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**Statement of Qualifications
Tracey Brooks**

Experience:

Union Gas Limited

Manager, DSM Strategy
2013

Manager, Low Income and Residential DSM Marketing
2012-2013

Manager, Low Income DSM Marketing
2011-2012

Program Manager, Residential Marketing
2010-2011

Marketing Specialist, Low Income DSM Marketing
2008-2010

Coordinator, C/I Prescriptive DSM Marketing
2007-2008

Bryan Mills Iradesso

Investor Relations Associate and Financial Events Manager
2005-2006

Events and Production Coordinator
2004-2005

Education:

Honours, Post-Graduate Certificate, Corporate Communications, Seneca
at York
2004

Bachelor of Arts, Sociology, University of Western Ontario
2003

**Statement of Qualifications
David L. Dent**

Experience: Union Gas Limited

Manager, Strategic and Power Markets, 2015
Manager, Strategic Power, 2009
Strategic Manager, Retail Energy Marketers, 2004
Manager, Gas Supply, 1999
Long Term Gas Supply Manager, 1997
Co-ordinator, Risk Management, 1997
Supervisor, Credit and Collections, 1993

Education: Master of Business Administration - University of Western Ontario, 1991

Appearances: Ontario Energy Board

RP-2005-0022
RP-2003-0063
RP-2002-0130 / EB-2003-0056
RP-2002-0130
RP-2001-0029
E.B.R.O. 499

**Statement of Qualifications
Ehsan Dibaji**

Experience:

Union Gas Limited

Manager, Low Income Marketing
2015

Senior Advisor, DSM Strategy
2013-2015

Program Evaluator, DSM Research and Evaluation
2013-2013

Coordinator, DSM Strategy
2012-2013

Analyst, DSM Research and Evaluation
2010-2012

Schlumberger

Senior Field Engineer
2007-2010

Education:

Bachelor of Aerospace Engineering, Ryerson University
2007

Appearances:

**Statement of Qualifications
Bryan Goulden**

Experience:

Union Gas Limited

Manager, Market Development
2010

Manager, Utilization Technology and Deployment
2007

Manager, Regulatory Applications
2002

Manager, Integrated Supply Planning
1999

Manager, Delivery Services Development
1997

Manager, Technology Marketing
1995

Manager, NGV Operations
1993

Manager, Industrial Sales Support
1987

Contract Gas Sales Engineer
1984

Coordinator Contract Administration
1983

Gas Supply Analyst
1982

Education:

Bachelor of Applied Science (Mechanical Engineering), University
of Waterloo
1982

Masters of Business Administration, University of Windsor
1992

Memberships: Professional Engineers Ontario

Appearances: **(Ontario Energy Board)**

E.B.R.O. 470

E.B.R.O. 476-01

E.B.R.O. 476-03

E.B.O. 169-II

EB-2011-0283

**Statement of Qualifications
Tracy Lynch**

Experience:

Union Gas Limited

Director, Energy Conservation Strategy
2012

Manager, Residential Program Delivery
2009-2012

Manager, Demand Side Management
2005-2009

Manager, Market Analysis
2003-2005

Team Lead, Market Analysis
2001-2003

Senior Customer Markets Advisor
2000-2001

Canadian Enerdata Ltd.

Vice President
1998-2000

Senior Energy Analyst
1996-1998

Canadian Chamber of Commerce

Policy Analyst
1996

Education:

Master of Arts, Economics, University of Guelph
1995

Honours Bachelor of Arts, Economics, Brock University
1994

Bachelor of Business Economics, Brock University
1993

Appearances: (Ontario Energy Board)

EB-2013-0109

EB-2012-0337

EB-2006-0021

EB-2005-0520

**Statement of Qualifications
Drew Quigley**

Experience:

Union Gas Limited

Manager, Regulatory Accounting
2015

Manager, Integrated Gas Supply Planning
2005

Risk Specialist, Capacity Management and Utilization
2000

London Reinsurance Group

Manager, Corporate Development
1999

Controller
1994

Accounting Specialist
1992

London Life Insurance Company

Senior Financial Analyst
1989

Canada Trust

Corporate Auditor
1987

National Trust

Branch Auditor
1986

Clarkson Gordon Chartered Accountants (now Ernst & Young)

Senior Staff Accountant
1985

Staff Accountant
1984

Education: Certified Management Accountant
1991

Bachelor of Arts (Economics), University of Western Ontario
1982

Memberships: Chartered Professional Accountants of Ontario

Appearances: (Ontario Energy Board)

EB-2011-0210
EB-2007-0724
EB-2005-0551

6) Resumes for Key Staff



Michael Sloan
 Principal, Fuels and Technology

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 9300 Lee Highway
 Fairfax, VA 22031
 Tel: 1.703.218.2758
 Mobile: 703.403.7569
Michael.Sloan@icfi.com



EDUCATION

B.A., Economics, Policy Studies/Operations Research, Dartmouth College, Hanover, NH, 1983

EXPERIENCE OVERVIEW

Mr. Sloan is a Principal and Senior Economist in ICF's Fuels and Technology Group. He has more than 30 years of experience in the energy field. His primary work areas include in-depth analysis of propane markets and demand, analytical and regulatory support for gas utilities, and natural gas storage valuation and assessment. He has worked extensively on Canadian natural gas market and regulatory issues.

Mr. Sloan provides a wide variety of market trend analysis and demand forecasting services to the propane industry, including demand assessments at the national, state and county levels, and market trend analyses on issues related to use per customer, new construction market share, and propane competition with alternative fuels in different end-uses and regions.

Mr. Sloan also provides in-depth analytical and regulatory support for natural gas utilities on issues related to natural gas storage, transmission, and distribution. His responsibilities include economic analyses of facility expansion projects, market assessments for corporate acquisitions, estimation of economic damages in litigation cases, and strategic analysis of regulatory issues. Areas of expertise include natural gas price volatility and market liquidity, analysis of natural gas price determination, natural gas storage issues and evaluation of long-term economic impacts of major transmission pipeline expansion projects.

Mr. Sloan is a frequent speaker at natural gas and propane conferences and association board meetings, and has testified on a variety of issues related to natural gas storage market power, pipeline facility expansion economics, natural gas storage economics and landowner issues, and natural gas market liquidity. He has also has submitted testimony to the FERC on natural

gas liquidity issues in California, and propane market economics and pricing practices. He has prepared estimates of economic damages related to non-performance on long term energy contracts.

RECENT PUBLIC PROJECT EXPERIENCE

Propane Market Analysis

Propane Market Metrics Initiative, Propane Education and Research Council, 2003 – 2010: Mr. Sloan has managed a major project to collect and analyze propane market data for the Propane Education and Research Council (PERC). This effort has included consolidation and evaluation of all of the publicly available sources of data on propane demand in the U.S. The effort also includes a continuing assessment of the impact of major market trends on the propane industry, including changes in propane sales per customer over time, impact of price and weather on propane demand, changes in the residential new construction market for propane, analysis of competitive fuel sources, including electricity, fuel oil and natural gas. Mr. Sloan regularly presents results of his analysis to the PERC Board of Directors, and to other propane industry associations and companies.

Propane Market Forecast Model Development: Mr. Sloan managed the development and implementation of two major propane demand forecasting models for the PERC. The models provide the only publicly available forecasting capability at the State and County levels. The Propane Database and Forecasting Model (PDFM) provides State by State assessments of the total odorized propane market by end-use, including residential, commercial, on-road vehicle, industrial, and portable cylinder markets. The County Residential Propane Model (CRPM) provided propane markets with a customizable forecasting tool capable of evaluating residential demand on a county by county basis.

Assessment of Alternative Fueled Vehicle Potential, California Energy Commission, 2010. For this project, Mr. Sloan prepared an assessment of the market potential and market obstacles for propane vehicles in California.

Regulatory and Market Support, National Propane Gas Association, 2008 – 2010. Mr. Sloan provides market and regulatory analysis of issues influencing the propane industry for the National Propane Gas Association.

Assessment of the EIA Regional Residential Propane Model and Regional Residential Distillate Model, U.S. Energy Information Administration, 2006/2007. Mr. Sloan was asked by the EIA to peer review the EIA Residential Short Term Energy Model residential propane and distillate modules. The review included an in-depth review of the two modules, and recommendations to the EIA for model improvements.

Selected Natural Gas Industry Analysis and Regulatory Support

Analysis of Natural Gas Market Outlook and Options for Gaz Metro, Quebec, Canada, 2013. Mr. Sloan completed an assessment of natural gas market conditions including expected pipeline flows and constraints impacting the Gaz Metro supply planning.

Valuation of Existing Natural Gas Storage Facilities 2013: Mr. Sloan used his storage valuation model to evaluate the future value of a series of existing natural gas storage assets in the Gulf Coast to help guide the client's long term asset planning.

Analysis of Value of Proposed Natural Gas Storage Facilities 2013: Mr. Sloan used his storage valuation model to evaluate the potential value of contracting for capacity on a proposed storage facility in Nova Scotia Canada.

Analysis of Natural Gas Supply Options, Centra Manitoba Gas Company – a Division of Manitoba Hydro, 2010 -2012: Mr. Sloan is preparing a detailed assessment of natural gas supply options for Centra Manitoba Natural Gas. The review included detailed assessment of customer demand patterns relative to industry standards, availability and likely costs of alternative supply strategies capable of meeting demand. The assessment also included evaluation of the clients' current facility contracts, and recommendations for future natural gas facility development and contracting practices. The review includes an assessment of likely pipeline flows and tariffs on the TransCanada Pipeline system.

Storage Market Concentration, Union Gas Limited, 2005 – 2006: On behalf of Union Gas, Mr. Sloan evaluated natural gas storage market concentration and natural gas storage market power in Ontario and the Great Lakes Basin. His report included an assessment of the workably competitive market region for Union Gas storage based on an analysis of market liquidity, connectivity, and market concentration. Mr. Sloan also testified before the Ontario Energy Board on behalf of Union Gas Limited on these issues. At the conclusion to this proceeding the Ontario Energy Board deregulated more than 50 Bcf of Union Gas Storage.

Analysis of Optimum Storage Utilization, MichCon Gas, 2006-2008, 2011: Mr. Sloan prepared an analysis of the optimum storage utilization for the MichCon Gas local distribution company business. The analysis evaluated the value of existing MichCon gas storage to LDC customers based on different weather patterns and usage scenarios.

Analysis of Natural Gas Commodity Options, Centra Manitoba Gas Company – a Division of Manitoba Hydro, 2006 -2007: Mr. Sloan prepared a detailed assessment of natural gas commodity issues and trends influencing natural gas commodity purchases for Centra Manitoba Natural Gas. The review included detailed assessment of customer demand patterns relative to industry standards, availability and likely costs of alternative supply strategies capable of meeting demand. The assessment also included evaluation of the clients' current commodity purchasing agreements, and recommendations for future natural gas commodity purchasing practices.

Analysis of Optimum Storage Utilization, MichCon Gas, 2006, 2008, 2011: Since 2006, Mr. Sloan has prepared a series of analyses of the optimum storage utilization for the MichCon Gas local distribution company business to support MichCon regulatory proceedings related gas supply costs and storage utilization. The analyses evaluated the value of existing MichCon gas storage to LDC customers based on different weather patterns and usage scenarios.

Analysis of Value of Proposed Natural Gas Storage Facilities to Nova Scotia Power and Light (NSPI) – 2008: Mr. Sloan used his storage valuation model to evaluate the potential value of contracting for capacity on a proposed storage facility to NSPI.

Analysis of the Impact of LNG on Natural Gas Markets in Quebec, Rabaska Limited, 2005 – 2006: Mr. Sloan prepared a detailed analysis and forecast of the likely impacts of an LNG import facility located in Quebec on local, regional, and US and Canadian natural gas markets. The analysis concluded that the facility would substantially reduce natural gas prices in the region, and increase supply options and supply reliability. The report was filed with the Canadian Environmental Assessment Agency by Rabaska Limited as part of the facility approval process.

Analysis of Natural Gas Market Liquidity at Points Affecting New York State LDC's, Northeast Gas Association, 2003: Mr. Sloan co-authored a major study of natural gas market liquidity for the Northeast Gas Association to identify liquid markets for natural gas commodity purchases. The study included development of new approaches to evaluating market liquidity in the

Northeastern U.S., and identified market centers that could be considered sufficiently liquid to provide a reliable source of natural gas.

Analysis of Natural Gas and Energy Price Volatility, for the American Gas Foundation and the Oak Ridge National Laboratory, 2003: Mr. Sloan managed a major study and co-authored a report on natural gas and energy price volatility for the American Gas Foundation.

Multi-Client Study, American Gas Association and Interstate Natural Gas Association of America: Mr. Sloan conducted the analysis, and co-authored the report “Short-term Natural Gas Markets” which was widely cited in FERC Order 637. The analysis was used by FERC to provide quantitative support for the removal of price caps in the short-term capacity release market

Other Energy Supply and Demand Forecasting

Mr. Sloan has also supported and enhanced versions of the oil, natural gas and coal sectors for the MARKAL-MACRO model, the long-term, multi-period optimization model used by the U.S. DOE Policy Office for policy analysis and scenario evaluation of U.S. energy markets. In addition, Mr. Sloan has been responsible for the development and maintenance of the a variety of energy forecasting models for the U.S. Department of Energy and the U.S. Environmental Protection Agency, including the World Energy Model (WOIL) and the IDEAS model used by the DOE Policy Office, and the Industrial Combustion Emissions (ICE) Model and the Industrial Fuel Choice Analysis Model (IFCAM) used by the EPA.

EXPERT TESTIMONY

On behalf of Union Gas Limited before the Ontario Energy Board. *Long term natural gas transmission expansion economics*, 1995.

Affidavit on behalf of Duke Energy before the U.S. Federal Energy Regulatory Agency. *Analysis of FERC Staff Report Investigating California Natural Gas and Electricity Prices*, October 15, 2002.

On behalf of Enbridge Gas Distribution, Societe En Commandite Gaz Metro, and Union Gas Limited before the National Energy Board of Canada. *TransCanada Pipeline Limited Southwest Zone Application*, 2002.

On behalf of Union Gas Limited before the Ontario Energy Board of Canada. RP-2000-0005. *Natural gas storage and transmission economics*, 2003.

On behalf of Enbridge Gas Distribution, Societe En Commandite Gaz Metro, and Union Gas Limited before the National Energy Board of Canada. RH-3-2004. *Impact of proposed North Bay Junction on Eastern Canadian gas markets*, 2004.

Written report filed on behalf of Rabaska, Limited before the Canadian Environmental Assessment Agency. *The Impact of Rabaska LNG Imports on Quebec and Ontario Natural Gas Markets*, 2005.

On behalf of Union Gas Limited before the Ontario Energy Board of Canada. EB-2005-0551, *Natural Gas Electricity Interface Review. Assessment of natural gas storage market concentration and market power*, 2006.

Written report filed on behalf of Centra Gas Manitoba before the Manitoba Public Utilities Board. *“Assessment of Natural Gas Commodity Options for Centra Gas Manitoba”*. February 2009.

Expert witness report filed on behalf of Ferrellgas, L.P., before the State of Minnesota District Court, Second Judicial District. *“Opinions and Report on Propane Markets and Prices in Minnesota Related to Minnesota Attorney General Counterclaim and Answer”*. February 2011.

Written report filed on behalf of ATCO Gas and Pipelines Ltd. before the Alberta Utilities Board. *“Impact of Changing Natural Gas Market Conditions on ATCO Pipelines Market Risk.”* Bruce Henning and Michael Sloan, December 2012 .

Written report filed on behalf of Gaz Métro before the Quebec Régie. *Review of Natural Gas Pipeline Market Activity around the Dawn Hub.* Bruce Henning and Michael Sloan. May 2013.

Written report filed on behalf of ATCO Gas and Pipelines Ltd. before the Alberta Utilities Board. *“Impact of Changing Natural Gas Market Conditions on ATCO Pipelines Market Risk* Michael Sloan, January 2014 .

Expert Witness Testimony on behalf of ATCO Gas and Pipelines Ltd. before the Alberta Utilities Board. *“Impact of Changing Natural Gas Market Conditions on ATCO Pipelines Market Risk* Michael Sloan, May 2014.

PUBLICATIONS AND PRESENTATIONS

Harry Vidas, Michael Sloan. “Pipeline Markets in Transition: Cost Impacts of FERC Order 636.” *Gas Research Institute*, March 1998.

Bruce Henning, Michael Sloan. “Analysis of Short-Term Natural Gas Markets.” *Energy and Environmental Analysis, Inc.*, November, 1998.

Michael Sloan, Paul Friley. “Natural Gas Storage Overview in a Changing Market Environment.” *Gas Research Institute*, GRI-99/0200, February 2000.

Michael Sloan, Paul Friley, Bruce Henning. “Restructuring Activity of Natural Gas Local Distribution Companies.” *Gas Research Institute*, GR00/0018, June 2000.

Bruce Henning, Michael Sloan, Maria deLeon. “Natural Gas and Energy Price Volatility.” *Prepared for the Oak Ridge National Laboratory by the American Gas Foundation*, October 2003.

Michael Sloan, Bruce Henning, Sol deLeon, David Clayton. “Propane Industry Issues and Trends.” *Propane Education and Research Council*, June 2004.

Michael Sloan, Bruce Henning, Sol deLeon, David Clayton. “Propane Industry Issues and Trends II.” *Propane Education and Research Council*, January 2005

Michael Sloan, Bruce Henning. “Propane Industry Issues and Trends III.” *Propane Education and Research Council*, August 2005.

Michael Sloan. “Propane Market Growth: A Review of Propane Market Trends and the Role of the PERC Market Metrics Initiative”, Prepared for the National Propane Gas Association, January 30, 2006.

Michael Sloan, Bruce Henning. “Propane Industry Issues and Trends IV. ” *Propane Education and Research Council*, August 2006.

Michael Sloan. “Natural Gas Supply and Demand in an Uncertain Environment”. Canadian Institute Conference on Natural gas Storage, September 2008.



Michael Sloan, Richard Meyer. “2009 Propane Market Outlook – Assessment of Key Market Trends, Threats, and Opportunities Facing the Propane Industry Through 2020. ” *Propane Education and Research Council*, September 2009.

Michael Sloan. “What Keeps You Up at Night? Natural Gas Market Planning in an Uncertain Environment”. Canadian Institute Conference on Natural gas Storage, February 2009.

Michael Sloan. “Back to the Future? Impact of Market Volatility and Uncertainty on Natural Gas Supply and Infrastructure”. Canadian Institute Conference on Natural Gas Infrastructure and Supply, November 2009.

Michael Sloan, Richard Meyer. “2010 Propane Market Outlook – Assessment of Key Market Trends, Threats, and Opportunities Facing the Propane Industry Through 2020. ” *Propane Education and Research Council*, June 2010.

Michael Sloan, Bruce Hedman, et al., “Strategic Market Assessment for Commercial Sector Propane Sales” *Propane Education and Research Council*, February 2011.

Michael Sloan, K.G. Duleep, et al. “Economic Impact of the Propane Green Autogas Solutions Act of 2011 (H.R. 2014)”, *National Propane Gas Association*, October 2011.

Michael Sloan. “Industry at a Crossroads”, *Propane Education and Research Council*, May 2012.

Michael Sloan, Warren Wilczewski. “2013 Propane Market Outlook – Assessment of Key Market Trends, Threats, and Opportunities Facing the Propane Industry Through 2020. ” *Propane Education and Research Council*, April 2013.

Michael Sloan. “Chasing the Value Chain: The Outlook for Natural Gas Liquids and the Impact on Ethane, Propane, and Related Petrochemical Products.” *The 6th ICIS World Chemical Purchasing Summit Boston, Massachusetts*, September 2013.

Michael Sloan. “Chasing the Natural Gas Liquids Value Chain: Evaluating the Impact of NGL Market Trends on Market Participants.” *NGL Forum, San Antonio, Texas*, December 2013.

EMPLOYMENT HISTORY

ICF International	Principal	2007 present	–
Energy and Environmental Analysis, an ICF International Company	Project Manager	1981-2006	

**Statement of Qualifications
Greg Tetreault**

Experience:

Union Gas Limited

Manager, Accounting and Finance Support
2015

Manager, Rates and Pricing
2008

Manager, Gas Management Services
2005

Team Lead, Gas Management Services
2001

Nominations Specialist, Gas Management Services
1999

Business Analyst, Industrial Marketing and Sales
1998

Education:

Honours Bachelor of Commerce, Finance, University of Windsor
1998

Bachelor of Arts, Geography, University of Windsor
1995

Memberships:

None

Appearances:

(Ontario Energy Board)

EB-2014-0012

EB-2014-0145

EB-2013-0365

EB-2013-0109

EB-2012-0433/EB-2012-0451/EB-2013-0074

EB-2012-0337

EB-2012-0087

EB-2011-0210

EB-2011-0283

EB-2011-0038

EB-2011-0025

EB-2010-0039

EB-2008-0411
EB-2008-0106

