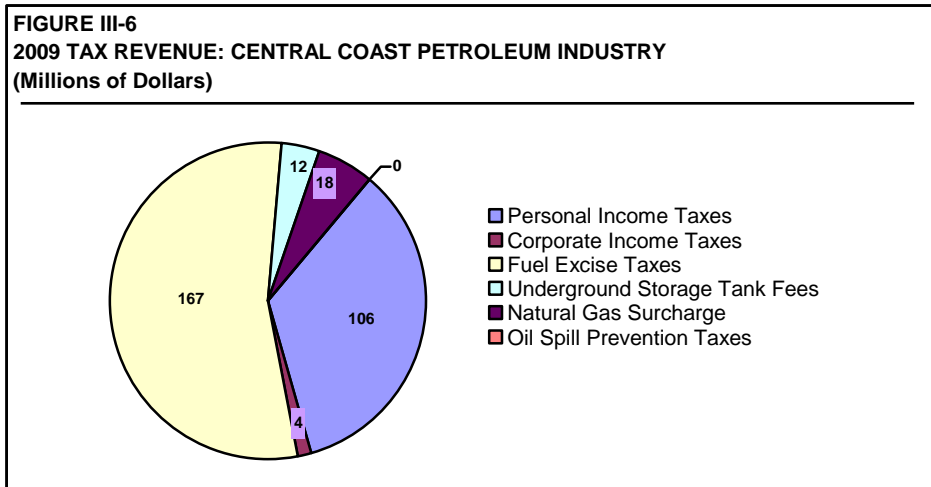



TABLE III-1

		<b>State of California</b> <b>Petroleum Industry Impact for 2009</b> (Millions of Dollars)	
<b>Employment (Employees)</b>		<b>State of California Revenue: \$ 5,657</b>	
<b>Upstream/Midstream</b>		<b>Personal Income Taxes (Based on Earnings)</b>	
Oil & Gas Extraction	18,297	Oil and Gas Upstream/Midstream	551
Pipeline Transportation	2,947	Manufacturing	516
<b>Manufacturing</b>		Trade	197
Petroleum Refining	14,552	Total Direct	1,264
Petrochemical Manufacturing	15	<b>Corporate Income Taxes (Estimate)</b>	
Machinery and Equipment	1,598	Oil and Gas Production	55
<b>Trade</b>		Refining	448
Wholesale	7,609	Total	503
Retail	49,842	<b>Fuel Excise Taxes</b>	
<b>Total Employment</b>		Gasoline	2,674
Direct	94,860	Diesel	515
Indirect	238,108	Jet	2
Total	332,968	Total	3,191
<b>Labor Income (Earnings)</b>		<b>Other State Tax Revenue</b>	
<b>Upstream/Midstream</b>		<b>Underground Storage Tank Fees</b>	224
Oil & Gas Extraction	2,356	<b>Oil Spill Prevention Taxes</b>	27
Pipeline Transportation	260	<b>Natural Gas Surcharge</b>	448
<b>Manufacturing</b>		<b>Federal Tax Revenue</b>	
Petroleum Refining	1,961	<b>Federal Income Tax (Personal)</b>	1,899
Petrochemical Manufacturing	1	<b>Federal Income Tax (Corporate)</b>	976
Machinery and Equipment	110	<b>Petroleum Industry Statistics</b>	
<b>Trade</b>		<b>Oil and Gas Production Statistics</b>	
Wholesale	520	Oil Production (Thousand Barrels)	207,460
Retail	1,139	Oil Revenue (Million Dollars)	22,758
<b>Total Wages and Salaries</b>		Gas Production (Billion Cubic Feet)	259
Direct	6,347	Gas Revenue (Million Dollars)	1,026
Indirect	10,887	Total Oil and Gas Revenue	23,785
Total for State of California	17,234	<b>Refining Statistics</b>	
<b>Supplemental + Proprietor Income</b>		Throughput (Thousand Barrels per Day)	1,593
Direct	8,678	Margin (Million Dollars per Year)	4,983
Indirect	13,345	Average Crude Margin (\$/Bbl)	8.57
Total for State of California	22,023		
<b>Total Earnings</b>			
Direct	15,024		
Indirect	24,233		
Total	39,257		


**Statistics Data Sources:**

U.S. Dept. of Labor (Bureau of Labor Statistics)  
 U.S. Commerce Dept. (Bureau of Economic Analysis)  
 U.S. Census Bureau  
 U.S. Energy Information Administration (EIA)

U.S. Internal Revenue Service (IRS)  
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 Purvin & Gertz Analysis of Public  
 Domain Data (5/2011)

TABLE III-2

		<b>Southern California</b> <b>Petroleum Industry Impact for 2009</b> <b>(Millions of Dollars)</b>	
<b>Employment (Employees)</b>		<b>Southern California Revenue: \$ 2,713</b>	
<b>Upstream/Midstream</b>		<b>Personal Income Taxes (Based on Earnings)</b>	
Oil & Gas Extraction	4,533	Oil and Gas Upstream/Midstream	139
Pipeline Transportation	1,266	Manufacturing	159
		Trade	103
		<b>Total Direct</b>	<b>401</b>
<b>Manufacturing</b>		<b>Corporate Income Taxes (Estimate)</b>	
Petroleum Refining	5,215	Oil and Gas Production	7
Petrochemical Manufacturing	15	Refining	277
Machinery and Equipment	259	<b>Total</b>	<b>285</b>
<b>Trade</b>		<b>Fuel Excise Taxes</b>	
Wholesale	2,872	Gasoline	1,438
Retail	25,861	Diesel	277
		Jet	1
		<b>Total</b>	<b>1,716</b>
<b>Total Employment</b>		<b>Other State Tax Revenue</b>	
Direct	40,021	<b>Underground Storage Tank Fees</b>	121
Indirect	84,120	<b>Oil Spill Prevention Taxes</b>	16
<b>Total</b>	<b>124,141</b>	<b>Natural Gas Surcharge</b>	176
<b>Labor Income (Earnings)</b>		<b>Federal Tax Revenue</b>	
<b>Upstream/Midstream</b>		<b>Federal Income Tax (Personal)</b>	
Oil & Gas Extraction	547		727
Pipeline Transportation	116	<b>Federal Income Tax (Corporate)</b>	
			339
<b>Manufacturing</b>		<b>Petroleum Industry Statistics</b>	
Petroleum Refining	655	<b>Oil and Gas Production Statistics</b>	
Petrochemical Manufacturing	1	Oil Production (Thousand Barrels)	28,926
Machinery and Equipment	17	Oil Revenue (Million Dollars)	3,173
		Gas Production (Billion Cubic Feet)	13
<b>Trade</b>		Gas Revenue (Million Dollars)	52
Wholesale	226	<b>Total Oil and Gas Revenue</b>	<b>3,226</b>
Retail	624	<b>Refining Statistics</b>	
		Throughput (Thousand Barrels per Day)	877
<b>Total Wages and Salaries</b>		Margin (Million Dollars per Year)	3,079
Direct	2,185	Average Crude Margin (\$/Bbl)	9.62
Indirect	3,619		
<b>Total for Southern California</b>	<b>5,804</b>		
<b>Supplemental + Proprietor Income</b>			
Direct	3,485		
Indirect	5,124		
<b>Total for State of California</b>	<b>8,609</b>		
<b>Total Earnings</b>			
Direct	5,670		
Indirect	8,743		
<b>Total</b>	<b>14,413</b>		


**Statistics Data Sources:**

U.S. Dept. of Labor (Bureau of Labor Statistics)  
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U.S. Internal Revenue Service (IRS)  
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 Purvin & Gertz Analysis of Public  
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TABLE III-3

		<b>Central Valley/Northern California</b> <b>Petroleum Industry Impact for 2009</b> <b>(Millions of Dollars)</b>	
<b>Employment (Employees)</b>		<b>Central Valley/North Calif. Revenue: \$ 1,107</b>	
<b>Upstream/Midstream</b>		<b>Personal Income Taxes (Based on Earnings)</b>	
Oil & Gas Extraction	10,374	Oil and Gas Upstream/Midstream	278
Pipeline Transportation	817	Manufacturing	59
<b>Manufacturing</b>		Trade	38
Petroleum Refining	1,164	Total Direct	376
Petrochemical Manufacturing	-	<b>Corporate Income Taxes (Estimate)</b>	
Machinery and Equipment	1,231	Oil and Gas Production	43
<b>Trade</b>		Refining	-
Wholesale	2,035	Total	43
Retail	9,571	<b>Fuel Excise Taxes</b>	
<b>Total Employment</b>		Gasoline	454
Direct	25,193	Diesel	87
Indirect	57,631	Jet	0
Total	82,824	Total	542
<b>Labor Income (Earnings)</b>		<b>Other State Tax Revenue</b>	
<b>Upstream/Midstream</b>		<b>Underground Storage Tank Fees</b>	38
Oil & Gas Extraction	1,184	<b>Oil Spill Prevention Taxes</b>	-
Pipeline Transportation	69	<b>Natural Gas Surcharge</b>	144
<b>Manufacturing</b>		<b>Federal Tax Revenue</b>	
Petroleum Refining	136	<b>Federal Income Tax (Personal)</b>	486
Petrochemical Manufacturing	-	<b>Federal Income Tax (Corporate)</b>	427
Machinery and Equipment	85	<b>Petroleum Industry Statistics</b>	
<b>Trade</b>		<b>Oil and Gas Production Statistics</b>	
Wholesale	111	Oil Production (Thousand Barrels)	161,355
Retail	188	Oil Revenue (Million Dollars)	17,701
<b>Total Wages and Salaries</b>		Gas Production (Billion Cubic Feet)	217
Direct	1,773	Gas Revenue (Million Dollars)	858
Indirect	2,732	Total Oil and Gas Revenue	18,559
Total for Central Valley/Northern C	4,506	<b>Refining Statistics</b>	
<b>Supplemental + Proprietor Income</b>		Throughput (Thousand Barrels per Day)	40
Direct	2,091	Margin (Million Dollars per Year)	-
Indirect	3,066	Average Crude Margin (\$/Bbl)	-
Total for State of California	5,157		
<b>Total Earnings</b>			
Direct	3,864		
Indirect	5,798		
Total	9,663		


**Statistics Data Sources:**

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TABLE III-4

		<b>San Francisco Bay Area</b> <b>Petroleum Industry Impact for 2009</b> (Millions of Dollars)	
<b>Employment (Employees)</b>		<b>San Francisco Bay Area Revenue: \$ 1,294</b>	
<b>Upstream/Midstream</b>		<b>Personal Income Taxes (Based on Earnings)</b>	
Oil & Gas Extraction	828	Oil and Gas Upstream/Midstream	48
Pipeline Transportation	229	Manufacturing	297
<b>Manufacturing</b>		Trade	39
Petroleum Refining	8,052	Total Direct	384
Petrochemical Manufacturing	-	<b>Corporate Income Taxes (Estimate)</b>	
Machinery and Equipment	17	Oil and Gas Production	0
<b>Trade</b>		Refining	140
Wholesale	1,837	Total	140
Retail	8,420	<b>Fuel Excise Taxes</b>	
<b>Total Employment</b>		Gasoline	491
Direct	19,383	Diesel	95
Indirect	77,476	Jet	1
Total	96,859	Total	587
<b>Labor Income (Earnings)</b>		<b>Other State Tax Revenue</b>	
<b>Upstream/Midstream</b>		<b>Underground Storage Tank Fees</b>	41
Oil & Gas Extraction	195	<b>Oil Spill Prevention Taxes</b>	11
Pipeline Transportation	19	<b>Natural Gas Surcharge</b>	99
<b>Manufacturing</b>		<b>Federal Tax Revenue</b>	
Petroleum Refining	1,147	<b>Federal Income Tax (Personal)</b>	452
Petrochemical Manufacturing	-	<b>Federal Income Tax (Corporate)</b>	165
Machinery and Equipment	1	<b>Petroleum Industry Statistics</b>	
<b>Trade</b>		<b>Oil and Gas Production Statistics</b>	
Wholesale	132	Oil Production (Thousand Barrels)	48
Retail	183	Oil Revenue (Million Dollars)	5
<b>Total Wages and Salaries</b>		Gas Production (Billion Cubic Feet)	15
Direct	1,677	Gas Revenue (Million Dollars)	59
Indirect	3,491	Total Oil and Gas Revenue	65
Total for San Francisco Bay Area	5,169	<b>Refining Statistics</b>	
<b>Supplemental + Proprietor Income</b>		Throughput (Thousand Barrels per Day)	668
Direct	1,981	Margin (Million Dollars per Year)	1,904
Indirect	3,539	Average Crude Margin (\$/Bbl)	7.81
Total for State of California	5,520		
<b>Total Earnings</b>			
Direct	3,658		
Indirect	7,030		
Total	10,688		


**Statistics Data Sources:**

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 U.S. Census Bureau  
 U.S. Energy Information Administration (EIA)

U.S. Internal Revenue Service (IRS)  
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TABLE III-5

		<b>Central Coast</b> <b>Petroleum Industry Impact for 2009</b> <b>(Millions of Dollars)</b>	
<b>Employment (Employees)</b>		<b>Central Coast Revenue: \$ 307</b>	
<b>Upstream/Midstream</b>		<b>Personal Income Taxes (Based on Earnings)</b>	
Oil & Gas Extraction	2,117	Oil and Gas Upstream/Midstream	85
Pipeline Transportation	464	Manufacturing	7
<b>Manufacturing</b>		Trade	14
Petroleum Refining	97	Total Direct	106
Petrochemical Manufacturing	-	<b>Corporate Income Taxes (Estimate)</b>	
Machinery and Equipment	90	Oil and Gas Production	4
<b>Trade</b>		Refining	-
Wholesale	416	Total	4
Retail	2,699	<b>Fuel Excise Taxes</b>	
<b>Total Employment</b>		Gasoline	140
Direct	5,884	Diesel	27
Indirect	13,354	Jet	0
Total	19,238	Total	167
<b>Labor Income (Earnings)</b>		<b>Other State Tax Revenue</b>	
<b>Upstream/Midstream</b>		<b>Underground Storage Tank Fees</b>	12
Oil & Gas Extraction	353	<b>Oil Spill Prevention Taxes</b>	-
Pipeline Transportation	41	<b>Natural Gas Surcharge</b>	18
<b>Manufacturing</b>		<b>Federal Tax Revenue</b>	
Petroleum Refining	19	<b>Federal Income Tax (Personal)</b>	163
Petrochemical Manufacturing	-	<b>Federal Income Tax (Corporate)</b>	44
Machinery and Equipment	6	<b>Petroleum Industry Statistics</b>	
<b>Trade</b>		<b>Oil and Gas Production Statistics</b>	
Wholesale	24	Oil Production (Thousand Barrels)	17,122
Retail	79	Oil Revenue (Million Dollars)	1,878
<b>Total Wages and Salaries</b>		Gas Production (Billion Cubic Feet)	11
Direct	522	Gas Revenue (Million Dollars)	45
Indirect	778	Total Oil and Gas Revenue	1,924
Total for Central Coast	1,300	<b>Refining Statistics</b>	
<b>Supplemental + Proprietor Income</b>		Throughput (Thousand Barrels per Day)	8
Direct	768	Margin (Million Dollars per Year)	-
Indirect	1,143	Average Crude Margin (\$/Bbl)	-
Total for State of California	1,911		
<b>Total Earnings</b>			
Direct	1,290		
Indirect	1,921		
Total	3,211		

**Statistics Data Sources:**

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