ENERGY PRICES & CALIFORNIA'S ECONOMIC SECURITY

October 2009

EXECUTIVE SUMMARY

INTRODUCTION

California's response to rising greenhouse gas (GHG) emissions has drawn one of the world's largest economies into an unprecedented policy dialogue that will influence energy and environmental decisions around the world. At the end of 2008, the California Air Resources Board (CARB) approved one of the world's most ambitious GHG reduction plans, consisting of a comprehensive set of standards and incentives to promote energy efficiency and renewable energy and decrease the use of fossil fuels. Aligned with that plan, the state legislature recently passed the nation's boldest commitment to renewable energy development, mandating a 33 percent Renewable Portfolio Standard (RPS) for its electric power utilities.

Globally, the financial crisis has left millions unemployed, drained personal savings and gutted national and subnational public sector budgets. In California, the impacts have been severe. The state now has the fourth-highest unemployment rate at 12.2 percent, the third-highest rate of mortgage foreclosures, and for two years has had the highest state budget deficit in the history of the country. Considerable pressure is mounting to delay or derail California's GHG policies already implemented and under consideration.

As the state commits to ever more determined efforts to promote energy efficiency and renewables, a thorough assessment of the economic impacts of California's GHG policy package is of paramount importance. These impacts will depend on three primary drivers, the course of fossil fuel energy prices, energy efficiency trends, and renewable energy development. This study assesses these three factors and their impact on California's economic growth prospects.

METHODOLOGY

Using the Berkeley Energy and Resources (BEAR) model, a state-of-the-art, economy-wide forecasting tool, the study analyzes six energy price and source scenarios and tracks complex market interactions across key elements of the California economy.

To date, official and unofficial economic assessments of state policies have been informed by relatively conservative and now dated fossil fuel price trend estimates. Unlike any previous study on the impacts of California's GHG policies, this study uses up-to-date U.S. Department of Energy (DOE) fossil fuel projections.

The fundamentals of global energy markets strongly support DOE projections. Despite the recent recession, over the last six months, with national unemployment at 25 year highs, retail U.S. gasoline prices have risen 40 percent, lifting an additional half a billion dollars per day from driver's pockets in the process. Crude oil is also rising steadily despite a persistent global recession, and today is over 60 percent above its lows at the beginning of the year. Emerging market demand will continue to exert pressure on existing resources, and new resources will only be available at ever-higher marginal cost. Unfortunately, a significant amount of public policy has been informed by unduly optimistic fossil fuel price trend estimates.

To assess the economic impact of increased RPS implementation, we sequence projects according to the most recent Renewable Energy Transmission Initiative report (RETI, June 2009) following the Rank Cost standard for drawing renewables into the system.

FINDINGS

Without implementation of State GHG policies, likely Increases in Fossil Fuels Will Hurt California's Economy

- Projecting California's growth with U.S. Department of Energy official price trends (***Figure 1***) finds that in 2020 GSP will be over $80 billion lower.
- An energy price handicapped economy will also offer more than half a million fewer jobs.
- Between now and 2020, without implementation of GHG policies, private electricity costs in California will be up to $100 per person higher in 2020, which would rise $100 above today's costs in any case, making electricity 33 percent more expensive (***Figure 2***). Higher energy prices force California enterprises and households to take a dollar away from in-state labor and labor-intensive goods and services and spend that dollar on capital-intensive fuel imports.

More Aggressive RPS & Energy Efficiency Protect Consumers & Grow California's Economy

Our forecast shows that combining AB 32, a 33 percent RPS, and enhanced energy efficiency (EE) will more effectively insulate California from external energy price shocks and stimulate economic growth and job creation.

- The impact of AB 32 combined with a 33 percent RPS mitigate GSP loss from higher energy prices by $71 billion and reduce job losses by 352,000 (fourth bar in ***Figures 3 and 4***).
- Increasing energy efficiency by 1 percent, as proposed by the AB 32 scoping plan, combined with 33 percent RPS increases GSP by an additional $33 billion and jobs by 387,000 (fifth bar in ***Figures 3 and 4***).

FIGURE 1

Higher Fossil Fuel Prices Handicap the Economy

(Differences from 2020 Baseline in 2008B$, Thousands of FTE Jobs)

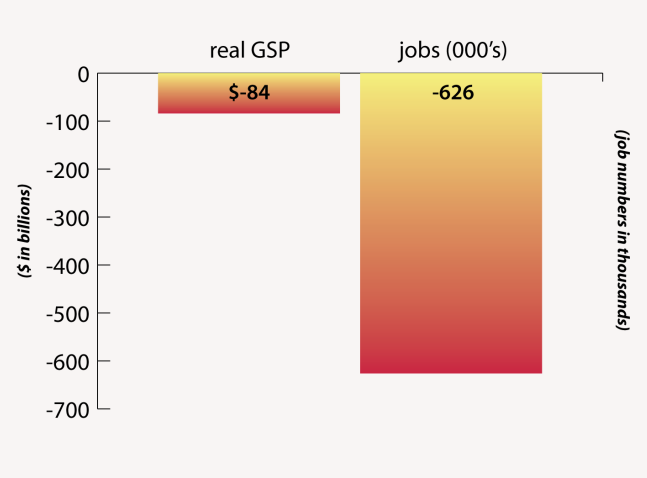


FIGURE 2

Higher Fossil Fuel Prices Drive Up Electricity Bills

(Difference from 2020 Baseline in 2008B$)

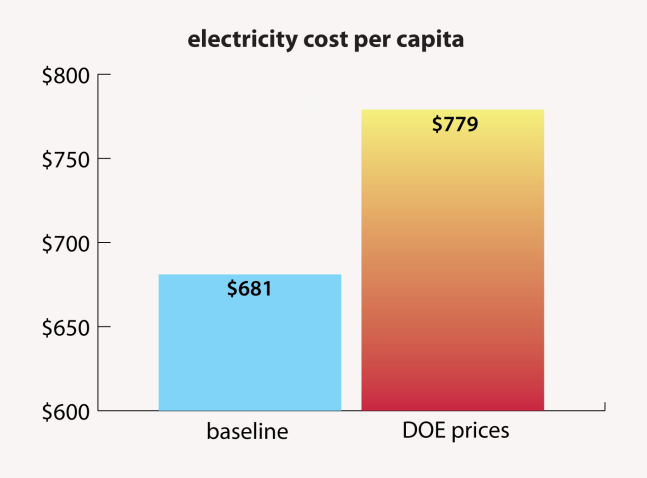


FIGURE 3

Climate Policy Protects the Economy

(Differences from 2020 Baseline, Real GDP in 2008B$)

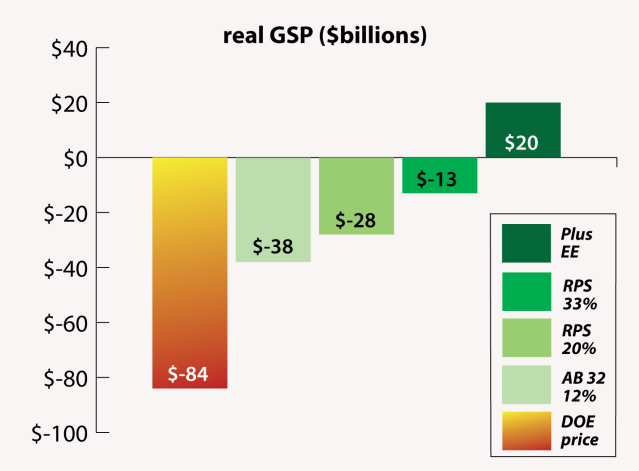
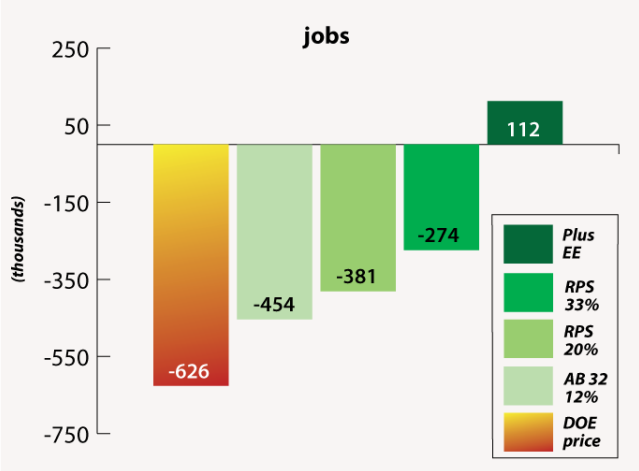


FIGURE 4

Climate Policy Promotes Growth

(Differences from 2020 Baseline, Thousands of FTE Jobs)



CONCLUSION

Aggressive Renewable Portfolio Standard & Energy Efficiency Will Help Protect California from Higher Energy Prices & Promote Economic Growth

Energy efficiency and renewables offer a valuable hedge against the risks of higher fossil fuel prices, quite apart from the fact that fossil fuel consumption generates over 80 percent of global GHG emissions.

California's ambitious program will create dramatic opportunities for emergent technologies and green job creation, while setting a standard for other state and national governments to watch and consider emulating.

Uncertainty is Endemic to Innovation, but its Potential Rewards Justify Adaptive Policies

Available recent evidence on renewable deployment has very large uncertainty bands. Such uncertainty is endemic to any innovation process, but this does not mean renewable policy should be deferred. Instead, we need to promote research to elucidate and reduce this uncertainty and attendant risks, and design policies that promote and capture further innovation.

Next 10 is an independent, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. Next 10 is focused on innovation and the intersection between the economy, the environment, and quality of life issues for all Californians. Next 10 funds research by leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

This Executive Summary and the full report, Energy Prices & California's Economic Security, was authored by Professor **David Roland-Holst**, University of California at Berkeley.