# Appendix B

# **Study Group Rosters**

#### **STUDY PARTICIPATION**

Study group and outreach participants contributed in a variety of ways, ranging from full-time work in multiple study areas, to involvement on a specific topic, to reviewing proposed materials, or to participating solely in an outreach session. Involvement in these activities should not be construed as endorsement or agreement with all the statements, findings, and recommendations in this report. Additionally, while U.S. government participants provided significant assistance in the identification and compilation of data and other information, they did not take positions on the study's policy recommendations.

As a federally appointed and chartered advisory committee, the National Petroleum Council is solely responsible for the final advice provided to the Secretary of Energy. However, the Council believes that the broad and diverse study group and outreach participation has informed and enhanced its study and advice. The Council is very appreciative of the commitment and contributions from all who participated in the process.

This appendix lists the individuals who served on this study's Committee, Coordinating Subcommittee, Task Groups, and Subgroups, as a recognition of their contributions. In addition, the National Petroleum Council wishes to acknowledge the numerous other individuals and organizations who participated in some aspects of the work effort through workshops, outreach meetings, and other contacts. Their time, energy, and commitment significantly enhanced the study and their contributions are greatly appreciated.

## **TABLE OF CONTENTS**

NPC Committee on Resource Development	B-3
Coordinating Subcommittee	B-6
Policy Subgroup	B-7
End-Use Emissions & Carbon Regulation Subgroup	B-8
Emissions Team	B-9
Life-Cycle Analysis Team B	-10
Technology TeamB	-10
EPA Regulations Team	-11
Policy TeamB	-11
Macroeconomic Subgroup	-12
Integration Subgroup	-13
Report Writing Subgroup Br	-13
Antitrust Advisory Subgroup B	-14
Presentations & Other Assistance to the Coordinating Subcommittee	-14
Resource & Supply Task Group B-	-16
Resource Endowment Subgroup B	-17
Data & Studies Subgroup B	-17
Offshore Subgroup B	-18
Arctic Subgroup	-18
Onshore Oil & EOR Subgroup	-19
Unconventional Oil Subgroup	-19
Oil Infrastructure Subgroup	-20
Onshore Gas Subgroup	-20
Gas Infrastructure Subgroup	-20
Operations & Environment Task Group B-	-21
Environmental & Regulatory Subgroup B-	-22
Offshore Operations Subgroup	-23
Technology Subgroup	-24
Onshore Operations Subgroup	-25
Demand Task Group B-	-27
Power Subgroup	-28
Residential/Commercial Subgroup	
Industrial Subgroup	-30
Gas Transportation Subgroup B	-30

## **COMMITTEE ON RESOURCE DEVELOPMENT**

Chair		
James T. Hackett	Chairman and Chief Executive Officer	Anadarko Petroleum Corporation
Government Cochair		
Daniel B. Poneman	Deputy Secretary of Energy	
<b>Vice Chair – Demand</b> Daniel H. Yergin	Chairman	IHS Cambridge Energy Research Associates, Inc.
Vice Chair – Operations &	Environment	
Aubrey K. McClendon	Chairman of the Board and Chief Executive Officer	Chesapeake Energy Corporation
Vice Chair – Resource & St	upply	
Marvin E. Odum	President	Shell Oil Company
Vice Chair – Policy		
Philip R. Sharp	President	Resources for the Future Inc.
<i>Ex Officio</i> David J. O'Reilly	Chair	National Petroleum Council
David J. O Kelliy	Chan	National Petroleum Council
<i>Ex Officio</i> Douglas L. Foshee	Vice Chair	National Petroleum Council
Secretary		
Marshall W. Nichols	Executive Director	National Petroleum Council
Members		
George A. Alcorn, Sr.	President	Alcorn Exploration, Inc.
Robert Neal Anderson	Head of Consulting	Wood Mackenzie Inc.
Robert H. Anthony	Commissioner	Oklahoma Corporation Commission
Alan S. Armstrong	President and Chief Executive Officer	The Williams Companies, Inc.
Fredrick J. Barrett	Chairman and Chief Executive Officer	Bill Barrett Corporation
Kateri A. Callahan	President	Alliance to Save Energy
Clarence P. Cazalot, Jr.	Chairman, President and Chief Executive Officer	Marathon Oil Corporation
Theodore F. Craver, Jr.	Chairman, President and Chief Executive Officer	Edison International
Patrick D. Daniel	President and Chief Executive Officer	Enbridge Inc.
Charles D. Davidson	Chairman and Chief Executive Officer	Noble Energy, Inc.
Chadwick C. Deaton	Chairman and Chief Executive Officer	Baker Hughes Incorporated
Randall K. Eresman	President and Chief Executive Officer	Encana Corporation
Behrooz Fattahi	2010 President	Society of Petroleum Engineers International

#### COMMITTEE ON RESOURCE DEVELOPMENT

John W. Gibson Russell K. Girling Andrew Gould Simon Greenshields Harold G. Hamm

John J. Hamre

John A. Harju

Jeffrey O. Henley Stephen A. Holditch

Martin J. Houston Ray R. Irani Eugene M. Isenberg Terrence S. Jacobs Fred C. Julander Richard D. Kinder John Krenicki, Jr. Stephen D. Layton

David J. Lesar

Andrew N. Liveris

T. O. Moffatt Michael G. Morris

James J. Mulva J. Larry Nichols Mark G. Papa Robert L. Parker, Jr. Keith O. Rattie June Ressler Adam E. Sieminski Robert C. Skaggs, Jr.

Carl Michael Smith

John P. Surma

Berry H. Tew, Jr.

Chief Executive Officer President and Chief Executive Officer Chairman Co-Head of Global Commodities Chairman of the Board and Chief Executive Officer President and Chief Executive Officer

Associate Director for Research, Energy & Environment Research Center Chairman of the Board Noble Endowed Chair and Head of the Harold Vance Department of Petroleum Engineering Executive Director Executive Chairman Chairman and Chief Executive Officer President Chairman and Chief Executive Officer President Chairman and Chief Executive Officer President President and Chief Executive Officer President and Chief Executive Officer

Chairman of the Board, President and Chief Executive Officer

Chairman, President and Chief Executive Officer

Chairman Chairman, President and Chief Executive Officer

Chairman and Chief Executive Officer Executive Chairman Chairman and Chief Executive Officer Executive Chairman Chairman President and Chief Executive Officer Chief Energy Economist, Global Markets/Commodities

President and Chief Executive Officer Executive Director

Chairman, President and Chief Executive Officer State Geologist ONEOK, Inc. TransCanada Corporation Schlumberger Limited Morgan Stanley Continental Resources, Inc.

Center for Strategic & International Studies University of North Dakota

Oracle Corporation Texas A&M University

BG Group plc Occidental Petroleum Corporation Nabors Industries, Inc. Penneco Oil Company Julander Energy Company Kinder Morgan Inc. GE Energy Infrastructure E&B Natural Resources Management Corporation Halliburton Company

The Dow Chemical Company

The Energy Council American Electric Power Co., Inc.

ConocoPhillips Devon Energy Corporation EOG Resources, Inc. Parker Drilling Company Questar Corporation Cenergy Companies Deutsche Bank AG

NiSource Inc. Interstate Oil and Gas Compact Commission U.S. Steel Corporation

Geological Survey of Alabama

## COMMITTEE ON RESOURCE DEVELOPMENT

Rex W. Tillerson	Chairman, President and Chief Executive Officer	Exxon Mobil Corporation
Scott W. Tinker	Director, Bureau of Economic Geology and State Geologist of Texas Jackson School of Geosciences	The University of Texas
Bruce H. Vincent	President	Swift Energy Company
Michael D. Watford	Chairman, President and Chief Executive Officer	Ultra Petroleum Corp.
John S. Watson	Chairman of the Board and Chief Executive Officer	Chevron Corporation
J. Robinson West	Chairman and Chief Executive Officer	PFC Energy, Inc.
Craig E. White	President and Chief Executive Officer	Philadelphia Gas Works
Patrick Wood, III	Principal	Wood3 Resources
Martha B. Wyrsch	President	Vestas Americas, USA

<i>Chair</i> D. Clay Bretches	Vice President, E&P Services and Minerals	Anadarko Petroleum Corporation
Government Cochair		
Christopher A. Smith	Deputy Assistant Secretary for Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Assistant Chair		
A. Scott Moore	Vice President, Marketing	Anadarko Petroleum Corporation
Secretary		
John H. Guy, IV	Deputy Executive Director	National Petroleum Council
Members		
Robert H. Anthony	Commissioner	Oklahoma Corporation Commission
Porter B. Bennett	President and Chief Executive Officer	BENTEK Energy, LLC
Randy L. Broiles	Vice President, Americas	ExxonMobil Production Company
Kenneth S. Bromfield	U.S. Commercial Director, Energy Business	Dow Hydrocarbons and Resources LLC
Mark S. Brownstein	Chief Counsel, Energy Program	Environmental Defense Fund
Christopher L. Conoscenti	Executive Director, Energy Investment Banking	J.P. Morgan Securities Inc.
Scott E. Davis*	Vice President, MidContinent/Alaska SBU	Chevron North America Exploration and Production Company
Jonathan H. Elkind	Principal Deputy Assistant Secretary, Office of Policy and International Affairs	U.S. Department of Energy
Edward Farquhar	Deputy Assistant Secretary for Land and Minerals Management	U.S. Department of the Interior
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Paul D. Hagemeier	Vice President, Regulatory Compliance	Chesapeake Energy Corporation
Stephen D. Layton	President	E&B Natural Resources Management Corporation
Stephen K. London	Account Vice President	Halliburton Company
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Douglas A. May**	Vice President, Investor Relations	The Dow Chemical Company
Philip D. Moeller	Commissioner	Federal Energy Regulatory Commission
Richard G. Newell***	Administrator Energy Information Administration	U.S. Department of Energy

<sup>\*</sup> Represented by Jack Derickson commencing April 2011.

<sup>\*\*</sup> Replaced by Kenneth S. Bromfield in March 2011.

 $<sup>^{***}</sup>$  Individual has since changed organizations but was employed by the specified company while participating in the study.

Frank P. Prager	Vice President, Environmental Policy	Xcel Energy Inc.
Kyle M. Sawyer	Manager	El Paso Corporation
Timothy Alan Simon	Commissioner, Public Utilities Commission	State of California
Andrew J. Slaughter	Business Environment Advisor – Upstream Americas	Shell Exploration & Production Company
Susan F. Tierney	Managing Principal	Analysis Group, Inc.
Frank A. Verrastro	Senior Vice President and Director, Energy and National Security Program	Center for Strategic & International Studies
Kenneth L. Yeasting	Senior Director, Global Gas and North American Gas	IHS Cambridge Energy Research Associates, Inc.
Assistants and Task Grou	up Assistant Chairs	
William M. Fowler	Director, Environmental and Regulatory Affairs	Chesapeake Energy Corporation
Marianne Funk	Director, CO <sub>2</sub> Advocacy	Shell Oil Company
Nancy L. Johnson	Director, Environmental Science and Policy Analysis, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Kevin A. Kelly	Manager, Gas Marketing Fundamentals	Anadarko Energy Services Company
Kevin M. O'Donovan*	Director, Policy and State Government Relations, Government Affairs	Shell Oil Company
James A. Osten	Director, North American Natural Gas	IHS Global Insight
Policy Subgroup		
Chair		
Susan F. Tierney	Managing Principal	Analysis Group, Inc.
Assistant Chair		
Robert L. Earle	Vice President	Analysis Group, Inc.
Members		
Douglas J. Arent	Executive Director, Joint Institute for Strategic Energy Analysis National Renewable Energy Laboratory	U.S. Department of Energy
James Bradbury	Senior Associate, Climate and Energy Program	World Resources Institute
Armond Cohen	Co-Founder and Executive Director	Clean Air Task Force
David W. Conover	Senior Vice President	Bipartisan Policy Center
Robert H. Edwards, Jr.	Deputy General Counsel for Energy Policy	U.S. Department of Energy
Thomas R. Eizember	Planning Manager, Corporate Strategic Planning	Exxon Mobil Corporation
Lisa E. Epifani	Member	Van Ness Feldman, PC

<sup>\*</sup> Replaced by Marianne Funk in April 2011. Individual has since changed organizations but was employed by the specified company while participating in the study.

James E. Ford	Vice President, Federal and State Government Affairs	ConocoPhillips
Robert W. Gee	President	Gee Strategies Group, LLC
John R. Hanger*	Secretary, Department of Environmental Protection	State of Pennsylvania
R. Maynard Holt	Co-President	Tudor, Pickering, Holt & Co., LLC
J. Bennett Johnston		Johnston & Associates LLC
Melanie A. Kenderdine	Executive Director, MIT Energy Initiative	Massachusetts Institute of Technology
Henry Lee	Jassim M. Jaidah Family Director of the Environment and Natural Resources Program, Belfer Center for Science and International Affairs John F. Kennedy School of Government	Harvard University
Rae McQuade	President	North American Energy Standards Board
Jan W. Mares	Senior Policy Advisor	Resources For the Future
Elizabeth Anne Moler		McLean, Virginia
Briana Mordick	Science Fellow	Natural Resources Defense Council
Larry W. Nettles	Partner	Vinson & Elkins LLP
John A. Riggs	Senior Fellow	The Aspen Institute
Robin K. Roy		Natural Resources Defense Council
Richard N. Sawaya	Washington Representative	Devon Energy Corporation
Assistants		
Mike Fowler	Climate Technology Innovation Coordinator	Clean Air Task Force
L. Bruce Hill	Senior Scientist	Clean Air Task Force
David Rosner	Associate Director for Energy Security	Bipartisan Policy Center
End-Use Emissions a	nd Carbon Regulation Subgroup	
Chair		
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Assistant Chair		
Timothy T. Cheung*	Senior Carbon Analyst	El Paso Corporation
Members		
Randy Armstrong	Environmental Issues Director, Environmental Department	Shell Upstream Americas SE & SD
Kevin D. Book	Managing Director, Research	ClearView Energy Partners, LLC
Bruce H. Braine	Vice President, Strategic Policy Analysis	American Electric Power Co., Inc.
Steven Caldwell	Senior Solutions Fellow	Pew Center on Global Climate Change
Ronald Edelstein	Director, Regulatory and Government Relations	Gas Technology Institute

\* Individual has since changed organizations but was employed by the specified company while participating in the study.

Bryan J. Hannegan	Vice President, Environment and Renewables	Electric Power Research Institute
Paul D. Holtberg	Acting Director, Office of Integrated and International Energy Analysis Energy Information Administration	U.S. Department of Energy
Sikander R. Khan	Senior Technical Advisor, Office of Clean Coal, Office of Planning and Environmental Analysis, Office of Fossil Energy	U.S. Department of Energy
Neil Leslie	R&D Director	Gas Technology Institute
Steven H. Levine	Principal	The Brattle Group
Rohan Ma	Senior Research Associate, Energy, Economics, and Policy	ClearView Energy Partners, LLC
William Meroney	Senior Operations Research Analyst, Clean Air Markets Division	U.S. Environmental Protection Agency
A. Scott Moore	Vice President, Marketing	Anadarko Petroleum Corporation
Erling Mowatt-Larssen	Principal Financial Advisor, Strategy and Market Analysis	El Paso Corporation
Samuel Napolitano	Director, Clean Air Markets Division, Office of Atmospheric Programs	U.S. Environmental Protection Agency
Rodney Nespeca	Analyst, Strategic Policy Analysis	American Electric Power Co., Inc.
Michael E. Parker	Technical Advisor, Upstream Safety, Health and Environment	ExxonMobil Production Company
Heidi J. Pervin	Senior Consultant	Chevron Corporation
David E. Rogers	General Manager, Climate Change, Strategic Planning	Chevron Corporation
Robin K. Roy		Natural Resources Defense Council
Edward S. Rubin	Professor of Engineering & Public Policy and Mechanical Engineering	Carnegie Mellon University
Milo Sjardin	Head of U.S. Carbon Markets	Bloomberg New Energy Finance
Andy Stevenson*	Finance Advisor, Center for Market Innovation	Natural Resources Defense Council
David G. Victor	Professor, School of International Relations and Pacific Studies and Co-Director, Laboratory on International Law and Regulation	University of California, San Diego
Scott A. Weaver	Manager, Strategic Policy Analysis	American Electric Power Co., Inc.
Emissions Team		
Members		

Timothy T. Cheung**	Senior Carbon Analyst	El Paso Corporation
Fiji C. George	Director, Carbon Strategies	El Paso Corporation

Replaced by Robin K. Roy in April 2011. Individual has since changed organizations but was employed by the specified company while participating in the study.

\*\* Individual has since changed organizations but was employed by the specified company while participating in the study.

Bryan J. Hannegan	Vice President, Environment and Renewables	Electric Power Research Institute
Paul D. Holtberg	Acting Director, Office of Integrated and International Energy Analysis Energy Information Administration	U.S. Department of Energy
Erling Mowatt-Larssen	Principal Financial Advisor, Strategy and Market Analysis	El Paso Corporation

#### Life-Cycle Analysis Team

Lead		
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Members		
Ramon Alvarez	Senior Scientist	Environmental Defense Fund
Grover Campbell	Manager Regulatory Affairs – Air Regulations	Chesapeake Energy Corporation
Ronald Edelstein	Director, Regulatory and Government Relations	Gas Technology Institute
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Bryan J. Hannegan	Vice President, Environment and Renewables	Electric Power Research Institute
Paul D. Holtberg	Acting Director, Office of Integrated and International Energy Analysis Energy Information Administration	U.S. Department of Energy
David E. Rogers	General Manager, Climate Change, Strategic Planning	Chevron Corporation
Technology Team		
Coleads		
Kevin D. Book	Managing Director, Research	ClearView Energy Partners, LLC
Rohan Ma	Senior Research Associate, Energy, Economics, and Policy	ClearView Energy Partners, LLC
Members		

Steven Caldwell Senior Solutions Fellow Pew Center on Global Climate Change Timothy T. Cheung\* Senior Carbon Analyst El Paso Corporation **Ronald Edelstein** Director, Regulatory and Gas Technology Institute **Government Relations** Fiji C. George Director, Carbon Strategies El Paso Corporation Neil Leslie **R&D** Director Gas Technology Institute Erling Mowatt-Larssen Principal Financial Advisor, El Paso Corporation Strategy and Market Analysis

\* Individual has since changed organizations but was employed by the specified company while participating in the study.

Rodney NespecaAnalyst, Strategic Policy AnalysisAmerican Electric Power Co., Inc.Michael E. ParkerTechnical Advisor, Upstream Safety,<br/>Health and EnvironmentExxonMobil Production Company<br/>Bloomberg New Energy FinanceMilo SjardinHead of U.S. Carbon MarketsBloomberg New Energy Finance<br/>American Electric Power Co., Inc.Scott A. WeaverManager, Strategic Policy AnalysisAmerican Electric Power Co., Inc.

## **EPA Regulations Team**

Members		
Timothy T. Cheung*	Senior Carbon Analyst	El Paso Corporation
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Bryan J. Hannegan	Vice President, Environment and Renewables	Electric Power Research Institute
Paul D. Holtberg	Acting Director, Office of Integrated and International Energy Analysis Energy Information Administration	U.S. Department of Energy
Steven H. Levine	Principal	The Brattle Group, Inc.
Policy Team		
Coleads		
Randy Armstrong	Environmental Issues Director, Environmental Department	Shell Upstream Americas SE & SD
David G. Victor	Professor, School of International Relations and Pacific Studies and Co-Director, Laboratory on International Law and Regulation	University of California, San Diego
Members		
Bruce H. Braine	Vice President, Strategic Policy Analysis	American Electric Power Co., Inc.
Timothy T. Cheung*	Senior Carbon Analyst	El Paso Corporation
Ronald Edelstein	Director, Regulatory and Government Relations	Gas Technology Institute
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Bryan J. Hannegan	Vice President, Environment and Renewables	Electric Power Research Institute
Paul D. Holtberg	Acting Director, Office of Integrated and International Energy Analysis Energy Information Administration	U.S. Department of Energy
Neil Leslie	R&D Director	Gas Technology Institute
Steven H. Levine	Principal	The Brattle Group, Inc.
William Meroney	Senior Operations Research Analyst, Clean Air Markets Division	U.S. Environmental Protection Agency
Erling Mowatt-Larssen	Principal Financial Advisor, Strategy and Market Analysis	El Paso Corporation

<sup>\*</sup> Individual has since changed organizations but was employed by the specified company while participating in the study.

Michael E. Parker	Technical Advisor, Upstream Safety, Health and Environment	ExxonMobil Production Company
Robin K. Roy		Natural Resources Defense Council
Edward S. Rubin	Professor of Engineering & Public Policy and Mechanical Engineering	Carnegie Mellon University
Andy Stevenson*	Finance Advisor, Center for Market Innovation	Natural Resources Defense Council

## Macroeconomic Subgroup

Chair		
Christopher L. Conoscenti	Executive Director, Energy Investment Banking	J.P. Morgan Securities Inc.
Members		
Stephen P. A. Brown	Nonresident Fellow and Co-Director, Center for Energy Economics & Policy	Resources for the Future
John Caldwell	Director of Economics	Edison Electric Institute
Joy V. Domingo	Controller, Drilling & Measurements Segment	Schlumberger Oilfield Services, North and South America
Allison P. Fleming	Associate, Energy Investment Banking	J.P. Morgan Securities Inc.
Dong Fu	Senior Economist, Corporate Strategic Planning	Exxon Mobil Corporation
Lola Infante	Director, Generation Fuels & Market Analysis	Edison Electric Institute
Kenneth B. Medlock, III	James A. Baker III and Susan G. Baker Fellow in Energy and Resource Economics and Deputy Director, Energy Forum, James A. Baker III Institute for Public Policy Adjunct Professor, Economics Department	Rice University
Karen Obenshain	Director, Fuels, Technology and Commercial Policy	Edison Electric Institute
Yorgos Papatheodorou	Petroleum Economist	Marathon Petroleum Company L.P.
Michael E. Parker	Technical Advisor, Upstream Safety, Health and Environment	ExxonMobil Production Company
John J. Pyrdol	Senior Economist	U.S. Department of Energy
David Sederis	Planning & Economics	Total E&P USA
Sheridan Titman	Walter W. McAllister Centennial Chair in Financial Services and Professor, Department of Finance	The University of Texas
Marc P. Zenner	Managing Director, Capital Structure Advisory & Solutions	J.P. Morgan Securities Inc.

<sup>\*</sup> Replaced by Robin K. Roy in April 2011. Individual has since changed organizations but was employed by the specified company while participating in the study.

## Integration Subgroup

<i>Chair</i> Porter B. Bennett	President and Chief Executive Officer	BENTEK Energy, LLC
<i>Assistant Chair</i> Andrew Bradford	Manager, Energy Analysis	BENTEK Energy, LLC
Members		
Lana B. Billeaud	Consultant	Anadarko Petroleum Corporation
Sandee Mourey	Project Manager	BENTEK Energy, LLC

# Report Writing Subgroup

Cochairs	,	
Kyle M. Sawyer	Manager	El Paso Corporation
A. Scott Moore	Vice President, Marketing	Anadarko Petroleum Corporation
Members		-
Porter B. Bennett	President and Chief Executive Officer	BENTEK Energy, LLC
Kevin D. Book	Managing Director, Research	ClearView Energy Partners, LLC
D. Clay Bretches	Vice President, E&P Services and Minerals	Anadarko Petroleum Corporation
Mark S. Brownstein	Chief Counsel, Energy Program	Environmental Defense Fund
Christopher L. Conoscenti	Executive Director, Energy Investment Banking	J.P. Morgan Securities Inc.
Robert L. Earle	Vice President	Analysis Group, Inc.
Thomas R. Eizember	Planning Manager,	
	Corporate Strategic Planning	Exxon Mobil Corporation
William M. Fowler	Director, Environmental and Regulatory Affairs	Chesapeake Energy Corporation
Fiji C. George	Director, Carbon Strategies	El Paso Corporation
Paul D. Hagemeier	Vice President, Regulatory Compliance	Chesapeake Energy Corporation
H. William Hochheiser	Senior Energy and Environment Manager	ALL Consulting
Nancy L. Johnson	Director, Environmental Science and Policy Analysis, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
David McBride	Vice President, Environment, Health and Safety	Anadarko Petroleum Corporation
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Andrew J. Slaughter	Business Environment Advisor – Upstream Americas	Shell Exploration & Production Company
Christopher A. Smith	Deputy Assistant Secretary for Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Susan F. Tierney	Managing Principal	Analysis Group, Inc.
Kenneth L. Yeasting	Senior Director, Global Gas and North American Gas	IHS Cambridge Energy Research Associates, Inc.
Michael V. Young	Counsel, Compliance & Ethics	Anadarko Petroleum Corporation

### Antitrust Advisory Subgroup

#### Cochairs

Michael V. Young	Counsel, Compliance & Ethics	Anadarko Petroleum Corporation
Douglas R. Melin	General Attorney	Marathon Petroleum Company L.P.
Members		
Adam J. Coates*	Associate	O'Melveny & Myers LLP
Steven M. Feisal	Regulatory Attorney	Chesapeake Energy Corporation
Paul R. Frontczak, Jr.	Senior Antitrust Counsel	Shell Oil Company
William J. Haynes II	Chief Corporate Counsel, Law Department	Chevron Corporation
Courtney M. Lynch	Senior Counsel, Corporate Unit, Law Department	Chevron Corporation
Barbra J. Moran	Senior Corporate Counsel	Caterpillar Inc.
R. Kenly Webster	Attorney at Law	Washington, D.C.
Christine C. Wilson	Partner, Antitrust and Competition Practice	Kirkland & Ellis LLP

#### **Presentations & Other Assistance**

The National Petroleum Council also wishes to recognize the contributions of the following individuals, most of whom were not members of specific study groups:

#### Presentations to the Coordinating Subcommittee

<i>Topic: Lessons Learned from</i> Thomas R. Eizember	n NPC Studies Planning Manager, Corporate Strategic Planning	Exxon Mobil Corporation
Topic: Human Resources fo	r Oil & Gas	
Brian Forbes	Vice President	Schlumberger Business Consulting
Topic: INGAA Infrastructu	re Report	
Richard R. Hoffmann	Executive Director	INGAA Foundation
Topic: Fracture Stimulation		
Ron Hyden	Technology Director,	Halliburton Company
	Production Enhancement	American Constitute
Christopher M. Keane	Technology and Communications Director	American Geosciences Institute
Topic: RFF Kaiser Study on Energy Policy		
Alan J. Krupnick	Research Director,	Resources for the Future
	Senior Fellow and Director,	
	Center for Energy Economics and Policy	

<sup>\*</sup> Individual has since changed organizations but was employed by the specified company while participating in the study.

Topic: Price Volatility		
Kenneth B. Medlock, III	James A. Baker III and Susan G. Baker Fellow in Energy and Resource Economics and Deputy Director, Energy Forum, James A. Baker III Institute for Public Policy Adjunct Professor, Economics Department	Rice University
Topic: MIT study The Futu	re of Natural Gas	
Anthony J. M. Meggs	Visiting Engineer and Co-Chair, MIT Study: <i>The Future of</i> <i>Natural Gas</i>	MIT Energy Initiative (MITEI)
Topic: INGAA Infrastructu	ire Report	
Donald F. Santa, Jr.	President and Chief Executive Officer	Interstate Natural Gas Association of America (INGAA)
Topic: Report of the Nation	nal Commission on the BP Deepwater Horizon Oil S	Spill and Offshore Drilling
Christopher A. Smith	Deputy Assistant Secretary for Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Assistance in Data Extrac	tion from Other Studies	
Burcu Cigerli	Graduate Student	Rice University
Gizem Keskin	Graduate Student	Rice University
Islam Likeleli	Graduate Student	Rice University
Assistance in Draft Repor	rt Review – Development of Findings & Recomme	endations Matrix
Jesse D. Filip	Mechanical Engineering	Rice University/Marathon Oil Corporation Intern
Victor A. Leyva	Mechanical Engineering	Rice University/Marathon Oil Corporation Intern
Samuel R. Stanbery	Petroleum Engineering	University of Houston/Marathon Oil Corporation Intern

#### **RESOURCE & SUPPLY TASK GROUP**

Chair		
Andrew J. Slaughter	Business Environment Advisor – Upstream Americas	Shell Exploration & Production Company
Government Cochair		
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Assistant Chair		
Kevin M. O'Donovan*	Director, Policy and State Government Relations, Government Affairs	Shell Oil Company
Marianne Funk	Director, CO <sub>2</sub> Advocacy	Shell Oil Company
Alternate Government Cocha	iir	
John R. Duda	Director, Strategic Center for Natural Gas and Oil National Energy Technology Laboratory	U.S. Department of Energy
Secretary		
John H. Guy, IV	Deputy Executive Director	National Petroleum Council
Members		
Richard P. Desselles, Jr.	Chief – Resource Evaluation Methodologies Branch, Resource Evaluation Division Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Jackie Forrest	Director, Global Oil	IHS Cambridge Energy Research Associates
Thomas A. Menges		Houston, Texas
Brenda S. Pierce	Program Coordinator, Energy Resources Program U.S. Geological Survey	U.S. Department of the Interior
Kevin P. Regan	Manager, Long-Term Energy Forecasting	Chevron Corporation
Robert C. Scheidemann, Jr.	Geological Advisor	Shell Upstream Americas
Charles E. Sheppard, III	Independent Industry, Government and Public Service	Kingwood, Texas
Don K. Thompson	Vice President, Green Energy	Enbridge Inc.
Douglas J. Tierney	Vice President, Business Development	Encana Corporation
Alan P. Wilson	Team Leader, Business Development	Encana Oil & Gas (USA) Inc.
Gerry A. Worthington**	U.S. & Argentina Joint Interest	ExxonMobil Production Company
Gregory J. W. Zwick	Director, Energy Market Analysis	TransCanada PipeLines Limited

<sup>\*</sup> Replaced by Marianne Funk in April 2011. Individual has since changed organizations but was employed by the specified company while participating in the study.

\*\* Retired April 2011.

#### **RESOURCE & SUPPLY TASK GROUP**

## **Resource Endowment Subgroup**

Chair		
Brenda S. Pierce	Program Coordinator, Energy Resources Program U.S. Geological Survey	U.S. Department of the Interior
Members		
David Haas	Manager, Strategy & Market Analysis	El Paso Corporation
Creties D. Jenkins	Vice President, Unconventional Oil and Gas Project Leader	DeGolyer and MacNaughton
Keith C. King	New Business Development	ExxonMobil Exploration Company
David F. Morehouse	Senior Petroleum Geologist, Office of Oil and Gas Energy Information Administration	U.S. Department of Energy
John E. Ritter	Senior Director, Worldwide Reserves and Reservoir Engineering	Occidental Petroleum Corporation
Philip H. Stark	Vice President, Industry Relations	IHS Cambridge Energy Research Associates, Inc.

## Data & Studies Subgroup

#### Cochairs

Kevin P. Regan	Manager, Long-Term Energy Forecasting	Chevron Corporation
Charles E. Sheppard, III	Independent Industry, Government and Public Service	Kingwood, Texas

#### Members

Senior Consultant	ICF International, Inc.
New Business Development	ExxonMobil Exploration Company
Vice President and Chief of Staff	QEP Energy Resources, Inc.
President	Nehring Associates, Inc.
Senior Analyst, U.S. Upstream Research	Wood Mackenzie Inc.
Vice President	ICF International, Inc.
Business Development Advisor	Encana Corporation
	New Business Development Vice President and Chief of Staff President Senior Analyst, U.S. Upstream Research Vice President

#### Database Team Members

Burcu Cigerli	Graduate Student	Rice University
Richard D. Farmer	Consultant	National Petroleum Council
John T. Foote	Decision Analysis Staff Analyst	Chevron Corporation
Gizem Keskin	Graduate Student	Rice University
Islam Likeleli	Graduate Student	Rice University
Kenneth B. Medlock, III	James A. Baker III and Susan G. Baker Fellow in Energy and Resource Economics and	Rice University
	Deputy Director, Energy Forum, James A. Baker III Institute for Public Policy	
	Adjunct Professor, Economics Department	

#### **RESOURCE & SUPPLY TASK GROUP** —

Maili Montgomery	Assurance Principal	Argy, Wiltse & Robinson, P.C.
Victor Cora Nazario	Project Manager	Business & Technology System Integrators, LLC
Jonathan X. Weinert	Planning Engineer, Low Carbon Energy Team	Chevron Energy Technology Company
Offshore Subgroup		
Chair		
Richard P. Desselles, Jr.	Chief – Resource Evaluation Methodologies Branch, Resource Evaluation Division Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Members		
John D. Harper	Director, Energy	Geological Survey of Canada
Sally A. Kemp	Engineering Technologist Advisor	Anadarko Petroleum Corporation
Denis Lavoie	Research Scientist, Quebec Division	Geological Survey of Canada
Dawn W. Peyton	Senior Reservoir Engineer	Anadarko Petroleum Corporation
Paul Schlirf	Geoscience Advisor, Deepwater Gulf of Mexico	Anadarko Petroleum Corporation
Thierno S. Sow	Economist, Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Arctic Subgroup		
Chair		
Gerry A. Worthington*	U.S. & Argentina Joint Interest	ExxonMobil Production Company
Robert C. Scheidemann, Jr.	Geological Advisor	Shell Upstream Americas
Assistant Chair		
Carl R. Mazzo	Geologic Advisor	ExxonMobil Production Company
Members		
Tim F. Fleming	Alaska Asset Manager	Anadarko Petroleum Corporation
Darryl Jordan	GBS Public Sector	IBM Global Business Services – US Federal Team
Bill Scott	General Manager, Chevron Arctic Center	Chevron Canada
Brent J. Sheets**	Regional Manager, Strategic Center for Natural Gas and Oil National Energy Technology Laboratory	U.S. Department of Energy
Daniel D. Smallwood	Chief Operating Officer	Marine Well Containment Company, LLC
Geir Utskot	Arctic Manager	Schlumberger Canada Limited

\* Replaced by Robert C. Scheidemann, Jr., in April 2011.

\*\* Individual has since changed organizations but was employed by the specified company while participating in the study.

#### **RESOURCE & SUPPLY TASK GROUP**

Jennifer Wyatt Environment/Regulatory, Chevron Canada Chevron Arctic Center **Onshore Oil & EOR Subgroup** Chair Thomas A. Menges Houston, Texas Members Operations Research Analyst, Philip M. Budzik U.S. Department of Energy Office of Petroleum, Natural Gas & Biofuels Analysis **Energy Information Administration** Founder CO<sub>2</sub> Specialist L. Stephen Melzer Melzer Consulting James P. Mosher Engineer Technology Manager -Aera Energy LLC CO<sub>2</sub> & Energy Vice President, Engineering and Lanny G. Schoeling Kinder Morgan CO<sub>2</sub> Company Technical Development Paul J. Tauscher North American Conventional Chief Reservoir Engineer Marathon Oil Company Unconventional Oil Subgroup Chair Jackie Forrest Director, Global Oil IHS Cambridge Energy Research Associates, Inc. Memhers

Senior Economist, Oil Sands Market Advisor	Natural Resources Canada
Vice President, Fundamental Analysis & Risk Management	Cenovus Energy Inc.
Fundamentals Analyst, Market Fundamentals and Hedging	Cenovus Energy Inc.
Vice President, Operations	US Oil Sands Inc.
President	Strategy West Inc.
Associate Director for Research, Energy & Environmental Research Center	University of North Dakota
Chief Executive Officer	Alberta Innovates – Energy and Environment Solutions
Director, Energy and Climate Policy	Suncor Energy, Inc.
Senior Policy Advisor, Oil Sands and Energy Security	Natural Resources Canada
President & Chief Financial Officer	US Oil Sands Inc.
Senior Research Manager, Energy & Environmental Research Center	University of North Dakota
Vice President, Engineering	US Oil Sands Inc.
Colorado Oil Shale and Grosmont Development Manager	Shell Exploration & Production Company
	<ul> <li>Vice President, Fundamental Analysis &amp; Risk Management</li> <li>Fundamentals Analyst, Market Fundamentals and Hedging</li> <li>Vice President, Operations</li> <li>President</li> <li>Associate Director for Research, Energy &amp; Environmental Research Center</li> <li>Chief Executive Officer</li> <li>Director, Energy and Climate Policy</li> <li>Senior Policy Advisor, Oil Sands and Energy Security</li> <li>President &amp; Chief Financial Officer</li> <li>Senior Research Manager, Energy &amp; Environmental Research Center</li> <li>Vice President, Engineering</li> <li>Colorado Oil Shale and Grosmont</li> </ul>

#### **RESOURCE & SUPPLY TASK GROUP -**

#### **Oil Infrastructure Subgroup**

#### Chair Don K. Thompson Vice President, Green Energy Enbridge Inc. Members Timothy J. Adams Vice President, Business Development and ExxonMobil Pipeline Company Joint Ventures Plains All American GP LLC Mark J. Gorman Senior Vice President, Business Development and Operations Enbridge Pipelines Inc. Morgan Keith **Business Development Advisor** Robert C. Lombardi Team Lead, Operations and Infrastructure Shell Gas Midstream Enbridge Pipelines Inc. Rafael Lopez **Business Planning Advisor Business Planning Advisor** Damir Raos Enbridge Pipelines Inc. Jeff M. Ray **TAPS** Coordinator ExxonMobil Pipeline Company **Onshore Gas Subgroup Cochairs** Douglas J. Tierney Vice President, Business Development Encana Corporation Alan P. Wilson Team Leader, Business Development Encana Oil & Gas (USA) Inc.

#### Members

wiembers		
Clayton A. Carrell	Senior Vice President, Chief Engineer	El Paso Exploration & Production Company
R. Dean Foreman	Chief Economist	Talisman Energy
Edward M. Kelly	Vice President, North American Gas & Power	Wood Mackenzie Inc.
Christopher M. McMahon	Manager Engineering – Corporate New Ventures	Devon Energy Corporation
Paul Mortensen	Technical Leader, Hydrocarbon Resources	National Energy Board
Robert H. Sterling, Jr.	Senior Geologist	Cirque Resources LP

#### Gas Infrastructure Subgroup

<b>Chair</b> Gregory J. W. Zwick	Director, Energy Market Analysis	TransCanada PipeLines Limited
Members		
Cynthia L. Armstrong	Director of Marketing and Business Development	Portland Natural Gas Transmission System
John Bridges	Manager, Market Analysis	TransCanada PipeLines Limited
William D. Wible	Manager, Strategy	El Paso Energy Services Company
Jeff C. Wright	Director, Office on Energy Projects	Federal Energy Regulatory Commission

## **OPERATIONS & ENVIRONMENT TASK GROUP**

Vice President – Regulatory Compliance	Chesapeake Energy Corporation
Assistant Administrator for Energy Statistics Energy Information Administration	U.S. Department of Energy
Director – Environmental and Regulatory Affairs	Chesapeake Energy Corporation
ochair	
Senior Policy Advisor, Office of Policy and International Affairs	U.S. Department of Energy
lochair	
Director, Reserves and Production Division Energy Information Administration	U.S. Department of Energy
Deputy Executive Director	National Petroleum Council
ory Subgroup Cochair	
Vice President, Environment, Health, and Safety	Anadarko Petroleum Corporation
ory Subgroup Cochair	
Senior Policy Advisor, Climate & Air Program	Environmental Defense Fund
ory Subgroup Assistant Chair	
Vice President, Special Projects	Anadarko Energy Services Company
ogroun Chair	
Manager, Regulatory Policy – Offshore, Upstream Americas	Shell Exploration & Production Company
pgroup Assistant Chair	
Chief Global Technical Advisor	Halliburton Company
group Chair	
Vice President, Environment, Health, and Safety	Encana Oil & Gas (USA) Inc.
group Assistant Chair	
Group Lead – Environment	Encana Oil & Gas (USA) Inc.
air	
Managing Partner	ALL Consulting
	Assistant Administrator for Energy Statistics Energy Information Administration Director – Environmental and Regulatory Affairs Cochair Senior Policy Advisor, Office of Policy and International Affairs Cochair Director, Reserves and Production Division Energy Information Administration Deputy Executive Director Deputy Executive Director Vice President, Environment, Health, and Safety Cry Subgroup Cochair Senior Policy Advisor, Climate & Air Program Cry Subgroup Assistant Chair Vice President, Special Projects Cry Corp Chair Manager, Regulatory Policy – Offshore, Upstream Americas Cry Chief Global Technical Advisor Chief Global Technical Advisor Cry Chief President, Environment, Health, and Safety Chief President, Environment, Health, and Safety Chief President, Environment, Health, and Safety Chief President, Environment, Health, and Safety Cry Dice President, Environment, Health, and Safety Cry Dice President, Environment, Health, and Safety Cry Dice President, Environment, Health, and Safety

#### **OPERATIONS & ENVIRONMENT TASK GROUP -**

#### Technology Subgroup Assistant Chair

H. William Hochheiser	Senior Energy and Environment Manager	ALL Consulting
At-Large Members		
AiJaz Rizvi	Technical Manager, The Digital Asset®	Halliburton Company
William Standifird	Director – Solutions, The Digital Asset®	Halliburton Company

#### Environmental & Regulatory Subgroup

Liivii oninciicui a ra	igulator y babgroup	
Cochairs		
A. Scott Anderson	Senior Policy Advisor, Climate & Air Program	Environmental Defense Fund
David McBride	Vice President, Environment, Health and Safety	Anadarko Petroleum Corporation
Assistant Chair		
Alan Higgins	Vice President, Special Projects	Anadarko Energy Services Company
Members		
Ramon Alvarez	Senior Scientist	Environmental Defense Fund
Grover Campbell	Manager, Regulatory Affairs – Air Regulations	Chesapeake Energy Corporation
Thomas H. Clayson	Senior Staff Environment and Regulatory Analyst	Anadarko Petroleum Corporation
Charles M. Clusen	Director, National Parks and Alaska Projects	Natural Resources Defense Council
Jill E. Cooper	Group Lead – Environment	Encana Oil & Gas (USA) Inc.
Eileen D. Dey	Regulatory Manager, Mid-Continent	ConocoPhillips
Kevin Robert Easley	Natural Gas Policy Analyst, Office of Policy & International Affairs	U.S. Department of Energy
Karl D. Fennessey	Senior Consultant, Climate Change & Sustainable Development	ConocoPhillips
Amy Hardberger	Attorney, Climate & Air Program and Land, Water & Wildlife Program	Environmental Defense Fund
Mike Mathis	Manager, Regulatory Affairs – Water Programs	Chesapeake Energy Corporation
Briana Mordick	Science Fellow	Natural Resources Defense Council
Jeff Ostmeyer	Environment, Health and Safety Manager	Anadarko Petroleum Corporation
Richard L. Ranger	Senior Policy Advisor, Upstream	American Petroleum Institute
Bill Scott	General Manager, Chevron Arctic Center	Chevron Canada
Denise A. Tuck	Global Manager, Chemical Compliance, Health, Safety and Environment	Halliburton Energy Services, Inc.
Richard Ward	Director, Energy Initiatives	Aspen Science Center
Michael E. Webber	Assistant Professor, Department of Mechanical Engineering and Associate Director, Center for International Energy and Environmental Policy	The University of Texas
Kent M. Weissling	Environment, Health & Safety Advisor	Anadarko Petroleum Corporation
Brian Woodard	Senior Environmental Policy Analyst	Devon Energy Corporation

## ------ OPERATIONS & ENVIRONMENT TASK GROUP

Sharon R. Zubrod	Manager, Stakeholder Engagement and Regulatory Affairs	ConocoPhillips
Ad Hoc Member		
Douglas W. Morris	Director, Reserves and Production Division Energy Information Administration	U.S. Department of Energy
<b>Offshore Operations S</b>	ubgroup	
Chair		
Kent Satterlee III	Manager, Regulatory Policy – Offshore, Upstream Americas	Shell Exploration & Production Company
Assistant Chair		
David L. Smith, Jr.	Chief Global Technical Advisor	Halliburton Company
Members		
Jennifer J. Barringer	Health, Safety and Environment Manager, Upstream BD Support & New Ventures	ConocoPhillips
Brad J. Blythe	Oceanographer, Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Louis P. Brzuzy	Marine Science and Regulatory Policy, Upstream Americas	Shell Exploration and Production Company
Catherine E. Campbell	Geologist	Encana Oil & Gas (USA) Inc.
Jill E. Cooper	Group Lead – Environment	Encana Oil & Gas (USA) Inc.
Elmer P. Danenberger, III	Offshore Safety Consultant	Reston, Virginia
Michael Else	Safety Research Engineer, Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Austin Freeman	Technical Applications Manager/ Administrator, Industry Regulations/ Product Certification/Strategic Initiatives	Halliburton Energy Services
James L. Gooding	Manager & Senior Consultant	Black & Veatch Corp.
C. Webster Gray	Senior Technical Advisor	Federal Energy Regulatory Commission
Carliane D. Johnson	Consultant	SeaJay Environmental LLC
Kevin Lyons	Asset Development Geologist	WesternGeco
Jan W. Mares	Senior Policy Advisor	Resources for the Future
James M. Morris	Senior Facilities Consultant	ExxonMobil Production Company
Kumkum Ray	Senior Regulatory Specialist, Bureau of Ocean Energy Management, Regulation and Enforcement	U.S. Department of the Interior
Thomas A. Readinger	Independent Consultant	Harrisburg, Pennsylvania
Paul D. Scott	Drilling Fluids Specialist	ConocoPhillips

## OPERATIONS & ENVIRONMENT TASK GROUP

E. J. Thomas	Senior Principle HSE Consultant, New Ventures & Business Development Upstream HSE	ConocoPhillips
Denise A. Tuck	Global Manager, Chemical Compliance, Health, Safety and Environment	Halliburton Energy Services, Inc.
Ian Voparil	Environmental Science Specialist	Shell International Exploration and Production B.V.
David Wilson	Operations Manager	WesternGeco
Mark S. Witten	Former Senior Regulatory Advisor, Gulf of Mexico	Chevron Corporation
John V. Young	Senior Technical & External Network Advisor, Strategic Capabilities – Marine Sound	ExxonMobil Exploration Company
Ad Hoc Member		
Douglas W. Morris	Director, Reserves and Production Division Energy Information Administration	U.S. Department of Energy
Technology Subgroup		
Chair		

Chair		
J. Daniel Arthur	Managing Partner	ALL Consulting
Assistant Chair		
H. William Hochheiser	Senior Energy and Environment Manager	ALL Consulting
Members		
Mark D. Bottrell	Manager – Field, Eastern Division	Chesapeake Energy Corporation
André Brown	Associate	W. L. Gore & Associates, Inc.
John Candler	Manager, Environmental Affairs	M-I SWACO
Lance Cole	Operations Manager	Petroleum Technology Transfer Council
David DeLaO	Manager, Drilling Engineering, Southern Division	Chesapeake Energy Corporation
Larry W. Dillon	Completions Manager, San Juan Business Unit	ConocoPhillips
Donald J. Drazan	Chief – Technical Assistance Section, Bureau of Oil and Gas Permitting and Management, Division of Mineral Resources, Department of Environmental Conservation	State of New York
Maurice B. Dusseault	Professor of Geological Engineering, Department of Earth & Environmental Sciences	University of Waterloo
Catherine P. Foerster	Commissioner	Alaska Oil & Gas Conservation Commission
Linda Goodwin	President	DOT Matrix Inc.

## - OPERATIONS & ENVIRONMENT TASK GROUP

Edward Hanzlik	Senior Consultant, Petroleum Engineering, Heavy Oil & Unconventional Resources	Chevron Energy Technology Company
Ron Hyden	Technology Director, Production Enhancement	Halliburton Company
Jake Jacobs	Environment, Health and Safety Advisor	Encana Oil & Gas (USA) Inc.
Valerie A. Jochen	Technical Director, Production Unconventional Resources	Schlumberger
Bethany A. Kurz	Senior Research Manager, Energy & Environmental Research Center	University of North Dakota
Matthew E. Mantell	Senior Environmental Engineer	Chesapeake Energy Corporation
John P. Martin*	Senior Project Manager, Energy Resources R&D	New York State Energy Research and Development Authority
Dag Nummedal	Director, Colorado Energy Research Institute	Colorado School of Mines
Jerry R. Simmons	Executive Director	National Association of Royalty Owners
Steve Thomson	Manager, DeSoto Water Resources	Southwestern Energy Company
Denise A. Tuck	Global Manager, Chemical Compliance, Health, Safety and Environment	Halliburton Energy Services, Inc.
Mike Uretsky	Member, Board of Directors Executive Committee	Northern Wayne Property Owners Alliance
John A. Veil*	Manager, Water Policy Program Argonne National Laboratory	U.S. Department of Energy
Donnie Wallis	Manager – Regulatory Affairs, Air Programs and Design	Chesapeake Energy Corporation
Chris R. Williams	Group Lead, Special Projects, Environment, Health and Safety	Encana Oil & Gas (USA) Inc.
Ad Hoc Member		
Douglas W. Morris	Director, Reserves and Production Division Energy Information Administration	U.S. Department of Energy
<b>Onshore Operations S</b>	ubgroup	
Chair		

Byron Gale	Vice President, Environment, Health and Safety	Encana Oil & Gas (USA) Inc.
<i>Assistant Chair</i> Jill E. Cooper	Group Lead – Environment	Encana Oil & Gas (USA) Inc.
Members	Group Leau – Environment	Elicalia Oli & Gas (USA) Ilic.
Catherine E. Campbell	Geologist	Encana Oil & Gas (USA) Inc.
Donald W. Hackler	Senior HES Professional, Corporate Environmental Support	Marathon Oil Company

<sup>\*</sup> Individual has since retired but was employed by the specified company while participating in the study.

# OPERATIONS & ENVIRONMENT TASK GROUP

Edward Hanzlik	Senior Consultant, Petroleum Engineering, Heavy Oil & Unconventional Resources	Chevron Energy Technology Company
Jennifer L. R. Hoffman*	Section Chief, Monitoring & Assessment	Susquehanna River Basin Commission
Robert D. Lawrence	Senior Policy Advisor – Energy Issues	U.S. Environmental Protection Agency
Richard Luedecke	Vice President, Environment, Health and Safety	Devon Energy Corporation
Amy Mall	Senior Policy Analyst	Natural Resources Defense Council
Kathryn M. Mutz	Senior Research Associate, Natural Resources Law Center	University of Colorado Law School
Michele O'Callaghan	Technical Asset Manager, Marcellus USA Onshore, Global Unconventional Gas	Statoil
Bill Scott	Manager, Chevron Arctic Center	Chevron Canada
Katherine Sinding	Senior Attorney, Urban Program	Natural Resources Defense Council
Denise A. Tuck	Global Manager, Chemical Compliance, Health, Safety and Environment	Halliburton Energy Services, Inc.
Chris R. Williams	Group Lead, Special Projects, Environment, Health and Safety	Encana Oil & Gas (USA) Inc.
Ad Hoc Members		
Douglas W. Morris	Director, Reserves and Production Division Energy Information Administration	U.S. Department of Energy
Rodney F. Nelson	Vice President, Government and Community Relations	Schlumberger Limited

<sup>\*</sup> Individual has since changed organizations but was employed by the specified company while participating in the study.

## **DEMAND TASK GROUP**

Chair		
Kenneth L. Yeasting	Senior Director, Global Gas and North American Gas	IHS Cambridge Energy Research Associates, Inc.
Government Cochair		
James M. Kendell	Director, Office of Oil, Gas and Coal Supply Statistics Energy Information Administration	U.S. Department of Energy
Assistant Chair		
James A. Osten	Director, North American Natural Gas	IHS Global Insight
Assistant Government Coc	hair	
Raymond J. Braitsch	General Engineer, Office of Planning and Environmental Analysis	U.S. Department of Energy
Secretary		
John H. Guy, IV	Deputy Executive Director	National Petroleum Council
Members		
Industrial Subgroup Chair		
Kenneth S. Bromfield	U.S. Commercial Director, Energy Business	Dow Hydrocarbons and Resources LLC
Industrial Subgroup Assist	ant Chair	
Scott Engstrom	Director, Global Energy Sourcing	International Paper Company
Power Subgroup Chair		
Kurtis J. Haeger	Managing Director, Wholesale Planning	Xcel Energy
Power Subgroup Assistant	Chair	
Jeanette Pablo	Director of Federal Affairs and Senior Climate Advisor	PNM Resources, Inc.
Residential/Commercial Si	ıbgroup Chair	
Thomas J. Massaro, Jr.	Vice President, Marketing & Business Intelligence	New Jersey Natural Gas Company
Residential/Commercial Si	ıbgroup Assistant Chair	
Richard D. Murphy	Senior Vice President, Energy Solution Services	National Grid
Transportation Subgroup (	Chair	
William C. Lawson	Director of Finance	The Williams Companies, Inc.
At-Large Members		
James Edward Burns	Clean Energy & Innovation	Shell Upstream Americas
John P. DeGeeter	Senior Counsel – Antitrust	ConocoPhillips
Leslie J. Deman	President	Les Deman Energy Consulting

# DEMAND TASK GROUP

John Hull	Managing Director, Fundamentals	Iberdrola Renewables
Jose Alberto Torres Lima	Vice President, LNG, Gas Monetization, and Wind Energy	Shell Upstream Americas
Robert L. Perez	Vice President, Mexico Ventures	Tennessee Gas Pipeline Company
Power Subgroup		
Chair		
Kurtis J. Haeger	Managing Director, Wholesale Planning	Xcel Energy
Assistant Chair		
Jeanette Pablo	Director of Federal Affairs and Senior Climate Advisor	PNM Resources, Inc.
Members		
Thomas M. Blake	Consultant, Chief Economist Office	ConocoPhillips
Susan C. Charlton	Managing Director, Intergovernmental Affairs	Dominion Resources, Inc.
Luciano Dalla-Longa	Group Lead, Natural Gas Economy, Business Development and Policy – Power Generation	Encana Corporation
Leo D. Eskin	Director, Advanced Energy Systems	Combustion Science & Engineering, Inc.
Thomas M. Grasso	Senior Advisor – Investment Appraisal, Global Business Development	ConocoPhillips
Jeffrey R. Grubb	Manager, Fuel Planning and Analysis	Southern Company Generation
Jack Ihle	Manager, Environmental Policy	Xcel Energy Inc.
Jim Jessee	Gas Supply Manager	Duke Energy Corporation
Marianne S. Kah	Chief Economist, Planning and Strategy	ConocoPhillips
Salud A. Layton	Policy Analyst	Dominion Virginia Power
Michael T. Leff	Industry Economist, Office of Electricity Coal, Nuclear and Renewables Analysis Energy Information Administration	U.S. Department of Energy
Bruce C. McKay	Managing Director, Federal Affairs	Dominion Resources, Inc.
James K. Martin	Senior Vice President, Regulation and Integrated Planning	Dominion Resources, Inc.
John N. Moura	Manager, Reliability Assessment	North American Electric Reliability Corporation
Bruce W. Rising	Strategic Business Management, Power System Sales	Siemens Energy, Inc.
Guodong Sun	Executive Director, New York Energy Policy Institute and Assistant Professor, Department of Technology and Society	Stony Brook University
Terence H. Thorn	President	JKM Consulting
Jeffrey L. Wallace	Vice President, Fuel Services	Southern Company Generation
Patrick H. Wood, III	Principal	Wood3 Resources

# Residential/Commercial Subgroup

Chair		
Thomas J. Massaro, Jr.	Vice President	New Jersey Natural Gas Company
Assistant Chair		
Richard D. Murphy	Senior Vice President	National Grid
Members		
Stanley Blazewicz	Vice President, Global Head of Technology	National Grid
Christopher R. Brown	Director – Central Services	UGI Utilities, Inc.
William O. Comstock	Operations Research Analyst, Office of Energy Consumption and Efficiency Analysis Energy Information Administration	U.S. Department of Energy
Arthur C. Corbin	President and Chief Executive Officer	Municipal Gas Authority of Georgia
Herb Emmrich	Gas Demand Forecast and Economic Analysis Manager, Regulatory Affairs Department	Southern California Gas Company
Paula A. Gant	Senior Vice President, Policy and Planning	American Gas Association
Jonathan R. Gruchala	General Manager, Energy Services	National Fuel Gas Distribution Corporation
James E. Hearing	Director, Marketing	Laclede Gas Company
William C. Horak	Chair, Energy Sciences and Technology Department Brookhaven National Laboratory	U.S. Department of Energy
Sini Jacob	Manager, Natural Gas Policy, Planning and Strategy	Pacific Gas & Electric Company
Carl W. Levander	President	Columbia Gas of Virginia
King Look	Director, Resource Planning	Consolidated Edison, Inc.
Russell Lovelace	Manager – Power Analytics	Shell Energy North America
Yvonne Merkel	Director, Strategic Partnerships & Alliances	AGL Resources Inc.
Richard Meyer	Energy Analyst	American Gas Association
John N. Moura	Manager, Reliability Assessment	North American Electric Reliability Corporation
Ken Newel	Technology Specialist, Strategy and Analysis	National Energy Board
Cassandra Newsome	Manager, Marketing and Business Support Services	Piedmont Natural Gas Company, Inc.
Donna N. Peeples	Vice President, Corporate Communications and Chief Marketing Officer	AGL Resources Inc.
Colin G. Shay	Director, Marketing and Sales	Washington Gas Light Company
Rodney Sobin	Senior Policy Manager	Alliance to Save Energy
Todd Strauss	Senior Director, Energy Policy, Planning and Analysis	Pacific Gas and Electric Company
Mary Usovicz	Vice President of External Affairs	Repsol Energy North America
Gregory K. Waller	Vice President of Finance, Kentucky/ Mid-States Division	Atmos Energy Corporation

#### DEMAND TASK GROUP -

Steve Spaulding

Paul L. Wilkinson	Vice President, Policy Analyst	American Gas Association		
Industrial Subgroup				
Chair				
Kenneth S. Bromfield	U.S. Commercial Director, Energy Business	Dow Hydrocarbons and Resources LLC		
Assistant Chair				
Scott Engstrom	Director, Global Energy Sourcing	International Paper Company		
Members				
Paul N. Cicio	President	Industrial Energy Consumers of America		
Leslie J. Deman	President	Les Deman Energy Consulting		
Michelle Michot Foss	Chief Energy Economist and Head, Center for Energy Economics, Bureau of Economic Geology Jackson School of Geosciences	The University of Texas		
Thomas R. McManness	Senior Petroleum Economist	Marathon Petroleum Company L.P.		
Frederick J. Mannion	Head of Energy and GHG Initiatives	United States Steel Corporation		
Rosemary O'Brien	Vice President, Public Affairs	CF Industries, Inc.		
Ray L. Ratheal	Director, Feedstocks & Energy Procurement	Eastman Chemical Company		
David M. Rohaus	Research Specialist	United States Steel Corporation		
Elizabeth D. Sendich	Industrial Team Analyst, Office of Energy Consumption and Efficiency Analysis Energy Information Administration	U.S. Department of Energy		
Ray Siada	Corporate Energy Manager	Guardian Industries Corp.		
Mark R. Stillwagon	Senior Purchasing Manager – North Region	Lehigh Hanson, Inc.		
Gas Transportation Subgroup				
Chair				
William C. Lawson	Director of Finance	The Williams Companies, Inc.		
Members				
Joseph G. Benneche	Operations Research Analyst, Oil and Gas Division Energy Information Administration	U.S. Department of Energy		
Nolan M. Rome	Commercial Rep – Processing	Crosstex Energy, L.P		
	1 0	07.		

Crosstex Energy, L.P

Senior Vice President, Processing and

Natural Gas Liquids