

America's Evolving Oil and Natural Gas Transportation Infrastructure

APPENDIX B – STUDY GROUP ROSTERS



A Report of the National Petroleum Council December 2019

This appendix was last updated on January 5, 2021

Appendix B STUDY GROUP ROSTERS

STUDY PARTICIPATION

Participants in this study contributed in a variety of ways, ranging from work in all study areas, to involvement on a specific topic, or to reviewing proposed materials. Involvement in these activities should not be construed as a participant's or their organization's 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 recommendations.

As a federally appointed and chartered advisory committee, the NPC is solely responsible for the final advice provided to the Secretary of Energy. However, the Council believes that the broad and diverse 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, Subgroups, and Teams, 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 outreach meetings or other contacts. Their time, energy, and commitment significantly enhanced the study and their contributions are greatly appreciated.

LIST OF STUDY GROUPS

Committee on U.S. Oil and Natural Gas Transportation Infrastructure B-3
Coordinating SubcommitteeB-6
Executive Summary Writing TeamB-9
Supply and Demand Task GroupB-11
Infrastructure Resiliency, Mapping, and Analysis Task GroupB-13
Permitting, Siting, and Social License to Operate Task Group B-15
Technology Advancement and Deployment Task GroupB-18
Report Communications Team B-23

COMMITTEE ON U.S. OIL AND NATURAL GAS TRANSPORTATION INFRASTRUCTURE

Chair

Alan S. Armstrong	President and Chief Executive Officer	The Williams Companies, Inc.
Government Cochair		
Dan R. Brouillette	Deputy Secretary of Energy	U.S. Department of Energy
Alternate Government G	Cochair	
Mark W. Menezes	Under Secretary of Energy	U.S. Department of Energy
Ex Officio		
Greg L. Armstrong	Chair	National Petroleum Council
John C. Mingé	Former Chairman and President	BP America Inc.
J. Larry Nichols	Vice Chair	National Petroleum Council
Secretary		
Marshall W. Nichols	Executive Director	National Petroleum Council

Steering Committee Members

E. Russell Braziel

Jeffrey A. Bruner

Diane X. Burman

Christi L. Craddick	Commissioner, Railroad Commission of Texas	State of Texas
Greg C. Garland	Chairman and Chief Executive Officer	Phillips 66 Company
Russell K. Girling	President and Chief Executive Officer	TC Energy Corporation
Ryan M. Lance	Chairman and Chief Executive Officer	ConocoPhillips Company
Al Monaco	President and Chief Executive Officer	Enbridge Inc.
Richard G. Newell	President and Chief Executive Officer	Resources for the Future
Michael K. Wirth	Chairman of the Board and Chief Executive Officer	Chevron Corporation
Study Committee Membe	ers	
Robert H. Anthony	Commissioner, Oklahoma Corporation Commission	State of Oklahoma
Edward H. Bastian	Chief Executive Officer	Delta Air Lines, Inc.
Joseph A. Blount, Jr.	President and Chief Executive Officer	Colonial Pipeline Company
Stevan B. Bobb	Executive Vice President and Chief Marketing Officer	BNSF Railway Company
Kevin D. Book	Managing Director, Research	ClearView Energy Partners,
Jason E. Bordoff	Professor of Professional Practice in	Columbia University

International and Public Affairs Founding Director, Center on Global

President and Chief Executive Officer

Energy Policy

President

Commissioner

Iroquois Pipeline Operating

New York State Public Service

RBN Energy, LLC

Company

Commission

LLC

COMMITTEE ON U.S. OIL AND NATURAL GAS TRANSPORTATION INFRASTRUCTURE

Lisa Davis	Managing Board Member	Siemens AG
John W. England	Vice Chairman and U.S. Energy & Resources Leader	Deloitte LLP
Corri A. Feige	Commissioner, Department of Natural Resources	State of Alaska
Randy A. Foutch	Chairman	Laredo Petroleum, Inc.
James T. Hackett	Partner	Riverstone Holdings LLC
Marilu Hastings	Vice President, Sustainability Program	Cynthia and George Mitchell Foundation
John D. Hofmeister	Founder and Chief Executive Officer	Citizens for Affordable Energy, Inc.
Martin J. Houston	Vice Chairman	Tellurian Inc.
Diane Leopold	Executive Vice President and President and Chief Executive Officer of the Gas Infrastructure Group	Dominion Energy, Inc.
Michael N. Mears	Chairman of the Board, President and Chief Executive Officer	Magellan Midstream Partners, L.P.
Pierce H. Norton II	President and Chief Executive Officer	ONE Gas, Inc.
Thomas B. Nusz	Chairman of the Board and Chief Executive Officer	Oasis Petroleum Inc.
Donald L. Paul	Executive Director of the USC Energy Institute Professor and William M. Keck Chair of Energy Resources Viterbi School of Engineering	University of Southern California
David L. Porges	Former President	EQT Corporation
Joseph H. Pyne	Chairman of the Board	Kirby Corporation
Tisha Conoly Schuller	Principal	Adamantine Energy LLC
David T. Seaton	Former Chairman and Chief Executive Officer	Fluor Corporation
Suhail A. Sikhtian	Managing Director Co-Head, Global Natural Resources Group	Goldman, Sachs & Co. LLC
Lorenzo Simonelli	Chairman and Chief Executive Officer	Baker Hughes Company
Clark C. Smith	President and Chief Executive Officer	Buckeye Partners, L.P.
John M. Stafford	Former Representative	Southern Ute Growth Fund
Bert Stedman	Alaska State Senator	The Energy Council
Douglas J. Suttles	Chief Executive Officer	Encana Corporation
A. James Teague	Director and Chief Executive Officer	Enterprise Products Partners L.P.
Lee M. Tillman	Chairman, President and Chief Executive Officer	Marathon Oil Corporation
Frank A. Verrastro	Senior Vice President and Trustee Fellow Energy and National Security Program	Center for Strategic & International Studies
Cynthia J. Warner	President and Chief Executive Officer	Renewable Energy Group, Inc.
Kelcy L. Warren	Chairman of the Board and Chief Executive Officer	Energy Transfer Partners, L.P.

COMMITTEE ON U.S. OIL AND NATURAL GAS TRANSPORTATION INFRASTRUCTURE

Gretchen H. Watkins Patrick H. Wood III Darren W. Woods

Daniel H. Yergin

President Principal Chairman, President and Chief Executive Officer

Vice Chairman

Shell Oil Company Wood3 Resources Exxon Mobil Corporation

IHS Markit

COORDINATING SUBCOMMITTEE

Chair		
Amy Shank	Director, Pipeline Safety & Asset Integrity, Safety & Operational Discipline	The Williams Companies, Inc.
Government Cochair		
Shawn Bennett	Deputy Assistant Secretary for Oil and Natural Gas	U.S. Department of Energy
Assistant Chair		
Kristen Drew	Manager of Project Development – Northeast OA, ORSH	The Williams Companies, Inc.
Alternate Government C	lochair	
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Secretary		
James A. Slutz	Director of Study Operations	National Petroleum Council
Members		
Holly Bamford	Chief Conservation Officer	National Fish and Wildlife Foundation
Kevin D. Book	Managing Director, Research	ClearView Energy Partners, LLC
E. Russell Braziel	President and Chief Executive Officer	RBN Energy, LLC
Richard Cain	Commercial Manager – North America, Chevron Pipeline and Power	Chevron Pipeline Company
Chris R. Chandler	Executive Vice President and COO	Plains All American Pipeline
Jay D. Churchill	Senior Vice President, Health, Safety & Environment and Projects	Phillips 66 Company
Jared Ciferno	Technology Manager, Oil and Natural Gas	U.S. Department of Energy/National Energy Technology Laboratory
Keith Conley	Director, Strategy	TC Energy Corporation
Paul Doucette	Global Industry Affairs and Stakeholder Engagement	Baker Hughes Company
Maria Dunn	Manager, Policy & Sustainability	Phillips 66 Company
Ryan A. Fisher	Principal Deputy Assistant Secretary (Civil Works)	U.S. Army Corps of Engineers
Kari French	Director Oversight and Safety Railroad Commission of Texas	State of Texas
Mark Gebbia	Vice President Environmental & Permitting Engineering Services	The Williams Companies, Inc.
David L. Goldwyn	President and Founder	Goldwyn Global Strategies, LLC
Jason Grumet	President	Bipartisan Policy Center
Brooke Harris	Global Gas Demand Development Manager, Value Chain Development	Exxon Mobil Corporation

- COORDINATING SUBCOMMITTEE

Stephen Hatridge	Vice President and Assistant General Counsel	The Williams Companies, Inc.
Kevin Hilton	Chief Executive Officer	IMPACT
Lydia J. Johnson	Americas Infrastructure Manager	Exxon Mobil Corporation
Paul L. Jones	Principal Cultural Resource Practice Leader	Cardno
Katharine S. MacGregor	Deputy Chief of Staff	U.S. Department of the Interior
Douglas M. MacIntyre	Associate Deputy Assistant Secretary, Office of Petroleum Reserves, Office of Fossil Energy	U.S. Department of Energy
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Kenneth E. Martin	Chair and Associate Director, Programs College of Food, Agriculture, and Environmental Science	Ohio State University
Paul McNutt	Manager, Reserves and Development Corporate Investment Evaluations and Approvals	ConocoPhillips
Brianne Metzger-Doran	Director – Project Evaluation Gas Transmission and Midstream	Enbridge Inc.
John Miller	Group Vice President, Industrial Products	BNSF Railway Company
Melissa Mitchell*	Tariff, Land and Permitting Manager	Shell Oil Company
Peggy Montana	Board Director	Shell Midstream
Drue Pearce	Deputy Administrator, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Mike Pomorski	Director, Market Fundamentals	Encana Services Company Ltd.
Rodger R. Schwecke	Senior Vice President Gas Transmission, Storage, & System Operations	Southern California Gas Co.
Eric Smistad	Program Manager, Natural Gas Infrastructure	U.S. Department of Energy/ National Energy Technology Laboratory
Andrea L. Spring	Policy Advisor	Federal Energy Regulatory Commission
Kenneth R. Vincent*	Chief of Staff, Office of Fossil Energy	U.S. Department of Energy
Matt Woodruff	Vice President of Public & Government Affairs	Kirby Corporation
Principal Assistants		
Thomas R. Eizember	Consultant	Eizember Consulting LLC
Lisa George-Sharpe	Senior Consultant – Energy Reform	Deloitte
John H. Guy, IV	Deputy Executive Director	National Petroleum Council
Nancy L. Johnson	Senior Advisor, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Marshall W. Nichols	Executive Director	National Petroleum Council

* Title and organization during study participation.

COORDINATING SUBCOMMITTEE

Ravi Patel	Consultant, Supply Chain & Network Operations	Deloitte
Karina Pérez del Rosario	Senior Manager, Supply Chain & Network Operations	Deloitte
Aparna Ramanan	Senior Consultant, Government and Public Sector	Deloitte
Elizabeth Stolpe	Consultant	Bipartisan Policy Center
Ryan Thomson	Communications Fellow	National Petroleum Council
NPC CCUS Study Coordination		
Sally Kolenda	Director, External Affairs	BP America Inc.
Jane Stricker	Project Director	BP America Inc.

-

EXECUTIVE SUMMARY WRITING TEAM

I	le	a	d	

Lead		
Thomas R. Eizember	Consultant	Eizember Consulting LLC
Members		
Amy Shank	Director, Pipeline Safety & Asset Integrity, Safety & Operational Discipline	The Williams Companies, Inc.
Shawn Bennett	Deputy Assistant Secretary for Oil and Natural Gas	U.S. Department of Energy
Kristen Drew	Manager of Project Development – Northeast OA, ORSH	The Williams Companies, Inc.
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
James A. Slutz	Director of Study Operations	National Petroleum Council
Richard Cain	Commercial Manager – North America, Chevron Pipeline and Power	Chevron Pipeline Company
Jay D. Churchill	Senior Vice President, Health, Safety & Environment and Projects	Phillips 66 Company
Keith Conley	Director, Strategy	TC Energy Corporation
Maria Dunn	Manager, Policy & Sustainability	Phillips 66 Company
Mark Gebbia	Vice President Environmental & Permitting Engineering Services	The Williams Companies, Inc.
David L. Goldwyn	President and Founder	Goldwyn Global Strategies, LLC
Brooke Harris	Global Gas Demand Development Manager, Value Chain Development	Exxon Mobil Corporation
Tate Johnson	Director, Crude Business Development	Magellan Midstream Partners, L.P.
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Paul McNutt	Manager, Reserves and Development Corporate Investment Evaluations and Approvals	ConocoPhillips
John H. Guy, IV	Deputy Executive Director	National Petroleum Council
Stacey Jensen	Senior Advisor, Office of Oil and Natural Gas Office of Oil & Gas	U.S. Department of Energy
Marshall W. Nichols	Executive Director	National Petroleum Council
Karina Pérez del Rosario	Senior Manager, Supply Chain & Network Operations	Deloitte
Aparna Ramanan	Senior Consultant, Government and Public Sector	Deloitte
Ryan Thomson	Communications Fellow	National Petroleum Council
Edith C. Allison	Consulting Geologist	National Petroleum Council
John Askounis	Manager, Fuels, Sustainability and Regulatory Affairs	Phillips 66 Company
Richard C. Haut	Consultant	National Petroleum Council

EXECUTIVE SUMMARY WRITING TEAM

John Hritcko, Jr.	Consultant	National Petroleum Council
Benjamin Nussdorf	Senior Regulatory Advisor, Office of Regulation, Analysis, and Engagement, Office of Fossil Energy	U.S. Department of Energy
Doug Sauer	Manager, Midstream Services	Phillips 66 Company

SUPPLY AND DEMAND TASK GROUP

Chair Paul McNutt	Manager, Reserves and Development Corporate Investment Evaluations and Approvals	ConocoPhillips
Government Cochair Kenneth R. Vincent*	Chief of Staff, Office of Fossil Energy	U.S. Department of Energy
Secretary		
Edith C. Allison	Consulting Geologist	National Petroleum Council
Members Kristen Drew	Manager of Project Development – Northeast OA, ORSH	The Williams Companies, Inc.
Richard C. Haut	Consultant	National Petroleum Council
John Miller	Group Vice President, Industrial Products	BNSF Railway Company
Drue Pearce	Deputy Administrator, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Mike Pomorski	Director, Market Fundamentals	Encana Services Company Ltd.
Rodger R. Schwecke	Senior Vice President Gas Transmission, Storage, & System Operations	Southern California Gas Co.
Matt Woodruff	Vice President of Public & Government Affairs	Kirby Corporation
Blair Beasley	Associate Director of Energy	Bipartisan Policy Center
Lazaro Benitez	Contract Writer	CenterPoint Energy
Brent Bergevin	Vice President of Transportation	Gemini Motor Transport
Jim Burkhard	Vice President Oil Markets	IHS Markit
Graeme J. Burnett	Senior Vice President Fuels Management	Delta Air Lines, Inc.
Patrick Callan	Chief Financial Officer	Monroe Energy, LLC
Guy Caruso	Senior Advisor	Center for Strategic & International Studies
Mathew Benjamin Davidson	Vice President – Marketing	Atmos Energy Corporation
Ryan Dreier	Vice President – Industrial Products Marketing	BNSF Railway Company
Jon Marsh Duesund	Partner & Head of Consulting Americas	Rystad Energy
Don Erickson	Gas Supply Financial Trader	Atmos Energy Corporation
Saskia Gordon	Director Energy Market Analysis	ConocoPhillips
John Hunter	Vice President Supply & Trading	Delta Air Lines, Inc.
Amy Kalt	Consultant	Baker & O'Brien
Miles Kenny	Director Gas Supply and Transportation	CenterPoint Energy
Anastasia Mironova	Economic Analyst	ConocoPhillips

* Title and organization during study participation.

SUPPLY AND DEMAND TASK GROUP

Bradley Motal	Senior Vice President, Natural Gas Assets and Marketing	Enterprise Products Operating LLC
Narmadha Navaneethan	Principal Research Analyst, North American Supply	IHS Markit
Mark Odom	Managing Director	Plains All American Pipeline
Reed Olmstead	Research Director, North American Supply	IHS Markit
Karina Pérez del Rosario	Senior Manager, Supply Chain & Network Operations	Deloitte
John Ray	Commercial Advisor – Crude Oil	Chevron Corporation
Zachery Roskilly	Director Marketing	BNSF Railway Company
Bill Ross	Director, System Optimization and Partnership Services	Dominion Energy, Inc.
William Rush	Director of Field Operations, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Nathan Schoenkin	Emergency Support & Security Specialist, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Jai Singh	Principal Consultant	Rystad Energy
Rick Smead	Managing Director, Advisory Services	RBN Energy, LLC
Robert J. Smith*	Senior Advisor Office of Oil and Natural Gas	U.S. Department of Energy
Laura Swett	Policy Advisor	Federal Energy Regulatory Commission
Caitlin Tessin	Director, Market Innovation	Enbridge Inc.
Andreas Thanos	Gas Policy Specialist	Massachusetts Department of Public Utilities
Daniel J. Trapp	LNG Markets Manager	Sempra Energy
Ishk N. Varghese	Director, Strategy & BD, Lower 48 Commercial Gas Activities	ConocoPhillips
Nikki Viilo	Senior Development Engineer	ConocoPhillips
Steve Weber	Vice President, Refining Petrochemical Consulting	Argus Media
Sarita Williams	Oil Trader	Delta Air Lines, Inc.

^{*} Title and Organization during study participation.

INFRASTRUCTURE RESILIENCY, MAPPING, AND ANALYSIS TASK GROUP

Cochairs

Richard Cain	Commercial Manager – North America, Chevron Pipeline and Power	Chevron Pipeline Company
Brooke Harris	Global Gas Demand Development Manager, Value Chain Development	Exxon Mobil Corporation
Lydia J. Johnson	Americas Infrastructure Manager	Exxon Mobil Corporation
Government Cochair		
Douglas M. MacIntyre	Associate Deputy Assistant Secretary, Office of Petroleum Reserves, Office of Fossil Energy	U.S. Department of Energy
Secretary		
John Hritcko, Jr.	Consultant	National Petroleum Council
Members		
David Adkins	Corporate Strategy Analyst	Plains All American Pipeline
Jennifer Bauer	Geo-data Scientist	U.S. Department of Energy, National Energy Technology Laboratory
Kathryn Clay	President	International Liquid Terminals Association
Noel Copeland	Director, Geospatial Solutions	RBN Energy, LLC
Daniel Diefenbach	Manager, Gas System Planning and Design	Dominion Energy Transmission, Inc.
Kareem El-Naggar	Chief Navigation Branch (Acting)	U.S. Army Corps of Engineers
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Peter Gagen	Sales Manager	Pennwell Map Search/Endeavor
Lisa George-Sharpe	Senior Consultant – Energy Reform	Deloitte
Michael Gladstein	Manager, Pipeline Business Development	Plains All American Pipeline
David Hackett	President	Stillwater Associates, LLC
James Shannon Hall	GIS Analyst III	The Williams Companies, Inc.
Dennis Henderson	Commercial Advisor	Chevron Gas & Midstream
Tate Johnson	Director, Crude Business Development	Magellan Midstream Partners, L.P.
Tyler Jones	Engineer	Dominion Energy, Inc.
Ahmad Maaty	Economist, Office of Planning and Analytics, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Shawn J. McCarthy	Vice President of Operations and General Manager	PennWell
Zachary Monckton	Professional Development Program – Commercial	Magellan Midstream Partners, L.P.
Patrick J. Moynihan	Director, Industrial Products Marketing	BNSF Railway Company

INFRASTRUCTURE RESILIENCY, MAPPING, AND ANALYSIS TASK GROUP

Abhi Rajendran	Director, Research & Advisory	Energy Intelligence
Kelly Rose	Geology and Geo-Data Science Researcher	U.S. Department of Energy, National Energy Technology Laboratory
Sara Schuttloffel	Director of Public Relation & Communications	IMPACT
Rick Smead	Managing Director, Advisory Services	RBN Energy, LLC
Rey Tagle	Owner	RexTag Strategies
Telisa Toliver	General Manager	Chevron Pipeline and Power
John Wolff	Senior Associate	Stillwater Associates, LLC
Matt Woodruff	Vice President, Government & Public Affairs	Kirby Corporation
Brad Wright	Managing Director – Acquisitions and Strategic Planning	Plains All American Pipeline

PERMITTING, SITING, AND SOCIAL LICENSE TO OPERATE TASK GROUP

Cochairs		
Maria Dunn	Manager, Policy & Sustainability	Phillips 66 Company
Mark Gebbia	Vice President Environmental & Permitting Engineering Services	The Williams Companies, Inc.
Government Cochair		
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Secretary		
Richard C. Haut	Consultant	National Petroleum Council
Members		
Ed Arnett	Chief Scientist	Theodore Roosevelt Conservation Partnership
John Askounis	Manager, Fuels, Sustainability and Regulatory Affairs	Phillips 66 Company
Magan Begler	Senior Project Manager	Tribal Energy Resource, LLC
Darren Bishop	Senior Consultant, Principal – NEPA	Cardno
Lindsay J. Box	Communications Specialist Tribal Council Affairs	Southern Ute Tribal Council
Robert Cast	Director of Archaeology	Tribal Energy Resource, LLC
Anthony Chatwin	Vice President, Science and Evaluation	National Fish and Wildlife Foundation
James Cisarik	Senior Vice President, Government Affairs & Public Relations	Enterprise Products
Brian DaRin	Energy Economist/Pipeline Analyst	U.S. Department of State
Paul Doucette	General Manager, Global Industry Affairs & Stakeholder Engagement	Baker Hughes Company
Kathy Elftmann	Regulatory Affairs Coordinator	Phillips 66 Company
Delbert Fore	Vice President, Government Affairs	Enterprise Products
Fiji C. George	Director, Climate & Sustainability	Cheniere
Bobby Gonzalez	President	Tribal Energy Resource, LLC
Dean Gore	Vice President, Environmental and Regulatory Compliance	Plains All American Pipeline
Jason Grumet	President	Bipartisan Policy Center
Scott Hans	Regulatory Branch Chief	U.S. Army Corps of Engineers
Rob Harper	Consultant	Tribal Energy Resource, LLC
Marilu Hastings	Vice President, Sustainability Program	Cynthia and George Mitchell Foundation
Patrick Hester	Vice President, U.S. Gas Law	Enbridge Inc.
Chris Jackson	Logistics Manager	Shell

PERMITTING, SITING, AND SOCIAL LICENSE TO OPERATE TASK GROUP

Ot I		
Stacey Jensen	Regulatory Program Manager	U.S. Army Corps of Engineers
Paul L. Jones	Principal Cultural Resource Practice Leader	Cardno
Dava Kaitala	General Director and Senior General Attorney II	BNSF Railway Company
Amy Klein	Regulatory Program Manager	U.S. Army Corps of Engineers
Joe Lima	OpenFRAC Program Manager Well Services	Schlumberger
Ann Loomis	Vice President, Federal Affairs	Dominion Energy, Inc.
John D. Lovenburg	Vice President, Environmental	BNSF Railway Company
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Kenneth E. Martin	Chair and Associate Director, Programs College of Food, Agriculture, and Environmental Science	Ohio State University
Amber McCloskey	Special Assistant	U.S. Department of Transportation
Melissa Mitchell*	Tariff, Land & Permitting Manager	Shell Oil Company
Peggy Montana	Former President/ Chief Executive Officer Shell Midstream Partners LP	Shell Oil Company
Jeff Morgheim	Principal	Edge Strategic Consulting
Myra Moss	Professor, Extension Educator	The Ohio State University
Julie Nelson	Vice President, State Government & Public Affairs	Cheniere
Benjamin Nussdorf	Senior Regulatory Advisor, Office of Regulation, Analysis, and Engagement, Office of Fossil Energy	U.S. Department of Energy
Pat Outtrim	Senior Vice President Government and Regulatory Affairs	Tellurian Inc.
Molly A. Parker	Federal Affairs Policy Advisor	Dominion Energy, Inc.
Drue Pearce	Deputy Administrator, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Christy Plumer	Chief Conservation Officer	Theodore Roosevelt Conservation Partnership
Tim Powell	Director Land & Permits	The Williams Companies, Inc.
Amanda Prestage	Manager, Natural Gas Infrastructure Development	Dominion Energy, Inc.
Aparna Ramanan	Senior Consultant, Government and Public Sector	Deloitte
Will Ratcliffe	Manager, Regulatory Affairs	The Williams Companies, Inc.
Tamara Robbins	Specialist, Regulatory Affairs	The Williams Companies, Inc.
Grant Ruckel	Vice President, Government Affairs	Energy Transfer

^{*} Title and organization during study participation.

-PERMITTING, SITING, AND SOCIAL LICENSE TO OPERATE TASK GROUP

Rodney Sartor	Director, Environmental	Enterprise Products
Gary Smith	Director, Rates & Regulatory Affairs	Atmos Energy Corporation
Robert J. Smith*	Senior Advisor Office of Oil and Natural Gas	U.S. Department of Energy
Elizabeth Stolpe	Consultant	Bipartisan Policy Center
Ritu Talwar	Manager – Energy & Environment Policy	Enbridge, Inc
Tracy Terry	Vice President, Energy	Bipartisan Policy Center
Lou Thompson	Chief Executive Officer	Tribal Energy Resource, LLC
Douglas J. Van Pelt	Environment and Regulatory Manager, Operational Excellence SSH&E	Exxon Mobil Corporation
Laura Vaught	Federal Affairs Policy Advisor	Dominion Energy, Inc.
Susan Waller	Vice President, Stakeholder Engagement and Enterprise Public Awareness Program	Enbridge, Inc
Richard Westerdale**	Senior Advisor	U.S. Department of State
Jay Winkelhake	Advisor, Crude Oil	Encana
Matt Woodruff	Vice President of Public and Government Affairs	Kirby Corporation

^{*} Title and organization during study participation.

^{**} Was no longer at the State Department at the conclusion of the study.

TECHNOLOGY ADVANCEMENT AND DEPLOYMENT TASK GROUP

Cochairs

Jay D. Churchill	Senior Vice President, Health, Safety & Environment and Projects	Phillips 66 Company
Doug Sauer	Manager, Midstream Services	Phillips 66 Company
Government Cochairs		
Jared Ciferno	Technology Manager, Oil and Natural Gas	U.S. Department of Energy/National Energy Technology Laboratory
Eric Smistad	Program Manager, Natural Gas Infrastructure	U.S. Department of Energy/National Energy Technology Laboratory
Secretary		
John Hritcko, Jr.	Consultant	National Petroleum Council
Members		
Mona Abdoirazaghi	Risk Specialist	Enbridge Inc.
Robert Albrecht	Geotechnical Expert	Exxon Mobil Corporation
Chris Alexander	President	ADV Integrity Inc.
Eric Amundsen	Senior Vice President, Operations	Energy Transfer Partners, L.P.
John Askounis	Manager, Fuels, Sustainability and Regulatory Affairs	Phillips 66 Company
Emil Avram	Vice President- Innovation	Dominion Energy, Inc.
Amy Bejtlich	Director, Intelligence Analysis	Dragos, Inc.
Greg Beshouri	Senior Expert – Engine Systems Integration	Hoerbiger Engine Division
Prabhas Bhat	Supervisor, Leak Detection	Plains All American Pipeline
Bill Bruce	Senior Principal Engineer & Group Leader, Welding Technology	DNV GL USA
Thomas Bubenik	Vice President, Systems Integrity	DNV GL USA
Owen Burdek	EIT NDE & ILI EIT II Pipeline Integrity Engineering	Enbridge Inc.
Timothy Burns	Materials & Welding TA2	Shell Pipeline Company
Kerry Checkwitch	Mechanical Technical Specialist	Enbridge Inc.
Mike Childers	Specialist, Corporate Engineering/GOSS	Southwest Gas Corporation
Jim Conway	Senior MQA Advisor, TMSA Lead	SeaRiver Maritime, Inc.
Kevin Cook	Region Admiral, Retired Dist. Commander, 8th District	Kirby Corporation
Michael Ferris Cook	Senior Engineering Manager – PII Project	Exxon Mobil Corporation
Shaun Dawe	Manager, Asset Integrity	Enbridge Inc.
Sean Donegan	President and Chief Executive Officer	Satelytics
Kristen Drew	Manager of Project Development – Northeast OA, ORSH	The Williams Companies, Inc.
Kathy Elftmann	Regulatory Affairs Coordinator	Phillips 66 Company

- TECHNOLOGY ADVANCEMENT AND DEPLOYMENT TASK GROUP

Tom Farmer	Assistant Vice President, Security	Association of American Railroads
David Felcman	Manager, Environment Shared Services	Enbridge Inc.
Jim Ferguson	Director, Gas Storage Services	Enable Midstream Partners, LP
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Rick Gailing	Principal Pipeline Specialist	BMT Canada Limited
Alfonso Garcia	Corrosion Prevention Specialist	Enbridge Inc.
David Garton	Enterprise Security Architect	Plains All American Pipeline
Trevor Grams	Director RD & Innovation	Enbridge Inc.
Timothy Grant	Port Security Specialist (Preparedness)	U.S. Coast Guard
Jeffrey A. Haferd	System Integrity Leader	Marathon Petroleum Company
Darren Hamilton	Office of Pipeline Safety – Central Region, Pipeline & Hazardous Materials Safety Administration	U.S. Department of Transportation
Ray Harris	Vice President	National Fuel Gas Supply Corporation
Sherif Hassanian	Director, Integrity Assessments	Enbridge Inc.
Angela Haun	Executive Director	Oil and Natural Gas Information Sharing and Analysis Center (ONG-ISAC)
Jason Haward-Grau	Chief Information Security Officer	PAS Global, LLC
David Heaney	Supervisor, Division Integrity	Phillips 66 Company
Joey Hewitt	Senior Director – Security & Safety	Plains All American Pipeline
Lee F. Hoehman	Technical Service Engineer	Phillips 66 Company
Jim Hoelker	Vice President Sales & Marketing	Groendyke Transport, Inc.
Rick Holmes	AVP Information Assurance & CISO	Union Pacific Railroad
J.D. Holt	HSE Manager – Global Environment	Occidental Petroleum Corp.
Nick Homan	Integrity & Corrosion Engineering Manager	Marathon Petroleum Company
Heather Hughes	Vice President, Engagement Management	Stroz Friedberg
Thomas D. Hutchins	EH&S Vice President	Kinder Morgan Natural Gas Pipelines
O. Chris Jackson	Logistics Manager	Shell
Cliff Johnson	President	Pipeline Research Council International
John Jorgensen	Chief Scientist Cybersecurity and Software	ABS
Muntaseer Kainat	Engineer	Enbridge Inc.
Sean Keane	Manager Integrity Safety Case, Pipeline Integrity	Enbridge Inc.
Ronald L. Keen	Senior Energy Advisor	U.S. Department of Homeland Security

TECHNOLOGY ADVANCEMENT AND DEPLOYMENT TASK GROUP

Frank Ketelaars	Vice President, Director of Region Americas	DNV GL USA
Kent Knudsen	Supervisor of Information Security	Plains All American Pipeline
Len Krissa	Supervisor, Corrosion Prevention	Enbridge Inc.
Loren Kruszewski	Manager, Facility Storage	Enbridge Employee Services CAN
Lyndon Lamborn	Engineer Specialist	Enbridge Inc.
Doug Langer	Consultant	Enbridge Inc.
Yanping Li	Engineer Specialist	Enbridge Inc.
Alfred Lindseth	SVP, Process, Risk and Technology Management	Plains All American Pipeline
Brandon M. Link	Chief, Domestic Ports Division	U.S. Coast Guard
Geoffrey Liogier	Facilities Integrity Specialist	Enbridge Pipelines Inc.
John Love	Director Gas Storage and Land Service	Dominion Energy, Inc.
Bryan MacKenzie	Manager – Pipeline Integrity Risk	Enbridge Energy Partners
Rob MacKenzie	Engineering Supervisor	Enbridge Inc.
Lisa Madden	Global Pipeline Integrity Manager	Exxon Mobil Corporation
Wesley Malaby	Chief Information Security Officer	Phillips 66 Company
Ryan Daniel Manning	Chief, Office of Port and Facility Compliance (CG-FAC)	U.S. Coast Guard
Philip Martin	Manager, Leak Detection	Enbridge Pipelines Inc.
George Mathai	Director – Engineering Services	Dominion Energy, Inc.
Zachery Robert McGavitt	Operations Manager	Kirby Inland Marine, LP
Jim McKenney	Technical Director	NCC Group
Alex McKenzie-Johnson	Principal Engineering Geologist	Geohazard Management
Shahzaad Mohammed	Director, Technical Services	Cheniere Energy Inc.
Tammy Moore	P.E., Engineer III	The Williams Companies, Inc.
Sean Moran	Pipeline Integrity Engineer	The Williams Companies, Inc.
Alan Muyskens	Vice President, Engineering	Kinder Morgan
Guy Nicholls	Director, Marine Operations	Cheniere Energy Inc.
Dan Noack	Vice President Operations	PAA Natural Gas Storage/ Plains Gas Solutions
David Norman	Engineering Associate	Exxon Mobil Corporation
Stephen Nowaczewski	Manager and Owner	Nova Northstar, LLC
Chris S. Nowak	Operations Director	Kinder Morgan
Chris O'Neill	Technology Manager – Innovation, Research & Development	Enbridge Pipelines Inc.
Salvatore R. Paonessa	Senior Technologist, Project Manager	Enbridge Liquid Pipelines
Ravi Patel	Consultant, Supply Chain & Network Operations	Deloitte

- TECHNOLOGY ADVANCEMENT AND DEPLOYMENT TASK GROUP

Donald L. Paul	Executive Director of the USC Energy Institute Professor and William M. Keck Chair of Energy Resources Viterbi School of Engineering	University of Southern California
Thomas Penn	Technical Manager, TIS	Enbridge Pipelines Inc.
Ray Philipenko	Director, Pipeline Control Systems & Leak Detection	Enbridge Pipelines Inc.
Mark Piazza	Manager – Pipeline Compliance	Colonial Pipeline Company
Trevor Place	Senior Specialist Engineer	Enbridge Inc.
Tara Podnar-McMahan	Principal Engineer – Integrity Solutions	DNV GL USA
Todd Porter	Vice President of Safety, Environmental and Regulatory	Sentinel Transportation LLC
Steve Potts	Principal Engineer	The Williams Companies, Inc.
Thomas G. Quine	Chief Executive Officer, President	Energy Project Consulting, LLC
Andrew Radtke	Manager, Integrity-Compliance-Process Engineering Storage Technical Services	TC Energy Corporation
Niall Ramsden	Project Coordinator	LASTFIRE
Gillian Robert	Senior Project Manager – Geospatial Services	MDA Corporation
Francois Rongere	Manager – Research and Development	PG&E
Marissa Ruffolo	Cybersecurity Enterprise Architect	Chevron Corporation
Nikos Salmatanis	Facilities Loss of Containment SME, Facilities Operations Reliability/Deepwater	Chevron Energy Technology Company
Mark Schulze	Vice President Operations Support	BNSF Railway Company
Millan Sen	Engineer Specialist	Enbridge Inc.
Gordon Shearer	Senior Advisor	Poten Partners
Shane Siebenaler	Director, Fluids Engineering	Southwest Research Institute
Robert J. Smith*	Senior Advisor Office of Oil and Natural Gas	U.S. Department of Energy
Robert W. Smith	R&D Manager, Pipeline and Hazardous Materials Safety Administration	U.S. Department of Transportation
Saxon Smith	Cybersecurity Account Manager	PAS Global, LLC
Michael Stackhouse	Manager Asset Integrity	Phillips 66 Company
Justin Stiles	Integrity Quality Assurance Supervisor	Marathon Petroleum Company
Kevin Stine	Chief, Applied Cybersecurity Division	National Institute of Standards and Technology (NIST)
Jeff Sutherland	Product Portfolio Leader – Global	Baker Hughes Company
Andrew F. Theodos	Natural Gas Storage Consultant	Process-Performance Improvement Consultants
Mark Thompson	Senior Director, Underground Storage Technology	Enterprise Products

* Title and organization during study participation.

TECHNOLOGY ADVANCEMENT AND DEPLOYMENT TASK GROUP

_

Jonathan Tubb	Senior Technical Lead and NERC CIP Specialist	Siemens Energy, Inc.
Nick Tzonev	Chief Executive Officer	Syscor Controls & Automation Inc.
Jon D. Van Reet	Director, Leak Detection and Hydraulic Analysis	Plains All American Pipeline
Mary Beth Whitfield	Principal Environmental Scientist, Engineering Services, Environmental Services	The Williams Companies, Inc.
Jeff Whitworth	Manager – Reliability & Integrity	Shell Pipelines
Curt Wiggins	SCADA Consulting Lead	Chevron Pipeline & Power
Marty Willhoite	Senior Consultant	Miller Consulting Services
Kim Williams	Manager, Corrosion	Phillips 66 Company
Mario A. Zayas	Strategic Manager, Energy Assurance	NCC Group
Fan Zhang	Engineer, Integrity Tech Services	Phillips 66 Company

REPORT COMMUNICATIONS TEAM

Leads

Adam M. Karson	Corporate Affairs, Manager Energy Policy & Planning	Chevron Corporation
Pete Sheffield	Vice President – U.S. External Affairs	Enbridge Inc.
Members		
Shawn Bennett	Deputy Assistant Secretary for Oil and Natural Gas	U.S. Department of Energy
Paul Doucette	Global Industry Affairs and Stakeholder Engagement	Baker Hughes Company
Daniel C. Easley	Senior Director, Federal Relations	Exxon Mobil Corporation
Christopher J. Freitas	Senior Program Manager, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Nancy L. Johnson	Senior Advisor, Office of Oil and Natural Gas, Office of Fossil Energy	U.S. Department of Energy
Jan W. Mares	Senior Policy Advisor	Resources for the Future
Amanda Mertens-Campbell	Vice President, Public Affairs & Government Outreach	The Williams Companies, Inc.
Karina Pérez del Rosario	Senior Manager, Supply Chain & Network Operations	Deloitte
Aparna Ramanan	Senior Consultant, Government and Public Sector	Deloitte
Elizabeth Stolpe	Consultant	Bipartisan Policy Center
Nancy Thompson	Senior Analyst – Lower 48 Communications	ConocoPhillips
Ryan Thomson	Communications Fellow	National Petroleum Council

