

AB 32: Components and Estimated Impacts

Lawrence Goulder, Stanford University

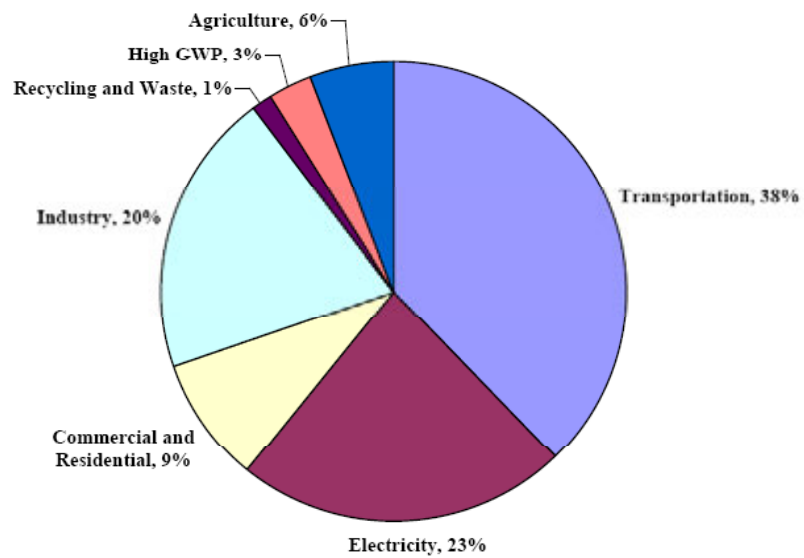
Prepared for 4 October 2010 Conference, "AB32 and Proposition 23:
What's at Stake for California's Economy and the Environment?"
sponsored by the Giannini Foundation

Signing Ceremony California's Global Warming Solutions Act (AB 32)

☐ September 2006



**Figure 1: California's Greenhouse Gas Emissions
(2002-2004 Average)¹⁴**



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Required Reductions: **174 mmt**

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1. Cap and trade (“147” mmt)

- Covers electricity and large industrial sources initially, then expands to cover transportation

2. Low Carbon Fuel Standard (15 mmt)

- Requires that ethanol share of passenger ground transportation fuels reach 18% for light vehicles by 2020. Requires biodiesel share of freight ground transportation reach 15% by 2020.

3. Renewable Portfolio Standard (21 mmt)

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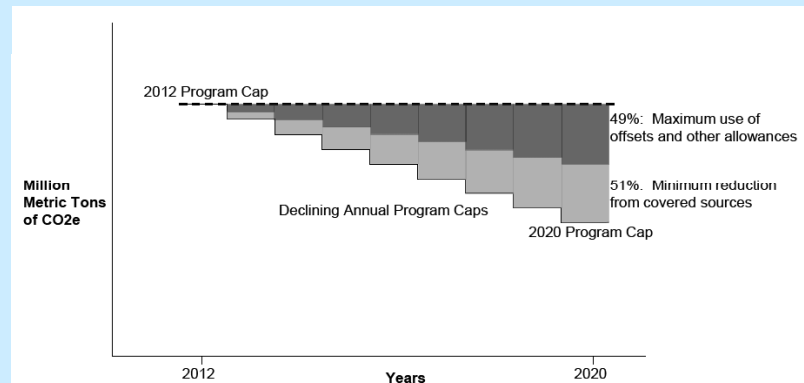
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Likely to continue if Prop 23 passes:

- Pavley II emission standards for cars and light trucks (15 mmt)
- Incentives to encourage residential installation of rooftop solar panels (2 mmt)
- Building and appliance energy efficiency requirements (22 mmt)
- Land-use policies to promote lower VMT (?)

Cap-and-Trade Component

- cap declining through time
- offsets allowed



- 2012-2014, 100% of allowances allocated free. Output-based free allocation employed to protect trade-sensitive industries

San Francisco Chronicle, 2 Sept '10

Pollution law faces challenge by 4 states

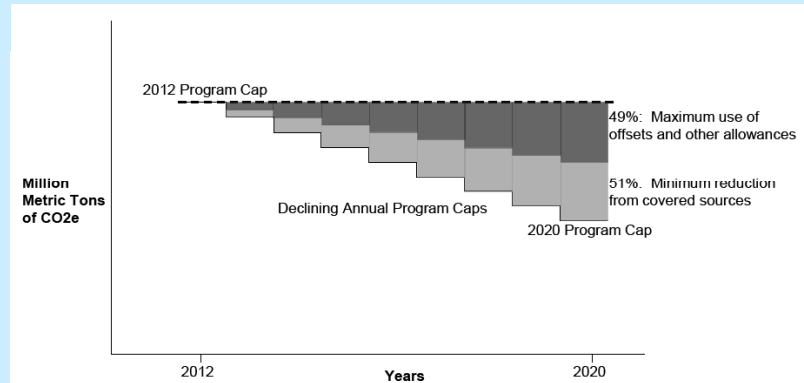
By Mark Schapiro

The attorneys general of at least four states are preparing to sue California if the state's landmark law limiting greenhouse gas emissions survives a challenge at the ballot box this November.

The officials in Alabama, Nebraska, Texas and North Dakota have been devising a legal strategy to challenge the California act, signed by Gov. Arnold Schwarzenegger in 2006, on the grounds that it interferes with the right to freely conduct interstate commerce, according to Wayne Stenehjem, the attorney general of North Dakota.

Cap-and-Trade Component

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- allowance value in 2020 estimated at \$7-21 billion
- intention to link with Western Climate Initiative

Estimated Economic Impacts

Determinants of cost impacts

- Technological factors and preferences
 - Costs of substitute fuels; ease of fuel substitution in production
 - Ease of substitution in consumption (elasticities of demand)
 - Pace of technological innovation
- Institutional/psychological factors
 - Labor market fluidity/rigidity – especially important in short run
 - Investor confidence
- Choice of policy components
- Administrative and monitoring/enforcement costs

Impacts on Income and Employment in 2020			
		ARB	CRA International
		Energy 2020 and E-DRAM models	Integrated MRN-NEEM Model (runs ARB1, ARB2, and CRA10)
Gross State Product (% change)		-0.2 to -1.4	-1.4 to -2.2
Income Gain (+) or Loss (-) per household		+\$86 to -\$270	-\$1175 to -\$1380
Jobs Gained (+) or Lost (-) (in thousands)		+10 (0.04%) to -320 (-1.30%)	

Important to note that allowance value is not the same as economic cost. The costs in the ARB and CRA models are a very small fraction of allowance value.

**Annual Growth Rate of Gross State Product
2010-2020**

	ARB Analysis	CRA Analysis
Business As Usual	2.4%	2.4%
AB 32	2.3%-2.4%	2.3%

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Prices in 2020

	offsets allowed	no offsets
Allowance prices:	\$20	\$60
Estimated price increases:		
• Commercial electricity:	0%	3%
• Residential electricity:	0%	4%
• Commercial natural gas:	12%	57%
• Residential natural gas:	11%	50%

Potential Limitations of the Models And Their Implications for Cost Estimates

	ARB	CRA International	Tanton
Model Characteristic			
Optimistic Assumptions regarding Costs of VMT and Pavley II Efforts	-		
Inattention to Emissions Leakage	-		-
Restricted Scope for Pre-Existing Market Failures		+	+
Absence of Potential for Input Substitution			+
Absence of Technological Change			+
Optimistic Assumptions for Growth of Economy under Business as Usual	+		
Inattention to Alternative Methods for Auction Revenue Recycling	+	+	+
Disregard of Co-Benefits	+	+	+

Short Term: Will AB 32 Stifle California's Recovery?

- Impacts in 2020 small relative to state economy; short-term impacts even smaller – AB 32 ramps up
- Estimated impacts do not account for beneficial short-term impacts on health (and related productivity)

Prop 23

Prop 23 slightly behind in polls



but Whitman favors one-year delay of implementing AB 32
(Brown opposes any delay)