

## SECTION ONE

## » Introduction

As Congress sifts through the complex programmatic, economic, environmental, political, jurisdictional, and equity issues associated with national climate policy, the work already done by the states and their stakeholders can provide critical policy and analytical guidance. Since 2000, 34 U.S. states have completed or are developing comprehensive greenhouse gas (GHG) reduction plans that identify, design, evaluate and recommend specific policy options for application at the local, state and federal levels to achieve climate change stabilization targets and important co-benefits such as economic growth and energy security.

This growing database of state-level stakeholder-recommended GHG reduction measures presents an opportunity to model the potential for national application of similar policies and measures, including the GHG reduction potential and cost effectiveness of each measure. This report presents the methods, findings and conclusions of this research, and carries the investigation two steps further; in addition to projecting the performance of successful state-level climate policies on a national scale, the authors have examined the likely impact of national climate policy implementation on U.S. employment, gross domestic product, incomes and consumer energy prices; and second, analysis of the Kerry-Lieberman (K-L) bill using the national data developed above.

The three modeling scenarios presented here are intended to offer Congressional leaders highly relevant information. The first two scenarios demonstrate the potential for full implementation of stakeholder recommended policies and measures. The third, Scenario 3, reflects the application of the stakeholder-recommended measures using the framework of the K-L bill. Like Scenario 2, this scenario incorporates a limited national cap-and-trade program modeled on the bill and utilizes the K-L GHG reduction targets and other features, but it limits application of the sector-based policies and measures to levels equal to congressional economy-wide targets.

The results of this study reflect what the authors believe to be the best estimation of GHG reduction opportunities, direct costs and savings, and indirect or macroeconomic impacts on a national level. The analysis is constructed from the bottom-up and is based upon policy measures selected, designed and recommended by diverse stakeholders from every region in the U.S. Furthermore, key analytical methods used in this study were subjected to external review.

These state climate plans were the product of thousands of formal, intensive stakeholder deliberations, and represent what is politically achievable and institutionally feasible. Stakeholders were tasked not only to meet GHG reduction goals, but other objectives such as cost containment, economic growth and job creation, energy security, improved public health outcomes, equity issues, and a range of policy implementation feasibility constraints.

The results of state climate action plans in the U.S. have varied from state to state and over time, and include many similar and overlapping recommendations and findings. But the fundamental approaches to policy development and analysis have been consistent for the 16 states that retained the Center for Climate Strategies (CCS) for facilitation and technical assistance, whose results are part of this study. Today, over 1,000 specific policy options have been designed and analyzed for these state action plans and converted to microeconomic or cost effectiveness analysis.

For macroeconomic analysis of state climate action plans, and for national macroeconomic analysis, a linked modeling system that integrates microeconomic and macroeconomic models was developed.

The national macroeconomic analysis of climate policy measures uses the Regional Economic Models, Inc. (REMI) Policy Insight tool, in combination with this cost effectiveness database from state climate plans, to model the macroeconomic impacts of 23 major policies and measures recommended by state stakeholders.

The authors and their associates previously conducted six macroeconomic analyses<sup>1</sup> of state climate action plans. These studies used state-of-the-art econometric models to estimate the impact of the stakeholder-recommended climate policies on jobs, income, gross domestic product, and consumer energy prices. The Florida study was successfully submitted for peer review. Due to the confluence of economic, energy and climate change related concerns of the public and the policy community, this information has been in great demand by governors, policy makers and legislators as they contemplate the best ways to advance climate and clean energy plans into rule, law or program.

This report contains an Executive Summary that presents key findings and results of this work. Available online at [energypolicyreport.jhu.edu](http://energypolicyreport.jhu.edu) are a series of Annexes that contain significant detail concerning the data sources, methods used and assumptions employed in this research, including illustrative examples of calculations. The report sections that follow provide an overview of the detail found in the Annexes and the findings and results of the study.

**Section 2** *National Scale-up of State Actions: Greenhouse Gas Reduction Potential and Microeconomic Analysis of Mitigation Options*, presents the approach used to document, update and extrapolate the analysis of state climate action plan results to the national scale. Findings reflect the direct cost or savings resulting from the implementation of the GHG reduction policies and projections of GHG reduction potential for the policies, both individually and in the aggregate, under three national implementation scenarios.

**Section 3** *Macroeconomic Effects of Mitigation Options: REMI Model Analysis*, presents the expected macroeconomic impacts of policy implementation at the national level. As noted above, the model used in this analysis is the Regional Economic Models, Inc. Policy Insight Plus (PI+), which is described in detail in Annex C.\*

**Section 4** *Mitigation Option Implementation: Jurisdictional and Programmatic Issues*, examines the practical realities of local, state and federal jurisdictional authority over highly diverse climate mitigation policies that affect all sectors of the economy. This section offers some insight for policy makers at all three government levels regarding apparent prerequisites for successful comprehensive climate policy implementation.

**Section 5** *Conclusions*, offers what the authors see as the key insights provided by this work. Until recently the major focus of state climate plans has been on the direct impacts of individual mitigation options. However, the indirect or macroeconomic impacts of climate and energy policies are often of greater interest to policy makers as political decisions are made. This section pinpoints key issues, impacts and dynamics of the economy to be considered and addressed in the national policy formulation process, and the value of sub national guidance.

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1. North Carolina, Arizona, Florida, Michigan, Pennsylvania, and Wisconsin.

\* The Annexes to this report are available at [energypolicyreport.jhu.edu](http://energypolicyreport.jhu.edu).