

# THE NATIONAL ACADEMIES

*Advisers to the Nation on Science, Engineering, and Medicine*

## AMERICA'S CLIMATE CHOICES

### PANEL ON LIMITING THE MAGNITUDE OF FUTURE CLIMATE CHANGE

#### Statement of Task

The Panel on Limiting the Magnitude of Future Climate Change will describe, analyze, and assess strategies for reducing the net future human influence on climate, including both technology and policy options (this is sometimes referred to as “mitigation of climate change”). The panel will focus on actions to reduce domestic greenhouse gas emissions and other human drivers of climate change, such as changes in land use, but will also consider the international dimensions of climate stabilization. The panel will not be responsible for evaluating specific proposals to limit or counteract climate change via direct interventions in the climate system (i.e., so called “geo-engineering” approaches), but may comment on the possible role that such approaches could play in future plans to limit the magnitude of climate change.<sup>1</sup> The panel will also keep abreast of the wide range of proposals currently being advanced by policymakers at a number of levels to limit the future magnitude of climate change, and strive to frame their recommendations in the context of these developments.

Ultimately, the goal of this panel is to answer the first question in the Statement of Task for the study (“What can be done to limit the magnitude of future climate change?”). This question will be expanded over the course of the study to include more specific sub-questions such as<sup>2</sup>:

- What are the most effective and feasible technology and policy options for reducing or offsetting domestic greenhouse gas emissions and other climate forcings?
- What are the risks, opportunities, costs, uncertainties associated with each of these options, which have been the most effective to date
- What factors determine the degree to which these options produce their intended results?
- What interactions and synergies exist with actions being taken to address other national priorities, such as energy independence and security, food security, as well as other environmental priorities like clean air and water?
- What synergies exist with efforts to limit climate change being taken by other countries, and what steps could be taken to ensure that the U.S. emerges as a leader in developing and encouraging worldwide adoption of climate-friendly technologies and policies?

The panel will be challenged to produce a report that is broad and authoritative, yet concise and useful to decision makers. The costs, benefits, limitations, tradeoffs, and uncertainties associated

---

<sup>1</sup> It is anticipated that the Panel on Advancing the Science of Climate Change will convene a workshop focusing on the research needed to better understand the potential efficacy, impacts, and risks of various “geo-engineering” proposals; the Panel on Limiting the Magnitude of Future Climate Change will be invited to attend the workshop and may reference the information gathered in its report.

<sup>2</sup> These sub-questions are only examples of the types of questions to be addressed by the panel, to indicate the level of specificity intended. Some of these illustrative questions may be revised or dropped, and other questions may be added, at the discretion of the panel and the Committee on America's Climate Choices.

with different options and strategies should be assessed qualitatively and, to the extent practicable, quantitatively, using the scenarios of future climate change and vulnerability provided by the Committee on America's Climate Choices. The panel should also provide policy-relevant (but not policy-prescriptive) input to the committee on the following overarching questions:

- What short-term actions can be taken to limit the magnitude of future climate change?
- What promising long-term strategies, investments, and opportunities could be pursued to limit the magnitude of future climate change?
- What are the major scientific and technological advances (e.g., new observations, improved models, research priorities, etc.) needed to limit the magnitude of future climate change?
- What are the major impediments (e.g., practical, institutional, economic, ethical, intergenerational, etc.) to limiting the magnitude of future climate change, and what can be done to overcome these impediments?
- What can be done to limit the magnitude of future climate change at different levels (e.g., local, state, regional, national, and in collaboration with the international community) and in different sectors (e.g., nongovernmental organizations, the business community, the research and academic communities, individuals and households, etc.)?

#### **Panel Membership:**

**Robert Fri (Chair)**, Resource of the Future

**Marilyn Brown (Vice-Chair)**, Georgia Institute of Technology

**Francisco De la Chesnaye**, Electric Power Research Institute

**Thomas Tietenberg**, Colby College

**Leon Clarke**, Pacific Northwest National Laboratory

**Ann Carlson**, University of California Los Angeles

**Majora Carter**, Majora Carter Group, LLC

**Robert O. Keohane**, Princeton University

**George Eads**, CRA International

**Edward Rubin**, Carnegie Mellon University

**Doug Arent**, National Renewable Energy Laboratory

**James Trainham**, Sundrop Fuels, Inc.

**Genevieve Giuliano**, University of Southern California

**Bruce McCarl**, Texas A&M University

**Loren Lutzenhiser**, Portland State University

**Andrew Hoffman**, University of Michigan

**Mack McFarland**, DuPont

**Laurie Geller (Study Director)**, National Research Council