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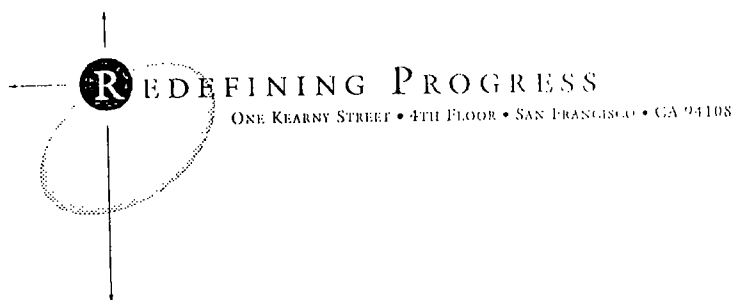
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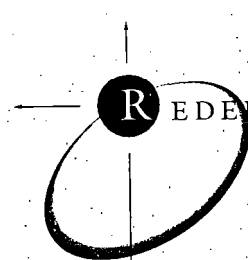
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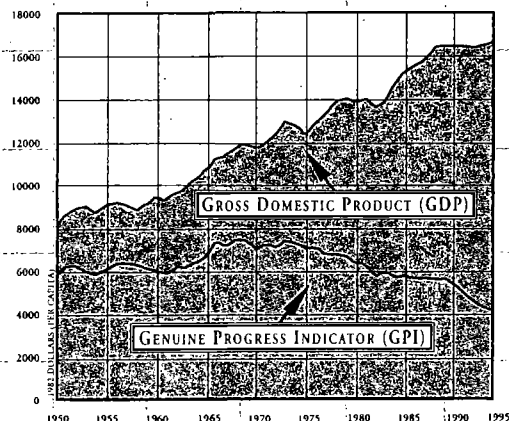
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GROSS PRODUCTION *Versus* GENUINE PROGRESS

1950-Present



WHEN SOCIAL AND
ENVIRONMENTAL COSTS ARE
TAKEN INTO ACCOUNT, THE
OVERALL HEALTH OF THE
ECONOMY SHOWS A STEADY
DECLINE SINCE THE 1970S.

Why Redefine Progress?

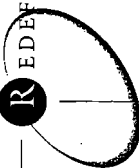
Americans have long believed that economic progress was a birthright, and that each generation would be better off than the one before. But in recent years, that sense of confidence has given way to uncertainty and doubt. We hear continually from the experts that the economy is "growing" and getting better all the time. Yet somehow, the economy that millions of Americans experience seems to be getting worse. This strange and growing gap between official claims of progress and the regress that people experience is a prime source of the anger and disaffection that pervade the nation's public life.

The most visible evidence is the economic hardship — the layoffs, falling wages and emerging "two-tier" economy that have been much noted in the national media. But the problem also goes deeper, to a sense that things are falling apart in a fundamental way. For some the signs are mainly social: crime, divorce, the breakdown of community and traditional values. For others, the signs are the destruction of the natural habitat and the relentless encroachments of the commercial culture. Some deplore an expanding government; others, the rise of footloose corporations that have no loyalty to people or place.

Such concerns are commonly regarded as opposite ends of a spectrum defined by "left" and "right." But increasingly they are different aspects of the same thing — the disruptions that occur when both market and government penetrate deeper and deeper into the realms of family, community and natural habitat. The economic engine that was supposed to make life better now increasingly makes it worse. And the policies that were supposed to lift the nation out of its social and economic problems, now seem to dig us into a deeper hole.

This downward spiral does not have to continue. It is not a fact of nature, but rather the result of human policies that can and must be changed. Americans can pass along to their children an economy that is full of opportunity, a civic culture that is rich, and a natural habitat that is healthy and abundant. But for this to happen, we must rethink our economic premises from the ground up — including what we mean by progress. The official definitions confuse more with better, costs with gains, borrowing with earning, and means with ends. In order to achieve real progress, we must learn to distinguish these once again.

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REDEFINING
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THE PURPOSE OF REDEFINING PROGRESS IS TO STIMULATE BROAD PUBLIC DISCOURSE ON THE TYPE OF FUTURE AMERICANS DESIRE, AND HOW BEST TO ACHIEVE IT. THE ORGANIZATION WAS FOUNDED ON THE CONVICTION THAT THE NATION'S ECONOMY AND POLITICAL CULTURE ARE INCREASINGLY AT ODDS WITH ITS BEST VALUES AND ASPIRATIONS, AND THAT BOLD NEW THINKING IS NEEDED TO BRING THEM BACK TOGETHER.  THROUGH ORIGINAL RESEARCH AND PUBLIC EDUCATION, REDEFINING PROGRESS PROMOTES NEW APPROACHES TO PUBLIC POLICY THAT ADVANCE THE PRINCIPLES OF ENTERPRISE, RESPONSIBILITY, AND STEWARDSHIP; BUILD LOCAL AUTONOMY AND BROADEN OPPORTUNITY; AND ENRICH CIVIC SOCIETY.

Honest Accounting

Accounting drives policy, for business and nation alike. Yet America's national accounting system, the Gross Domestic Product or GDP, is fundamentally flawed and misleading. The GDP makes no distinction between costs and benefits, advance and decline. Not only does it mask the breakdown of our social structure and natural habitat; worse, it actually portrays this breakdown as economic gain. With the GDP as primary compass, it is little wonder that the nation keeps heading in the wrong direction, and that our leaders don't seem to know how to set it straight.

America needs a new way to measure progress, one that better reflects the values and well-being of the American people. To help meet this need, Redefining Progress has developed a new economic scorecard, which we call the Genuine Progress Indicator or GPI. The GPI broadens the accounting framework to include a wide range of social and environmental factors that the GDP ignores. The result is a picture of the U.S. economy that is fundamentally different from the one the GDP portrays. While the GDP has gone steadily upward, the GPI shows a decline in economic well-being since the early 1970s, suggesting that the costs of our current economic path have begun to outweigh the benefits.

Honest accounting would bring a bracing new rigor to America's political debate. It would prevent politicians and special interests from hiding behind a rigged set of books, and would make them more accountable for the consequences of their actions. It would lay bare the enormous liabilities — economic, social and environmental — that we are passing onto our children and grandchildren in the name of economic advance. Perhaps most important, better accounting would point the way to better policies. Knowing where we are, we would see more clearly the direction in which we need to go.



A Tax System for The 21st Century

A tax system is not just a means of raising revenue. It is also the way that public policy affects the economy most directly, for good or ill. Today the nation's tax system — federal, state and local — sends the wrong signals to just about everyone. It taxes that which should be encouraged — such as work and enterprise — while rewarding waste, pollution and other activities the nation should discourage. The system is also complicated and unfair. It works against the very values that people expect public policy to promote.

There is a better way to raise revenue, one that experts in Washington have somehow missed. It is to reduce or eliminate taxes on work and enterprise, and most sales taxes. In their place, the government could shift the tax burden to the use of finite natural resources, and the pollution and waste that result. Instead of taxing the creation of wealth, we could tax the depletion of it. Redefining Progress is exploring the implications for such a tax shift for California and the nation. We have found that it is feasible from a revenue standpoint, and that many benefits would ensue.

The very act of raising revenue would help to solve the problems that make revenue necessary. Tax avoidance would become both legal and socially beneficial. The nation would become an enterprise and innovation zone, in which jobs would be more plentiful because labor costs less. Workers would take home the entire reward from their labor, while business would use more human ingenuity and fewer raw materials. This is a tax system for where the economy is going, rather than where it's been. It would help turn better accounting into economic policy. Nations in Europe are moving in this direction already. America must not fall behind.



Old Values, New Groundrules

An economy does more than meet material needs. Americans also count on it to express their values — to reward work and enterprise, foster the cohesion of families and communities, encourage saving for the future over extravagance and waste.

But increasingly, our economy has turned against the values that nurtured it. It rewards hard work with downsizing and lower wages. Families and communities are disrupted by corporations that move abroad. The relentless promotion of debt, consumption, and quick monetary gain have corroded the underpinnings of our prosperity and civic life.

The answer is not heavy handed regulation. Rather, it is to change the groundrules of the market process so that it solves these problems on its own. New accounting systems and fundamental tax reform are two important ways, but there are many others. These include changing the time lines for business investment and return, the nature of our safety nets and how we finance them, the rules of international trade, and those governing the creation of debt. There is also a need to rebuild the nonmarket economy of families and communities, and to reform the political process that is basic to all of these. Redefining Progress seeks to raise bold new thinking on these and other issues to the fore of national attention.



Redefining Progress is a non-profit, non-partisan public policy institute. It is tax-exempt under section 501(c)(3) of the Internal Revenue Code, and receives its financial support from foundations, individuals, and the sale of publications.



ECONOMISTS' STATEMENT ON CLIMATE CHANGE

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MARCH 7, 1997*

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ECONOMISTS' STATEMENT ON CLIMATE CHANGE

LIST OF ECONOMISTS WHO HAVE ENDORSED TO DATE MARCH 7, 1997

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Kevin Lansing	Federal Reserve Bank of Cleveland	Steven C. Michael	George Mason University
Joseph Haimowitz	Federal Reserve Bank of Kansas City	Chris G. Rodrigo	George Mason University
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Dale W. Henderson	Federal Reserve Board	Eric Kodjo Ralph	George Washington University
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Randall Mariger	Federal Reserve Board	Julian Silk	George Washington University
Steve Rhoades	Federal Reserve Board	Stephen C. Smith	George Washington University
Laura S. Rubin	Federal Reserve Board	Elinor H. Solomon	Georgetown University
Charles Siegman	Federal Reserve Board	John Cuddington	Georgetown University
Guy V.G. Stevens	Federal Reserve Board	Charles K. Ebinger	Georgetown University
Chunsheng Zhou	Federal Reserve Board	Daniel Kahn	Georgetown University
Gerald D. Lomen	Federal Reserve Board of New York	Mitch Kaneda	Georgetown University
George Budzeika	Federal Reserve Board of New York, Fed.	Jens Ludwig	Georgetown University
Richard E. Ludwick, Jr.	Federal Trade Commission	Ibrahim M. Oweiss	Georgetown University
Ohannes Hagopian	Religion College	James Tybout	Georgetown University
Abdollah Ferdowsi	Penn State University	George J. Vikarnis	Georgetown University
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Gabriel Torres	Fitch Investor Services	Ronald G. Cummings	Georgia State University
Benjamin Chinitz	Florida Atlantic University	Julie Hotchkiss	Georgia State University
Alison Butler	Florida International University	Jorge Martinez-Vazquez	Georgia State University
Maria Willumsen	Florida International University	Rubin Saposnik	Georgia State University
James Cobbe	Florida State University	David L. Sjoquist	Georgia State University
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William J. Serow	Florida State University, Ctr. for the Study of Pop.	Peter G. Sassone	Georgia Tech
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Oliver Hart	Harvard University	Robin Klay	Hopa College
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Nathan Keyfitz	Harvard University	Sung Kwack	Howard University
David Laibson	Harvard University	Chuck Nwaka	Howard University
Andrew Metrick	Harvard University	C. Elisabeth Pittman	HPA, Inc.
John R. Meyer	Harvard University	L. Douglas Lee	HSBC Washington Analysis
Cheol Soo Park	Harvard University	Mark Shroder	HUD (for identification only)
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NAME	AFFILIATION	NAME	AFFILIATION
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Joyce Man	Indiana University	William L. Hemphill	International Monetary Fund
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Philip T. Powell	Indiana University	George Iden	International Monetary Fund
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Geoffrey Carliner	Institute for International Economics	Jonathan Levin	International Monetary Fund, Rtd.
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Zohreh M. Niknia	Johnson County Community College	Todd A. Watkins	Lehigh University
Nan L. Wilson	Johnson County Community College	Eban Goodstein	Lewis & Clark College
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Robert B. Borges	Kansas State University	Vishwanath Tirupattur	Lincoln National
Patrick Gormely	Kansas State University	Randy R. Grant	Linfield College
Steve Hamilton	Kansas State University	Stephen M. Lewarne	LMCL Corp
Richard L. D. Morse	Kansas State University	Douglas A. Wion	Lock Haven University
Amir Tavakkol	Kansas State University	Michael Edesess	Lockwood Financial Group
Roger Trenary	Kansas State University	Gang Feng	Lockwood Trade Journal Co., Inc.
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Youn-Suk Kim	Kean College of New Jersey	Ranbir Varma	Long Island University
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Penelope B. Prime	Kennedaw State University	Steven Booth	Los Alamos National Laboratory
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Bruce Vanderporten	Loyola University, Chicago	Paul Segerstrom	Michigan State University
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Walter Conson	Mathematica Policy Research	Paul W. Grimes	Mississippi State University
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Frank Zarnowski	Mount St. Mary's College	Lewis A. Kornhauser	New York University
George Heitmann	Muhlenberg College	** Wassily Leontief	New York University
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Hirschel Kasper	Oberlin College	Philip J. Ruder	Pacific University
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Michael K. Tamada	Occidental College	Teresa L. C. Laughlin	Palomar College
James Whitney	Occidental College	Loren A. Lee	Palomar College
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Joseph R. Mason	Office of the Controller of the Currency	Brandt Witte	Peace Corps, U.S. Department of State
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Frederick Church	Ohio Legislature Budget Office	Colin Polsky	Penn. State Univ., Earth System Science Center
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Robert J. Caswell	Ohio State University	Ali Abderrezak	Pennsylvania State University
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Nancy Ettlinger	Ohio State University	Gary Bolton	Pennsylvania State University
Eric Fisher	Ohio State University	Tim Considine	Pennsylvania State University
Belton M. Fleisher	Ohio State University	Jacob DeRooy	Pennsylvania State University
Amy Jocelyn Glass	Ohio State University	Donald J. Epp	Pennsylvania State University
Elián Khalil	Ohio State University	Ann Fisher	Pennsylvania State University
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Alan Randall	Ohio State University	Philip A. Klein	Pennsylvania State University
Brent Sohagen	Ohio State University	Childem Kurdas	Pennsylvania State University
Richard A. Tybout	Ohio State University	Jeffrey K. Lazo	Pennsylvania State University
Jay L. Zagorsky	Ohio State University	James D. Rodgers	Pennsylvania State University
Jingang Zhao	Ohio State University	Norman R. Swanson	Pennsylvania State University

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NAME	AFFILIATION	NAME	AFFILIATION
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Yoon Kim	Phoenix, Inc.	Rex J. Bates	R. J. Bates
James Lehman	Pitzer College	Robert L. Randall	RainForest ReGeneration
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Michael Kuehlwein	Pomona College	Antoinette J. Criss	Randolph-Macon Woman's College
James D. Likens	Pomona College	Eugenio Diaz-Bonilla	RDP Consulting Group
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Frank C. Wykoff	Pomona College	Carl M. Stevens	Reed College
Giles H. Burgess Jr.	Portland State University	Heidi Brown	Reed Consulting Group
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John F. Walker	Portland State University	Mary J. Oates	Regis College
Helen Youngelson-Neal	Portland State University	Robert L. Lessne	Rehabilitation Services, Inc.
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Peter Merrill	Pricewaterhouse	Sheila A. Martin	Research Triangle Institute
Elizabeth C. Bogen	Princeton University	Gary Zarkin	Research Triangle Institute
Gregory Chow	Princeton University	Marvin Feldman	Resource Decisions
Maria Hanraity	Princeton University	Dallas Burtraw	Resources for the Future
Burton Malkiel	Princeton University	Alema Karim	Rhode Island College
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Timothy Van Zandt	Princeton University	Gordon W. Smith	Rice University
Mark Watson	Princeton University	Kei-Mu Yi	Rice University
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Y J Yoon	Public Choice Center	Albert Keidel, III	Rock Creek Research, Inc.
Evan White	Public Utility Commission of Oregon	Bernard Rose	Rocky Mountain College
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John M. Connor	Purdue University	Dale Bremmer	Rose - Hulman Institute of Technology
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Patrick McCarthy	Purdue University	Horace J. De Podwin	Rutgers University
James C. Moore	Purdue University	A. Myrick Freeman III	Rutgers University

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Xum Z. Pomponio	St. Olaf College	Karen Nelson	Streamline Training & Documentation
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Victor R. Fuchs	Stanford University	Edward C. Kokkelenberg	SUNY, Binghamton
Auner Greif	Stanford University	Richard M. Romano	SUNY, Broome
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Bert G. Hickman	Stanford University	Thomas Romans	SUNY, Buffalo
Bruce F. Johnston	Stanford University	David Ring	SUNY, College at Oneonta
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Mordecai Kurz	Stanford University	William H. Foeller	SUNY, Fredonia
Lawrence J. Lau	Stanford University	Amar K. Parai	SUNY, Fredonia
Henry M. Levin	Stanford University	David A. Martin	SUNY, Geneseo
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Gerald M. Meier	Stanford University	William P. O'Dea	SUNY, Oneonta
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Javier Gimeno	Texas A&M University	Robert Hunt	The World Bank
Ronald C. Griffin	Texas A&M University	Estelle James	The World Bank
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Frank Giesber	Texas Lutheran University	Andrew Steer	The World Bank
Richard E. Quandt	The Andrew W. Mellon Foundation	Moshe Syrquin	The World Bank
Paul R. Carpenter	The Brattle Group	Humayun Tai	The World Bank
Peter Fox-Penner	The Brattle Group	Saji Thomas	The World Bank
Peter Fox-Penner	The Brattle Group	Jacques Van der Gaag	The World Bank
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Gerald Kraft	The GSK Group, Ltd.	Enrique Lerdau	The World Bank, Ltd.
Ronald H. Miller	The Hudson Group	George C. Maniatis	The World Bank, Ltd.
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Jane Sung	Truman State University	Paul D. Gayer	U. S. Dept of Health and Human Services, Rad.
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William H. Oakland	Tulane University	Adrian Kandry	U. S. Naval Academy
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MARCH 7, 1997

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J. Douglas Klein	Union College	** Gerard Debreu	University of California, Berkeley
Therese McCarthy	Union College	Aaron S. Edlin	University of California, Berkeley
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Charles D. Kolstad	University of California, Santa Barbara	Kenneth A. Lewis	University of Delaware
Lloyd J. Mercer	University of California, Santa Barbara	George R. Parsons	University of Delaware
Doug Steigerwald	University of California, Santa Barbara	Laurence Seidman	University of Delaware
Menzie D. Chinn	University of California, Santa Cruz	Russell F. Settle	University of Delaware
Daniel Friedman	University of California, Santa Cruz	David E. Black	University of Delaware
Richard B. Howarth	University of California, Santa Cruz	Pamela C. Brown	University of Delaware
Michael M. Hutchison	University of California, Santa Cruz	Lawrence P. Donnelley	University of Delaware
Lori Kletzer	University of California, Santa Cruz	Pamela J. Smith	University of Delaware
Alan Richards	University of California, Santa Cruz	Francis Tannian	University of Delaware
Catherine Y. Co	University of Central Florida	Donald Pemberton	University of Detroit, Mercy
James D. Fearon	University of Chicago	Maurice Tsai	University of Evansville
Lars Peter Hansen	University of Chicago	Sanford V. Berg	University of Florida
Milton Harris	University of Chicago	Eugene Brigham	University of Florida
David Hummels	University of Chicago	David Denslow	University of Florida
Gale D. Johnson	University of Chicago	Elias Dinopoulos	University of Florida
Stefan Krieger	University of Chicago	Ira Horowitz	University of Florida
Timur Kuran	University of Chicago	Tracy R. Lewis	University of Florida
Uzma Qureshi	University of Chicago	Jay R. Ritter	University of Florida
Andres Rodriguez	University of Chicago	John F. Scoggins	University of Florida
Thomas Sargent	University of Chicago	Richard E. Suttor	University of Florida

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ECONOMISTS' STATEMENT ON CLIMATE CHANGE

LIST OF ECONOMISTS WHO HAVE ENDORSED TO DATE MARCH 7, 1997

NAME	AFFILIATION	NAME	AFFILIATION
Andy Keeler	University of Georgia	Benjamin Wilner	University of Iowa
P. Mather Lindsay	University of Georgia	S. Y. Wu	University of Iowa
Steve Turner	University of Georgia	Neal Becker	University of Kansas
W. J. Florkowski	University of Georgia, Griffin	Joseph Sicilian	University of Kansas
Paul Callaghan	University of Guam	De-Min Wu	University of Kansas
Demetrios Giannaros	University of Hartford	Yoonbai Kim	University of Kentucky
Bharat Kolluri	University of Hartford	Donald J. Mullineaux	University of Kentucky
Farhad Rassek	University of Hartford	James Stoker	University of Kentucky
Rao Singamsetti	University of Hartford	Gonyung Park	University of La Verne
Sumner La Croix	University of Hawaii	John Vahaly	University of Louisville
Chung H. Lee	University of Hawaii	R. Betancourt	University of Maryland
David McClain	University of Hawaii	Christopher K. Clague	University of Maryland
James Moncur	University of Hawaii	Robert Costanza	University of Maryland
Richard E. Peterson	University of Hawaii	Peter Cramton	University of Maryland
Louis A. Rose	University of Hawaii	Maureen Cropper	University of Maryland
David L. Hammes	University of Hawaii, Hilo	John H. Cumberland	University of Maryland
Denise Eby Konan	University of Hawaii, Manoa	John W. Dorsey	University of Maryland
A. Reza Hoshmand	University of Hawaii, West Oahu	Karla Hoff	University of Maryland
D. Andrew Austin	University of Houston	Theodore C. Kariotis	University of Maryland
Steven G. Craig	University of Houston	Suzi C. Kerr	University of Maryland
Janet Kohlhaas	University of Houston	Anthony Lanyi	University of Maryland
A. Marvasti	University of Houston	Erik Lichtenberg	University of Maryland
Stephen Devadoss	University of Idaho	Douglas Meade	University of Maryland
Eliezer B. Ayal	University of Illinois	Arvind Panagariya	University of Maryland
Anil K. Bera	University of Illinois	Lee E. Preston	University of Maryland
John B. Braden	University of Illinois	Paul A. Weinstein	University of Maryland
Hans J. Brems	University of Illinois	Phillip Weitzman	University of Maryland UNW College
Robert W. Gillespie	University of Illinois	Norman D. Aitken	University of Massachusetts
Gerrit Knaap	University of Illinois	Branch Ben	University of Massachusetts
Walter W. McMahon	University of Illinois	Paul M. Brown	University of Massachusetts
Donald W. Paden	University of Illinois	James T. Campen	University of Massachusetts
George C. Pennacchi	University of Illinois	Nancy Folbre	University of Massachusetts
Robert Resek	University of Illinois	Irving Gershenberg	University of Massachusetts
Thomas S. Ulen	University of Illinois	Herbert Giwtes	University of Massachusetts
Richard F. Kosobud	University of Illinois, Chicago	Donald W. Katzner	University of Massachusetts
George Rosen	University of Illinois, Chicago	James K. Kindahl	University of Massachusetts
Houston H. Stokes	University of Illinois, Chicago	Joann Stewart	University of Massachusetts, Boston
William F. Maloney	University of Illinois, Urbana	David Terkla	University of Massachusetts, Boston
William F. Malowey	University of Illinois, Urbana	Andres Torres	University of Massachusetts, Boston
David J. Balan	University of Illinois, Urbana-Champaign	K. K. Fung	University of Memphis
Koji Taira	University of Indiana	David M. Kemme	University of Memphis
John M. Brooks	University of Iowa	Anphonse G. Holtmann	University of Miami
Joel Horowitz	University of Iowa	David Letson	University of Miami
Gerald Nordquist	University of Iowa	David C. Mauer	University of Miami
Thomas F. Pogue	University of Iowa	Kerry Anne McGeary	University of Miami
Calvin D. Siebert	University of Iowa	Bryan W. Roberts	University of Miami

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ECONOMISTS' STATEMENT ON CLIMATE CHANGE

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NAME	AFFILIATION	NAME	AFFILIATION
Yan Chen	University of Michigan	Nicholas Kalaitzandonakes	University of Missouri
Paul N. Courant	University of Michigan	Chyi-Ing Lin	University of Missouri
Alan V. Deardorff	University of Michigan	Shawn Ni	University of Missouri
Merritt B. Fox	University of Michigan	Donald J. Schilling	University of Missouri
Edward Gramlich	University of Michigan	Philip B. Thompson	University of Missouri, Rolla
Richard A. Hirth	University of Michigan	Douglas Dalenberg	University of Montana
F. Thomas Juster	University of Michigan	John Duffield	University of Montana
J. Kmenta	University of Michigan	Michael Kupilik	University of Montana
Jeffrey K. Mackie-Mason	University of Michigan	Lilyan E. Fulginiti	University of Nebraska
Michael R. Moore	University of Michigan	Gordon Karels	University of Nebraska
James N. Morgan	University of Michigan	Craig R. MacPhee	University of Nebraska
Christine Papajohn	University of Michigan	E. Wesley F. Peterson	University of Nebraska
Albert Park	University of Michigan	Roger F. Riefler	University of Nebraska
Jonathan A. Parker	University of Michigan	Richard K. Perrin	University of Nebraska, Lincoln
Terry L. Roe	University of Michigan	Ronald M. Cronovich	University of Nevada
Wolfgang F. Stolper	University of Michigan	Ricardo Gazel	University of Nevada, Las Vegas
Frank Thompson	University of Michigan	W. David Bradford	University of New Hampshire
Steven T. Vass	University of Michigan	Dwayne Wrightsman	University of New Hampshire
Michael Wellman	University of Michigan	Edward A. Downe	University of New Haven
Warren C. Whattey	University of Michigan	Robert Rainish	University of New Haven
Sugato Bhattacharyya	University of Michigan Business School	Geoffrey J. Bannister	University of New Mexico
David Weinstein	University of Michigan Business School	Max D. Bennett	University of New Mexico
Mark J. Perry	University of Michigan, Flint	K. Gawande	University of New Mexico
N. N. Reddy	University of Michigan, Flint	Christine Sauer	University of New Mexico
Edward Coen	University of Minnesota	Arja Turunen-Red	University of New Orleans
Jay S. Coggins	University of Minnesota	Andrew C. Brod	University of North Carolina
Jared Creason	University of Minnesota	Alfred J. Field Jr.	University of North Carolina
Bryan Dowd	University of Minnesota	Barry M. Popkin	University of North Carolina
Roger Feldman	University of Minnesota	David J. Ravenscraft	University of North Carolina
Edward Foster	University of Minnesota	Robert Gallman	University of North Carolina, Chapel Hill
Leonid Hurwicz	University of Minnesota	Teresa L. Kauf	University of North Carolina, Chapel Hill
Timothy J. Kehoe	University of Minnesota	Michael Luger	University of North Carolina, Chapel Hill
Pareena Lawrence	University of Minnesota	Richard A. Zuber	University of North Carolina, Charlotte
John A. Nyman	University of Minnesota	Fikret Ceyhan	University of North Dakota
Margaret Peteraf	University of Minnesota	Donald R. Escarraz	University of North Dakota
Philip M. Raup	University of Minnesota	Micheal A. McPhasa	University of North Texas
C. Ford Runge	University of Minnesota	Michael Nieswiadomy	University of North Texas
Vernon W. Ruttan	University of Minnesota	Jeffrey H. Bergstrand	University of Notre Dame
G. Edward Schuh	University of Minnesota	Ralph Chami	University of Notre Dame
Mahmood A. Zaidi	University of Minnesota	Robert E. Florence	University of Notre Dame
Robert T. Kudrle	University of Minnesota	Richard G. Sheehan	University of Notre Dame
Arne Kildergaard	University of Mississippi	Charles K. Wilber	University of Notre Dame
Norman K. Womer	University of Mississippi	James C. Hartigan	University of Oklahoma
Robert J. Bevins	University of Missouri	Zhen Zhu	University of Oklahoma
Floyd K. Harmston	University of Missouri	Shuanglin Lin	University of Omaha
W. Whitney Hicks	University of Missouri	Bruce A. Blomigen	University of Oregon

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NAME	AFFILIATION	NAME	AFFILIATION
Stephen Haynes	University of Oregon	Yhi-Min Ho	University of Saint Thomas
Raymond Mikesell	University of Oregon	Rosalie Liccardo Pacula	University of San Diego
Paul B. Simpson	University of Oregon	Man-Lui Lau	University of San Francisco
Robert E. Smith	University of Oregon	Mike Lehmann	University of San Francisco
James P. Ziliak	University of Oregon	Ed Scahill	University of Scranton
Arthur I. Bloomfield	University of Pennsylvania	Samuel L. Baker	University of South Carolina
David Cummins	University of Pennsylvania	Randolph C. Martin	University of South Carolina
Patricia M. Danzon	University of Pennsylvania	John H. McDermott	University of South Carolina
Paul E. Fischer	University of Pennsylvania	William T. Moore	University of South Carolina
Morris Hamburg	University of Pennsylvania	William S. Rawson	University of South Carolina
Alan Heston	University of Pennsylvania	Oliver G. Wood, Jr.	University of South Carolina
** Lawrence R. Klein	University of Pennsylvania	Dennis A. Johnson	University of South Dakota
Herbert S. Levine	University of Pennsylvania	John C. Briggs	University of South Florida
Daniel Levinthal	University of Pennsylvania	Thomas N. Chirikos	University of South Florida
Andrew Postlewaite	University of Pennsylvania	K. Gyimah-Brempong	University of South Florida
Petra E. Todd	University of Pennsylvania	Ella Hanni	University of South Florida
Franklin Allen	University of Pennsylvania, Wharton School	John W. Rowe, Jr.	University of South Florida
Elizabeth E. Bailey	University of Pennsylvania, Wharton School	R. Mark Wilson	University of South Florida
Richard C. Marston	University of Pennsylvania, Wharton School	Catherine S. Elliott	University of South Florida, New College
William G. Whitney	University of Pennsylvania, Wharton School	Frederick R. Strobel	University of South Florida, New College
Daniel Berkowitz	University of Pittsburgh	Semoon Chang	University of Southern Alabama
Gene W. Gruver	University of Pittsburgh	Timothy N. Cason	University of Southern California
Steve Husted	University of Pittsburgh	Kevin Chang	University of Southern California
John Kagel	University of Pittsburgh	Jeff Chapman	University of Southern California
Josephine E. Olson	University of Pittsburgh	Baizhu Chen	University of Southern California
Alvin E. Roth	University of Pittsburgh	Richard H. Day	University of Southern California
Steven F. Rushen	University of Pittsburgh	Peter Gordon	University of Southern California
Kevin Sontheimer	University of Pittsburgh	Jeff Nugent	University of Southern California
Michael H. Spiro	University of Pittsburgh	Peter B. Rosendorff	University of Southern California
Edward Susana	University of Pittsburgh	Howard F. Chang	University of Southern California Law School
Jerome C. Wells	University of Pittsburgh	Lewis R. Gale, IV	University of Southwest Louisiana
Evaldo A. Cabarrony	University of Puerto Rico	Marsha Blumenthal	University of St. Thomas
Kate Stirling	University of Puget Sound	Paul R. Casperson	University of St. Thomas
Lorenzo Garbo	University of Redlands	Charles M. Gray	University of St. Thomas
John P. Burkett	University of Rhode Island	Demos P. Hadjiyannis	University of Tennessee
S. Ghon Rhee	University of Rhode Island	Peter M. Bearse	University of Tennessee
Stephen Swallow	University of Rhode Island	Sidney L. Carroll	University of Tennessee
Robert Dolan	University of Richmond	Amy Farmer	University of Tennessee
Peter W. Schuhmann	University of Richmond	Charles B. Garrison	University of Tennessee
Jonathan Wight	University of Richmond	Jean Gauger	University of Tennessee
Jeffrey S. Banks	University of Rochester	John W. Mayo	University of Tennessee
James A. Kahn	University of Rochester	Matthew N. Murray	University of Tennessee
Per Krusell	University of Rochester	Jonathan D. Rubin	University of Tennessee
Lionel W. McKenzie	University of Rochester	Thomas R. Sadler	University of Tennessee
Florian Zettelmeyer	University of Rochester	E. Bruce Hutchinson	University of Tennessee, Chattanooga
Eric Hanushak	University of Rochester, Wallis Institute	William J. Crowder	University of Texas

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NAME	AFFILIATION	NAME	AFFILIATION
Chrys Dougherty	University of Texas	Haldeh Salehi-Esfahani	University of Washington
Don Fullerton	University of Texas	Robert Varadi	University of Washington
Tracy Hofer	University of Texas	James Andreoni	University of Wisconsin
Charles C. Holt	University of Texas	Patricia Hallinan	University of Wisconsin
David Kendrick	University of Texas	Donald A. Nichols	University of Wisconsin
Stephen L. McDonald	University of Texas	Raghar Oygard	University of Wisconsin
Dwight Steward	University of Texas	James D. Schilling	University of Wisconsin
Wim P.M. Vijverberg	University of Texas	Lawrence Weiser	University of Wisconsin
Geoffrey T. Andron	University of Texas, Austin	Kenneth D. West	University of Wisconsin
Ray Marshall	University of Texas, Austin	Abbas A. Taheri	University of Wisconsin Center, Fox Valley
David Scoones	University of Texas, Austin	Wayne Carroll	University of Wisconsin, Eau Claire
Brian M. Trinquet	University of Texas, Austin	Maria DaCosta	University of Wisconsin, Eau Claire
Paul W. Wilson	University of Texas, Austin	Darwin Wassink	University of Wisconsin, Eau Claire
Charles Lackey, Jr.	University of Texas, Brownsville	Sayed Payesteh	University of Wisconsin, Fond du Lac
John Merrifield	University of Texas, San Antonio	Thomas S. Nesslein	University of Wisconsin, Green Bay
Jose A. Pagan	University of Texas-Pan American	Glenn Knowles	University of Wisconsin, LaCrosse
Michael Ballot	University of the Pacific	W. A. Brock	University of Wisconsin, Madison
David E. Keefe	University of the Pacific	Martin David	University of Wisconsin, Madison
Walter C. Wagner	University of the Pacific	Arik Levinson	University of Wisconsin, Madison
Johannes Overbeek	University of the Virgin Islands	James D. Shilling	University of Wisconsin, Madison
Alan H. Gleason	University of Toledo	David J. Bernstein	University of Wisconsin, Milwaukee
John Murray	University of Toledo	Markos J. Mamalakis	University of Wisconsin, Milwaukee
C. R. Winegarden	University of Toledo	Sol Shalit	University of Wisconsin, Milwaukee
Bobbie L. Horn	University of Tulsa	Nancy J. Burnett	University of Wisconsin, Oshkosh
John Karikari	University of Tulsa	M. Kevin McGee	University of Wisconsin, Oshkosh
Gail Blattenberger	University of Utah	Norman R. Cloutier	University of Wisconsin, Parkside
Lance Girton	University of Utah	Dennis A. Kaufman	University of Wisconsin, Parkside
Mark Glick	University of Utah	Richard H. Keehu	University of Wisconsin, Parkside
Kenneth P. Jameson	University of Utah	Ahdol Sooti	University of Wisconsin, Platteville
Thomas N. Maloney	University of Utah	Thomas D. Crocker	University of Wyoming
R. Thayne Robson	University of Utah	Mark D. Soskin	University of Central Florida
Abbas Alnaerawi	University of Vermont	Robert Stern	University of Michigan
Michael Seginowitz	University of Vermont	Jerrold M. Peterson	University of Minnesota
Alfred L. Thimm	University of Vermont	John D. Bitzan	Upper Great Plains Transportation Institute
Mark R. Eaker	University of Virginia	Gerhard N. Rostvold	Urbanomics Research Associates
John Elder	University of Virginia	Christine Williams	USC
Charles A. Holt	University of Virginia	Amit Batabyal	Utah State University
Jane Irig	University of Virginia	Carl Lundgren	Valmarco Forecasting
Michael G. Rukstad	University of Virginia	Rudolph C. Blitz	Vanderbilt University
John K. Whitaker	University of Virginia	Stephen Buckles	Vanderbilt University
John Treble	University of Wales	Malcolm Getz	Vanderbilt University
William Bayers	University of Washington	C. Elton Hinshaw	Vanderbilt University
Gardner Brown	University of Washington	Gian S. Sahota	Vanderbilt University
Kathryn Dewenter	University of Washington	Fred M. Westfield	Vanderbilt University
Dan Jacoby	University of Washington	Geoffrey A. Jehle	Vassar College
J. Lawarree	University of Washington	Phyllis W. Isley	Vermont Law School

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NAME	AFFILIATION	NAME	AFFILIATION
N. Lanpodis	Villa Julie College	Jerald J. Fletcher	West Virginia University
Wen Mao	Villanova University	Clifford B. Hawley	West Virginia University
Kishor Thanawala	Villanova University	Kern O. Kymn	West Virginia University
John H. Bowman	Virginia Commonwealth University	Walter C. Labys	West Virginia University
Amy H. Dalton	Virginia Commonwealth University	Douglas W. Mitchell	West Virginia University
Eleanor C. Snellings	Virginia Commonwealth University	Peter V. Schaeffer	West Virginia University
Ojavad Salehi-Isfahani	Virginia Polytechnic Institute	Susan K. Kask	Western Carolina University
Thomas J. Meeks	Virginia State University	Vaman Rao	Western Illinois University
Catherine Eckel	Virginia Tech	James A. Yunker	Western Illinois University
George W. Norton	Virginia Tech	Donald L. Alexander	Western Michigan University
Vijay Singal	Virginia Tech	Usree Bandyopadhyay	Western Michigan University
Mark Stegeman	Virginia Tech	Annette N. Brown	Western Michigan University
Nicholas Tideman	Virginia Tech	Bassam E. Harik	Western Michigan University
Allan Mandelstamm	Virginia Technical University	Emily P. Hoffman	Western Michigan University
Vernon O. Roningen	VORSDM	Werner Sichel	Western Michigan University
Glen H. Mitchell	VPSU	Dennis R. Murphy	Western Washington University
Christopher J. O'Leary	W.E. Upjohn Institute	John R. Wagner	Westfield State College
Jonathan Peters	Wagner College	Maria K. Wrotniak	Westminster College
Donald W. Walls	Walls and Associates	James Halteman	Wheaton College
Art Goldsmith	Washington and Lee University	John A. Walgreen	Wheaton College
John C. Windfrey	Washington and Lee University	Gordon Weil	Wheaton College
Lisa Daniels	Washington College	James F. Shepherd	Whitman College
Bruce Herrick	Washington & Lee University	Samuel Webb	Wichita State University
Gareth P. Green	Washington State University	Charles Waldauer	Widener University
Robert Rosenman	Washington State University	James S. Hanson	Willamette University
Ernst W. Strumsdorfer	Washington State University	Don Negri	Willamette University
Marcus Berliant	Washington University	Beth A. Wilson	Willamette University
Wilhelm Neufeind	Washington University	Elizabeth Brainerd	Williams College
Bruce Petersen	Washington University	Matthew Hyle	Winnona State University
Dennis L. Lambert	Washington University School of Medicine	David Peterson	Wisconsin Department of Revenue
R. W. La Hote	Washburn Community College	Marcus Boggs	Wishview Press
Kenneth G. McCain	Wassford International	E. B. Gendel	Woolbury University
Yong U. Glasure	Wayland Baptist University	Michael J. Radzicki	Worcester Polytechnic Institute
Doris Geide-Stevenson	Weber State University	Edward K. Hawkins	World Bank, Rtd.
John Mukum Mbaku	Weber State University	Robert Repetto	World Resources Institute
Sarah Tinkler	Weber State University	Paul Faeth	World Resources Institute
James Burtle	WEFA Group	Norman S. Anon	Wright State University
Virendra Singh	WEFA Group	Rishi Kumar	Wright State University
Jeffrey F. Werling	WEFA Group	Thomas Traynor	Wright State University
Marshall Goldman	Wellesley College	Steven C. Agee	XAS Corporation
Lori Bollinger	Wesleyan University	Robert O. Zimmerman	Xavier University
John P. Bonin	Wesleyan University	Henry Hansmann	Yale Law School
Joyce Jacobsen	Wesleyan University	Paul W. MacAvoy	Yale School of Management
Marnie W. Mueller	Wesleyan University	Katherine O'Regan	Yale School of Management
Gary Yohe	Wesleyan University	Lynne Bennett	Yale University
Stratford M. Douglas	West Virginia University	Dirk Berlemann	Yale University

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ECONOMISTS' STATEMENT ON CLIMATE CHANGE

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MARCH 7, 1997*

NAME	AFFILIATION	NAME	AFFILIATION
Robert Evenson	Yale University		
Barry Nalebuff	Yale University		
* William Nordhaus	Yale University		
M. J. Peck	Yale University		
L. G. Reynolds	Yale University		
T. Paul Schultz	Yale University		
Jody Sindelar	Yale University		
** James Tobin	Yale University		
Joel Waldfoegel	Yale University		
Gustav Ranis	Yale University, Economic Growth Center		

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NAME AFFILIATION

Annonymous
Michael Adler
Ahmad Afrasiabi
Donald E. Agthe
Gary Anders
Anthony Apostolides
Almudena Arcelus
Arthur C. Ashbrook, Jr.
David Ashmore
Elias R. Ason
Shimon Awerbuch
Omar Azfar
Timothy D. Baker
Druc Barker
Chris Beacham
Jack Beebe
Ken Beier
William R. Belmont
Rene Bernier
Robert V. Bishop
Robert V. Bishop
Jeff Bond
Theodore Borek
Joseph E. Bowring
Paul Boyce
Abbass Bozory
W. C. Brainard
Benjamin Bridges
Shannon R. Brown
Harold L. Bryant
Rogene A. Buchholz
David Buland
J. Herbert Burkman
David R. Burnett
David Burrese
Joseph P. Cain
Ralph N. Calkins
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Frank Canter
Joseph V. Cartwright
Angela E. Chang
Roberto Chang
Irving W. Cheskin
Ajai Chopra
Andrew Chritton
Clara Chu

NAME AFFILIATION

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A. W. Coats
Lee Cohen
Charles D. Coleman
Gilbert R. Coleman
John S. Coleman
Lorraine M. Connell
Roger H. Coupal
Julie-Anne M. Cronin
William Crowell
Irma T. de Alonso
Karl De Schweinitz
Andrea Dean
Ann A. Dean
William Dellal
Mike Denning
Robert Dennis
Philip A. Dillaber
Gordon K. Douglass
Karl Driessen
Kenneth R. Dunmore
James Duprey
David M. Eaves
Peter M. Emerson
Christian Ergen-Zucchi
Bruce Fallick
George R. Feiwel
Marianne Ferber
Thomas Foster
George Fox
Philip E. Franklin
Hugh Franks
Peter F. Freund
Joseph Froomkin
John Dean Gaffey
Craig Gallet
Thesia I. Garner
Howard Gensler
Frank W. Gery
Arun Kumar Ghosh
James E. Glassman
Patricia Godoy-Kain
David Calvin Gogerty
Dana Goldman

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NAME	AFFILIATION	NAME	AFFILIATION
Kent R. Nilsson		Fereidoon P. Sioshansi	
M. S. Noorzoy		David I. Siskind	
John R. Norsworthy		Edward K. Smith	
Donald W. O'Connell		Leah J. Smith	
Donald J. O'Hara		Saul I. Smith	
Gerald T. O'Mara		Terrence P. Smith	
Kenan Ogelman		John J. Soladay	
Ernest C. Olson		Thomas M. Stanback, Jr.	
Carlos Padilla		John Stein	
Stahis S. Panagides		Robert L. Steiner	
Jan Parker		Robert D. Stevens	
Stephen Parkoff		John R. Stewart, Jr.	
George L. Perry		William S. Stine	
Barbara Y. Peters		Eugene D. Straub	
Ralph W. Pfouts		Cornelia Strawser	
Nora Piore		Timothy E. Sullivan	
Elliot A. Ponchick		Li-Teh Sun	
Abdul Qayum		Daniel G. Swanson	
Michael Rabbitt		Stella Swetnick	
Richard Raymond		Clyde Tappwig	
David Reiffen		Lawrence Thurston	
Robert A. Rennie		Arturo R. Torres Jr.	
Jeffrey M. Rhodes		James Trask	
R.R. Rhomberg		Kuo Tseng	
Mark W. Rider		W. N. Turpin	
David W. Riggs		Carlos Ullberri	
David C. Roberts		Evamaria Uribe	
S. Scanlon Romer		Evert Van Der Heide	
Charles Ronald Ross		John Van Dewater	
Gregory L. Rosston		Karen Van Nuys	
Richard L. Ruth		Va Nee V. Van Vleck	
Karl E. Sagner		Desiderius Viktor	
Teresa Sala-Rueda		Juan A. Vileta-Trip	
David Sandler		Keith Waehrer	
Chetan Sanghavi		Leibert Benet Wallerstein	
Debojyoti Sarkar		Gary Watts	
David Schenker		Richard Weckstein	
Valeo Schultz		Andrew W. Weier	
Deborah A. Senior		Barbara Weinstein	
Marnie Shaul		William J. Weiskopf	
Joseph F. Shaw		John H. Wells Jr.	
John P. Shelton		Damon Wheelchel	
Priya Shyamsundar		Thomson Whittin	
Peter Siegelman		Volker Wieland	
F. Brian Simmons, III		Jonathan Willner	
Kent Sims		Nancy H. Wilson	

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Scott Goldsmith		Douglass B. Lee	
Richard Gomez		Tim Lefever	
Richard B. Goode		Frank Leiber	
Bernard Gordon		Sergio Pereira Leite	
Edgar J. Gordon		Frank Lerman	
Carmine Gorga		James A. Lew	
Gertrude Schroeder		Chyongchiou Lin	
Jay V. Groves		Ehmer P. Lotshaw	
Caren Grown		John Maher	
Raymond L. Guarnieri		Jon Manger	
Souleyman Gueye		Roger Mann	
John M. Hackett		Lawrence F. Mansfield	
James L. Hamilton		D. Ward Mardfin	
Dr. Raynal Hammelton		Pat Markovich	
David D. Hanig		Yves Maroni	
Rudolph W. Hardy		William A. Masters	
Rebecca A. Havens		Charles S. Maurice	
Robert Hawkins		Timothy E. Mc Clive	
John Hayes		Gretchen McClain	
Mark D. Henson		Henry B. McFarland	
John J. Hisnanick		John McFarland	
Austin Curwood Hoggatt		Kathleen V. McNally	
Richard Hooley		Mary McNally	
Andrew Horowitz		Francois Melese	
Serim Huh		Eloy Mestre	
Jacob C. Hurwitz		George E. Michel	
Gordon Irlam		Dubravko Mihaljek	
Brian C. Jack		H. Lynn Miller	
Milton Garnet James		Raymond A. Miller	
Willem J. Jansen		Rick Mines	
Rod E. Jensen		Rafael Montalvo	
Nizar Jetha		John R. Moore	
Rose Jochnowitz		Fred Morser	
George A. Jougantoe		Milton Moss	
William Kahley		Robert T. Mott	
Patrick Karani		Martin Muhleisen	
Bernard Kemp		Robert Myers	
Amos Khasigian		Delle Nadler	
Kevin J. Kiyan		Maud Naroll	
Nicholas Komninos		Eric Nauenborg	
Jacques J. Kozub		John Navratil	
Kishure Kulkarni		Deenie Neff	
Van Lam		Jessica Gordon Nembhard	
Kathleen Lang		Richard Nichols	
Jules N. LaRocque		Jurg Niehans	
P. Michael Laub		Norman Nierenberg	

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TOTAL P.13

Paul K.

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Donna

Negotiations

Office 617 253-1551

re GLCC

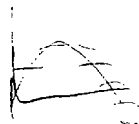
Right answer

AEE1

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1.25

1.75



low cost solution

WON'T get word
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(eq. to 1.25, but above 1.75)
without current ap.

We from:

- announcement of energy
- moral situation from WH
- govt. Rehn. R&D, unless
maybe massive subsidize
- govt. outreach - PR for Rehn
dissemination
- respect of more serious political
measures 15 yrs in the future

dangers

role of Bobo ecists letter

lots lunch

get together

Int. Energy

**OFFICE OF TIMOTHY E. WIRTH
UNDER SECRETARY
FOR GLOBAL AFFAIRS**

**DEPARTMENT OF STATE
2201 C Street, N.W.
Room 7250
Washington, D.C. 20520
Phone: 202-647-6240 Fax: 202-647-0753**

New Fed link

TO: Distribution: See Attached List
FROM: Debbie Jones
DATE: 3/4/97
FAX: _____

Number of Pages (including cover): 12

COMMENTS: Under Secretary Wirth is hosting a Climate Change Luncheon
on Thursday, March 13 from 12:00-1:30 pm in the Henry Clay Room on the 8th floor
of the State Department. Please contact me on (202) 647-6205 of your
principal's attendance. FYI: Guest of Honor is Prof. Paul Krugman of MIT.

INTERAGENCY GROUP ON CLIMATE CHANGE

Jim Baker	Commerce/NOAA	(O) 482-3436 (F) 408-9674 POC: Pat
Rosina Bierbaum	White House	(O) 456-6202 (F) 456-6025 72 POC: Sandy
Eileen Claussen	State	(O) 647-1554 (F) 647-0217 POC: Lillie
Charles Curtis	Energy	(O) 586-5500 (F) 586-7573 POC: Kim
Everett Ehrlich	Commerce	(O) 482-3727 (F) 482-0432 POC: Vickie
Jeffrey Frankel	CEA	(O) 395-5046 (F) 395-6947 POC: Francine
John Garamendi	Interior	(O) 208-6291 (F) 208-1873 POC: Gwen
Jack Gibbons	White House	(O) 456-7116 (F) 456-6021 POC: Susie
T. J. Glauthier	OMB	(O) 395-4561 (F) 395-4639 POC: Alecia
Joshua Gotbaum	Treasury	(O) 622-2200 (F) 622-2633 POC: Rosemary

- 2 -

Fred Hansen	EPA	(O) 260-4724 (F) 401-3764 POC: Linda H.
Elgie Holstein	NEC	(O) 456-2800 (F) 456-2223 POC: Gay
Jeff Lang	USTR	(O) 395-5114 (F) 395-4549 POC: Dena
Katie McGinty	CEQ	(O) 456-5147 (F) 456-2710 POC: Robert
Jerry Melillo	White House	(O) 456-6202 (F) 456-6025 POC: Sandy
Alicia Munnell	CEA	(O) 395-5036 (F) 395-6958 POC: Lisa
Richard Rominger	USDA	(O) 720-6158 (F) 720-5437 POC: Joanne
David Sandalow	CEQ	(O) 456-6224 (F) 456-2710 POC: Wendy
Lois Schiffer	Justice	(O) 514-2701 (F) 514-0557 POC: Norma
James Steinberg	White House	(O) 456-9480 (F) 456-9490 POC: Kathy

- 3 -

Lawrence Summers	Treasury	(O) 622-1080 (F) 622-0081 POC: Judy
Dan Tarullo	NEC	(O) 456-5353 (F) 456-1605 POC: Kristin
Timothy E. Wirth	State	(O) 647-6240 (F) 647-0753 POC: Debbie
John (Randy) Wood	State	(O) 647-9796 (F) 647-0753 POC: Debbie



United States Department of State

Under Secretary of State
for Global Affairs

Washington, D.C. 20520-7250

March 4, 1997

MEMORANDUM

TO: Climate Deputies Group

FROM: G - Timothy E. Wirth *TEW in SM*

SUBJECT: Scheduled Luncheon Speakers

*No you want any
of these in your
calendar?*

Following is a list of speakers for our Climate Change luncheon group:

Thursday, March 13: Prof. Paul Krugman, MIT

Prof. Krugman was one of the five signatories of the economics letter (attached). He will discuss economic impacts and benefits.

Thursday, March 27: Prof. Paul Epstein, Harvard Medical School

From his perspective on Medicine and Public Health, Prof. Epstein has done extensive work on the health impacts of Climate Change. He is one of the world's leading public health authorities, paying special attention to infectious diseases.

Tuesday, April 1: E. Linn Draper, President & CEO, American Electric Power

American Electric Power is one of the largest investor-owned utilities in the USA, with major investment in coal fired power plants. Mr. Draper is deeply engaged in the issues of utility deregulation and strategies for climate change.

Wednesday, April 16: Robert Shapiro, President, Monsanto

Robert Shapiro has led Monsanto through a major transformation, and the company is now world leader in bio-engineering related agribusiness. The impact of Climate Change for agriculture makes this transition even more compelling.

Wednesday, April 30: Kenneth Lay, President, Enron

Ken Lay has transformed Enron into a broad energy company and views Climate Change as a great opportunity for business and for the USA.

- 2 -

Thursday, May 8: New Director of the National Renewable Energy Laboratory

The new Director (who will be officially designated on March 1) will discuss renewables, their expected role in dealing with climate change, cost and technology projections to 2050. NREL is the government-sponsored laboratory dedicated to renewables.

Friday, May 30: Paul O'Neill, Chairman & CEO, ALCOA

A member of the Business Council on Sustainable Development and President of the largest aluminum company in America, Mr. O'Neill has been a leader in the transition of a major industry and in positioning that industry in the world economy.

We have a number of other invitations outstanding and I would welcome any ideas you may have for speakers. Lunch will be held on the 8th floor of the State Department, a buffet style. The cost is approximately \$15.00. We will send out a reminder three weeks before each lunch, and ask for an RSVP. In prior discussions, we agreed on a no substitution policy unless a truly compelling case could be made.

If you have questions, please call Randy Wood or Debbie Jones on (202) 647-6205.

g/admin:clispeak

PAUL KRUGMAN: BIOGRAPHICAL SKETCH

Paul Krugman is Professor of Economics at MIT. He received his B.A. from Yale University in 1974, and his Ph.D. from MIT in 1977. From 1977 to 1979 he taught at Yale; then moved to MIT, where he remained on the faculty from 1979 to 1994, he then moved to Stanford from 1994 until 1996. In 1982-3, on leave from MIT, he served as chief international economist of the Council of Economic Advisers.

Krugman is the author or editor of 16 books and more than 100 papers in professional journals and edited volumes. His professional reputation rests largely on work in international trade and finance; he is one of the founders of the "new trade theory," a major rethinking of the theory of international trade. In recognition of that work, in 1991 the American Economic Association awarded him its John Bates Clark medal, a prize given every two years to "that economist under forty who is adjudged to have made a significant contribution to economic knowledge". Krugman's current academic research is focussed on the application of ideas from complexity theory and the concept of self-organizing systems to economics, especially to the spatial organization of production.

At the same time, Krugman has written extensively for a broader public audience. Some of his recent articles on economic issues, originally published in *Foreign Affairs*, *Harvard Business Review*, *Scientific American*, and other journals, are reprinted in his latest book, *Pop Internationalism*.

January 3rd, 1997

Dear Colleague,

As you may know, representatives of the world's nations will convene in Kyoto in December, 1997 to negotiate an international agreement addressing the threat of global climate change due to greenhouse gas emissions. This presents a significant opportunity for the United States to exercise a leadership role in ensuring our long-term well-being. Conversely, a failure on the part of the U.S. government to put forward a well-reasoned position would be a major environmental, economic, and diplomatic setback.

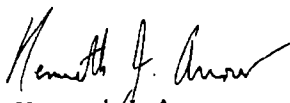
As the climate debate unfolds, it is imperative that public policy be guided by sound economics rather than misleading claims put forward by special interest groups. For this reason, we invite you to join us in endorsing the attached non-partisan consensus statement on the economics of climate change.

Once this statement has been signed by a large number of economists, it will be widely disseminated to leaders in the public and private sectors, and to the general media. This effort is being coordinated by Redefining Progress, a non-partisan, non-profit public policy organization.

Attached please find an endorsement form for your consideration. This letter and endorsement form are being sent to the membership of the American Economic Association. Please feel free to circulate it to your colleagues in case they are not on the AEA mailing list.

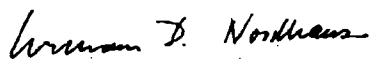
We thank you for your prompt attention to this critical issue.

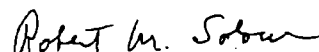
Sincerely,


Kenneth F. Arrow


Dale W. Jorgenson


Paul R. Krugman


William D. Nordhaus


Robert M. Solow

Endorsed by over 2,000 Economists, including six Nobel Laureates.

ECONOMISTS' STATEMENT ON CLIMATE CHANGE

We the undersigned agree that:

I. The review conducted by a distinguished international panel of scientists under the auspices of the Intergovernmental Panel on Climate Change has determined that "the balance of evidence suggests a discernible human influence on global climate." As economists, we believe that global climate change carries with it significant environmental, economic, social, and geopolitical risks, and that preventive steps are justified.

II. Economic studies have found that there are many potential policies to reduce greenhouse-gas emissions for which the total benefits outweigh the total costs. For the United States in particular, sound economic analysis shows that there are policy options that would slow climate change without harming American living standards, and these measures may in fact improve U.S. productivity in the longer run.

III. The most efficient approach to slowing climate change is through market-based policies. In order for the world to achieve its climatic objectives at minimum cost, a cooperative approach among nations is required—such as an international emissions trading agreement. The United States and other nations can most efficiently implement their climate policies through market mechanisms, such as carbon taxes or the auction of emissions permits. The revenues generated from such policies can effectively be used to reduce the deficit or to lower existing taxes.

ENDORSEMENT FORM

NAME _____ SIGNATURE _____

TITLE/AFFILIATION _____ DATE _____

DO YOU HOLD A PHD IN ECONOMICS ☐ YES ☐ NO IF NO, DEGREE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____ E-MAIL _____

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SAN FRANCISCO, CA 94108

NOBEL LAUREATE SIGNATORIES

Kenneth J. Arrow
Stanford University

Gerard Debreu
University of California at Berkeley

John C. Harsanyi
University of California at Berkeley

Lawrence R. Klein
University of Pennsylvania

Wassily Leontief
New York University

Franco Modigliani
Massachusetts Institute of Technology (Emeritus)

Robert M. Solow
Massachusetts Institute of Technology

James Tobin
Yale University

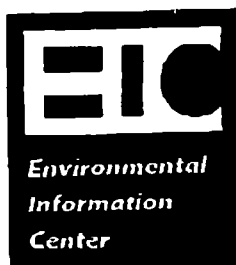
ECONOMISTS' STATEMENT ON CLIMATE CHANGE

Among the over 2,300 economists who have endorsed the Economists' Statement on Climate Change are the following, they include scholars at top universities and economists from top corporations.

Michael C. Barth	ICF Kaiser	Laurence J. Kotlikoff	Boston University
William J. Baumol	New York University	Anne O. Krueger	Stanford University
Steven Neil Braun	Council of Economic Advisers	Mordecai Kurz	Stanford University
W.A. Brock	University of Wisconsin, Madison	Steven G. Lanning	Bell Labs-Lucent Technologies
Martin Bronfenbrenner	Duke University	Lester Lave	Carnegie Mellon University
John P. Brown	KPMG Economic Consulting Services	David Lui	Southern California Edison
R. Thomas Burge	Proctor & Gamble Pharmaceuticals	Paul W. MacAvoy	Yale School of Management
Dallas Burtraw	Resources for the Future	Gerald M. Meiser	Stanford University
Trudy Ann Cameron	University of Los Angeles California	John R. Meyer	Harvard University
Jian Cao	AT&T	Christopher J. Monroe	AT&T
Carl F. Christ	Johns Hopkins University	Richard R. Nelson	Columbia University
Gerard Debreu	University of California at Berkeley	Richard B. Norgaard	University of California at Berkeley
Stephen J. DeCanio	University of California at Santa Barbara	Charles Plott	California Institute of Technology
Robert Dorfman	Harvard University	Richard E. Quandt	The Andrew W. Mellon Foundation
Franklin M. Fisher	Massachusetts Institute of Technology	Roy Radner	New York University
Peter J. Francis	CNA Corporation	Gordon Rausser	University of California at Berkeley
Victor R. Fuchs	Stanford University	Kenneth Rogoff	Princeton University
Claudia Goldin	Harvard University	David Romer	University of California at Berkeley
Edward Gramlich	University of Michigan	Michael Rothschild	Princeton University
Jerry R. Green	Harvard University	Daniel Rubinfeld	University of California at Berkeley
Frances Hammond	General Motors Corporation	Vernon W. Ruttan	University of Minnesota
John C. Harsanyi	University of California at Berkeley	Jeffrey Sachs	Harvard University
Oliver Hart	Harvard University	Thomas Sargent	University of Chicago
James J. Heckman	University of Chicago	F.M. Scherer	Harvard University
Albert O. Hirschman	Institute for Advanced Study	T. Paul Schultz	Yale University
Jack Hirshleifer	University of Los Angeles California	M.M. Shahjahan	PEPCO
Robert Hunt	World Bank	Steven Shavell	Harvard University
Leonid Hurwicz	University of Minnesota	A. Michael Spence	Stanford University
Christopher Jencks	Harvard University	Robert Stavins	Harvard University, Kennedy School
Gale D. Johnson	University of Chicago	Bruce Stram	Enron Corporation
Carl Kaysen	Massachusetts Institute of Technology	James Tobin	Yale University
Robert Kirchner	PEPCO	Gordon Tullock	University of Arizona
Lawrence R. Klein	University of Pennsylvania	Hal R. Varian	University of California at Berkeley
J. Kmenta	University of Michigan	W. Kip Viscusi	Harvard Law School
		Oliver E. Williamson	University of California at Berkeley



George Abar



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Fax 202.797.6501
Email eicinfo@acpa.com or
[first initial] + [lastname]@acpa.com
Web <http://www.igc.apc.org/eic>

MEDIA ADVISORY
Thursday, February 27, 1997

Contact: George Abar
Telephonc: (202)797-6500

Debunking Doomsday

With GCC's Economic Models, It's Garbage In, Garbage Out

Washington, DC -- Only this month, eight Nobel Prize-winners and 2,300 other economists endorsed a statement that reads, "sound economic analysis shows that there are policy options that would slow climate change without harming American living standards, and these measures may in fact improve U.S. productivity in the longer run."

Yet, today, the Global Climate Coalition (GCC) plans to proclaim, once again, that efforts to mitigate climate change will bring doom and gloom to the U.S. economy and to the economy of developing nations. The GCC, a lobby funded by the coal and oil industries, will point to the economic analysis of industry consultants Charles Rivers Associates for proof of this self-serving conclusion.

The economic projections promoted by the GCC are seriously flawed, according to Dr. Florentin Krause, a lead author of the economic modeling review recently undertaken by the authoritative UN Intergovernmental Panel on Climate Change (IPCC), and the Director of the International Project for Sustainable Energy Paths (IPSEP).

In a soon to be released report, Dr. Krause concludes that studies relied upon by the GCC (including prior studies by Charles Rivers Associates):

- report costs for climate change mitigation that fall outside the range of credible estimates because they fail to use analytically sound, state-of-the-art modeling procedures;
- grossly overstate costs because they fail to consider five major policy options for increasing economic welfare while reducing emissions (so-called double dividends or no regrets options).

Dr. Krause also documents the "spin" used by the GCC to paint an alarmist picture from supposed economic impacts that are slight enough to be well within the margin of error of long-range economic forecasts. The GCC rarely mentions that its predicted worst-year cost for climate change mitigation (typically between 2-4 percent of GDP) occur in the context of a **doubling** of projected GDP over approximately the same time frame. Thus, climate change mitigation would not, as the GCC has claimed, "force Americans into second class lifestyles."

Press wishing to discuss these and other findings in the upcoming IPSEP report can contact Dr. Krause at (510) 525-7530.

January 3rd, 1997

Dear Colleague,

As you may know, representatives of the world's nations will convene in Kyoto in December, 1997 to negotiate an international agreement addressing the threat of global climate change due to greenhouse gas emissions. This presents a significant opportunity for the United States to exercise a leadership role in ensuring our long-term well-being. Conversely, a failure on the part of the U.S. government to put forward a well-reasoned position would be a major environmental, economic, and diplomatic setback.

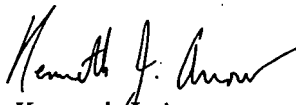
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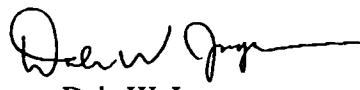
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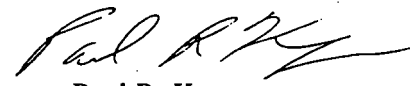
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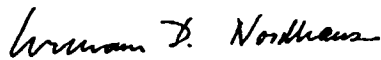
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Sincerely,


Kenneth J. Arrow


Dale W. Jorgenson


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ECONOMISTS' STATEMENT ON CLIMATE CHANGE

*Endorsed by Over 2000 Economists
including six Nobel Laureates*

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FINANCIAL TIMES

FRIDAY FEBRUARY 14 1997

4

Economists back call for new carbon taxes

By Mark Suzman in Washington

More than 2,000 US economists, including six Nobel laureates, yesterday endorsed an unprecedented statement calling for new taxes on carbon use and an international emissions trading agreement to help control global warming.

The economists argue that using such market-based policies to limit the growth in greenhouse gas emissions could ultimately prove beneficial for the economy.

"For the United States in particular, sound economic analysis shows there are policy options

that would slow climate change without harming American living standards, and these measures may in fact improve US productivity in the long run," the statement says.

Although there are still some sceptics, the overwhelming consensus among economists is a blow for energy companies and other lobby groups which have managed to derail previous attempts to introduce such a carbon tax on the grounds that it would be prohibitively expensive.

It will also put pressure on the Clinton administration to come up with concrete proposals on com-

bating global warming ahead of the international conference on the issue in Kyoto, Japan, next December.

The administration recently indicated its support for emissions trading but has backed away from the idea of a carbon tax.

The statement was drafted by five prominent economists, Mr Kenneth Arrow and Mr Robert Solow, both Nobel prizewinners, Mr Dale Jorgenson of Harvard University, Mr Paul Krugman of the Massachusetts Institute of Technology and Mr William Nordhaus of Yale University.

It was circulated to economists

across the country by Redefining Progress, a non-partisan, non-profit public policy organisation based in San Francisco.

The statement cites scientific evidence from the United Nations-sponsored Intergovernmental Panel on Climate Change in 1995 to argue that "preventive steps are justified" to combat the "significant environmental, economic, social and geopolitical risks" associated with global warming.

Specifically, it calls for the US and other countries to co-operate on reforms such as carbon taxes and the auction of internationally tradeable emission permits. "The

revenues generated from such policies can effectively be used to reduce the deficit or to lower existing taxes," it says.

Mr Stephen DeCanio, senior economic fellow with Redefining Progress, said the statement is aimed at persuading the US to take an international lead in combating global warming.

"Some groups have asserted that we cannot address the global climate change problem without incurring serious economic harm," he said. "These 2,000 economists have said essentially the opposite - that the greatest risks lie with inaction."

The New York Times

THURSDAY, FEBRUARY 13, 1997

Economic Scene | Peter Passell

C2

Yawn. A global-warming alert.
But this one has solutions.

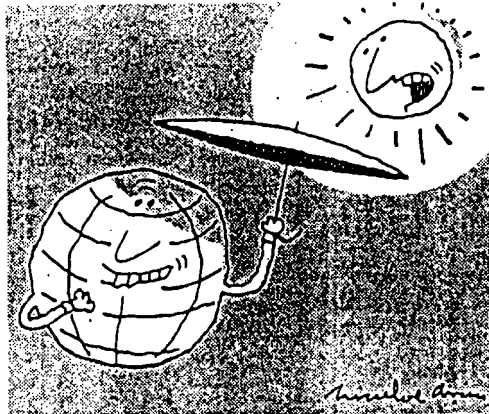
STERNLY worded petitions and ringing screeds of principle are as much a part of campus life as grade inflation — which is why Washington rarely takes them seriously. But the nation's movers and shakers would do well to pay attention to a statement on global warming by some 2,000 mostly academic economists.

For one thing, the signatures collected by Redefining Progress, a group of policy-minded social scientists based in San Francisco, range from the newish left (Duncan Foley of Barnard College) to the skeptical center (James Heckman of the University of Chicago) to the libertarian right (Gordon Tullock of the University of Arizona). "Market-based approaches to coping with climate change generate as much consensus among economists as free trade," explains Paul Krugman of M.I.T., one of the organizers of the statement.

More important, the statement focuses on what is now regarded by insiders as a make-it-or-break-it issue in slowing atmospheric warming: designing an international system that permits rich economies to contribute cash in lieu of emissions reductions. "Allowing some to pay others to reduce greenhouse emissions could reduce the total cost by 80 to 90 percent," estimates William Nordhaus, an economist at Yale and another organizer of the statement.

Like any committee looking for consensus, the drafters of the climate statement cast their net widely. "We believe that global climate change carries with it significant environmental, economic, social and geopolitical risks, and that preventive steps are justified," the unshocking introduction reads.

Those who read on, however, will discover there is meat on these bones: "Sound economic analysis," the authors argue, "shows that there are



Nicolae Asciu

policy options that would slow climate change without harming American living standards."

And what might these policy options be? Here, the drafters stake out a position that seems almost obvious to economists, but has barely entered the consciousness of environmental policy makers. "A cooperative approach among nations is required — such as an international emissions trading agreement," the statement asserts.

To understand where the economists really want the diplomats to go, consider where we are now. Current rates of deforestation and combustion of carbon-based fuels — coal, oil, gas — are adding carbon dioxide into the atmosphere faster than the oceans can absorb it. The higher carbon dioxide concentrations trap solar energy. Rising temperatures will likely change weather patterns radically and raise the level of the oceans.

Governments of all the major economies are vaguely committed to containing greenhouse gas emissions before once-a-century hurricanes become an annual event in the Caribbean, Kansas turns into a dust bowl and the Bay of Bengal doubles in size at the expense of Bangladesh. But the emphasis is on the vague: the process of setting emissions targets or creating political in-

stitutions to enforce the targets is in the talking stage.

That's where the economists' statement fits in. "We wanted to be there early," said Stephen DeCanio of the University of California at Santa Barbara, "before governments and politicians were locked into positions." Specifically, the statement is intended to give the Clinton Administration some help in pressing the idea of creating an international market in emissions permits at the next global meeting on climate change, set for Kyoto, Japan, in December.

The idea is simple. If and when world leaders start to deal with the practical issues, they are apt to set national targets for containing emissions that will be very expensive to meet in the rich industrial economies, and probably won't be honored in the large emerging economies like China, Russia, India and Indonesia.

Creating an emissions trading system that allows already rich economies to pay the emerging economies to use less energy and less carbon-intensive fuels as they develop offers a double dividend. It reduces the cost for developed countries, in turn reducing the chances their legislatures will balk. And it creates a pool of capital to be used as an incentive to push emerging economies toward environmentally benign growth.

Translation: Getting, say, China or India to switch from coal to natural gas, or to encourage energy conservation by charging world market prices at home would be a lot easier if they were paid billions of dollars each year to do it.

Not every economist who favors emissions trading signed the statement. "I'm worried it will be used at Kyoto to commit America to useless, expensive unilateral actions in reducing emissions," says Robert Hahn, an economist at the American Enterprise Institute.

But Mr. Nordhaus has very different worries. "Economists haven't been important players in environmental policy over the last 30 years," he said. "This time we could make a difference."

The Washington Post

AN INDEPENDENT NEWSPAPER

Staying Cool

WE NOW KNOW that the old saying attributed to Mark Twain—"We all grumble about the weather but nothing is *done* about it"—is not quite true. By virtue of the coal we burn and the gasoline we use and in a thousand other ways, we all have a great effect on the weather. The earth has grown warmer by about one degree, on average, during the last century, and scientists believe the process is accelerating. If nothing is done to slow global warming, the consequences in the next century are likely to be dire. Much turns on decisions the government must take this year.

After years of debate, few now dispute that the burning of fossil fuels releases gases into the atmosphere which then trap more of the sun's warmth than the planet would otherwise retain. The effects of this are more complex than the term "global warming" suggests. Some parts of the earth are likely to become colder, others drier; monsoon and hurricane paths may shift; storms may become more extreme; sea levels will rise. Many small islands and low-lying coastal areas, such as Maryland's Eastern Shore, are at risk. Relatively small temperature changes could have a dramatic impact on agriculture and even the spread of disease.

At the 1992 Earth Summit in Rio de Janeiro, the United States—which produces something like one-quarter of the world's greenhouse-gas emissions—vowed to reduce them to 1990 levels by the year 2000. It seemed a modest goal, but it won't be met. So last year the

administration accepted, in principle, the notion of binding targets. Now nations are negotiating those targets—amounts and dates—hoping to reach agreement at yet another conference in Kyoto in December.

Opponents of meaningful action, led by parts of the energy and utilities industries, have shifted their strategy from attacking the scientists to warning of dire economic consequences. But last week more than 2,000 economists signed a statement challenging the industry claims. The broad array of economists, led by Nobel-Prize winners Kenneth J. Arrow and Robert M. Solow, said that measures to reduce greenhouse-gas emissions need not harm the economy—and "may in fact improve U.S. productivity in the longer run." That's because there are many innovative and energy-efficient technologies just awaiting the right financial incentives to enter the market. In many such fields, U.S. industry leads the way.

The key, then, is for the United States to set a goal that's not pushed off to some distant date like 2020 or beyond. A near-term date would send the signal industry needs to begin seriously investing in more efficient technologies, and the commercialization of such technologies would offer an alternative path for development to giants like China and India. Their economies are sure to grow in coming decades; and if they follow the U.S. path to prosperity, we will all be doing more than just grumbling about the weather.

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Using the least wrong model

BY DALE W. JORGENSEN

There's an old saying that if the only tool you have is a hammer, then all problems start to look like nails. Even in a field as seemingly esoteric as economic modeling of efforts to combat global climate change, there's a real danger that policy-makers could pick up the wrong tool and start banging away — with grave dangers to the world at large.

A vast majority of climate scientists believe that human action — principally the release of carbon dioxide from the burning of fossil fuels — is slowly affecting global climate, creating a range of problems. The difficult task is deciding what to do about it.

We don't know exactly how, where or when the world's climate will change, though the dangers posed to our environment, lifestyle and world political stability simply cannot be ignored. We also don't know exactly how much economic hardship — or benefit — would arise from measures to mitigate such damage, yet solutions must begin somewhere. Therefore economists employ models — or simulations — of national and global economies to formulate the best possible plans. That, however, only begs the question: Which model should be used? And now the ongoing deliberations of a U.S. interagency task force have greatly increased the urgency of the issue.

One problem with some of the current alternatives is that many people in business and government are looking at short-term economic models designed to forecast macroeconomic changes over a period of 18 to 24 months. The Federal Reserve Board, Congressional Budget Office and many large companies employ such models to tell them what to expect within that time frame. But applying such models to a decades-long, dynamic, global issue such as climate change is a critical distortion of economic

modeling.

One problem with some of the current alternatives is that many people in business and government are looking at short-term economic models.

Such application fails to adequately account for economic growth since, in business cycle models, growth implications are highly "aggregated" segments of the economy. These models also fail to capture important differences among industries and consumers, lack capacity for regionalization, and simply do not provide enough detail for climate policy decisions.

Furthermore, they contain no provision for technological change and diffusion — something that even longer-term models have trouble capturing.

We know, however, that research and technology will play major roles in mitigating the effects of man-made carbon dioxide emissions, offsetting a large part of any economic adjustment. Indeed, the paradigm for most pollution problems has been to recognize the severity of the issue, prescribe corrective measures and allow technology and the marketplace to formulate the answers.

If a short-term modeling tool is used to analyze the issue of global climate change, it will lead to incorrect analysis, and policy based on incorrect analysis will yield unfortunate consequences. If modeling numbers are sufficiently pessimistic and policy-makers believe the U.S. economy will be severely harmed by carbon dioxide abatement efforts, they may defer action. Economic models invariably show greater results from carbon dioxide reduction efforts in later years. Since investments in energy-efficient technology may completely off-

set any cost to the economy, technological innovation and diffusion — when fully incorporated into our models — will show even larger positive changes down the road. Yet without firm goals, industry and the public will never take the necessary early steps on that path.

Also, assessing the economic costs of abating carbon dioxide emissions — through carbon taxes or tradable permits, for instance — is different from deciphering the potential costs of global warming itself. Sea-level rise, increased storm activity or shifts in agricultural productivity might harm an economy far beyond the costs of reducing carbon dioxide pollution. Yet these risks cannot be ignored, nor can those of political instability in the countries most adversely affected by global warming — another factor that would be hard to quantify. No current economic models of climate change are perfect, but our choice of what to use as a basis for future decisions is critical, especially when viewed against the background of doing nothing. The short-term models, which give a distorted picture of the economic costs, are particularly appealing to fossil fuel connected industries wishing to delay action on reducing carbon dioxide emissions.

What we need, however, is a very different sort of economic tool — one designed to fit the specific problem. Such tools exist and offer a far more accurate approach.

Since reliable economic analysis shows that dealing with climate change need not harm — and might strengthen — the economy, we need to make sure that policy-makers use the best, most inclusive and longest-range models available.

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