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**The Fiscal and Economic Impact  
of the California Global Warming  
Solutions Act of 2006  
Executive Summary**

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June 2012

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The California Manufacturers & Technology Association works to improve and enhance a strong business climate for California's 30,000 manufacturing, processing and technology based companies. Since 1918, CMTA has worked with state government to develop balanced laws, effective regulations and sound public policies to stimulate economic growth and create new jobs while safeguarding the state's environmental resources. CMTA represents 600 businesses from the entire manufacturing community – an economic sector that generates more than \$200 billion every year and employs more than 1.2 million Californians.

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**Acknowledgements:**

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**The Fiscal and Economic Impact of the  
California Global Warming Solutions Act (AB 32)  
(Key Findings)**

- In our optimistic case, AB 32 will cost consumers \$135.8 billion cumulatively by 2020. This is equivalent to almost two-and-a-half times the annual spend on K-12 education.
- Annual AB 32 direct costs total \$35.3 billion in 2020. This is equivalent to about 40 percent of California's General Fund revenues, and exceeds the General Fund collections for Sales and Use Tax, Corporation Tax, Motor Vehicle Fees, Insurance Tax, Estate Taxes, Liquor Tax and Tobacco Tax combined.
- 26 percent of emissions reductions will stem from the economic slowing caused by AB 32.
- AB 32 lowers California's 2020 GSP by \$153.2 billion, amounting to a loss of 5.6 percent of GSP.
- California will have 262,000 fewer jobs in 2020 because of AB 32.
- By 2020, increased energy prices will increase household expenses for the average family by \$2,500 per year.
- AB 32 will reduce state and local tax revenues by over \$7.4 billion annually in 2020. \$6.8 billion is lost from state revenues and \$640 million from local revenues. The State losses are roughly equivalent to the amount that is needed to fund the Governor's entire Local Realignment initiative or more than a decade of funding Children's Medical Services program under the Department of Health Care Services.

## EXECUTIVE SUMMARY

ARB shall prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases by 2020.

California Public Codes  
Health and Safety Code (HSC) §38561

The Global Warming Solutions Act of 2006 (AB 32) propelled California to the forefront in the fight against global warming. Specifically, AB 32 directed the California Air Resources Board (ARB) to develop programs to reduce California's Greenhouse Gas (GHG) emissions to 1990 levels by the year 2020 while balancing the environmental objective with the goal of maximizing cost-effectiveness. ARB has completed two economic studies regarding its AB 32 Scoping Plan – an initial economic analysis completed in September 2008 and an updated economic analysis in March 2010. The result of ARB's most current study indicates that AB 32 will reduce California Gross State Product (GSP) by approximately 0.2 percent.

Since ARB's last economic study in 2010, new information about the potential cost of AB 32 programs has come to light, including the following:

- New information about the impact of Pavley II fuel efficiency rules on diesel trucks and the cost of local implementation of SB 375 (Vehicle Miles Traveled reduction);
- New data, particularly in regards to the strength of the California economy and the development speed and outlook for alternative fuel supply projections, such as low carbon intensity gasoline and diesel alternatives; and
- New independent studies that shed light on the cost and economic impact of AB 32 in California.

Andrew Chang & Company, LLC has been retained to provide policy makers with information as it pertains to AB 32 cost and economic impact utilizing the most current information available in a manner that is transparent and non-proprietary.

## Direct Costs

AB 32 consists of seven main policies. This includes the Low Carbon Fuel Standard (LCFS), Pavley II Fuel Efficiency Standards (Pavley II), SB 375 (VMT), the Renewable Portfolio Standard (RPS), Combined Heat & Power (CHP), Efficiency Measures and Cap-and-Trade (C&T). These policy levers impose direct costs on California in the form of higher commodity costs, the cost of required technological changes and the cost of Cap-and-Trade compliance credits and offsets as well as direct savings in the form of decreased demand for commodities. Because of the tremendous amount of uncertainty in the AB 32 program, our analysis is based on three scenarios as summarized in Table ES-1.

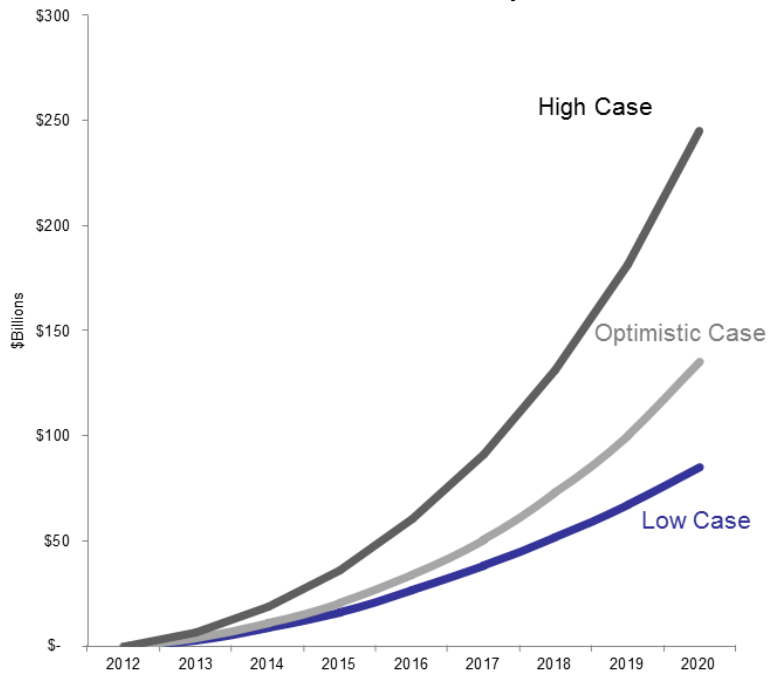
Table ES-1  
Assumption by Case

	Low Case	Optimistic Case	High Case
Summary	This case is most comparable to ARB's base case scenario, with key cost drivers added.	This case includes realistic, but optimistic assumptions for key cost drivers	This case includes high, but realistic assumptions for key cost drivers
Base 2020 Credit Price	\$25	\$50	\$100
Cellulosic Production (relative to OECD U.S. projection)	575% (50% to CA)	150% (50% to CA)	50% (50% to CA)
Brazilian Ethanol Cost Basis	Ample – Available at standard market rates plus import cost	Midpoint of Ample and Impacted	Impacted – Only available at a significant premium, the cost of replacement gasoline in Brazil
Biodiesel Premium	\$2.00	\$2.50	\$3.00
Efficiency Growth	3% (2% standard + 1% from measures)	2.5% (2% standard + .5% from measures)	1% (2% standard – 1% due to preexisting technological penetration)
SB 375	Fully Implemented (4%)	Half Implemented (2%)	Half Implemented (2%) with increased transit need
Combined Heat and Power	CEC High Penetration	CEC Low Penetration	CEC Low Penetration

Our cumulative estimates of direct costs are shown in Figure ES-1 and ranges between \$85.2 billion in the Low Case to \$245.3 billion in the High Case. In the Optimistic Case, cumulative costs grow at an average rate of 70 percent per year and total \$135.8 billion during

the first eight years of implementation. This is equivalent to almost two-and-a-half times the current annual spend on K-12 education.

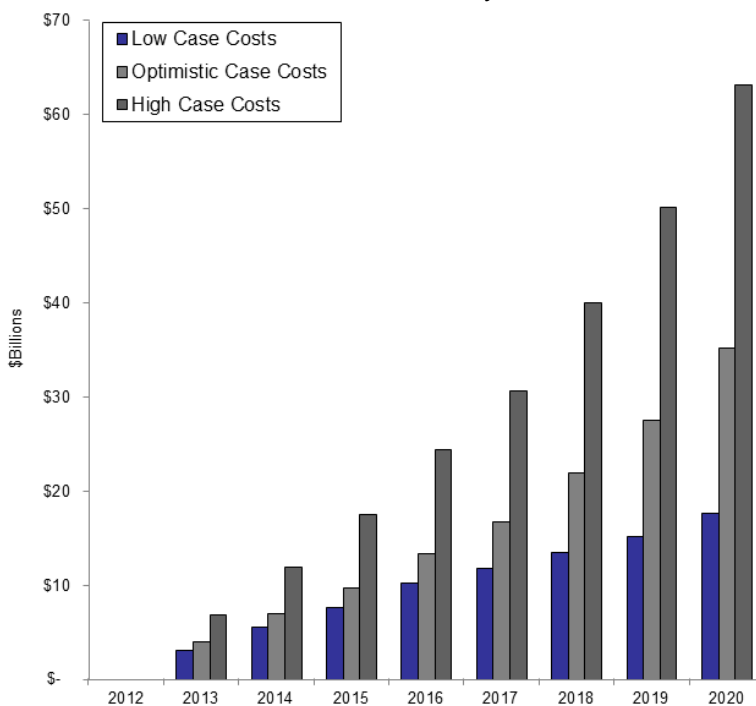
Figure ES-1  
Cumulative Direct Costs by Case



SOURCE: Appendix C

Figure ES-2 exhibits the annual direct costs of AB 32. Annual direct costs in 2020 range from \$17.7 billion to \$63.3 billion. In the Optimistic Case, the direct annual cost of AB 32 grows at an average rate of 37 percent and amounts to \$35.3 billion in 2020. This is equivalent to about 40 percent of California's General Fund revenues, and exceeds the General Fund collections for Sales and Use Tax, Corporation Tax, Motor Vehicle Fees, Insurance Tax, Estate Taxes, Liquor Tax and Tobacco Tax.

Figure ES-2  
Annual Direct Costs by Case

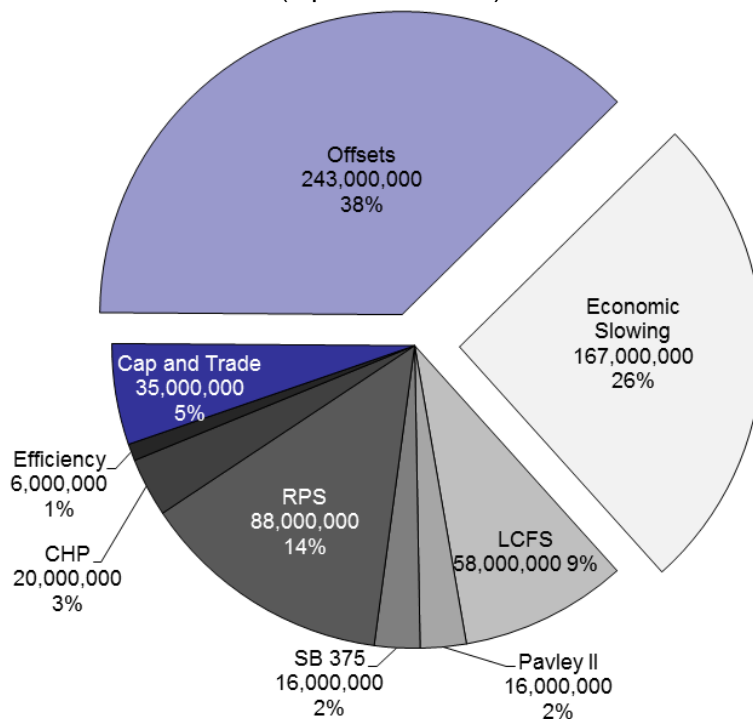


SOURCE: Appendix C

### Economic Impact

Our analysis shows that AB 32 reductions in GHG will come at significant cost to the state's economy. The second largest share of emissions reductions will stem from the economic slowing caused by AB 32, while the larger share will be achieved by Cap-and-Trade, as exhibited in Figure ES-3.

Figure ES-3  
GHG Reductions by Source  
(Optimistic Case)



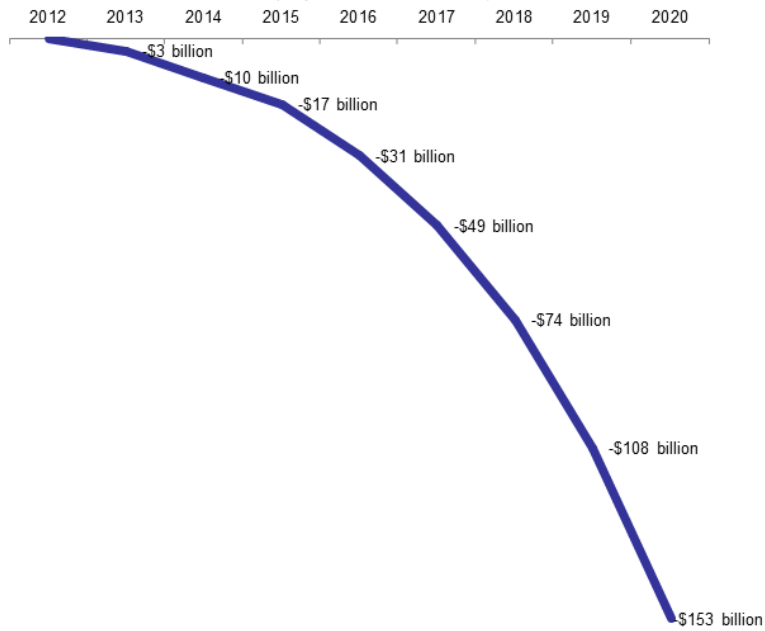
SOURCE: Appendix C

In the Optimistic Case, we find that AB 32 will cumulatively reduce 648 million tons of GHG through 2020. Purchased offsets under Cap-and-Trade account for the largest share with 243 million tons, with an additional 35 million tons of reductions made by capped entities. An additional 26 percent of the reduction, 167 million tons, will be due to economic slowdown resulting from AB 32 and the decrease in transportation fuel consumption due to increased costs and decreased earnings.

Figure ES-4 shows our estimate of AB 32's impact on GSP. AB 32 lowers the projected 2020 GSP from \$2.722 trillion to only \$2.569 trillion, a loss of \$153.2 billion in 2020. This amounts to a loss of approximately 5.6 percent of GSP in the year 2020. This lost percentage of GSP is roughly equivalent to California's real GSP loss in the Great Recession from December 2007 to June 2009.



Figure ES-4  
 GSP Gains/(Losses) Resulting from AB 32  
 (Optimistic Case)

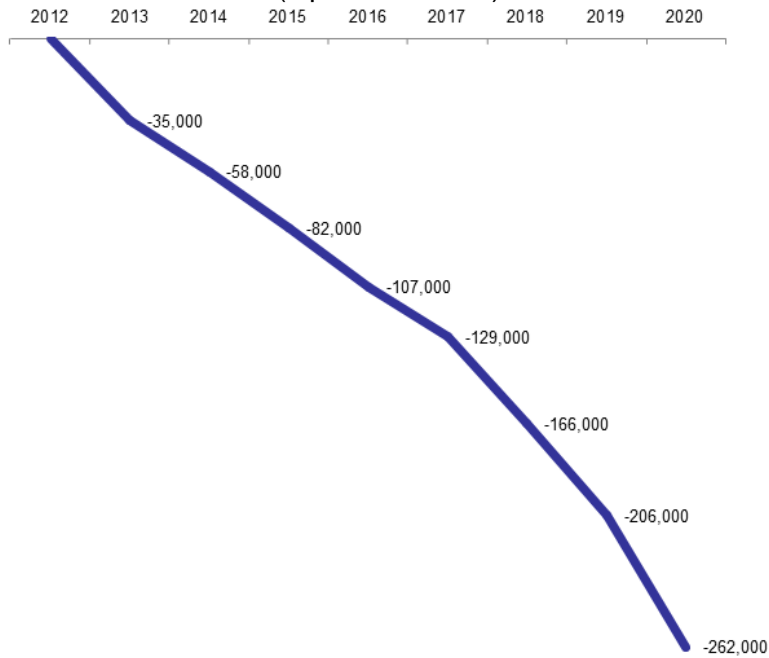


SOURCE: Appendix C

Figure ES-5 shows the impact of AB 32 on California's employment under our Optimistic Case. California's unemployment rate remains the third highest in the nation, making lost jobs a significant concern.<sup>1</sup> AB 32 will cause a reduction of 262,000 jobs in 2020.

<sup>1</sup> Bureau of Labor Statistics, Regional and State Employment and Unemployment Summary, April 2012

Figure ES-5  
Job Gains/(Losses) Resulting from AB 32  
(Optimistic Case)

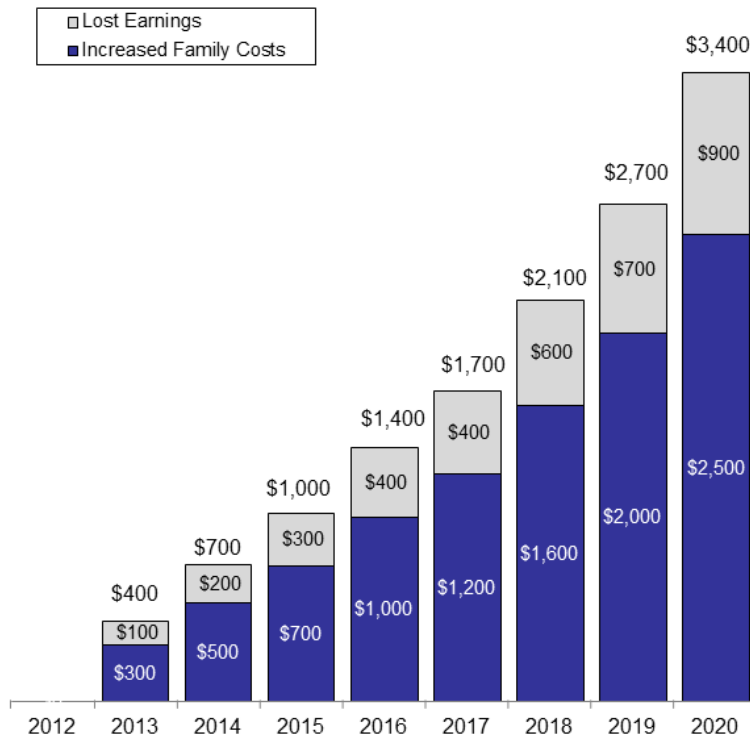


SOURCE: Appendix C

### Family Impact

The combined effects of AB 32 will significantly impact the average California family. AB 32 will drive a combination of increased prices for commodities, goods and housing and lost earnings. By 2020, increased energy and transit prices will increase household expenses for the average family by \$2,500 per year as shown in Figure ES-6. This is nearly two and a half times the monthly mortgage payment made by an average California family. When combined with the lost earnings, AB 32 will cost the average California family almost \$3,400 per year.

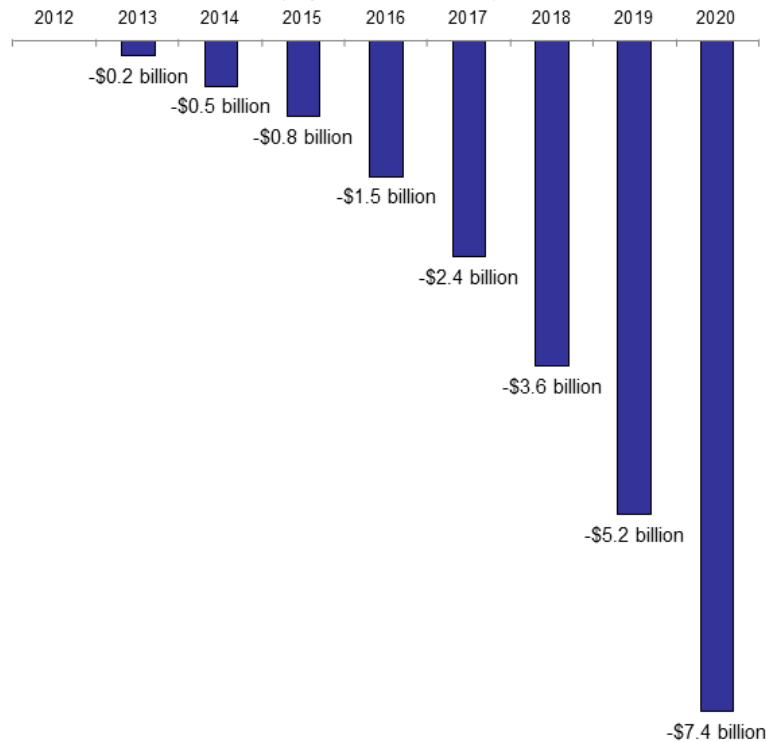
Figure ES-6  
Impact on Households Resulting from AB 32  
(Optimistic Case)



SOURCE: Appendix C

State and local government revenues were hit hard by the Great Recession. Budgets for education, social services, law enforcement, parks and infrastructure have had to be cut significantly. AB 32's impact on the economy will likewise impact state and local revenues as shown in Figure ES-7. AB 32 will reduce state and local tax revenues by over \$7.4 billion annually by 2020. \$6.8 billion is lost from state revenues and \$640 million directly from local revenues. The State losses are roughly equivalent to the amount that is needed to fund the Governor's entire Local Realignment initiative or more than a decade of funding Children's Medical Services program under the Department of Health Care Services.

Figure ES-7  
 State and Local Revenue Gains/(Losses) Resulting from AB 32  
 (Optimistic Case)



SOURCE: Appendix C

## Conclusion

Our review using the most current resources available suggests that the cost and economic impact of AB 32 will likely be significantly higher than what was reported by ARB in its base case. Even under optimistic of circumstances, ARB's implementation of AB 32 will lower California's 2020 GSP by 5.6 percent when costs are fully accounted.

At this critical junction, policy makers should consider if there are more cost-effective solutions that may produce the same GHG reductions. As noted, AB 32 has a balanced mandate to produce cost-effective solutions. However, despite the considerable amount of research that has been produced or commissioned by ARB, no study has comprehensively assessed whether ARB's plan is indeed cost-effective. Because of the potential harms and benefits that could emerge, policy makers should explore this issue in greater detail.