

Updated Economic Analysis of the AB 32 Scoping Plan

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*California's Climate Change Policy:
The Economic and Environmental Impacts of AB 32*

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Updated Economic Analysis

- Economic analysis of implementation of the AB 32 Scoping Plan was updated in March, 2010
- Updated analysis provides estimates of the state-level economic effects of implementing the measures in the Scoping Plan
- Economic and Allocation Advisory Committee (EAAC) formed to advise ARB
- Staff worked closely with EAAC to refine methodologies and discuss results

What Changed from the Original Scoping Plan Analysis?

- New Business-as-Usual projection
 - Updated forecasts reflecting recent economic downturn
 - Pavley regulations
 - 20% RPS
- Used a dual modeling approach
 - Energy 2020 model
 - E-DRAM model
- Sensitivity analysis

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Models

- ENERGY 2020 is a detailed energy model that simulates the supply, price, and demand for all fuels
- E-DRAM is a computable general equilibrium (CGE) model of the California economy

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Key Measures Analyzed

Focused on key Scoping Plan measures:

- Electricity and natural gas energy efficiency programs and standards
- 33 percent Renewable Energy Standard
- Increased use of combined heat and power
- Regional VMT reduction targets
- California's clean car standards (LEV III)
- Goods movement measures
- Low Carbon Fuel Standard
- Cap and Trade

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Cases Analyzed

Case 1: Full complementary policies

Case 2: No offsets in cap-and-trade;
full complementary policies

Case 3: Fewer reductions from
transportation measures

Case 4: Fewer reductions from electricity and
natural gas measures

Case 5: Combination of Cases 3 and 4

Note: AB 32 target achieved in all cases

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Main Study Results

- California's emissions target can be achieved while maintaining economic growth
- Less effective implementation of some complementary measures could increase costs
- Offsets reduce costs

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Reference Case Growth

	2007 Reference	2020 Reference	Average Annual Growth
Gross State Product (\$ Billions)	\$1,845	\$2,502	2.4%
Personal Income (\$ Billions)	\$1,492	\$2,027	2.4%
Income Per Capita (\$Thousands)	\$39.3	\$46.1	1.2%
Labor Demand (Millions)	16.4	18.4	0.9%

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2020 Economic Effects

	2007 Reference	2020 BAU Reference Case	Scoping Plan Case (Case 1)
Gross State Product (\$ Billions)	\$1,845	\$2,502	\$2,498
Personal Income (\$ Billions)	\$1,492	\$2,027	\$2,029
Income Per Capita (\$Thousands)	\$39.3	\$46.06	\$46.09
Labor Demand (Millions)	16.4	18.41	18.42
	Average Annual Growth (2007 to 2020)		
Gross State Product	NA	2.4%	2.4%
Personal Income	NA	2.4%	2.4%
Income Per Capita	NA	1.2%	1.2%
Labor Demand	NA	0.9%	0.9%
2020 Allowance Price	NA	NA	\$21

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2020 Economic Effects: Sensitivity Cases

	2020 Business as Usual Reference Case	No Offsets Sensitivity (Case 2)	Reduced Transp. Measures Sensitivity (Case 3)	Reduced Electricity/Natural Gas Measures Sensitivity (Case 4)	Combined Reduced Measures Sensitivity (Case 5)
Gross State Product (\$ Billions)	\$2,502	\$2,480	\$2,477	\$2,483	\$2,467
Personal Income (\$ Billions)	\$2,027	\$2,018	\$2,011	\$2,019	\$2,003
Income Per Capita (\$Thousands)	\$46.06	\$46.00	\$45.84	\$46.00	\$45.79
Labor Demand (Millions)	18.41	18.19	18.27	18.22	18.09

2020 Economic Effects: Sensitivity Cases

	2020 Business as Usual Reference Case	No Offsets Sensitivity (Case 2)	Reduced Transp. Measures Sensitivity (Case 3)	Reduced Electricity/ Natural Gas Measures Sensitivity (Case 4)	Combined Reduced Measures Sensitivity (Case 5)
	Average Annual Growth (2007 to 2020)				
Gross State Product	2.4%	2.3%	2.3%	2.3%	2.3%
Personal Income	2.4%	2.4%	2.3%	2.4%	2.3%
Income Per Capita	1.2%	1.2%	1.2%	1.2%	1.2%
Labor Demand	0.9%	0.8%	0.9%	0.8%	0.8%
	2020 Allowance Price				
	NA	\$103	\$40	\$87	\$102

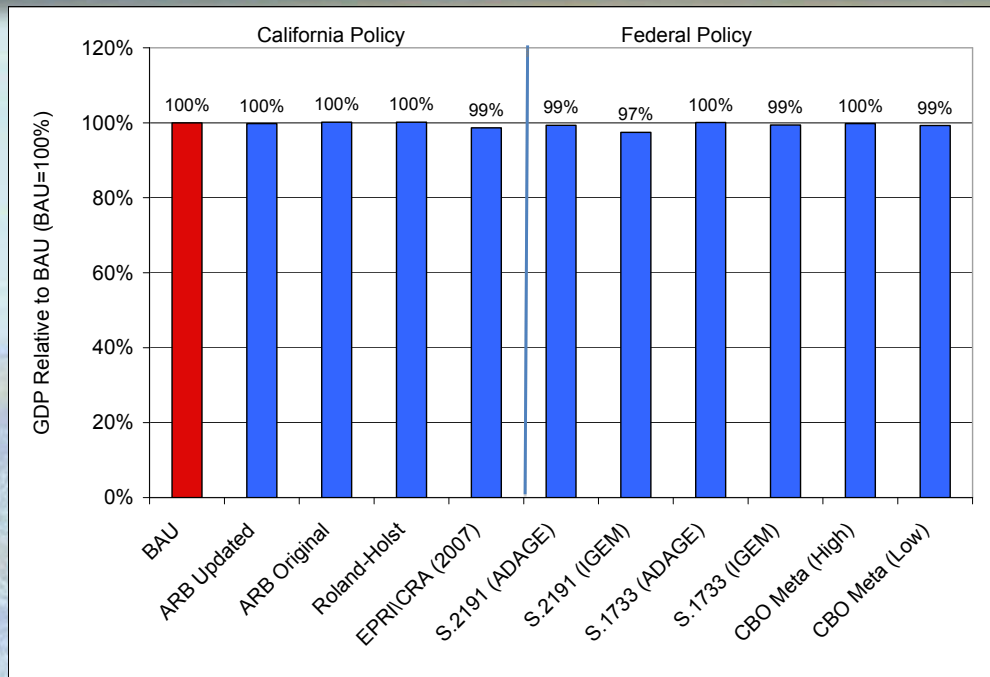
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Comparison with Other Economic Analyses

- ARB results are consistent with other economic analyses of AB 32 and federal climate change proposals
- Modeling approaches vary but reach similar conclusions – impacts on GDP are small relative to projected growth between now and 2020

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Comparison with Other Economic Analyses of Climate Policy



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Achieving AB 32 Goals

- Analysis demonstrates the Scoping Plan strategy for reducing greenhouse gases represents a cost-effective approach to implement AB 32
- Cap-and-trade proposal (due out in late October) will have its own economic analysis

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For more information...

- on the updated economic analysis:

<http://www.arb.ca.gov/cc/scopingplan/economics-sp/economics-sp.htm>

- on implementation of the Scoping Plan:

<http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>