



California Prison Industry Authority's  
Economic Impact on California  
Fiscal Year 2012-13



**CALPIA**  
Quality Products • Changed Lives • A Safer California

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Economic Impact on California  
Fiscal Year 2012-2013**

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## Executive Summary

This study is an update of three previous studies by Goldman et al. (1998), Goldman and Pradhan (2002), and Price et al. (2008). This analysis derives the total output, employment and labor income impacts of the California Prison Industry Authority (CALPIA) on the economy of the state of California. As a producer of goods and services, CALPIA is linked to the state economy in several ways. Most importantly, CALPIA purchases intermediate inputs (or raw materials) for further processing in its factories. This study utilizes a state of California economic model to translate these intermediate input purchases into sales by place of production so that the multiplier effect of CALPIA on the state economy can be estimated.

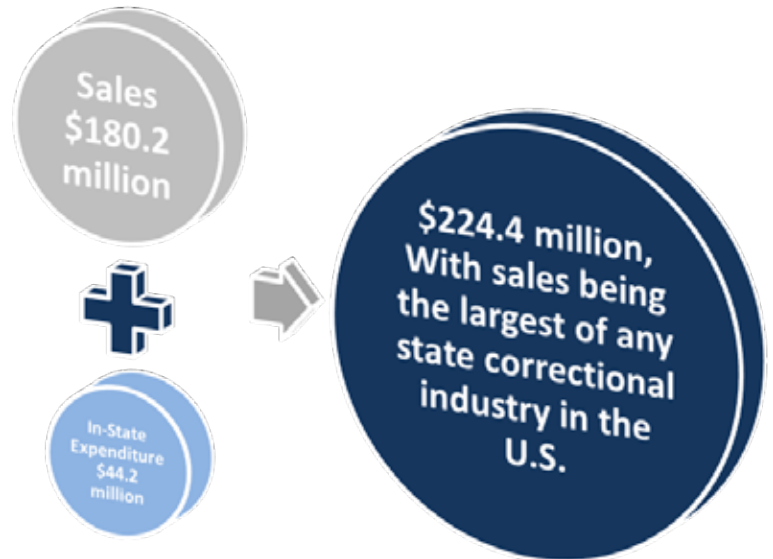
- According to the National Corrections Industries Association, CALPIA for fiscal year (FY) 2012-13 had the largest sales at \$180.2 million (M) of any state correctional industry in the United States.
- CALPIA sales and in-state expenditures for FY 2012-13 totaled \$224.4 M.
- From these sales and purchases, total impacts of CALPIA activities on the economy of the state of California was \$375.4 M with total labor income impact of \$92.6 M, and total employment impact of 1,913.
- If CALPIA activities did not exist in the state of California, total economic activity would decline by \$214.0 M, state household income would decline by \$42.6 M with a total of 1,061 job losses statewide.

## Introduction

CALPIA was reconstituted in 1983, authorized by Penal Code sections 2800-2818, as a semi-autonomous state agency to operate California prison industries in a manner similar to private industry. CALPIA trains and provides productive work assignments to offenders with an emphasis on rehabilitation through job training. Offender workers produce a variety of goods and services at correctional institutions throughout California. These production activities provide a variety of uses to the State including: (1) training of offenders who acquire positive work habits and skills; (2) the supervision of offenders in a secure environment; and (3) the provision of goods and services to the state of California public sector agencies. Each of these services has an economic dimension in terms of contributing value added to the state economy. In this report, the contributions of CALPIA during the FY 2012-13 to the state of California's economy are estimated.

CALPIA is a self-supporting government agency. CALPIA sales increased by 16.1 percent between FY 1996-97 and FY 2012-13, giving CALPIA the largest sales (\$180.2 M) of any state's prison industry in the U.S. (National Corrections Industries Association, 2014).

## Impact of Sales and Expenditures



This sales increase is noteworthy, given that CALPIA can only sell to the public sector. CALPIA manages 57 manufacturing, service, and consumable factories in 25 California Department of Corrections and Rehabilitation (CDCR) institutions (California Prison Industry Authority, Annual Financial Report, 2013). CALPIA uses its revenues to cover its costs such as purchasing raw materials, providing offender supervision, offender payroll, transporting and distributing its products, acquiring capital, and supporting CALPIA's Central Office.

The Prison Industry Board was established in 1983 to oversee operations of CALPIA. The Board sets general policy for CALPIA, appointing a General Manager, monitoring existing operations, and deciding which new industries

to enter. The Board serves as a public hearing body charged with ensuring that the operations of CALPIA are self-sufficient. The Board actively solicits public input in its decisions with regard to expanding existing or developing new prison industries (California Prison Industry Authority, 2008).

CALPIA customers are limited to government entities, except as specified by law. CDCR is CALPIA's largest customer, purchasing approximately 57.4 percent of all CALPIA's total annual production of goods and services in FY 2012-13 (California Prison Industry Authority, 2013).

This study derives the total and sectoral output, employment and labor income impacts of CALPIA on the economy of the state of California. As a producer of goods and services, CALPIA is linked to the state economy in several ways. Most importantly, CALPIA purchases intermediate inputs (materials) for further processing in its factories. This study utilizes economic models of the state of California that translates these intermediate input purchases into sales by place of production so that the multiplier effect of CALPIA on the state economy can be estimated.

## CALPIA Production

In FY 2012-13, CALPIA had sales of \$180.2 M, a 23.0 percent decrease in nominal sales from FY 2008-09. The reasons for this decrease are twofold. One is the impact of the "Great Recession" that decreased statewide private and public sector activity. Also, the passage and signing of Senate Bill 105 and Assembly Bill 109 by Governor Brown reduced the number of CDCR offenders that utilize CALPIA products by over 35,000 offenders. CALPIA sales of laundry services, modular construction, and general fabrication were greatly impacted.

In Table 1 (p. 19), the goods and services that were produced by CALPIA and their contributions toward sales are shown. Manufacturing revenue represents the largest portion of total CALPIA revenue with \$85.7 M in sales. Within Manufacturing revenue, fabric products (\$22.3 M) and license plates (\$15.3 M) are the largest portion of total manufacturing sales. Fabric product sales represent purchases by CAL FIRE of CALPIA's First Defense Wildlife Firefighting garments. Also given the state's economic recovery, automobile purchases have increased which increased license plate sales.

Services were second in sales categories with overall sales of \$67.0 M. Service sales in food and beverage packaging, meat cutting, and bakery increased in FY 2012-13 due to the introduction

of pre-packaged lunches, increased juice sales and 4-pack bread sales. Because of offender population reductions, laundry services even though second highest among overall Service sales realized a decrease in sales in FY 2012-13 of 18.9%.

Lastly, Agricultural Products were third with overall sales of \$27.5 M in FY 2012-13. This decrease in agricultural sales can be attributed to reductions in prison population numbers.

CALPIA selling and administrative expenses for the state totaling \$38.1 M are shown in Table 1. These expenses do not include any costs related to the production of CALPIA goods and services, but include distributional and transportation costs and central office costs which include all support staff in the Central Office. During FY 2012-13, CALPIA had on average 664 civilian filled positions as well as on average 5,408 filled offender assignments. Offenders, on average, receive \$0.58 per hour.

## **Economic Context**

The economic analysis in this study takes into account the fact that prison industries hire individuals who otherwise would make no contribution to the economy of the state of California during incarceration. CALPIA offenders have zero “opportunity cost” to the

economy while making products that are sold to state agencies. An important part of the economic contribution of CALPIA production is that it captures within California all the value-added (i.e. income) in the final manufacturing stage of its products. In the absence of prison industries in California, many of the products now sold by CALPIA would be manufactured outside the state, representing a loss of material sales to California’s economy. While California vendors would receive wholesale margins for handling the goods, the margin would be less than the value-added at the final manufacturing stage since CALPIA currently captures both the value-added and the equivalent of the wholesale margin from the sales.

Part of the value-added at CALPIA goes into wage payments to employees who spend most of their income in the California economy. CALPIA’s value-added also goes into the operation of CALPIA’s program which provides offenders with job skills and develops good work habits, helping to reduce recidivism.

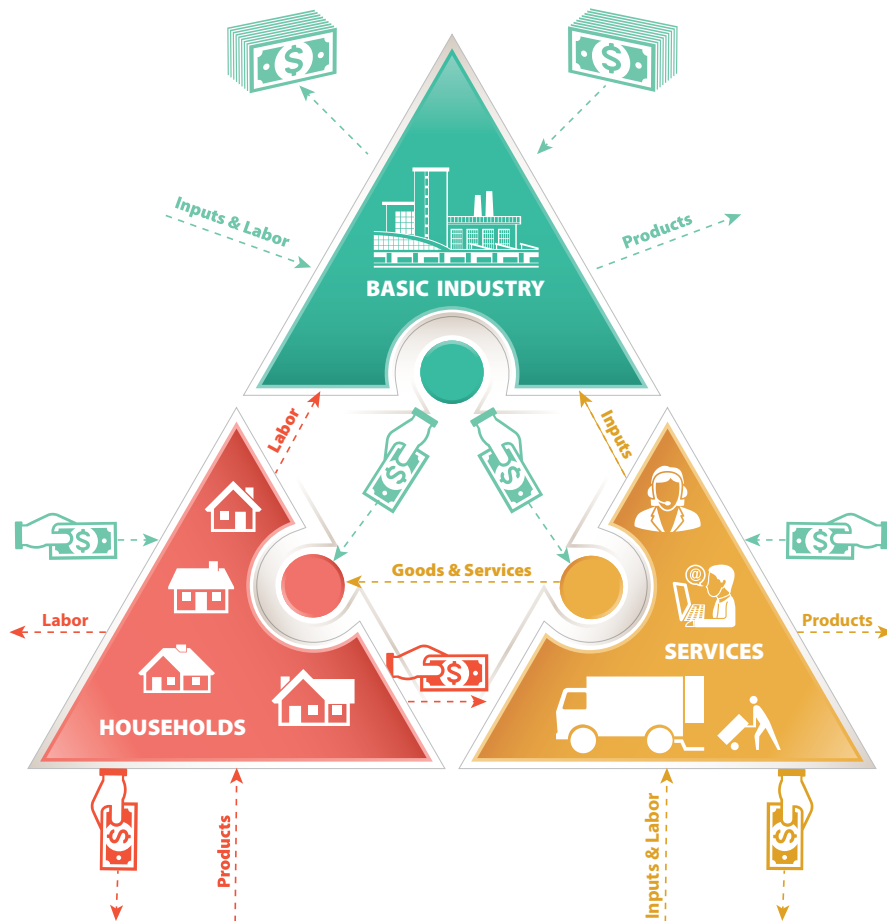
## **Economic, Income, and Employment Concepts**

Figure 1 (p. 12) illustrates the major dollar flows of goods and services in any economy. The foundation of a state’s economy is comprised of those businesses which sell some or all of their

goods and services to buyers outside of the state. Such a business is a basic industry. The flow of products and services out of the state and dollars into the state depicts export industries in the upper right portion of Figure 1. To produce these goods and services for “export” outside the state, the basic industry purchases inputs from outside of the state (upper left portion of Figure 1), labor from the residents or “households” of the state (left side of Figure 1), and inputs from service

industries located within the state (right side of Figure 1). The flow of labor, goods and services in the state is completed by households using their earnings to purchase goods and services from the state’s service industries (bottom of Figure 1). It is evident from the interrelationships illustrated in Figure 1 that a change in any one segment of a state’s economy will have reverberations throughout the entire economic system of the state.

**Figure 1 | Overview of the Californian State Economic System**





Consider, for instance, CALPIA and its impacts on the state economy. CALPIA's activities can be considered a service industry as it makes sales primarily to state agencies. These dollars may hire people from the local household sector such as laborers in CALPIA. However, most of the local economic linkages are from CALPIA's purchasing goods from the service sectors. These include service and retail businesses. As earnings increase in these businesses, they will hire additional people and buy more inputs from other businesses. Thus the change in the economic activity of CALPIA works its way throughout the entire local economy.

The total impact of a change in the economy consists of direct, indirect and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the operations by CALPIA. The impacting business, such as CALPIA, changes its purchases of inputs as a result of the direct impact. This produces an indirect impact in the state's business sectors. Both the direct and indirect impacts change the flow of dollars to the state's households. The state households alter their consumption accordingly. The effect of this change in state household consumption upon businesses in a county is referred to as an induced impact. A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect.

In this study, the impact of CALPIA is analyzed under two scenarios. In the first scenario, the economic impacts of CALPIA products and services on the economy of California are estimated. This includes its impact on state product, income and employment. In the second scenario, the impact if the CALPIA was removed and the same goods and services were purchased from the private sector is calculated. Both analyses are based on sales figures of CALPIA's goods and services for FY 2012-13 that were provided by CALPIA.

Economic impacts are measured in terms of (1) total California output/sales impacts (direct, indirect and induced effects), (2) total California income impacts (only indirect and induced effects), and (3) total employment impacts (only indirect and induced effects). The direct effect occurs when the CALPIA produces and sells goods and services. The indirect effect occurs when CALPIA purchases materials and supplies from distributors and manufacturers in the state. The induced effect occurs as workers in in-state industries that supply materials to CALPIA receive incomes that are then spent on consumer goods and services produced in the region. Together, these three effects make up the total effect. An input-output model measures these direct, indirect, and induced effects to assess their total impact on the economy.

This model does not include the induced effects

of CALPIA sales on the economy's total sales, since prisoners do not spend their income in the local economy as a resident would. In addition, the direct effects of CALPIA sales on income and employment are not included since it is not possible to know how much offender income is spent in the community. However it is acknowledged that offenders do spend their money on buying goods at institutional canteen, send money to family members for personal consumption, and upon release on parole spend their savings.

## Economic Impacts

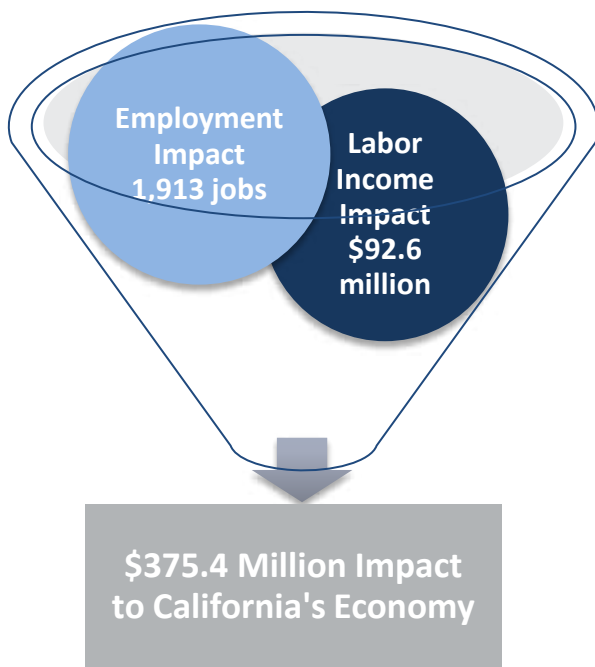
In this section, the output, employment, and household income impacts of CALPIA on the California economy are presented. CALPIA operates in twenty-five (25) CDCR institutions throughout California. The state impacts reflect those output, employment, and household income impacts arising from production of goods and services in those facilities.

The analysis in this study examines two scenarios. The first is the impact of CALPIA sales in the state of California. This is equivalent to asking the question: "What would be the impact if instead of purchasing goods and services from CALPIA, the public sector were to purchase them all from sources outside of the region?" This reflects the most common way of analyzing the economic impact of an industry.

The second scenario is to look at the impact of removing CALPIA and purchasing the same goods and services from the most likely private sources, either within or outside the borders of the state of California. This is equivalent to asking the question: "If CALPIA were to vanish, where would the same goods and services be purchased, and what would this impact be?" In this case, some of the goods and services will be purchased within the state, while some will be purchased from out-of-state businesses. Because the goods and services will continue to be purchased by the private sector within the state, the impact of eliminating CALPIA sales will be smaller than the total impact of the first scenario. The larger the proportion of products produced outside the state, the greater will be the negative impact of removing CALPIA.

In Table 2 (p. 19), the second column of figures shows the state sales for each sector in FY 2012-13. The third through fifth column figures show the multiplier effects of CALPIA sales as discussed in the previous section. The impacts of CALPIA's capital expenditures and selling and administrative expenditures are included at the bottom of the table to account for the expenditures and employment impacts of CALPIA. Total direct CALPIA sales are \$180.2 M. Since CALPIA purchases inputs from private firms, total multiplier effects (direct and indirect) are a total of \$283.5 M of cumulative sales in the state. The indirect and induced

impact of household income within California is \$56.0 M, creating 901 jobs. CALPIA's capital expenditures (\$6.0 M) generate \$11.1 M in sales, \$2.4 M in household income, and 38 jobs.



Additionally, CALPIA's operating and personnel expenditures (\$38.1 M) generate \$80.9 M in sales, \$34.1 M in household income, and 974 jobs. Total impacts of CALPIA activities on the California economy are \$375.4 M in sales, \$92.6 M in household income, and 1,913 in jobs.

Table 3 (p. 20) shows the impacts of discontinuing CALPIA production throughout California and purchasing the same goods and services from the private sector. In this table, an additional

column is included to show the percent decline in sales in each sector due to purchases made outside the state. The interpretation of the final three columns is similar to that of the final three columns in Table 2. A negative value in those columns represents a loss for the state economy. Total state sales will decline because a proportion of the goods and services that were once produced by CALPIA will be purchased outside of the state.

The extent to which out-of-state purchases will substitute for CALPIA production of the products determines the impact of removing CALPIA on the state's economy. For California economic sectors such as laundry, digital services, and construction services and facilities maintenance, the proportion of sales from outside the state are low (Table 3, column 2) so these economic sectors should realize increased purchases. Also from Table 3, positive values for employment and income columns (such as in laundry and dairy) represent a gain for the state's economy. However, sectors such as shoe production and metal products which have a very high percentage of their products purchased outside California, there would be losses in state income and employment. However, recall that these sector-specific impacts do not account for the fact that the CALPIA employs people to oversee the production and distribution of these goods and services, nor the impact of the rest of CALPIA's operating expenditures.

Table 3 (p. 20) shows that the total reduction in direct sales (the amount purchased outside of the state) would be almost \$97.8 M. This represents a 54 percent loss in direct purchases of these goods and services within the state. This direct sales reduction would have direct and indirect effects on state sales, leading to a loss in total California sales of \$122.1 M. Income would decrease by \$6.1 M, and employment in the private sector would decrease by 49 jobs. The reason for this decrease is that income and employment multipliers for CALPIA are much larger than for the private sector because they do

not include direct effects within the CALPIA such as hiring people to oversee the production and distribution of the goods. The impacts of these CALPIA operating and personnel expenditures are \$80.9 M in state sales, \$34.1 M in income, and 974 jobs. Additionally, CALPIA's capital expenditures will be eliminated, resulting in a sales loss of \$11.1 M, a household income loss of \$2.4 M and the elimination of 38 jobs. Once these impacts are accounted for, total losses to California's economy totals \$214.1 M in sales, \$42.6 M in income, and 1,061 jobs.

## Economic Losses If CALPIA Vanishes

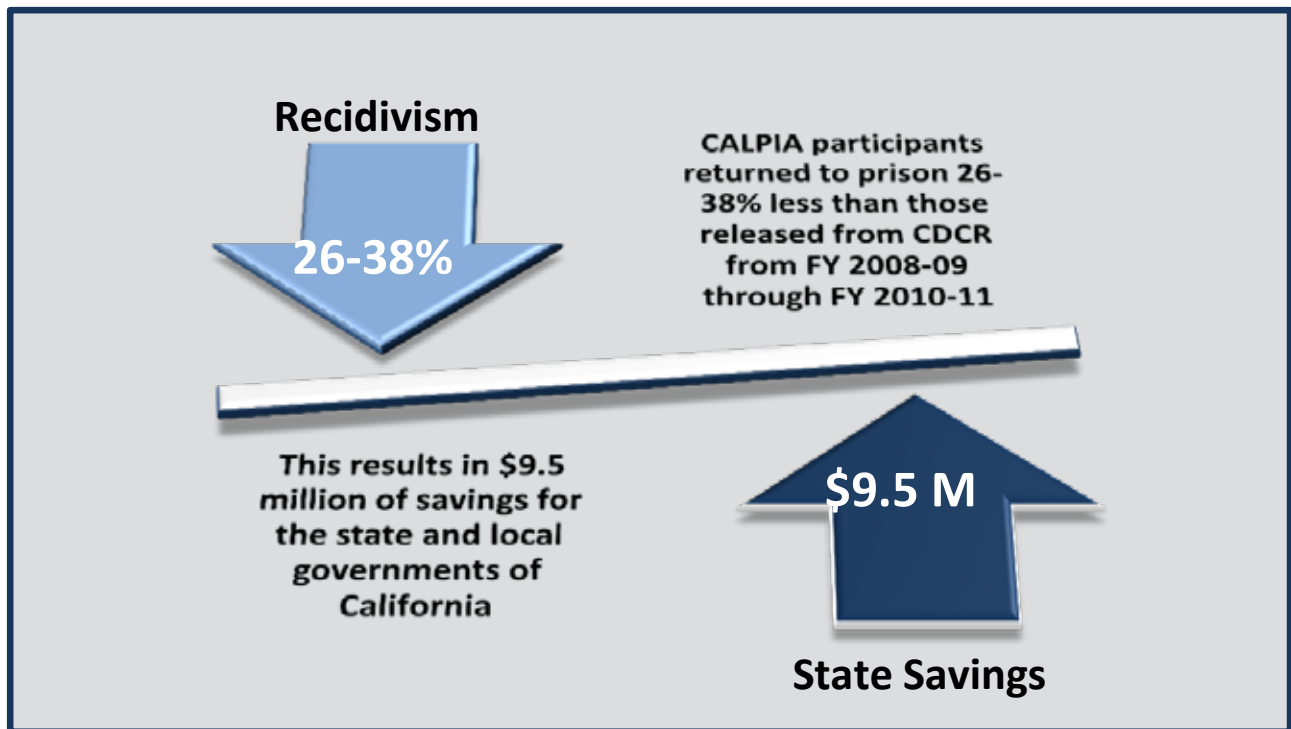


## Conclusions

CALPIA is a self-supporting government agency and has the largest sales of any prison industry in the nation. The total economic impacts of CALPIA on California's economy are \$375.4 M with total employment impacts of 1,913 jobs and \$92.6 M in household income.

Not only are there economic, labor income, and employment impacts from activities of CALPIA, there are potential cost savings to the state of California from reduced recidivism of CALPIA parolees. Over a three year period beginning in FY 2008-09, CALPIA participants returned to prison on average 26 to 38 percent less often than

offenders released from the general population of CDCR (California Prison Industry Authority, 2013). In addition if a CALPIA offender participated in the Career Technical Education (CTE) Programs, they cumulatively from FY 2007-08 to FY 2010-11 have a recidivism rate of 7.13% (California Prison Industry Authority, 2012). This translates from FY 2007-08 to 2010-11 a net saving of \$9.5 M to state and local governments in the state of California (California Prison Industry Authority, 2012). As stated in the California Prison Industry Authority study (2012): "Reducing recidivism is essential for improving the safety of California, reducing justice resource costs and improving the well-being of individual offenders".



# Tables and Appendices

**Table 1  
CALPIA Goods and Services Produced**

<b>Manufacturing Revenue</b>		<b>Services Revenue</b>	
Fabric Products	\$22,285,994	Food & Beverage	\$19,723,505
License Plates	15,257,567	Laundry	13,012,320
Furniture	13,487,601	Optical	10,514,288
General Fabrication	10,252,030	Meat Cutting	10,377,158
Metal Products	8,706,798	Printing	5,305,856
Cleaning Products	5,953,468	Bakery	3,310,375
Shoes	3,775,483	Coffee Roasting	1,900,648
Mattress	2,394,996	Metal Signs	1,141,915
Bindery	2,120,162	CSFM	695,651
Knitting Mill	1,381,854	Dental Lab	647,814
Modular Construction	95,775	Digital Services	357,484
	<b>\$85,711,728</b>		<b>\$66,987,014</b>
		<b>Agriculture Revenue</b>	
		Dairy	\$14,220,179
		Poultry	6,223,872
		Egg Production	6,024,323
		Crops	1,078,896
			<b>\$27,547,270</b>
<b>Capital Expenditures</b>		<b>\$6,026,045</b>	
<b>Sellings and Administrative Expenditures</b>		<b>\$38,089,843</b>	
<b>Total Operating Revenues</b>		<b>\$180,246,012</b>	

CALPIA total sales include all costs related to production of CALPIA goods and services. CALPIA selling and administrative expenditures include all in-state personnel and purchasing expenses for its central office plus distribution and transportation costs.

**Table 2  
CALPIA Impacts on California**

Sector	Sales and Expenditures	Impacts on California		
		Sales	Income	Number of Jobs
Fabric Products	\$22,285,994	\$33,592,266	\$6,295,538	97
Food & Beverage	19,723,505	35,745,361	7,931,381	120
License Plates	15,257,567	23,744,291	5,898,057	95
Dairy Farm	14,220,179	20,145,723	2,934,562	44
Furniture	13,487,601	20,509,956	3,676,198	57
Laundry	13,012,320	14,758,762	4,388,449	77
Optical	10,514,288	12,777,095	2,106,982	34
Meat Cutting	10,377,158	22,694,472	3,326,536	79
General Fabrication	10,252,030	16,265,397	3,145,777	49
Metal	8,706,798	15,159,768	2,687,186	40
Poultry	6,223,872	9,909,486	1,787,036	26
Egg Production	6,024,323	9,591,770	1,729,740	25
Cleaning Products	5,953,468	9,744,625	1,459,491	20
Printing	5,305,856	8,943,593	1,841,754	30
Shoe Factory	3,775,483	5,713,299	1,205,839	19
Bakery	3,310,375	5,700,420	1,286,613	20
Mattress Factory	2,394,996	3,911,692	770,706	12
Bindery	2,120,162	3,288,096	925,379	15
Coffee Roasting	1,900,648	3,587,776	929,721	13
Knitting Mill	1,381,854	1,936,970	332,806	6
Metal Signs	1,141,915	1,777,090	441,426	7
Crops	1,078,896	1,488,563	353,829	6
CSFM	695,651	1,062,434	269,008	4
Dental Lab	647,814	874,070	244,214	4
Digital Services	357,484	404,357	40,659	1
Modular Construction	95,775	153,900	38,967	1
	<b>\$180,246,012</b>	<b>\$283,481,232</b>	<b>\$56,047,854</b>	<b>901</b>
<b>Capital Expenditures</b>	<b>\$6,026,045</b>	<b>\$11,046,218</b>	<b>\$2,422,463</b>	<b>38</b>
<b>Operating &amp; Personnel</b>	<b>\$38,089,843</b>	<b>\$80,857,748</b>	<b>\$34,095,829</b>	<b>974</b>
<b>Total</b>	<b>\$224,361,900</b>	<b>\$375,385,198</b>	<b>\$92,566,146</b>	<b>1,913</b>

CALPIA total sales include all costs related to production of CALPIA goods and services.

CALPIA selling and administrative expenditures include all in-state personnel expenses for its central office plus distribution and transportation costs.



**Table 3  
California State Impacts if CALPIA Vanishes**

Sector	Reduction in Sales		Losses to California		
	\$	Purchases Outside California	Sales	Income	Jobs (Loss) / Gain
Fabric Products	(\$16,404,497)	74%	(\$22,966,342)	(\$3,680,316)	(46)
License Plates	(11,443,175)	75%	(15,673,705)	(2,729,241)	(44)
Furniture	(10,696,342)	79%	(15,465,882)	(2,490,042)	(38)
Food & Beverage	(8,090,976)	41%	(10,277,862)	(1,410,062)	(13)
Metal	(8,051,176)	92%	(13,820,298)	(2,394,571)	(36)
Optical	(7,893,391)	75%	(8,682,219)	(757,572)	(17)
Meat Cutting	(7,056,467)	68%	(14,360,676)	(1,732,038)	(44)
Dairy Farm	(3,807,453)	27%	(3,266,376)	381,469	28
Shoe Factory	(3,658,254)	97%	(5,488,601)	(1,135,568)	(18)
General Fabrication	(2,973,089)	29%	(2,042,629)	815,418	11
Poultry	(2,603,259)	42%	(3,047,776)	(77,584)	(7)
Printing	(2,562,304)	48%	(2,678,256)	(50,594)	2
Egg Production	(2,519,794)	42%	(2,950,059)	(75,096)	(7)
Cleaning Products	(2,024,179)	34%	(2,452,524)	(191,728)	(4)
Laundry	(1,508,128)	12%	7,495,548	9,467,294	178
Bindery	(1,462,912)	69%	(1,883,597)	(353,240)	(5)
Mattress Factory	(1,195,462)	50%	(1,571,537)	(204,624)	(3)
Coffee Roasting	(936,069)	49%	(1,398,257)	(533,432)	(7)
Knitting Mill	(746,201)	54%	(860,093)	(56,803)	0
Bakery	(677,534)	20%	(23,127)	412,458	11
Metal Signs	(644,074)	56%	(723,733)	(27,844)	0
Crops	(592,098)	55%	(553,821)	57,410	0
Dental Lab	(121,549)	19%	197,627	292,690	5
Digital Services	(35,748)	10%	16,421	43,671	0
Modular Construction	(35,113)	37%	(24,128)	9,298	0
CSFM	(18,365)	3%	357,871	306,072	5
<b>Net</b>	<b>(\$97,757,609)</b>	<b>48%</b>	<b>(\$122,144,031)</b>	<b>(\$6,114,575)</b>	<b>(49)</b>
<b>Capital Expenditures</b>	<b>(\$6,026,045)</b>	<b>n/a</b>	<b>(\$11,046,218)</b>	<b>(\$2,422,463)</b>	<b>(38)</b>
<b>Selling &amp; Admin</b>	<b>(\$38,089,843)</b>	<b>n/a</b>	<b>(\$80,857,748)</b>	<b>(\$34,095,829)</b>	<b>(974)</b>
<b>Total</b>	<b>(\$141,873,497)</b>	<b>n/a</b>	<b>(\$214,047,997)</b>	<b>(\$42,632,867)</b>	<b>(1,061)</b>

CALPIA total sales include all costs related to production of CALPIA goods and services.

## Appendix:

### **Model and Data Used to Estimate Output, Employment and Income Multipliers**

A computer spreadsheet that uses state IMPLAN (Impact Analysis for Planning) multipliers was developed to enable estimation of the primary and secondary impacts of CALPIA on the California economy. A complete overview and review of input-output modeling and its applications are presented in Miller and Blair (2009). A brief review of input-output analysis and IMPLAN are presented below.

### **A Review of Input-Output Analysis**

Input-output (I/O) was designed to analyze the transactions among the industries in an economy (Miernyk, 1965). These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for CALPIA goods and services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis portrays a general

economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal. Nonetheless, the framework has been widely accepted and used (Miller and Blair, 2009). I/O analysis is useful when carefully executed and interpreted in defining the structure of a state economy, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive factors can be computed, which can be useful in analyzing economic changes in the state of California. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

### **MicroIMPLAN**

MicroIMPLAN is a computer program developed by the United States Forest Service (Alward, et al., 1989) to construct I/O accounts and models. Typically, the complexity of I/O modeling has hindered

practitioners from constructing models specific to a community requesting an analysis. Too often, inappropriate national multipliers have been used to estimate local economic impacts. In contrast, IMPLAN can construct a model for any county, region, state, or zip code area in the United States by using available state, county, and zip code level data. Impact analysis can be performed once a regional I/O model is constructed. For this analysis, data to develop an I/O model of the state of California was used.

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry such as the additional production or sales of CALPIA products and/or services. The increased purchases of inputs by the CALPIA as a result of the direct impact are the indirect impact on the business sectors.

Two types of multipliers are generated. Type I multipliers measure the impact in terms of

direct and indirect effects. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars of California's households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand sales (the sum of direct, indirect, and induced divided by direct).

IMPLAN also estimates a modified Type II multiplier, called a Type SAM multiplier that also includes the direct, indirect, and induced effects. The Type SAM multiplier further modifies the induced effect to include spending patterns of households based on a breakdown of households by nine difference household income groups.

**Minnesota IMPLAN Group, Inc. (MIG)  
and IMPLAN Group, LLC**

Dr. Wilbur Maki at the University of Minnesota utilized the input/output model

and database work from the U. S. Forest Service's Land Management Planning Unit in Fort Collins to further develop the methodology and to expand the data sources. Scott Lindall and Doug Olson joined the University of Minnesota in 1984 and worked with Dr. Maki and the model.

As an outgrowth of their work with the University of Minnesota, Lindall and Olson entered into a technology transfer agreement with the University of Minnesota that allowed them to form MIG. At first, MIG focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, MIG took on the task of writing a Version 2 of the IMPLAN software. This new version extended the previous Forest Service version by creating an entirely new modeling system that included creating Social Accounting Matrices (SAMs) – an extension of input-output accounts, and resulting SAM multipliers (Minnesota IMPLAN Group, Inc., 2000). In 2009, Version 3 of the IMPLAN software was released (Minnesota IMPLAN Group, Inc., 2010). This version of IMPLAN added the capability of multi-regional analysis to the IMPLAN microcomputer model. Finally, Minnesota IMPLAN Group, Inc.

was purchased by IMPLAN Group, LLC and relocated to Huntersville, North Carolina. For more information concerning the IMPLAN data and microcomputer model contact the IMPLAN Group, LLC at their website which is [www.implan.com](http://www.implan.com).

## Methodology and Data Sources

The IMPLAN microcomputer input-output (I-O) model of the California economy was used to estimate the statewide economic impacts of CALPIA. An I-O model measures the multiplier effects of economic activities through a complex set of accounts that track the circular flow of expenditure and income in the economy. The data in the I-O model consist of three major categories of economic transactions: (1) interindustry sales and purchases of intermediate inputs, (2) final payments by industries to in-state labor, in-state owners of capital, various levels of government, and out-of-state producers and owners of capital, and (3) commodity purchases by households and governments plus inventory changes, investment and exports. These three categories contain all the data necessary to estimate multiplier effects in the economy.

The California I-O data and accounts used in this study were prepared by IMPLAN (IMPLAN Group, LLC, 2014). These accounts are based on numerous federal government data series including County Business Patterns, the Employment Security (ES202) series, the quinquennial national I-O accounts, and the Regional Economic Information System (REIS). The REIS data are derived from economic censuses (Manufactures, Retail, Agriculture, Governments, etc.) conducted by the U.S. Bureau of the Census, the Gross State Product series, and various other statistical series.

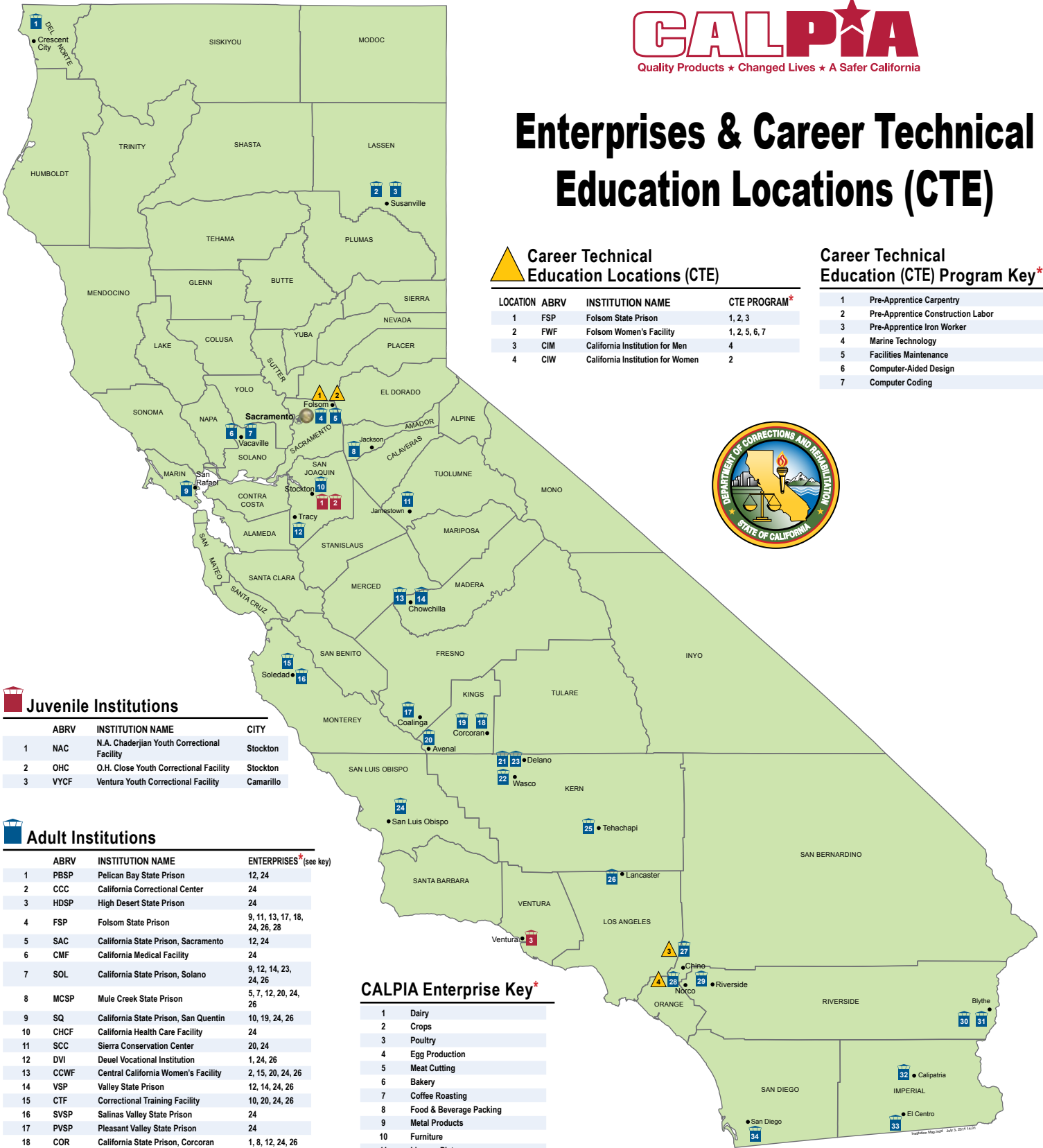
The I-O accounts record California's transactions with the state, the rest of the nation, and the rest of the world. This information is essential for accurately estimating economic multipliers since the size of the multiplier is determined by the pattern of trade. The impact of replacing purchases from CALPIA with purchases

from the private sector is determined by the potential of the private sector within the state to substitute CALPIA in producing the products. This potential is represented by the regional purchase coefficient (RPC), which estimates the proportion of the state's demand for specific products and services that will be met within the state. Sectoral RPC's are derived from the IMPLAN software (Olson and Lindall, 2004). Using  $(1-RPC)$ , the proportion of demand in the private sector in the state that will be met by businesses located outside the state of California. If the state has greater capacity to supply the demand for goods or services in a particular sector, the RPC will be close to one, and the sectoral impact of removing CALPIA will be small. On the other hand, if alternative suppliers of the goods or services are not readily available in the state, the regional RPC will be close to zero, and removing CALPIA will have a much larger negative economic impact on the state's economy.

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# Enterprises & Career Technical Education Locations (CTE)



## Career Technical Education Locations (CTE)

LOCATION	ABRV	INSTITUTION NAME	CTE PROGRAM*
1	FSP	Folsom State Prison	1, 2, 3
2	FWF	Folsom Women's Facility	1, 2, 5, 6, 7
3	CIM	California Institution for Men	4
4	CIW	California Institution for Women	2

## Career Technical Education (CTE) Program Key\*

1	Pre-Apprentice Carpentry
2	Pre-Apprentice Construction Labor
3	Pre-Apprentice Iron Worker
4	Marine Technology
5	Facilities Maintenance
6	Computer-Aided Design
7	Computer Coding



## Juvenile Institutions

ABRV	INSTITUTION NAME	CITY
1	NAC	N.A. Chaderjian Youth Correctional Facility
2	OHC	O.H. Close Youth Correctional Facility
3	VYCF	Ventura Youth Correctional Facility

## Adult Institutions

ABRV	INSTITUTION NAME	ENTERPRISES* (see key)
1	PBSP	Pelican Bay State Prison
2	CCC	California Correctional Center
3	HDSP	High Desert State Prison
4	FSP	Folsom State Prison
5	SAC	California State Prison, Sacramento
6	CMF	California Medical Facility
7	SOL	California State Prison, Solano
8	MCSP	Mule Creek State Prison
9	SQ	California State Prison, San Quentin
10	CHCF	California Health Care Facility
11	SCC	Sierra Conservation Center
12	DVI	Deuel Vocational Institution
13	CCWF	Central California Women's Facility
14	VSP	Valley State Prison
15	CTF	Correctional Training Facility
16	SVSP	Salinas Valley State Prison
17	PVSP	Pleasant Valley State Prison
18	COR	California State Prison, Corcoran
19	SATF	Substance Abuse Treatment Facility
20	ASP	Avenal State Prison
21	NKSP	North Kern State Prison
22	WSP	Wasco State Prison
23	KVSP	Kern Valley State Prison
24	CMC	California Men's Colony
25	CCI	California Correctional Institution
26	LAC	California State Prison, Los Angeles County
27	CIM	California Institution for Men
28	CIW	California Institution for Women
29	CRC	California Rehabilitation Center
30	CVSP	Chuckawalla Valley State Prison
31	ISP	Ironwood State Prison
32	CAL	Calipatria State Prison
33	CEN	Centinelia State Prison
34	RJD	RJ Donovan Correctional Facility

## CALPIA Enterprise Key\*

1	Dairy
2	Crops
3	Poultry
4	Egg Production
5	Meat Cutting
6	Bakery
7	Coffee Roasting
8	Food & Beverage Packing
9	Metal Products
10	Furniture
11	License Plates
12	Laundry
13	Digital Services
14	Optical
15	Dental lab
16	Cleaning Products
17	Printing
18	Metal Signs
19	Mattress
20	Fabric Products
21	Knitting Mill
22	Shoes
23	Bindery
24	Construction Services
25	Facilities Maintenance
26	General Fabrication/Century
27	Support Services
28	On Time Delivery Center
29	Modular Building

## CDCR Headquarters



Department of Corrections and Rehabilitation  
1515 "S" Street  
Sacramento, CA 95814

## CALPIA Central Office



560 East Natoma Street  
Folsom, CA 95630-2200

