

## PREFACE

### *EPA's Response to the Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*

This is the Response to Petitions (RTP) document that accompanies the Environmental Protection Agency's (EPA's) Notice of Denial of Petitions to Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act ("Denial" or "Decision"). The Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act ("Findings" or "Endangerment Finding") were signed by the Administrator on December 7, 2009, appeared in the Federal Register December 15, 2009, and became effective January 14, 2010. The Administrator's Endangerment Finding concluded that six greenhouse gases (GHGs) taken in combination endanger both the public health and public welfare of current and future generations. The Findings were supported by a Technical Support Document (TSD), containing the underlying GHG emissions data and climate change science, as well as an 11-volume Response to Comments (RTC) document that provided EPA's responses to all significant public comments received during the comment period following the Administrator's proposed Findings, signed April 17, 2009.

Since issuing the December 2009 Findings, EPA has received 10 petitions requesting that EPA reconsider the Findings.

This RTP document provides additional information, often more technical information, in response to the arguments, claims and assertions by the petitioners in their petitions to reconsider the Endangerment Finding. EPA has thoroughly reviewed all of the petitions, the arguments presented in the petitions, and the supplemental information provided by the petitioners intended to show evidence of the petitioners' claims. EPA also revisited the scientific record and the Administrator's decision process underlying the Endangerment Finding in light of the petitions. All of the petitioners' arguments are addressed in the Denial and/or this RTP document.

Within this document, the petitioners' arguments and assertions are grouped together and responded to in three volumes: 1) climate science and data issues raised by the petitioners; 2) issues raised by petitioners on EPA's use of information from the Intergovernmental Panel on Climate Change; and 3) process issues raised by the petitioners.

The Administrator's Findings and its supporting material (the TSD and RTC), as well as all ten petitions, including amendments to some of those petitions, can be found at: <http://epa.gov/climatechange/endangerment.html>. All documents and materials that are referenced in the Denial and this RTP document can be found in the docket for this action (Docket ID No. EPA-HQ-OAR-2009-0171 at [www.regulations.gov](http://www.regulations.gov)).

Throughout the Denial and the three volumes of this RTP document, EPA references the conclusions of five recent inquiries and investigations regarding the Climatic Research Unit

(CRU) e-mails and the IPCC's Fourth Assessment Report (AR4). These five reports have been placed in the docket for this action (Docket ID No. EPA-HQ-OAR-2009-0171 at [www.regulations.gov](http://www.regulations.gov)) under the document title "Recent Inquiries and Investigations of the CRU E-mails and the IPCC Fourth Assessment Report". We provide a brief overview of the purpose of each investigation below:

1. *The disclosure of climate data from the Climatic Research Unit at the University of East Anglia*

UK House of Commons, Science and Technology Committee

Published on March 31, 2010

Referred to in the volumes as: "the UK House of Commons Science and Technology Committee investigation"

This investigation assessed the accuracy and availability of CRU's data, datasets and computer programming, whether CRU scientists withheld access to this information, and implications for the UK Freedom of Information Act 2000. The report also included the Science and Technology Committee's comments on the independent reviews that University of East Anglia announced.

2. *Report of the International Panel set up by the University of East Anglia to examine the research of the Climatic Research Unit*

University of East Anglia, Oxburgh Panel

Published on April 14, 2010

Referred to in the volumes as: "the Scientific Appraisal Panel review"

The Panel was set up by the University of East Anglia in consultation with the Royal Society to assess the integrity of the research published by CRU in light of various external assertions. The Panel was asked to address criticisms regarding whether climatic data had been dishonestly selected, manipulated and/or presented to arrive at pre-determined conclusions.

3. *RA-10 Final Investigation Report Involving Dr. Michael E. Mann*

The Pennsylvania State University

Published on June 4, 2010

Referred to in the volumes as: "the Pennsylvania State University investigation"

The University initiated an investigation to examine whether accusations that Michael Mann had manipulated data, destroyed records and colluded to hamper the progress of scientific discourse, when placed in an academic context, could be construed as allegations of research misconduct, which would constitute a violation of Pennsylvania State University policy.

4. *Assessing an IPCC assessment – An analysis of statements on projected regional impact in the 2007 report*

Netherlands Environmental Assessment Agency (PBL)  
Published on July 5, 2010  
Referred to in the volumes as: “Assessing an IPCC Assessment”

On January 28, 2010, the Dutch Parliament asked the Ministry for the Environment and the Netherlands Environmental Assessment Agency for an investigation into the reliability of the regional chapters 9-16 of the IPCC Working Group II Report, and to assess the effects of any errors on the summary conclusions drawn by the IPCC Working Group II.

5. *The Independent Climate Change E-mails Review*

University of East Anglia, Russell Panel  
Published on July 7, 2010  
Referred to in the volumes as: “the Independent Climate Change E-mails Review”

This report examines the conduct of the scientists involved in the CRU email issue and makes recommendations to the University of East Anglia. The inquiry addressed a number of important allegations that were made following the e-mail release, including: a) the behavior of the CRU scientists, such as their handling and release of data, their approach to peer review, and their role in the public presentation of results, b) the assertion that actions were taken to promote a particular view of climate change by improperly influencing the process of advising policy makers, and c) the honesty, rigor and openness with which the CRU scientists have acted.

## **Table of Contents**

### **Volume 1: Climate Science and Data Issues Raised by Petitioners**

- 1.1. Validity of Paleoclimate Temperature Reconstructions and Related Issues
  - 1.1.1 The “Divergence Issue” in Paleoclimate Reconstructions
  - 1.1.2 Background
  - 1.1.3 Assessment of the Evidence Provided by Petitioners Regarding the Climate Reconstructions
  - 1.1.4 Assessment of the Evidence Provided by the Petitioners of Intentional Data Manipulation Regarding Tree Ring Data and the MWP
  - 1.1.5 Assessment of Petitioners’ Argument That the MWP May Have Been Warmer Than Present Temperatures
  - 1.1.6 Assessment of the Petitioners’ Argument that Questions About the MWP and Paleoclimate Reconstructions Limit Current Ability to Attribute Present Warming to Humans
  - 1.1.7 Summary
- 1.2 Attribution of Recent Temperature Trends and Models
  - 1.2.1 The Validity of the Human “Fingerprint” in the Vertical Temperature Structure of the Atmosphere Over the Tropics
    - 1.2.1.1 Background
    - 1.2.1.2 Assessment of the Arguments Regarding the Vertical Temperature Structure Over the Tropics
  - 1.2.2 Global Temperature Trends Over the Last Decade and Implications for Attribution of These Trends to GHGs
    - 1.2.2.1 Background
    - 1.2.2.2 Assessment of Arguments Regarding Global Temperature Trends Over the Last Decade and Implications for Attribution of These Trends to GHGs
  - 1.2.3 Climate Model Issues Raised by Petitions
  - 1.2.4 Summary
- 1.3. Validity of the HadCRUT Temperature Record
  - 1.3.1 Overview
  - 1.3.2 Scientific Background on Surface Temperature Records and Underlying Datasets
  - 1.3.3 Responses to Petitioners’ Arguments Regarding the Validity of CRU Data
    - 1.3.3.1 Alleged Destruction of Raw Data
    - 1.3.3.2 Alleged Data Manipulation
    - 1.3.3.3 “Harry Read Me” file and other code
    - 1.3.3.4 Claims of Selective Use of Data From Russian Weather Stations
  - 1.3.4 Claims of Flawed Approach to Correct for Urban Heat Island (UHI) Effects

- 1.3.5 Alleged Dependence of IPCC Conclusions on the HadCRUT temperature record
  - 1.3.6 Summary
  - 1.4 Validity of NOAA and NASA Temperature Records
    - 1.4.1 Overview
    - 1.4.2 Background on the Collection and Analysis of Surface Temperature Data
    - 1.4.3 The Petitioners' Arguments and EPA Responses
      - 1.4.3.1 Assessment of Issues Related to Alleged Station Dropout and Inappropriate Extrapolation
      - 1.4.3.2 Issues Raised With Respect to Adjustments for the UHI Effect
      - 1.4.3.3 Issues Raised in Additional Literature Provided by Petitioners
      - 1.4.3.4 Petitioners' Allegations Regarding Data Adjustments at Specific Stations
      - 1.4.3.5 Allegations Regarding the Independence of NOAA, NASA, and HadCRUT Temperature Records
      - 1.4.3.6 Additional Issues Regarding Allegations of Manipulation of Data
    - 1.4.4 Summary
  - 1.5 Implications of New Studies and Data Submitted by the Petitioners
    - 1.5.1 Overview
    - 1.5.2 Implications of a New Study on Stratospheric Water Vapor
    - 1.5.3 Implications of Material Indicating That CO<sub>2</sub> Is Not Well Mixed in the Atmosphere and That the Airborne Fraction of CO<sub>2</sub> Has Not Changed
    - 1.5.4 Implications of New Tropical Cyclone Studies
    - 1.5.5 Implications of New Studies on the Statistical Significance of Increases in Antarctic Sea Ice
    - 1.5.6 Implications of Recent Data on Observational Snow Cover Trends
    - 1.5.7 Petitioners Claim That EPA Ignored a Satellite Dataset
    - 1.5.8 Summary
- References

## **Volume 2: Issues Raised by Petitioners on EPA's Use of IPCC**

- 2.1 Claims That IPCC Errors Undermine IPCC Findings and Technical Support for Endangerment
  - 2.1.1 Overview
  - 2.1.2 Accuracy of Statement on Percent of the Netherlands Below Sea Level
  - 2.1.3 Validity of Himalayan Glacier Projection
  - 2.1.4 Characterization of Climate Change and Disaster Losses
  - 2.1.5 Validity of Alps, Andes, and African Mountain Snow Impacts
  - 2.1.6 Validity of Amazon Rainforest Dieback Projection

- 2.1.7 Validity of African Rain-Fed Agriculture Projection
- 2.1.8 Summary
- 2.2 Claims That the IPCC Has a Policy Agenda and Is Not Objective and Impartial
  - 2.2.1 Overview
  - 2.2.2 Background
  - 2.2.3 Responses to Arguably New Objections Raised by the Petitioners
    - 2.2.3.1 Allegations of Inappropriate Authorship and Reviewer Roles Among IPCC Personnel
    - 2.2.3.2 Allegations That Citing One's Own Papers Compromises Objectivity
    - 2.2.3.3 Allegations That IPCC Is Biased
    - 2.2.3.4 Allegations That IPCC Lead Authors Forced Consensus and Suppressed Dissenting Views
  - 2.2.4 Responses to Allegations Based on Information That Is Not New
    - 2.2.4.1 Allegations of Inappropriate Collaborations Among IPCC Authors
    - 2.2.4.2 Allegations Regarding Insufficient Peer Review Processes for the IPCC
    - 2.2.4.3 Allegations That IPCC Authors Manipulated Deadlines for New Literature
    - 2.2.4.4 Allegations Regarding the IPCC's Use of Gray Literature
  - 2.2.5 Summary
- References

### **Volume 3: Process Issues Raised by Petitioners**

- 3.1 Approaches and Processes Used to Develop the Scientific Support for the Findings
  - 3.1.1 Overview
  - 3.1.2 Issues Regarding Consideration of the CRU E-mails
  - 3.1.3 Assessment of Issues Raised in Public Comments and Re-Raised in Petitions for Reconsideration
  - 3.1.4 Summary
- 3.2 Response to Claims That the Assessments by the USGCRP and NRC Are Not Separate and Independent Assessments
  - 3.2.1 Overview
  - 3.2.2 EPA's Response to Petitioners' Arguments
  - 3.2.3 Summary
- 3.3 Issues Concerning the Integrity of Peer-Reviewed Literature
  - 3.3.1 Overview
  - 3.3.2 Allegations Regarding Reviews of Manuscripts
  - 3.3.3 Allegations Regarding Journal Publication Practices
  - 3.3.4 Allegations Regarding Efforts to Remove Editors and Boycott Journals

- 3.3.5 Allegations Regarding Objectivity of the Peer-Reviewed Literature
- 3.3.6 Allegations of Intimidating Scientists and Those With Dissenting Views
- 3.3.7 Summary
- 3.4 Issues Concerning Freedom of Information Act Requests
  - 3.4.1 Overview
  - 3.4.2 Allegations of Withholding Key Data and Information
  - 3.4.3 Allegations of Improper Conduct With Regard to UK FOI and U.S. FOIA Laws
    - 3.4.3.1 General Allegations
    - 3.4.3.2 Specific FOI Request Regarding the IPCC's Fourth Assessment Report
    - 3.4.3.3 Allegations of Improperly Influencing University FOIA Officials
  - 3.4.4 Summary
- References