

CHAPTER 1

INTRODUCTION

1.1 PURPOSE

State-level policies to control greenhouse gas emissions are essential for mitigating the economic, health, and environmental threats posed by global climate change. States play a crucial role in helping the US as a whole to meet the national pledge to reduce greenhouse gas emissions. However, the circumstances surrounding climate change creates a complicated and politically volatile situation for policy-makers who must deal with complex and uncertain scientific issues and develop policies that potentially affect multiple economic sectors, including energy, transportation, agriculture, industry, and forestry. This guidance document is intended to help states evaluate these complex issue and develop response strategies that address their distinct situations. EPA's objective is to assist each state in formulating a realistic State Action Plan for addressing greenhouse gas emissions.

This document represents the second phase in EPA's State and Local Outreach Program. The first phase produced the *State Workbook: Methodologies for Estimating Greenhouse Gas Emissions*, which contains a set of guidelines and methodologies for states to use to compile an inventory of their greenhouse gas emissions and sinks. Identifying emission sources and sinks and compiling an inventory is a critical first step in building a comprehensive and long range state action plan. The *State Workbook* is available through EPA's Office of Policy, Planning and Evaluation, Office of Economy and Environment.¹

As follow-on to the Phase I materials, the *States Guidance Document: Policy Options for Reducing Greenhouse Gas Emissions* provides a framework and supporting information to assist policy-makers in further understanding the issues associated with climate change and in identifying and evaluating options to mitigate emissions identified during the inventory process. The document presents background information particularly relevant at the state level and examines emissions forecasting, setting goals and policy criteria, policy evaluation, and organizational and political issues. It also offers suggestions on how climate change mitigation programs can concentrate on reducing emissions where the greatest opportunities exist within each individual state. To support this, a comprehensive survey of technical approaches and policy options for addressing each greenhouse gas source is provided.

The information presented here should help states compile a practical and comprehensive State Action Plan for addressing greenhouse gas emissions. This State Action Plan will lay out the institutional and policy structure, including specific policy proposals or planning processes, that each state will use to develop and implement its climate change mitigation program.

While providing extensive guidance for program development, this document is not intended to lead states explicitly through the detailed steps of climate change policy formulation. Such policy formulation is a process that depends critically on local economic, social, technical, and political circumstances. States may also wish to consider potential adaptive responses to the probable effects of climate change. This

¹ The Phase I *State Workbook* provides worksheets for calculating greenhouse gas emissions by source category, accompanied by detailed explanations of the formulas and methodologies used, alternative approaches states may consider, data on regional emissions characteristics, and references to additional information.

document is, however, intended to supplement state efforts in a complex field by providing information, resources, and references that highlight and help clarify the most crucial policy and organizational issues.

1.2 ORGANIZATION OF THE DOCUMENT

This document is divided into three parts, which are structured in the form of sequential stages that states may pursue in developing State Action Plans. Each part reflects a different aspect of climate change program design. Part I presents an overview of information and procedures that policy-makers should consider *before* developing explicit programs in this field. Part II describes technical and policy approaches for reducing the concentration of greenhouse gases in the atmosphere. Part III discusses the structuring and administration of climate change programs.

Each of these three parts of the document, which are summarized in more detail below, is subdivided into chapters. The chapters address more discrete components of climate change policy formulation and are designed to be referenced independently. Consistent with the general theme that policy formulation in this field is a dynamic process that incorporates various interconnected issues, each chapter cross-references information in other sections of the document where appropriate. All the chapters maintain a common focus on how states can plan greenhouse gas policies around distinct local environmental, economic, and political situations.

Part I: Initiation of Climate Change Programs

Part I, which includes Chapters 2 through 4, presents information to help state policy-makers establish a focal point the initiation of climate change programs. As discussed throughout the document, climate change and greenhouse gas emissions and sequestration span many sectors of society and extend far into the future. Furthermore, policy measures to address greenhouse gases overlap with many other public policy objectives, often in a complementary way. The chapters in Part I present background information and planning mechanisms for sorting through this complex policy arena and developing a clear focus for policy formulation.

Chapter 2, *Background on Climate Change Science and Policy*, provides scientific and policy background information on climate change issues as they affect states. It includes an introduction to greenhouse gases and to the probable impacts of climate change at the state and local level, summarizes climate change policy initiatives around the world, and highlights the importance of state level action. To help states envision their role in confronting this complicated issue, this chapter integrates these scientific and policy issues, along with important time frame concerns, into a general framework for climate change policy analysis that serves as a basis for State Action Plan formulation.

Chapter 3, *Measuring and Forecasting Greenhouse Gas Emissions*, summarizes the methodologies for estimating emissions that were presented in EPA's Phase I greenhouse gas inventory document, described above. This chapter also explains how these methodologies can serve as a base for forecasting the impact of various alternative policy options throughout future time periods.

Chapter 4, *Establishing Emission Reduction Program Goals and Evaluative Criteria*, examines goal setting in climate change program development. It highlights the practical and political differences between setting quantitative and qualitative emission reduction targets and emphasizes the importance of establishing specific criteria for evaluating policy options over a range of time frames.

Part II: Technical Approaches and Policy Options for Reducing Greenhouse Gas Emissions

Part II, which includes Chapters 5 and 6, describes the specific sources and sinks of greenhouse gases across all sectors of society and highlights numerous emission reduction policy options. The chapters in Part II should be used as a reference tool for learning about how greenhouse gases are generated and for compiling a portfolio of policy options that can be further investigated and, potentially, implemented.

Chapter 5, *Technical Approaches and Source-Specific Policy Options*, contains a separate section on seventeen greenhouse gas sources and sinks. Each section describes how the source generates gases or the sink sequesters them, and discusses the technical approaches that government agencies can use to reduce source-emissions or increase sequestration. The sections also elaborate on potential policy options that states might use to implement those technical approaches, and how these options may interact with other state policy objectives. This chapter emphasizes the range of policy options that are unique to a particular source or sink.

Chapter 6, *Cross Cutting Policy Options*, describes policy approaches that offer promise for reducing emissions from various sources simultaneously. These approaches highlight how innovative government action tailored to particular situations can substantially affect greenhouse gas emissions and can potentially promote other public sector goals as well. In presenting policy ideas, this chapter references the technical information in Chapter 5 extensively.

Part III: Program Development and State Action Plan Preparation

Part III, which includes Chapters 7 through 9, addresses organizational and analytical topics relating to climate change program design and offers guidance in preparing the State Action Plan. Programs that are structured to support flexible selection and evolution of policies will maintain a stronger and more dynamic link with overall state policy objectives. This flexibility is especially relevant because of the diversity of political circumstances surrounding climate change and the changing state of scientific and technical knowledge in this field. The chapters in Part III draw on state experiences and current research to present mechanisms states can use to evaluate options and to structure flexible and responsive programs in an uncertain policy environment.

Chapter 7, *Climate Change Program Development*, addresses institutional, administrative, and political issues that can affect the success of climate change mitigation efforts. This information highlights how states can anticipate issues that may arise during the process of program design and presents ideas on how programs might be structured to deal with these concerns. Specific topics include time frame perspectives in policy planning, understanding the important public and private sector actors in this field, political issues in program development, program finance, and interaction between agencies within the state and at the local and national level. The topic of partnerships between state agencies is extremely important within the context of this chapter.

Chapter 8, *Evaluating Policy Options*, examines alternative approaches to balancing emissions, costs, and other policy impacts. It summarizes the methodologies states might use to evaluate emission control policies, and introduces models for analyzing the complicated interactions between various factors. This chapter also discusses analytic constraints, such as uncertainty and multiple time-frames for planning. This information illustrates the range of issues states should consider when evaluating policies and is not intended to suggest any specific approach.

Chapter 9, *Guidance on State Action Plan Formulation*, offers a framework and model for developing the State Action Plan on climate change mitigation.

Exhibit 1-1 illustrates the structure of the document and the primary contents of each chapter. While the document presents policy formulation as a sequential process, the information and concepts presented in each of the chapters may need to be referenced at different times throughout program development.

**Exhibit 1-1
Structure of Document**



