



## ENVIRONMENTAL DEFENSE FUND

finding the ways that work

# Getting the Job Done Right: Employment Growth through California's Global Warming Solutions Act

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### Summary for Policymakers

A number of studies have been conducted examining the potential economic consequences of the California Air Resources Board's (CARB) *Climate Change Proposed Scoping Plan* and ancillary documents. CARB's own analyses indicate that California's Global Warming Solutions Act (AB 32) will have positive economic benefits. These benefits are due principally to savings from improved energy efficiency and development of petroleum alternatives that will result in net cost reductions to businesses and consumers. M.Cubed, a research firm specializing in resource economics and public policy analysis, was commissioned by Environmental Defense Fund (EDF), which cosponsored AB 32, to examine available analyses to assess the potential for positive changes in California's investment patterns and employment in response to AB 32 policies. Research found that well-crafted policies are likely to result in positive employment growth and will reinforce beneficial changes in the state's economy that have already emerged from existing state energy policies. Key findings of the study include:

- **California is well-positioned to lead the nation's transition to a clean energy economy because of changes that have occurred over the past three decades.** High energy prices combined with other factors, such as housing costs, make relatively low-value activities financially unattractive in California. Consequently, over the past decades, a significant share of the state's manufacturing sector has relocated, while California has grown more competitive in the industrial design and advanced fabrication, health, education and professional services sectors, and in its other place-based industries – agriculture and tourism. As a result, California is well-positioned to take advantage of the opportunities created by reducing greenhouse gas (GHG) emissions and to avoid employment dislocations.

Employment spurred by AB 32 implementation is likely to be in the following sectors or market segments, as well as their associated supply chains:

- Biofuels, particularly as used in transportation and to generate electricity.
  - Construction, particularly solar installation, heating, ventilation, and air conditioning contractors and construction of new generation and transmission facilities.
  - (Clean) Technology, particularly associated with energy efficiency, advanced materials and nanotechnology, high efficiency vehicles, photovoltaics, and related software.
  - Environmental engineering services associated with testing and compliance.
  - Consumer products, particularly biodegradable packaging and plastic ware and nontoxic household cleaners.
  - Information technology, particularly environmental-related software.
  - Transportation and logistics, such as fuel cells, diesel retrofits and hybrids.
  - Waste and water purification and conservation, especially efficiency measures.
- **The adoption of similar efforts to reduce emissions by nearby states – and, under the new U.S. administration, nationally – can protect California jobs and give California a competitive advantage in the low carbon economy.** Several Western states and Canadian provinces have pledged to reduce GHG emissions as part of a Western Regional Climate Action Initiative. Regional cooperation over climate change policies significantly reduces the impetus to flee California to avoid climate pollution policy. Such cooperation also creates a networking effect that encourages private sector entities to make changes to reduce their GHG emissions, with concomitant economic

benefits. Likewise, federal action to adopt a national cap within the next four years will put California in a competitive advantage as a result of advanced efforts to transition to create a low carbon economy.

- **Existing public policies and economic conditions are already acting to transform the state's economy in the direction of AB 32.** Current law and public policies, including the existing 20 percent renewable portfolio standard and substantial subsidies for energy efficiency measures and solar installations, are already “priming the pump” toward transforming the state's economy. Even before implementing the measures contained in the *Proposed Scoping Plan*, California has among the lowest GHG emissions per dollar of economic production in the United States and the world. The state's energy efficiency has improved by 1.5 percent per year for the past 40 years. Transportation costs are encouraging businesses to locate closer to California's massive markets, while existing policies are creating incentives for “clean tech” industries to cluster in California.
- **Over time expenditures for energy and transportation can be lowered by the measures in the AB32 Scoping Plan.** Similar to the productivity enhancements created by advances in telecommunications and computers over the past two decades, AB 32 implementation will ultimately prompt higher energy productivity – greater output per unit of energy input – associated with equipment and buildings. This means that household and business spending for electricity, fuels and vehicles will be lowered by implementing AB32. Furthermore, experience shows that building energy efficient homes and buildings is not significantly more costly than conventional building techniques, will save in energy costs, and will employ workers using existing skills for high wages.
- **AB 32's emphasis on renewable technologies will create jobs.** The influx of investment in electric power generation using renewable technologies, as well as the general increased reliance on these generating sources, will result in more employment gains than building fossil-fuel based power plants.
- **AB 32 will draw increased energy-related research and development (R&D) investment into the state.** Five of the top 10 cities for “clean” technology (e.g., solar, biofuels, smart grids systems) investments are located in California. A consistent, long-term commitment to market-based and technology-inducing policies, such as those proposed in the Scoping Plan, will maintain R&D momentum.
- **AB 32 will help reduce the economic risks associated with fuel shocks.** AB 32 implementation will provide California with a more a diverse energy supply system. With petroleum prices likely to rise as supplies are diminished, AB 32 can mitigate the risks of single-fuel supply disruptions and price shocks. Rapid increases in energy prices result in greater economic harm than smooth, or predictable, transitions. A well-balanced diversified energy and transportation portfolio can lead to greater long-term economic growth and thus higher employment levels.
- **Market-based policies that help bridge economic shifts and that expand access to financing would serve to reduce the incidence of adverse consequences on particularly vulnerable populations.** For example, allowing homes and businesses to aggregate their emission reductions as a way to participate in carbon trading markets would enable them to benefit economically while reducing their emissions, and provide them with the necessary capital to make energy-saving investments. Likewise, implementing a comprehensive trading regime, which enables cost-effective trades to be flexibly made across all sectors, would help lower AB 32's transition costs, and more rapidly lead to productive outcomes. Further, the development of new financing mechanisms, such as on-bill and property tax financing and power purchase arrangements, would provide greater access to capital that will lead to additional jobs.

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