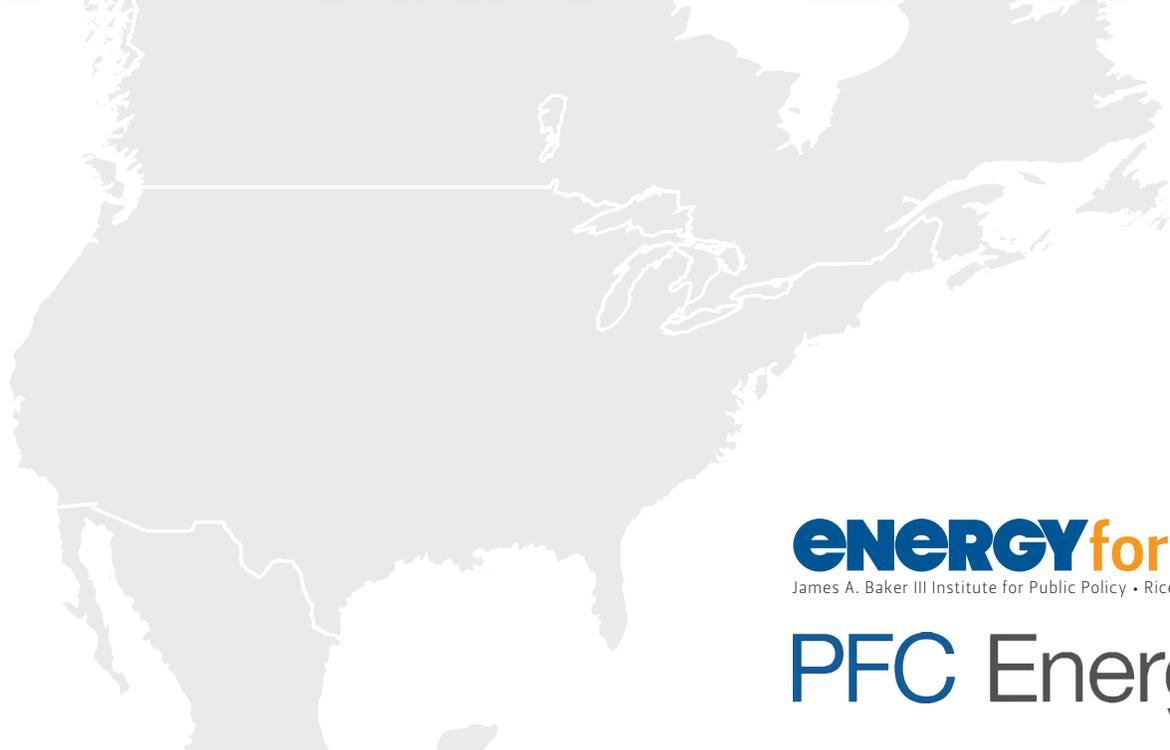


NORTH AMERICAN ENERGY RESOURCES SUMMIT



energyforum
James A. Baker III Institute for Public Policy • Rice University

PFC Energy

WEDNESDAY, JANUARY 18, 2012
BAKER INSTITUTE • RICE UNIVERSITY

NORTH AMERICAN ENERGY RESOURCES SUMMIT



About the Conference

In recent years, North America has been viewed as a declining domain where domestically produced oil, natural gas and renewable energy would have difficulty keeping up with rising demand. Americans have voiced concerns about energy supply, pricing and security. However, the American energy industry is experiencing a renaissance in the global natural gas market – and oil could be next. This business boom, focused primarily on vast unconventional resources and driven by American ingenuity and technological innovation, portends a possible shift of the center of gravity in the energy world back to the Americas by the 2020s, away from the troubled Middle East, with extremely positive consequences for the U.S. economy and global position.

The purpose of the North American Energy Resources Summit, hosted by the Baker Institute Energy Forum and Washington, D.C.-based consultants PFC Energy, is to highlight the vast endowment of natural resources coming to the forefront in North American energy markets and the policy challenges associated with large-scale development. The summit features significant speeches by senior government officials from the United States, Canada and Mexico, as well as top oil industry and environmental leaders, policymakers and industry commentators.

As turmoil spreads across the Middle East, the need for a coherent energy policy in the Americas is reaching critical importance. Americans want to learn more about improving our potential energy options and the environmental consequences of increasingly available fuels. The North American Energy Resources Summit addresses the emerging policy trade-offs between the need for secure energy supplies to fuel our daily lives and increased awareness of the need for environmental stewardship toward a greener energy system.

Organizing Partners

Baker Institute Energy Forum

Located in Houston, Texas, the energy capital of the world, the James A. Baker III Institute for Public Policy has created a multifaceted program designed to promote original, forward-looking discussion and research on the energy-related challenges facing our society in the 21st century. The mission of the Energy Forum is to shed light on important trends – both regional and global – that shape the nature of global energy markets and influence the quantity and security of vital supplies needed to fuel world economic growth and prosperity. The choice of the word “forum” is deliberate. It reflects our goal to serve as a focal point for the exchange of ideas on how to improve understanding of the complex political, cultural, religious, economic and social forces that influence open access to energy resources and their equitable distribution.

PFC Energy

PFC Energy is a leading advisory firm to the oil and gas industry, including the most significant companies in the international, national, independent, service and gas sectors. PFC Energy assists clients in making smart decisions based on extensive data and models, project and portfolio evaluation, competitive analysis; political, regulatory and market risk; and practical experience. PFC Energy has a wide practice in exploration and production, including domestic and international offshore, conventional and unconventional oil and gas, as well as detailed data on the service sector.

Sponsor

The Baker Institute would like to thank Houston Plating and Coatings LLC for its generous support of this event.

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Wednesday, January 18, 2012

9:00 am Welcoming Remarks
The Honorable Edward P. Djerejian
Founding Director, James A. Baker III Institute for Public Policy

Setting the Stage — America's Energy Challenge

9:10 am **Peter H. Lehner**
Executive Director, Natural Resources Defense Council

The Honorable John M. Deutch
Emeritus Institute Professor, Department of Chemistry, Massachusetts Institute of Technology

Keynotes — North American Energy Potential

Introduction: Susan Farrell, Senior Director, Upstream and Gas Practice, PFC Energy

10:00 am **James J. Mulva**
Chairman and CEO, ConocoPhillips

Juan José Suárez Coppel, Ph.D.
Director General, Petróleos Mexicanos

James E.C. Carter
Retired President and Chief Operating Officer, Syncrude Canada Ltd.; and
Corporate Director, Climate Change and Emissions Management Corporation

11:15 am Coffee Break

CEO Armchair Session — The Future of Energy in the Americas

Moderator: The Honorable Edward P. Djerejian, Founding Director, James A. Baker III Institute for Public Policy

11:45 am **James T. Hackett**
Chairman and CEO, Anadarko Petroleum Corporation

The Honorable Philip R. Sharp
President, Resources for the Future

Scott S. Nyquist
Director, Global Energy Practice, McKinsey & Company

12:30 pm Lunch

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Panel I — Shale Gas Resources in North America

Moderator: Kenneth B. Medlock III, Ph.D., James A. Baker, III, and Susan G. Baker Fellow in Energy and Resource Economics, James A. Baker III Institute for Public Policy

1:45 pm

Arthur E. Berman

Petroleum Geologist and Consultant

Terry Engelder, Ph.D.

Professor of Geosciences, Pennsylvania State University

Raoul LeBlanc

Senior Director, Financial Advisory Practice, PFC Energy

3:00 pm

Coffee Break

Panel II — Environmental Constraints to Development

Moderator: Ronald L. Sass, Ph.D., Fellow in Global Climate Change, James A. Baker III Institute for Public Policy

3:15 pm

John R. Hanger

Special Counsel, Eckert Seamens

Ian J. Duncan, Ph.D.

Program Director for Earth and Environmental Systems, Bureau of Economic Geology, The University of Texas at Austin

Robert B. Jackson, Ph.D.

Nicholas Chair of Global Environmental Change, Duke University

Richard Dixon

Executive Director, Centre for Applied Business Research in Energy and the Environment, Alberta School of Business, University of Alberta

Closing Remarks — U.S. National Issues

4:30 pm

Thomas L. Carter, Jr.

Founder, Chairman and CEO, Black Stone Minerals Company

Amy Myers Jaffe

Wallace S. Wilson Fellow in Energy Studies, James A. Baker III Institute for Public Policy

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Participant Biographies

Arthur E. Berman is a petroleum geologist and consultant who specializes in prospect and play evaluation, reserve assessment, risk evaluation, subsurface geological and geophysical interpretation, and database management. With 32 years of oil and gas industry experience, Berman spent 20 years with Amoco Production Company and 10 years as an independent geological consultant. He has been featured in several interviews and articles over the past year by media sources including the Associated Press, CNN's "American Morning," National Review, KYOG Radio (San Francisco), KNX Radio (Los Angeles), BBC News, the Association for the Study of Peak Oil, Bloomberg News and Bloomberg Businessweek, Business News Network TV, the Financial Times, the Houston Chronicle, the Philadelphia Enquirer and Platts. He is a staff contributor to The Oil Drum, contributing editor and columnist for World Oil. From 2007 to 2009, he was an associate editor of the American Association of Petroleum Geologists. Berman is also a former editor of the Houston Geological Society (HGS) Bulletin (2004–2005) and former vice president of the HGS (2008–2009). He has published more than 50 articles on geology, technology and the petroleum industry, including 10 articles on shale gas plays such as the Barnett, Haynesville and Fayetteville shales. Berman holds an M.S. in geology from the Colorado School of Mines and a B.A. in history from Amherst College.

James E.C. Carter served Syncrude Canada Ltd. for more than 27 years, including 10 years as president and 18 years as chief operating officer. He also serves as corporate director for the Climate Change and Emissions Management Corporation. Prior to joining Syncrude, he held progressively responsible management positions at McIntyre Mines Ltd. and the Iron Ore Company of Canada. Carter currently serves on the boards of directors of EPCOR Utilities Inc., Finning International Inc., CAREERS: The Next Generation, Clark Builders and the Alberta Treasury Branch. In addition, he chaired the Alberta Carbon Capture and Storage Development Council for the government of Alberta in 2008–2009. He is a director and past chair of the Mining Association of Canada, where he championed development of the Toward Sustainable Mining initiative. Carter was also a member, director and executive member of the Alberta Chamber of Resources for many years, and pioneered the Oil Sands Technology Roadmap and Aboriginal Programs Project. He is the recipient of three honorary doctorates from the Technical University of Nova Scotia (engineering, 1995), University of Alberta (science, 2004) and the University of Prince Edward Island (law, 2008). In 2005, he was named Resource Person of the Year by the Alberta Chamber of Resources, and was inducted as a fellow of the Canadian Academy of Engineering. Carter holds a B.S. in mining engineering and is a graduate of the Advanced Management Program at Harvard Business School.

Thomas L. Carter, Jr., is the founder of Black Stone Minerals Company and currently serves as its chairman of the board and CEO. Prior to the formation of Black Stone, Carter served as managing general partner of several predecessors to the company, including W.T. Carter & Bro. and Black Stone Energy Company. W.T. Carter & Bro. was a family partnership that owned timber and mineral interests in East Texas since the late 19th century. In 1980, Carter founded Black Stone Energy Company, which serves as Black Stone's operating and exploration subsidiary, while Black Stone Minerals holds the fee and royalty interests. From 1975 to 1979, Carter worked for Texas Commerce Bank in Houston, Texas. During his first two years, he worked in the finance and budget planning areas and subsequently served a year as executive assistant to the bank's CEO. After completing his appointment as executive assistant, Carter spent the subsequent two years as a lending officer in the Energy Department. He currently sits on the boards of Carrizo Oil & Gas Inc., The Lawrenceville School, Episcopal High School in Houston, St. Edward's University in Austin and the Ripley Foundation. Carter holds MBA and B.B.A. degrees from The University of Texas at Austin.

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The Honorable John M. Deutch is an emeritus institute professor in the Department of Chemistry at the Massachusetts Institute of Technology (MIT), where he has been a member of the faculty since 1970. Previously, he served as chairman of the Department of Chemistry, dean of science and provost. Deutch has published more than 140 technical publications in physical chemistry, as well as numerous publications on technology, energy, international security and public policy issues. Deutch has served in significant government and academic posts throughout his career. In May 1995, he was sworn in as director of central intelligence (DCI) following a unanimous vote in the Senate, and served as DCI until December 1996. In this position, he was head of the Intelligence Community (all foreign intelligence agencies of the United States) and directed the Central Intelligence Agency. From March 1994 to May 1995, he served as the deputy secretary of defense. From March 1993 to March 1994, Deutch served as undersecretary of defense for acquisitions and technology. From 1977 to 1980, Deutch served in a number of positions for the U.S. Department of Energy, including director of energy research, acting assistant secretary for energy technology, and undersecretary of the department. In addition he has served on many commissions during several presidential administrations. Deutch received his B.A. from Amherst College, and his B.S. and Ph.D. from MIT.

Richard Dixon is the executive director at the Centre for Applied Business Research in Energy and the Environment (CABREE) at the University of Alberta's Alberta School of Business. Dixon joined CABREE on secondment from Alberta Environment, where he was responsible for strategic intelligence. He was also in the first class of University of Alberta MBAs to graduate with a specialization in natural resources and energy.

The Honorable Edward P. Djerejian served in the U.S. Foreign Service for eight presidents, from John F. Kennedy to William J. Clinton (1962–1994). Prior to his nomination by President Clinton as U.S. ambassador to Israel (1993–1994), he was assistant secretary of state for Near Eastern affairs in both the George H.W. Bush and Clinton administrations (1991–1993). He was the U.S. ambassador to the Syrian Arab Republic (1988–1991). He also served as special assistant to President Ronald Reagan and deputy press secretary for foreign affairs in the White House (1985–1986). After his retirement from government service in 1994, Djerejian became the founding director of the James A. Baker III Institute for Public Policy at Rice University. His book “Danger and Opportunity: An American Ambassador’s Journey Through the Middle East” was published by Simon & Schuster Threshold Editions in September 2008. He has been awarded the Presidential Distinguished Service Award, the Department of State’s Distinguished Honor Award and numerous other honors, including the Ellis Island Medal of Honor and the Anti-Defamation League’s Moral Statesman Award. He is also a recipient of the Association of Rice Alumni’s Gold Medal, the group’s most prestigious award, for his service to Rice University. In 2011, Djerejian was elected a fellow of the American Academy of Arts and Sciences, and named to the board of trustees of the Carnegie Corporation of New York.

Ian J. Duncan, Ph.D., is the program director for earth and environmental systems in the Bureau of Economic Geology at The University of Texas at Austin. He previously served as associate director and research scientist. His current research focuses on the scientific, environmental and public policy aspects of unconventional natural gas production; the water-energy nexus; and carbon capture and storage. He has a particular interest in risk analysis, decision-making and legal/regulatory issues related to fracking, CO₂ sequestration, CO₂-enhanced oil recovery and energy production. Duncan has presented congressional testimony to the House Natural Resources Committee, the House Committee on Energy and Commerce and the House Committee on Energy and Commerce. He also has participated in a number of external review boards, including the ASME external review, the U.S.

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Participant Biographies (continued)

Department of Energy's Carbon Sequestration Research Programs, the external review panel for the Burger CO₂ Injection Project, Battelle Memorial Institute and the governor's external review panel for Commonwealth of Pennsylvania CO₂ sequestration, among others. For 10 years, he worked as scientist manager at the Virginia Department of Mines, Minerals and Energy in the Division of Geology and Mineral Resources. Duncan has taught geology at Southern Methodist University in Dallas and Washington University in St. Louis. He received his Ph.D. from The University of British Columbia, Vancouver.

Terry Engelder, Ph.D., a leading authority on the recent Marcellus shale gas play, is currently a professor of geosciences at Pennsylvania State University and has previously served on the staffs of the U.S. Geological Survey, Texaco and Columbia University. Short-term academic appointments include visiting professor at Graz University in Austria and visiting professor at the University of Perugia in Italy. Engelder's other academic distinctions include a Fulbright Senior Fellowship in Australia, Penn State's Wilson Distinguished Teaching Award, membership in a U.S. earth science delegation to visit the Soviet Union immediately following Nixon-Brezhnev détente, and the singular honor of helping Berkeley professor Walter Alvarez collect the samples that led to the famous theory for dinosaur extinction by large meteorite impact. Engelder has written 150 research papers, many focused on Appalachia, as well as a book, the research monograph "Stress Regimes in the Lithosphere." In the international arena, he has worked on exploration and production problems with companies including Saudi Aramco, Royal Dutch Shell, Total, Agip and Petrobras. Engelder holds a B.S. from Penn State, an M.S. from Yale and a Ph.D. from Texas A&M University.

Susan Farrell is a senior director in PFC Energy's Upstream and Gas Practice, as well as an expert in service sector strategies. She joined the company in 2000, bringing more than 20 years of experience in the assessment and implementation of strategic planning for international markets. Prior to joining PFC Energy, Farrell led the global strategy groups of two major oilfield service companies. From 1996 to 2000, she held the positions of director of global strategy and planning and director of global marketing for Brown & Root Energy Services in London and Houston. From 1977 to 1996, she held a variety of positions in planning and international market analysis, including director of global marketing, at J. Ray McDermott, in both New Orleans and London. For 15 years, Farrell conducted on-site market assessments in Asia Pacific, the Middle East, Europe and North America, which were used as the framework for operating and strategy decisions. Prior to joining McDermott, Farrell worked in a strategy consulting firm in Brussels, Belgium. She received a B.A. in economics from Brown University and an MBA from Boston University.

James T. Hackett is chairman and CEO of Anadarko Petroleum Corporation. He joined the company in December 2003 as president and CEO. Houston-based Anadarko is active in the United States, Algeria, Brazil, China, Liberia, Sierra Leone, Indonesia and Ghana, and is executing strategic exploration programs in several other countries. Before joining Anadarko, Hackett served as president and chief operating officer of Devon Energy Corporation following its merger with Ocean Energy Inc. He had served as chairman, president and CEO of Ocean Energy, itself a product of a merger with Seagull Energy Corporation, where he was chairman, CEO and president. Hackett is past chairman of America's Natural Gas Alliance and is on the board of several industry associations, including the American Petroleum Institute and the National Petroleum Council. He is a member of the Society of Petroleum Engineers. Additionally, Hackett is a director of Bunge Ltd. and Fluor Corporation, and he is the former chairman of the board of the Federal Reserve Bank of Dallas. He is also former chairman, and now a member, of Houston Grand Opera's board; serves as vice chairman of Baylor College of Medicine; and sits on the boards of the Welch

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Foundation for Chemistry, the Business Roundtable and the Trilateral Commission. He is also a board member and adjunct professor at Rice University. Hackett holds a Bachelor of Science from the University of Illinois and a Master of Business Administration from Harvard University.

John R. Hanger is currently special counsel for Eckert Seamens. Prior to entering private practice, he served as the secretary of the Pennsylvania Department of Environmental Protection. Hanger is also a former commissioner of the Pennsylvania Public Utility Commission. He is a nationally recognized expert on environment, energy, gas drilling and green economy issues. He is one of a two Pennsylvanians who have served both as a secretary of the Department of Environmental Protection and as a commissioner of the Pennsylvania Public Utility Commission. He has written leading utility and environmental regulatory decisions, enacted major environmental and utility rules, and played a pivotal role in writing and passing major legislation. Hanger served as the chair of the Pennsylvania Energy Development Authority, the chair of the Environmental Quality Board, vice chairman of the Pennsylvania Infrastructure and Investment Authority, and a commissioner of the Susquehanna River Basin Commission. He also chaired the Pennsylvania Mine Safety Board. Hanger was the founding president of Citizens for Pennsylvania's Future (PennFuture) from 1998 to 2008.

Robert B. Jackson, Ph.D., is the Nicholas Chair of Global Environmental Change and a professor in the Biology Department and the Nicholas School of the Environment and Earth Sciences at Duke University. His research examines feedbacks between people and the biosphere, including studies of the global carbon and water cycles, biosphere/atmosphere interactions and global change. Jackson also is currently director of Duke's Center on Global Change and Duke's Stable Isotope Mass Spectrometry Laboratory. He also directs the new Department of Energy-funded National Institute for Climatic Change Research for the southeastern United States and co-directs the Climate Change Policy Partnership, working with energy and utility corporations to find practical strategies to combat climate change. Jackson has received numerous awards, including the Murray F. Buell Award from the Ecological Society of America and a 1999 Presidential Early Career Award in Science and Engineering from the National Science Foundation (one of 19 scientists honored at the White House by President Bill Clinton). He has published more than 125 peer-reviewed scientific works and is co-editor of the book "Methods in Ecosystem Science" (Springer, 2000). His trade book on global change, "The Earth Remains Forever," was published in October 2002.

Amy Myers Jaffe is the Wallace S. Wilson Fellow in Energy Studies and director of the Energy Forum at the Baker Institute, as well as associate director of the Rice Energy Program. Jaffe's research focuses on oil geopolitics, strategic energy policy including energy science policy, and energy economics. Jaffe was formerly senior editor and Middle East analyst for Petroleum Intelligence Weekly. She is widely published and served as co-editor of "Energy in the Caspian Region: Present and Future" (Palgrave, 2002) and "Natural Gas and Geopolitics: From 1970 to 2040" (Cambridge University Press, 2006), and as co-author of "Oil, Dollars, Debt and Crises: The Global Curse of Black Gold" with Mahmoud A. El-Gamal (Cambridge University Press, 2010). Jaffe also contributed to Foreign Policy's "21 Solutions to Save the World" (May/June 2007). She served as a member of the reconstruction and economy working group of the Baker/Hamilton Iraq Study Group, as project director for the Baker Institute/Council on Foreign Relations Task Force on Strategic Energy Policy, and as a principal adviser to USAID's project on "Options for Developing a Long Term Sustainable Iraqi Oil Industry." She currently serves as a strategic adviser to the American Automobile Association (AAA) of the United States and is a member of the Council on Foreign Relations. Jaffe was among the Key Women in Energy-Americas honorees in the Pathfinders/Trailblazers category

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Participant Biographies (continued)

(2004), the honoree for Esquire's annual 100 Best and Brightest in the contribution to society category (2005), Elle magazine's Women for the Environment (2006), and was named to Who's Who in America (2008). Jaffe is a Princeton University graduate with a degree in Arabic studies.

Raoul LeBlanc is senior director of PFC Energy's Financial Advisory Practice. He is responsible for developing and growing PFC Energy's emerging relationship with a range of financial institutions and to tailor the firm's research and consulting to meet their needs. LeBlanc joined PFC Energy in January 2007, bringing 15 years of experience in strategic and industry analysis. Familiar with a wide range of corporate and market issues, he has extensive experience on issues related to North American independents and natural gas market developments. From 1997 to 2006, LeBlanc worked at Anadarko Petroleum Corporation. During his tenure there, he directed the company's strategic planning effort, which assumed responsibility for strategy formulation, portfolio optimization, scenario planning and competitor analysis. He also worked on the company's mergers and acquisitions team, evaluating and modeling financial results, operational performance and E&P corporate valuation. Prior to Anadarko, LeBlanc was a senior oil analyst at Energy Security Analysis, a market analysis consulting company in Washington, D.C., where he was responsible for Asian markets and worldwide distillate fuels. LeBlanc has worked and studied in Japan, the Western Pacific and Britain. He holds an undergraduate degree from Georgetown University and an M.A. in international relations from the School of Advanced International Studies at Johns Hopkins University.

Peter H. Lehner is the executive director of the Natural Resources Defense Council (NRDC) and the NRDC Action Fund. He is responsible for guiding NRDC's policy positions, advocacy strategies, communications plans, development and administration, and managing NRDC's seven offices. He also leads the Action Fund's political activities. Since Lehner's return to NRDC in 2007, the organization has opened new offices in Beijing and Chicago, started a Center for Market Innovation, and expanded both its policy and communications capacity. Previously, Lehner served as chief of the Environmental Protection Bureau of the New York State Attorney General's office for eight years. He supervised all environmental litigation by the state, prosecuting a wide variety of polluters and developing innovative multistate strategies targeting global warming, acid rain and smog-causing emissions. Lehner has also served at NRDC as a senior attorney in charge of the water program. Before that, he created and led the environmental prosecution unit for New York City. He holds an A.B. in philosophy and mathematics from Harvard College and is a graduate of Columbia Law School, where he continues to teach environmental law. He also has extensive experience in sustainable farming and green business.

Kenneth B. Medlock III, Ph.D., is the James A. Baker, III, and Susan G. Baker Fellow in Energy and Resource Economics at the Baker Institute and an adjunct professor and lecturer in the Department of Economics at Rice University. Currently, Medlock heads the Baker Institute Energy Forum's natural gas program and is a principal in the development of the Rice World Natural Gas Trade Model, which assesses the future of international natural gas trade. He also teaches energy economics courses and supervises students in the energy field. Medlock studies natural gas markets, gasoline markets, energy commodity price relationships, transportation, modeling national oil company behavior, economic development and energy demand, forecasting energy demand, and energy use and the environment. Medlock is a council member of the International Association for Energy Economics (IAEE), and a member of United States Association for Energy Economics (USAEE), The American Economic Association and the Association of Environmental and Resource Economists. In 2001, he won (with Ron Soligo) the IAEE Award for Best Paper of the Year in the Energy Journal. In 2011, he was given the USAEE's Senior Fellow Award. Medlock also served as an adviser to the U.S. Department of Energy and the California Energy Commission in their

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respective energy modeling efforts. He was the lead modeler of the Modeling Subgroup of the 2003 National Petroleum Council (NPC) study of long-term natural gas markets in North America, and is involved in the ongoing NPC study “North American Resource Development.” Medlock received his Ph.D. in economics from Rice and held the MD Anderson Fellowship at the Baker Institute from 2000 to 2001.

James J. Mulva is currently chairman and CEO of ConocoPhillips; he also served as president from 2002 to 2004. He was appointed senior vice president in 1993, executive vice president in 1994, president and chief operating officer in 1994 and served as chairman and CEO from 1999 to 2002. Mulva has served as chairman of the American Petroleum Institute in 2005 and 2006 and is a member of the board of visitors for the MD Anderson Cancer Center and The Business Council. After serving as an officer in the U.S. Navy, he joined Phillips Petroleum Company in 1973 and became its chief financial officer in 1990, when he also became part of the company’s management committee. Mulva received a B.B.A. and an MBA in finance from The University of Texas.

Scott S. Nyquist is a director of the Global Energy Practice at McKinsey & Company, where he has worked since 1984. He now co-leads McKinsey’s global energy and materials sector and is a leader in McKinsey’s Climate Change Special Initiative. Nyquist has extensive experience in helping private- and public-sector energy and materials clients develop and implement strategies to significantly improve their performance. He has led work on energy efficiency, wind and solar power, carbon capture and storage, and natural gas, and co-authored McKinsey’s recent report “Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?” He also co-authored the report “Averting the Next Oil Crisis: The Demand Challenge,” based on a joint research effort by McKinsey’s global energy and materials sector and the McKinsey Global Institute. Nyquist has a bachelor’s degree in chemical engineering from the University of Michigan and an MBA from Harvard Business School.

Ronald L. Sass, Ph.D., is the fellow in global climate change at the Baker Institute and the Harry C. and Olga K. Wiess Professor of Natural Sciences emeritus at Rice University. Now retired, he joined the Rice faculty in 1958 and served as chairman of the Ecology and Evolutionary Biology Department. Sass has received the Rice University Award of Highest Merit, the Rice University Alumni Association Meritorious Service Award and the Association of Rice Alumni Gold Medal. Sass’ current research interests are in climate change, wetland environments and estuary systems; he has also studied wetland sources of biogenic radiatively active atmospheric trace gases. He was a co-convenor of the International Geosphere-Biosphere Programme focus group on exchange of methane and other trace gases in rice cultivation. Sass is an active consultant and an expert witness in legal cases involving environmental issues. He consulted for the Environmental Protection Agency and advised the United Nations Development Programme Interregional Research Program on methane emission from rice fields in Asia. His work with the Intergovernmental Panel on Climate Change helped establish guidelines and values for national greenhouse gas inventories throughout the world. In 1988, Sass served as a National Research Council senior fellow with NASA at the Langley Research Center in Virginia, and in Alaska working as a member of the ABLE-2A Global Tropospheric Experiment research team. Sass holds a doctorate in physical chemistry from the University of Southern California and a bachelor’s degree from Augustana College in Rock Island, Ill. He was a postdoctoral fellow at Brookhaven National Laboratories studying neutron scattering. As a Guggenheim Fellow, Sass was a member of the Department of Theoretical Chemistry at Cambridge University.

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Participant Biographies (continued)

The Honorable Philip R. Sharp became president of Resources for the Future in September 2005. His career in public service includes 10 terms as a member of the U.S. House of Representatives from Indiana, as well as a lengthy tenure on the faculty of the Harvard Kennedy School and the Institute of Politics at Harvard University. After leaving Congress, Sharp was a member of the National Research Council's Committee on Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, which issued its report in 2001. He chaired the secretary of energy's Electric Systems Reliability Task Force, which issued its report in 1998. Sharp was also the congressional chair for the National Commission on Energy Policy, a panel established by the Hewlett Foundation and other major foundations to make energy policy recommendations to the federal government, and was a member of the National Academies' Committee on America's Climate Choices. He currently serves on the board of directors of the Duke Energy Corporation and the Energy Foundation and was appointed to the Blue Ribbon Commission on America's Nuclear Future. Sharp also serves on the National Petroleum Council, a federal advisory committee, and is a member of the Massachusetts Institute of Technology (MIT) Energy Initiative External Advisory Board as well as the International Advisory Board of the Harvard Environmental Economics Program. In addition, he chairs the external advisory committee for the MIT Nuclear Fuel Cycle Study. Sharp received his Ph.D. in government from Georgetown University.

Juan José Suárez Coppel, Ph.D., is the director general of Petróleos Mexicanos (Pemex). During his career, Suárez Coppel has held different positions in both the public and private sector. He served as chief adviser to the Ministry of Finance and as chief financial officer at Pemex. He also served as vice president of finance at Grupo Modelo and as the adjunct director of derivatives for Banamex. He lectured in economics at the Instituto Tecnológico Autónomo de México (ITAM) and the Universidad Autónoma de Barcelona, as well as at Brown University in Providence, R.I. Suárez Coppel earned a bachelor's degree in economics from ITAM and a Ph.D. from The University of Chicago.