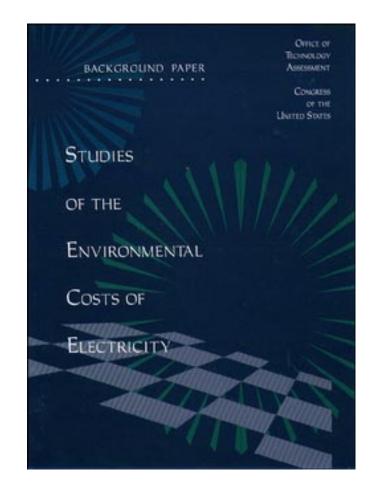
#### Studies of the Environmental Costs of Electricity

September 1994

OTA-BP-ETI-134 NTIS order #PB95-109641 GPO stock #052-003-01393-2



Recommended Citation: U.S. Congress, Office of Technology Assessment, Studies Of the Environmental Costs of Electricity, OTA-ETI-134 (Washington, DC: U.S. Government Printing Office, September 1994).

### Foreword

tudies of the Environmental Costs of Electricity examines studies that assign monetary value to the environmental effects of energy technologies. Quantitative analysis of environmental effects has been an important feature of energy policy for several decades, and growing numbers of studies attempt to integrate these analyses into an overall framework that allows comparison of the environmental effects of different technologies for generating electricity.

Because of the large size and scope of environmental cost studies, however, they necessarily involve a large number of assumptions. These assumptions have been the focus of contentious debate in the analytical and policy communities. While changing a study's assumptions can profoundly affect its results, there is currently no agreement on the most appropriate set of assumptions. This does not imply that all assumptions are equally valid, but indicates that assumptions often reflect deeply held values of participants in policy debates.

This report was prepared in response to a request by the House Committee on Science, Space, and Technology. The report examines a set of environmental cost studies, compares and contrasts their methods and assumptions, and discusses how they could be made more useful to federal policy makers. In contrast to other studies in this area, OTA'S report explores the close ties between values, assumptions, and quantitative results and the implications of these ties for policymaking.

OTA appreciates the participation of many individuals without whose help this report would not have been possible. OTA received generous assistance from workshop participants and reviewers who offered valuable information and comments. The contents of the report itself, however, are the sole responsibility of OTA.

ROGER C. HERDMAN

Director

## Preject Staff

Peter Blair

Assistant Director OTA Industry, Commerce, and International Security Division

Emilia L. Govan

Program Director OTA Energy, Transportation, and Infrastructure Program

Samuel F. Baldwin

Project Director OTA Renewable Energy Project **PRINCIPAL STAFF** 

David Jensen Project Director ADMINISTRATIVE STAFF

Lillian Chapman

Division Administrator

Marsha Fenn

Office Administrator

Gay Jackson

PC Specialist

**Tina Aikens** 

Administrative Secretary

#### Reviewers

Alan Basala

U.S. Environmental Protection Agency

**Thomas Bath** 

National Renewable Energy Laboratory

**David Boomsma** 

U.S. Department of Energy

**Shepard Buchanan** 

Bonneville Power Administration

**Dallas Burtraw** 

Resources for the Future

**Paul Carrier** 

U.S. Department of Energy

**Emily Caverhill** 

Resource Insight, Inc.

Mark Cooper

Consumer Energy Council of America

**David Dawson** 

Forest Policy Consultant

Jonathan Koomey

Lawrence Berkeley Laboratory

Robert W. Fri

Resources for the Future

John Hughes

Electric Consumers Resource Council

**Bruce Humphrey** 

Edison Electric Institute

**James Kennedy** 

U.S. General Accounting Office

John Kennedy

Allied Signal Inc.

Jan McFarland

U.S. Environmental Protection Agency

Rick Morgan

U.S. Environmental Protection Agency

Victor Niemeyer

Electric Power Research Institute

Richard Norgaard

University of California— Berkeley

Dale W. Osborn

Kenetech

Robert D. Rowe

RCG/Hagler, Bailly, Inc.

Mark Sagoff

University of Maryland

Robert L. San Martin

U.S. Department of Energy

Kari Smith

Natural Resources Defense Council

Eric Von Magnus

Maine Public Utilities Commission

Kris Wernstedt

Resources for the Future

Irvin L. (Jack) White Battelle Pacific Northwest

Laboratories

**OTA REVIEWERS** 

Mark Boroush

Robert Friedman

Gregory Eyring

Gretchen Kolsrud

Todd LaPorte

Karen Larsen Dalton Paxman

Steve Plotkin

Robin Roy

Joanne Seder

Matthew Weinberg

# **Workshop Participants**

Irvin L. (Jack) White

(Chairman)
Battelle Pacific Northwest
Laboratories

Steve Bernow Tellus Institute

**Ashley Brown** RCG/Hagler, Bailly, Inc.

**Dallas Burtraw**Resources for the Future

Robert Costanza
University of Maryland

**Bruce Humphrey**Edison Electric Institute

Alan Krupnick
Resources for the Future

Daniel Lashof Natural Resources Defense Council Richard Norgaard

University of California – Berkeley

**Richard Ottinger** Pace University

Mark Sagoff University of Maryland