

# Ronald D. Ripple, Ph.D.

## Address:

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## Education:

Ph.D., Economics, University of Oregon, 1988  
M.A., Economics, The Pennsylvania State University, 1980  
B.S., Finance, The Pennsylvania State University, 1975

## Professional Experience:

### April 2009 to Present

Professor of Energy Economics  
Curtin Business School  
Curtin University of Technology  
Perth, Australia

My role is to conduct and facilitate research (increasing the research capacity and output) in both the energy and minerals resources areas. This includes leading the establishment of a new Curtin University research centre within the Curtin Business School; the Centre for Research in Energy and Minerals Economics. My research agenda covers the areas of energy economics, energy financial derivatives, the role of energy in the mining industry, and the likely effects of an Australian CO2 emissions trading system on both energy and mining industry participants. I also contribute to the University's academic program in both the energy and mineral economics disciplines, which includes lecturing in the mineral and energy economics masters programs, the petroleum engineering masters program, and the natural gas management executive education program, for which I am the Academic Advisor. I was responsible for managing the transfer of the Department of Mineral Economics and Mine Management from the WA School of Mines to the Curtin Graduate School of Business, where it is recast as the Department of Mineral and Energy Economics. I stepped down as the Head of the program to take up my current responsibilities.

### August 2008 to April 2009

Professor of Mineral Economics  
Head, Department of Mineral Economics  
Western Australian School of Mines  
Curtin University of Technology  
Perth, Australia

I was responsible for the coordination of four award programs in mineral and energy economics. These are Postgraduate Graduate awards in both mineral and energy economics, including a dual degree comprised of the Master of Science of Mineral Economics and the MBA program with the Graduate School of Business of Curtin University of Technology. The student cohort is comprised primarily of full-time industry people taking our programs on a part-time basis, via intensive, block release style unit delivery. I also conducted research in the areas of energy and mineral economics.

### **July 2002 to July 2008**

Associate Professor  
Head (January 2007-February 2008), Department of Economics  
Macquarie University  
Sydney, Australia

I teach energy economics and finance, international financial management, and applied finance. My current research focus is on futures markets for energy commodities in an international setting, with an emphasis on Asian oil markets. I am also interested in all aspects of primary commodity markets with an emphasis on energy markets, including oil, gas, and coal, the implications of environmental policy on these markets, the role of cross-hedging in the international environment, the success of futures contracts and exchanges, and the measurement of effective exchange rates. The units that I teach are primarily at the Masters level to an internationally diverse student body, and the energy economics and finance unit has also been offered in China in a concentrated, block-teaching format. I also supervise PhD students, Honours students, and Masters by Research students.

### **August 2001 to May 2002**

Visiting Associate Professor  
Department of Finance  
The Chinese University of Hong Kong

I taught classes of financial management at both the introductory undergraduate and MBA level and a senior undergraduate class in futures and options markets. My research during this visiting time was focused on the development of successful futures contracts and exchanges, with an emphasis on energy commodities in Asia. I also maintained my research program on crude oil and refined products markets.

### **January 2001 to March 2001**

Manager, Research and Development  
Australian Derivatives Exchange  
Sydney, Australia

I managed the Research and Development group, with a focus on identifying markets for new derivatives (futures and options) products to satisfy risk management requires of market participants. I managed a staff of four and coordinated the efforts of an external consultant, and I interfaced closely with the Sales and Marketing group and the Market Control Centre. I reported to the General Manager of Market Operations. Before the closure of the Exchange, the group brought forward new product specifications in fixed interest and electricity instruments, as well as maintaining an ongoing overview and tracking of the performance of existing products. The position terminated with the bankruptcy of the exchange.

### **January 1998 to December 2000**

Visiting Associate Professor, Edith Cowan University  
Perth, Australia

I taught intermediate microeconomics and third-year international economics and finance, and I tutored quantitative economics and finance. I conducted research in the areas of energy economics, financial economics, economics of uncertainty and microeconomics. Research included analysis of world oil markets, Asian natural gas markets, Asian independent power producers, decision models under conditions of uncertainty, and valuation of subsidies under uncertainty. I played an active role in reviewing papers submitted to the School's working paper series. In addition, I provided

supervision on masters and Ph.D. research, and participate in internal review of theses. During academic year 2000, I was nominated for an Outstanding Lecturer Award by the students.

**August 1988 to July 2002:**

Vice President/Senior Economist, Economic Insight, Inc.  
Portland, Oregon

I conduct and supervise a full range of energy market analyses focused on providing strategic planning and litigation support to both private and public sector clients. My areas of specialization are in natural gas, electricity and oil market analyses, and risk and project-feasibility analyses. My most recent focus has been on Asian IPPs and natural gas markets. This has resulted in a report published by Financial Times, titled *Independent Power Producers in Asia: Past, Present and Future*. An example of the range of other research and analyses conducted/supervised includes the following: (1) evaluating the role that may be played by Alaska North Slope crude oil in the Asian refining market following the removal of the export ban, with a focus on the competitiveness of the Asian refinery value of ANS relative to alternative feedstocks, (2) analyzing the availability of natural gas pipeline transportation capacity in the Pacific Northwest and its potential effect on the viability of electricity generation with natural-gas-fired combustion turbines to firm non-firm hydroelectric resources; (3) evaluating the competitive structure of the Western Alaska petroleum products market(s); (4) assessing the importance of imported crude oils to U.S. domestic crude oil price determination; (5) evaluating the relationship between crude oil prices and qualitative and locational characteristics; (6) analyzed the U.S. West Coast (PADD V) market for natural gas and for oxygenated and reformulated gasoline, as a component of a multiclient research report, *PADD V in Transition: Strategic Evaluation of Oil Industry Prospects in the 1990s*; (7) analyzed the supply and transportation capacities for natural gas for Western North America (inclusive of British Columbia, Alberta, and Saskatchewan provinces in Canada, the Western United States from the Rocky Mountains to the Pacific Ocean, and the states of Baja California Norte, Sonora, Chihuahua in Mexico), as a component of a multiclient research report, *Western North American Natural Gas Markets in Transition*; (8) analyzed the natural gas market structure of Northern Nevada and the economics of developing a new natural gas pipeline system to provide fuel for incremental gas turbine generators, and (9) evaluated the market value/price for Alaska North Slope natural gas for purposes of determining royalty liability.

**July 1994 to January 1996:**

Fellow, East-West Center  
Coordinator - Pacific Islands Energy Project  
Honolulu, HI

While on sabbatical from Economic Insight, Inc., I conducted research with the following topical focus: international petroleum market analysis—crude oil, downstream refined products, and natural gas; energy project feasibility analysis methodologies; the integration and interrelationship of energy resource markets; corporate and national strategic planning in the energy sector; and petroleum trade flows. Research geographical emphasis: U.S. West Coast, Southeast Asia, Arab Gulf, and the Pacific Islands.

Duties: Coordinator of the Program's Pacific Islands energy research. This includes the writing of the quarterly newsletter, *Pacific Island Energy Connections*, overseeing outside consultancy research and report preparation, and updating the Program's energy databook, *Energy in the Pacific Islands: Issues and Statistics*, employing information gathered through consultation with country agencies and private sector participants. Additional responsibilities include research and analysis of (1) petroleum markets—crude oil and refined products—on the U.S. West Coast and their interaction with Asia-Pacific markets; (2) international crude oil export markets, with an emphasis on the implications for Asia-Pacific markets; (3) the oil policies of the Gulf Arab nations, (4) natural gas market development in Southeast Asia; (5) U.S. international petroleum trade flows; and (6) the vulnerability of the Pacific Islands to global petroleum market fluctuations.

Program on Resources contracts to which I contributed: (1) Pacific Islands Energy Security Project, (2) Independent Power in the Asia-Pacific Region, (3) InterAmerican Petroleum and Gas Conference 1995, and (4) Independent Power in the Asia-Pacific Region: Implications Regarding Energy Efficiency and Renewable Energy.

**August 1988 to December 1988:**

Adjunct Assistant Professor, School of Business,  
University of Portland  
Portland, Oregon

I taught business economics, with an emphasis on the intermediate economic theory of the firm, consumer choice, and business decision making. The decision making aspects of the course included basic capital budgeting techniques and methods for accounting for risk and uncertainty.

**January 1987 to July 1988**

Adjunct Assistant Professor, Department of Economics, and  
Graduate Teaching Fellow, Department of Economics,  
University of Oregon  
Eugene, Oregon

From March-July 1988, I taught an intermediate and an advanced undergraduate course in environmental economics. The course emphasized the analysis of environmental issues in the context of the efficient allocation of environmental amenities and microeconomic theory. From January 1987-February 1988, while completing the requirements for the Ph.D. in Economics, I taught independent courses in intermediate micro- and macroeconomics and assisted in the teaching of money, banking, and financial institutions.

**September 1984 to September 1986:**

Principal Economist, The McDowell Group,  
Juneau, Alaska

As project manager/project economist, I was responsible for economic/financial analysis and proposal/report writing for a variety of consulting projects. A sample of these projects includes: (1) The Alaska Geographical Differential Study, 1985, a state-wide household and retail survey conducted for the State of Alaska, Department of Administration to determine the appropriate cost-of-living differentials for 21 different geographical regions: our proposed differentials were adopted and withstood labor arbitration (6 researchers, \$250,000); (2) The Juneau Economic Study, 1985, an annual report evaluating the economic condition of the city with a focus on sectoral employment activity (3 researchers, \$50,000); (3) Tolstoi Bay Feasibility Study, 1985, an analysis of economic viability of a proposed State of Alaska ferry terminal: we concluded that it was not viable and the project did not go forward (3 researchers, \$50,000); (4) Juneau Fisheries Support Facility Proposal: Economic Analysis, 1986, an analysis of the socio-economic implication of providing a city-financed fisheries facility to facilitate the development and growth of small scale fish business: we concluded the facility would have a positive socio-economic effect, but due to lack of city funds the project did not go forward (3 researchers, \$35,000); and (5) Fairbanks Construction Labor Study, 1986, a research report that estimated the tendency for construction dollars to “leak” out of the State of Alaska economy (4 researchers, \$100,000).

**July 1983 to January 1984:**

Special Assistant to the Commissioner, Alaska Department of  
Commerce and Economic Development,  
Juneau, Alaska

I was responsible for advising the Commissioner on matters relating to the Alaska Power Authority. The Power Authority was responsible for developing energy facilities in the state, and the

Commissioner was the Chairman of the Power Authority Board of Directors, which is the policy decision-making entity responsible for the actions of the Authority. The position required analysis of financial, economic, statutory, and regulatory issues relevant to the operation of the APA. During this period of time, the Power Authority was evaluating the feasibility of four separate major hydroelectric projects (known as the "Four Dam Pool") and the role the State of Alaska should play in financing and operating the facilities. I was also called upon to provide testimony before legislative committees on the financial/fiscal ramifications of proposed development projects.

**April 1981 to July 1983:**

Senior Economist, Office of the Governor, State of Alaska  
Office of Management and Budget/Division of  
Budget and Management,  
Juneau, Alaska

My responsibilities as an economist in the Alaska Governor's Office extended over two administrations. I was responsible for evaluating proposed energy related projects, summarizing the results, and advising the division director, who was a member of the Governor's energy policy development team. A sample of the projects analyzed includes: the Dow-Shell Group, Alaska Petrochemical Industry Study; State participation in the financing of the Alaska Natural Gas Transportation System (ANGTS); the feasibility of the 1600 MW Susitna Hydroelectric Project; and the disposition of Alaska royalty oil. I monitored world oil and gas markets; I participated in the development of a computerized feasibility-evaluation model for electric generating facilities; and I conducted, and provided technical support for, reviews of Alaska Power Authority reconnaissance and feasibility studies. I also provided technical assistance on a harbor development study and assisted in establishing the Division of Finance and Economics, while on "loan" to the Alaska Department of Commerce and Economic Development. During this "loan" period, I assumed the responsibilities of the Special Assistant to the Commissioner.

**September 1977 to March 1981:**

Graduate Teaching and Research Fellow,  
Department of Economics and Department of Finance,  
University of Oregon

While pursuing my studies toward the Ph.D. in Economics, I was awarded teaching fellowships in both the Department of Finance and the Department of Economics. I was also awarded a one-year Research Fellowship with the Center for Capital Market Research to assist with a study assessing the appropriateness of the entry of commercial banks into the municipal bond underwriting.

**September 1975 to August 1977:**

Graduate Teaching Assistant, Department of Economics,  
The Pennsylvania State University

While pursuing my studies toward the M.A. in Economics, I was awarded a teaching assistantship in the Department of Economics where I assisted the teaching of a courses in Money and Banking, Introductory Micro- and Macroeconomics, and Comparative Economic Systems.

**October 1968 to October 1970:**

United States Marine Corps (Corporal at time of honorable discharge)

## University and Community Activities

Interim-Chairman, Economics Program Restructuring Committee, Edith Cowan University, 1998.  
Conference Committee, International Conference on the Development of the Indian Ocean Region,  
University of Western Australia/Edith Cowan University, 1998.  
Seminar Coordinator, School of Finance and Business Economics, ECU, 2000.  
Council Member, Economic Society of Australia, Western Australia Branch, elected August 2000.  
Committee Member, Australian Institute of Energy, Sydney Branch (elected November 2005).  
Official Recorder, APEC Gas (APGAS) Forum, held in Perth, WA, 2005 and 2006.  
Organizing Committee, Asian conference of the International Association for Energy Economics,  
Perth, Australia, November 2008.

## Publications, Papers, Reports, Books and Book Contributions:

“International Steam Coal Market Integration,” with Raymond Li and Roselyne Joyeux, *The Energy Journal*, forthcoming in 2010.

“The effect of maturity, trading volume, and open interest on crude oil futures price range-based volatility,” with Imad A. Moosa, *Global Finance Journal*, 20:3, (2009), pp. 206-219.

“International energy derivatives markets,” Chapter 30 in *International Handbook on the Economics of Energy*, editors: L. Hunt and J. Evans, Edward Elgar, 2009, pp. 707-739.

“Have oil futures traders driven up the market?,” *Oil and Gas Journal*, Vol. 106.37, October 6, 2008, pp. 24-26.

“Futures trading: What is excessive?,” *Oil and Gas Journal*, Vol. 106.22, June 9, 2008, pp. 24-32.

“Energy consumption and real income: A panel cointegration multi-country study,” with Roselyne Joyeux, *The Energy Journal*, under revision, submitted May 2008.

“The normal backwardation of Keynes and Hicks still holds,” *Oxford Economics Papers*, under review, submitted January 2008.

“LNG industry faces up to implications of developing in a carbon constrained world,” *LNG Journal*, January 2008, pp. 10-12.

“Hedging effectiveness and futures contract maturity: the case of NYMEX crude oil futures,” with Imad A. Moosa, *Applied Financial Economics*, (2007), 17, pp. 683-689.

“A Destiny That Cannot Be Assumed: APGAS 2006,” Official Recorder’s Report of the APEC Gas Forum 2006, Perth, Western Australia, 1 February 2007.

“Household energy consumption versus income and relative standard of living: a panel approach,” with Roselyne Joyeux, *Energy Policy*, 35 (January 2007), pp. 50-60.

“Hedgers, Investors, and Futures Returns Volatility: The Case of NYMEX Crude Oil,” with George Milunovich, Macquarie Economics Research Papers, No. 7/2006, October 2006; under revision for publication in *Applied Financial Economic*.

“Energy futures trading versus physical commodity usage: a playground for manipulation or a miscalculation,” Macquarie Economics Research Papers, No. 3/2006, May 2006.

“Transparency, Relationships and Security: APGAS 2005,” Official Recorder’s Report of the APEC Gas Forum 2005, Perth, Western Australia, 1 February 2006.

"Duration-based Hedge Using Three-year EFN Futures," *Interest Rate Derivatives Newsletter*, Hong Kong Exchanges and Clearing Ltd., March 2002, p. 6.

"Deriving Equity-linked Notes from HSI Options and Stock Options," with Kevin Cheng, *Exchange*, Hong Kong Exchanges and Clearing Ltd., December 2001, pp. 34-37.

"U.S. West Coast Petroleum Industry in the 1990s: Isolated or Globally Integrated?," *Oil, Gas, and Energy Quarterly*, 50:1 (September 2001), pp. 105-137.

"Alaska North Slope Crude Oil Price and the Behaviour of Diesel Prices in California," with B. Adrangi, A. Chatrath, and K. Raffiee, *Energy Economics*, 23 (2001), pp. 29-42.

"The Effect of Seasonal Adjustment of the Accuracy of Forecasting U.S. West Coast Oil Imports," with Imad Moosa, *Journal of Economic Research*, 5 (2000), pp. 149-172.

"Is the U.S. West Coast Petroleum Industry Integrated with the Global Market?," School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, Working Paper 00.12, August 2000.

"Income and Energy in the East Indian Ocean Basin," *International Journal of Business Studies* (June 2000).

*Natural Gas in Asia*, 2<sup>nd</sup> Edition, Financial Times Energy Publishing, November, 1999, ISBN: 1840830948.

"Income and Energy in the East Indian Ocean Basin," School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, October 1999.

"Privatized Public Utility Pricing and the Implications of Subsidies and Uncertainty," with Y.H. Cheung, School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, Working Paper 99.5, June 1999.

"Is the World Oil Market "One Great Pool"?: Revisited, Again," with Peter Wilamoski, School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, Working Paper 98.19, December 1998.

"The Maturing of Southeast Asia's Natural Gas Sector and the Growing Role of Gas in the Power Sector," in *Natural Gas in Asia: Facts and Fiction*, PECC (Pacific Economic Cooperation Council) Energy Forum, November 1998.

"Uncertainty and Subsidy," School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, Working Paper 98.13, October 1998.

"Northeast Asia: Outlook for Gas Sales and IPPs," with Arlon R. Tussing, *Natural Gas Journal*, June 1998.

"Stochastic Dominance, Major Project Investment Analysis and the Range of Dominance," School of Finance and Business Economics Working Paper Series, Edith Cowan University, Perth, Australia, Working Paper 98.4, April 1998.

"Northeast Asian Energy Development in a Global Perspective," co-authored with Arlon R. Tussing, Samuel A. Van Vactor and John Tichotsky, for presentation at the 3<sup>rd</sup> International Conference on Northeast Asian Natural Gas Pipeline, November 4-7, 1997.

*Independent Power Producers in Asia: Past, Present and Future*, co-authored with Emiko Takahashi, Financial Times Energy Asia Pacific, July 1997.

“Potential Value of Alaska North Slope Crude Oil to China: A Refinery Modelling Analysis,” with Frank C. Tang, *OPEC Review*, June 1996, pp. 165-179.

*The Natural Gas Industry: Evolution, Structure, and Economics*, 2nd Edition, Arlon R. Tussing and Bob Tippee, Pennwell Publishing Company, Tulsa, Oklahoma, 1995 (“Ronald D. Ripple made special contributions to Chapters 1 and 3.”)

*Natural Gas in the Gulf Nations: An Overview of Middle East Resources, Export Potentials, and Markets*, Report Series No. 4, of Emerging Energy Security Issues, prepared for the United States Department of Energy, Office of International Energy Assessments, September 1995 (with Ronald E. Hagen).

“The Value of Alaska North Slope Crude Oil in Asia: Will There Be a Premium Over U.S. Market Values?,” an East-West Center, Program on Resources, Energy Advisory No. 159, August 4, 1995.

“Alaska North Slope Crude Oil: When Will the U.S. West Coast Market Reflect Global Market Conditions?,” an East-West Center, Program on Resources, Energy Advisory No. 153, June 15, 1995.

“Uncertainty and the Microeconomic Evaluation of Subsidy,” a research paper presented at the 70th Annual Western Economic Association International Conference, San Diego, CA, July 8, 1995.

“Reformulated Forecasting: How Much Gasoline and How Much Crude Oil?,” a research paper presented at the 18th International Conference of the International Association for Energy Economics, Washington D.C., July 7, 1995.

*Pacific Islands Energy Connection*, Vol. 4, No. 1, May 1995, an East-West Center, Program on Resources regional energy newsletter.

“Is the World Oil Market “One Great Pool?”: Revisited,” with Peter Wilamoski, *OPEC Review*, Winter 1995, pp. 283-292.

“PADD V MTBE “Import” Requirements: The Risks Increase,” East-West Center, Program on Resources, Energy Advisory, No. 148, April 5, 1995.

*The Oil Policies of the Gulf Arab Nations*, a Research Report prepared for the United States Department of Energy, Office of International Energy Assessments, March 1995 (with Ronald E. Hagen).

*Pacific Islands Energy Connection*, Vol. 3, No. 4, January 1995, an East-West Center, Program on Resources regional energy newsletter.

“MTBE to Meet California and PADD V Air Quality Requirements: An Opportunity for Imports from Asia-Pacific Supply Sources,” East-West Center, Program on Resources, Energy Advisory, No. 138, December 9, 1994.

*Pacific Islands Energy Connection*, Vol. 3, No. 3, October 1994, an East-West Center, Program on Resources regional energy newsletter.

*An Evaluation of the Market for Alaska North Slope Natural Gas*, An Expert Witness Report, Prepared on behalf of BP Exploration (Alaska) Inc., June 1994.

*Western North American Natural-Gas Markets in Transition*, with Arlon R. Tussing and David B. Hatcher. A private multi-client research report, July 1993.

*PADD V in Transition: 1992-2000*, with Samuel A. Van Vactor and Jeffrey R. Currie. A private multi-client research report, October 1992.

“Oil Pricing Policies Based on Expected Replacement Costs,” published in *The Oregonian*, Portland, Oregon, August 29, 1990.

“Natural Gas in the Pacific Northwest: Hydro-Firming vs. Base Resources,” Presented at the Twenty-fourth Annual Pacific Northwest Regional Economic Conference, Bellingham, WA, April 26-28, 1990; published in PNREC Conference Proceedings.

*Future Natural Gas Cost and Availability in the Pacific Northwest*, (Principal author), research report for the Northwest Power Planning Council, Portland, Oregon, January 1990.

*Analysis of the Pacific Northwest Natural Gas Transportation/Pipeline Industry*, Private Client research report, October 1988.

*Alaska North Slope Natural Gas Marketing Systems: Decisions Under Uncertainty and the Cost of Regulation*, Ph.D. dissertation, University of Oregon, March 1988.

“Replacing Susitna with Alaska Natural Gas Electrification,” with David L. Allison, *The Alaska Public Affairs Journal*, 2 (Summer 1985), pp. 3-4.

*Japanese Automobile Competitiveness in the United States: 1965-1975*, unpublished Masters paper, The Pennsylvania State University, June 1980.

### **Presentations and Testimony**

“Alaska North Slope Crude Oil Price and the Behaviour of Diesel Prices in California,” (co-authored with B. Adrangi, A. Chatrath, and K. Raffiee), presented at the 23<sup>rd</sup> International Conference of the International Association for Energy Economics, Sydney, Australia, June 2000.

“Stochastic Dominance, Major Project Investment Analysis and the Range of Dominance,” presented at the Far East Meetings of the Econometric Society, Singapore, July 1999.

“Privatized Public Utility Pricing Efficiency and the Implications of Subsidies and Uncertainty,” with Y.H. Cheung, presented at the 1999 Annual Conference, Academy of International Business, Southeast Asia Region, Melbourne, Australia, July 1999.

“The Changing Structure of Natural Gas in Asia,” Woodside Business Analysts’ Forum, Woodside Petroleum, Perth, Australia, (forthcoming, April 1999).

“Stochastic Dominance, Major Project Investment Analysis and the Range of Dominance,” presented January 18, 1999, Lecture Series, School of Management, University of Edinburgh.

“Income and Energy in the East Indian Ocean Basin,” presented at the International Conference on the Development of the Indian Ocean Region, held at the University of Western Australia, November 30-December 2, 1998, Perth, Australia.

“Opportunities for Russian Far East Natural Gas in East Asia’s Power Sector,” presented at Development of Russian Far East Natural Gas Resources: Opportunities for U.S. Industry, a Workshop in conjunction with the Gore-Chernomyrdin Commission Ad Hoc Working Group for U.S. West Coast and the Russian Far East, October 25-26, 1997, Portland, Oregon, USA.

“Natural Gas Usage in Asia,” presented at the Financial Times’ Asia Gas: Development, Investment and Financing Strategies Conference, Singapore, June 5-6, 1997.

“Independent Power Producers, Competition and Pricing,” presented at the UN-ESCAP’s Ad Hoc Expert Group Meeting on Energy Infrastructure and Energy Pricing, Bangkok, Thailand, May 28-30, 1997.

“The Maturing of Asia’s Natural Gas Sector: Questions Regarding a Role in the Transport Sector,” presented at the UN-ESCAP’s Technical Symposium and Investment Roundtable on Transport-use Related Contracts for Natural Gas, Kuala Lumpur, Malaysia, October 4, 1996.

“Oxygenate Supply and Demand: The Rest of the World, Emphasizing PADD V,” presented at the Oil & Gas Journal’s International Oxygenates Conference, Houston, Texas, October 2-3, 1995.

“The Value of Alaska North Slope Crude Oil in Asia: Will There Be a Premium Over U.S. Market Values?,” presented at Pacific Petroleum Insiders, Singapore, September 16-17, 1995.

Expert Witness testimony. Deposition taken August 1994, San Francisco, California, for the Alaska North Slope Natural Gas Royalty Litigation, State of Alaska vs. BP Exploration (Alaska) Inc., et.al., regarding the valuation of Alaska North Slope natural gas. Client: BP Exploration (Alaska) Inc.

Expert Witness testimony. Testified before the Nevada Public Service Commission, October 1993, Carson City, Nevada, regarding the Resource Plan of Sierra Electric Power, specifically addressing the efficacy of developing a new natural gas pipeline to fuel electric generation facilities. Client: Paiute Pipeline Company, Inc.

“Least Cost Planning and the Pacific Northwest Natural Gas Utility Industry,” presented at the Pacific Northwest Regional Economic Conference, Portland, Oregon, May 1991 and at the North American Conference of the International Association for Energy Economics, Chicago, Illinois, November 1991 (co-researcher, Dr. Daniel J. Packey).

Expert Witness testimony. Deposition taken June 1991, Portland, Oregon, for the Alaska North Slope Oil Royalty Litigation, State of Alaska vs. Amerada Hess, et.al., regarding the valuation of Alaska North Slope crude oil. Client: joint producers’ defense team.

“Alaska North Slope Natural Gas Marketing Systems: Decisions Under Uncertainty and the Cost of Regulation,” presented at the 14th Annual International Conference of the International Association for Energy Economics, Honolulu, Hawaii, June 8-10, 1991.

“Natural Gas in the Pacific Northwest: Hydro-Firming vs. Base Resources,” presented at the Twenty-fourth Annual Pacific Northwest Regional Economic Conference, Bellingham, WA, April 26-28, 1990; published in PNREC Conference Proceedings.

“Spot and Contract Markets in the Petroleum Industry,” with Samuel A. Van Vactor, delivered at the 11th Annual International Conference of the International Association of Energy Economics, Caracas, Venezuela, June 1989.