

JOHN B. ADGER, JR.

Areas of Specialization

Strategic analysis and business planning for the natural gas industry; natural gas supply and procurement strategy; natural gas marketing strategy; U.S. and Canadian gas industry regulation. Also, management studies for public utility commissions.

Relevant Experience

U.S. and Canadian Gas Industry Regulation

Served as an extension of the Staff of the Connecticut Department of Public Utility Control in a general rate case for the State's largest distributor, Yankee Gas Services Company. Principal responsibilities were evaluation of the prudence of the Company's expenditures to build its liquefied-natural-gas (LNG) facility in Waterbury, CT, and manufactured gas plant remediation.

Evaluated the fuel-oil and natural-gas supply activities of Nova Scotia Power, Inc. for the Staff of the Nova Scotia Utility and Review Board. Presented testimony to the Board regarding findings in the Company's 2004, 2005 and 2006 rate cases. Assisted the Board in monitoring Company implementation of Liberty recommendations for improvements in fuel-supply management practices.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control in a prior general rate case for the State's largest distributor, Yankee Gas Services Company. Principal responsibilities were gas supply/gas cost, system expansion, interruptible target margin, and manufactured gas plant remediation.

For a regional marketer of gas and electricity, directed an analysis of the role of the purchased-gas-cost adjustment mechanism in forming retail prices for natural gas in Ohio.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control in a prior general rate case for Yankee Gas Services Company. Principal responsibilities were Yankee's proposed expansion plans, including special rate provisions to support those plans; evaluation of a proposed liquefied natural gas production and storage facility; manufactured gas plant remediation; and gas supply/gas cost. Assisted the Staff in subsequent evaluations of the proposed LNG facility.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control for its consideration of the winter 2000/2001 purchased-gas adjustments of the three gas distributors in

Connecticut, Connecticut Natural Gas Corporation, The Southern Connecticut Gas Company and Yankee Gas Services Company.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control for its consideration of an audit of the affiliate relationships of The Southern Connecticut Gas Company.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control for its consideration of proposed incentive rate plans for The Southern Connecticut Gas Company and Connecticut Natural Gas Corporation. Principal responsibilities were gas-cost reduction incentives, and comparative analysis of plans used in other jurisdictions.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control for its consideration of Consolidated Edison Company's proposed acquisition of Northeast Utilities. Principal responsibilities included affiliate relationships and evaluation of the effects of the transaction on gas supply options for Connecticut.

Presented expert witness testimony on FERC rate-design policy to a pipeline-rates proceeding before the Railroad Commission of Texas.

Served as an extension of the Staff of the Connecticut Department of Public Utility Control for two distribution-company rate cases (The Southern Connecticut Gas Company and Connecticut Natural Gas Corporation), and one facilities-certification proceeding.

For the staff of a regulatory commission in the northeast U.S., evaluated a gas-service and capacity-release project that was proposed by a jurisdictional utility.

Directed Liberty's analysis for the Georgia Public Service Commission of the impacts of FERC's Order 636 on gas rate structures in Georgia.

Prepared and presented a seminar on U.S. regulation of oil and gas pipelines for staff members of the Argentina Task Force on Privatization of the Oil Industry.

For a syndicate of U.S. and Canadian commercial banks, prepared an analysis of the influence of certain FERC Gas Tariff issues on pipeline cash flow. Also provided technical support to a "due diligence" investigation for project-type financing.

For a major U.S. pipeline company, prepared an analysis of certain Federal (FERC, Council on Environmental Quality) and State (California) regulatory issues.

Directed an evaluation of the marginal costs of the District of Columbia Natural Gas Company, a division of the Washington Gas Light Company, for the Public Service Commission of the District of Columbia.

For Yankee Gas Marketing (subsequently Enron Access Energy), directed an analysis of line-of-business restrictions as applied to the gas industry. This analysis was attached to Yankee's filing in the FERC's rule-making proceeding regarding rules of conduct for pipeline-affiliated

marketers (proceeding resulted in the issuance of FERC Order 497).

For the U.S. Department of Energy, financial institutions, pipelines, and distribution companies, prepared various studies exploring the impacts of regulatory change on segments of the gas industry and on specific firms.

For the U.S. Department of Energy, participated in a study of Canadian gas export policies, and the potential influence on U.S. policies toward gas imports.

Served as Director of the U.S. Federal Energy Regulatory Commission's Alaska Gas Project Office. Evaluated financing and tariff aspects of gas transportation system proposals. Responsible for policy development, managing FERC proceedings, representing the FERC to government and industry, and liaison with counterpart officials in the Government of Canada.

Served as Director of the U.S. Federal Energy Administration's Office of Energy Project Operations. Evaluated legislative and regulatory impediments to energy project development. Recommended changes and prepared testimony.

As a Policy Analyst for the Federal Energy Administration, produced research, analysis, writing, and recommendations in oil and gas exploration and production, price control and allocation programs for crude oil and petroleum products, and the international petroleum market.

Management Studies for Public Utility Commissions

Currently serving as a Team Leader for a focused management audit of the gas-supply procurement and supply-management practices of The Peoples Gas Light and Coke Company and North Shore Gas Company for the Illinois Commerce Commission. Responsible for reviews of affiliate relationships; load forecasting and gas-supply planning; procurement, sales and portfolio optimization; and storage and hub operations.

Served as Leader of the Gas Procurement Analysis Team in a focused audit of affiliate transactions and general management audit of New Jersey Natural Gas Company for the New Jersey Board of Public Utilities. Responsible for all reviews in the focused audit.

Served as Lead Consultant in an audit of the affiliate relationships of Nova Scotia Power, Inc. for the Nova Scotia Utilities and Review Board. Responsible for reviews of oil, gas and electric power relationships and transactions with affiliates.

Served as Lead Consultant in an audit of the fuel and purchased-power procurement practices and costs of Arizona Public Service Company for the Arizona Corporation Commission. Responsible for reviews of its contracting and supply-management practices for natural gas.

For the State Corporation Commission of Virginia, served as a Consultant for an assessment of Virginia Natural Gas Company's asset-management agreement with its affiliate, Sequent Energy Management Company. Responsible for reviews of Sequent/VNG/AGLS roles and responsibilities in gas supply operations, and for transaction analysis.

Served as Project Manager for a review of the supply planning and asset-management agreements of EnergyNorth Natural Gas, Inc. for the New Hampshire Public Utilities Commission. Presented testimony to the Commission in the Company's Winter 2004/2005 Cost of Gas proceeding, and in a special proceeding convened to consider the results of the review.

Served as Leader of the Gas Procurement Analysis Team in a focused audit of affiliate transactions and general management audit of South Jersey Gas Company for the New Jersey Board of Public Utilities. Responsible for all reviews in the focused audit, and for the review of system operations in the general management audit.

Lead Consultant on Liberty's focused audit of the affiliate relationships within NUI Corporation, parent of Elizabethtown Gas Company, for the New Jersey Board of Public Utilities. Responsible for the review of transactions among NUI's energy affiliates.

Lead Consultant on Liberty's management audit of the gas-purchasing function at the five largest gas distribution companies in Kentucky (Columbia Gas of Kentucky, Delta Natural Gas Company, Louisville Gas & Electric Company, Union Light, Heat and Power Company, and Western Kentucky Gas Company) for the Kentucky Public Service Commission. Responsible for reviews in gas supply planning, supply management, gas transportation services and system balancing.

Lead Consultant on Liberty's examination of cost allocation issues at Arkansas Western Gas Company for the Arkansas Public Service Commission. Responsible for the review of staffing levels.

Lead Consultant on Liberty's management audit of The Southern Connecticut Gas Company for the Connecticut Department of Public Utility Control. Responsible for reviews of gas supply and marketing activities, and manufactured gas plant remediation activities.

Lead Consultant on Liberty's management audit of Connecticut Natural Gas Corporation for the Connecticut Department of Public Utility Control. Responsible for reviews of gas supply and marketing activities.

Managed Liberty's audit of the gas purchasing and supply management policies and practices of K N Energy, Inc. for the Wyoming Public Service Commission. Responsible for the reviews of gas acquisition, gas transportation and storage, relationships with affiliates, and response to regulatory change. Conducted supplemental evaluations in response to Liberty's initial findings, and presented testimony to the Commission in the proceeding to consider K N's pilot program for unbundling its services in Wyoming.

Lead Consultant on Liberty's management audit of Yankee Gas Services Company for the Connecticut Department of Public Utility Control. Responsible for the review of gas supply activities and manufactured gas plant remediation activities.

Consultant on Liberty's management audit of the Tennessee operations of United Cities Gas Company for the Tennessee Public Service Commission. Responsible for reviews in system

operations, marketing, and affiliate relationships.

Lead Consultant on Liberty's audit of gas purchasing policies and practices at Pike Natural Gas Company and Eastern Natural Gas Company for the Public Utilities Commission of Ohio. Responsible for the reviews of gas acquisition, gas transportation services, and response to regulatory change.

Consultant on Liberty's audit of the affiliate relationships of Public Service Enterprise Group (holding company for Public Service Electric & Gas Company) for the New Jersey Board of Regulatory Commissioners. Responsible for reviews of systems and processes, affiliate relationships, and transaction analysis with regard to (a) the purchase of gas from the Group's gas-producing subsidiary, (b) the purchase of electric power from the Group's IPP subsidiary, and c) the Group's real estate subsidiary.

Led the evaluation of gas supply activities as part of Liberty's management audit of New York State Electric & Gas Corporation for the New York Public Service Commission.

Lead Consultant on a general management audit of the Peoples Natural Gas Company, a subsidiary of Consolidated Natural Gas Corporation, for the Pennsylvania Public Utility Commission. Responsible for the review of gas-supply activities.

Other Experience

Strategic Analysis and Business Planning

Consultant on a merger-benefits study performed for an electric distribution cooperative and a local farmers' cooperative.

Lead consultant on a business-enhancement project for a Rocky-Mountain-area electric cooperative. Responsible for diversification-planning task.

For an investment banking group, identified themes for enhancing the value of gas distribution and transmission/storage business segments through acquisitions, and used those themes to develop criteria for acquisitions.

Co-directed a project to develop a comprehensive unbundling strategy for a gas distributor with operations in 12 states.

Directed a project to assist an electric utility in exploring opportunities in related businesses. Options considered included gas pipeline and storage projects; distribution of other fuels including natural gas, propane and heating oil; and ventures in telecommunications.

For a combination electric and gas utility company in the Midwest U.S., participated in a major re-evaluation of its strategy for its gas business unit.

For a major Canadian pipeline company, prepared an analysis of strategic factors in U.S. pipeline industry mergers. Subsequently presented findings of the study to the company's Corporate Strategy and Policy Committee.

For an investor group, evaluated three gas-gathering systems and an intra-state pipeline for possible acquisition. One gathering system was acquired, and a workout plan was developed.

For two gas distribution companies, consulted on strategy development for non-utility subsidiaries.

For a syndicate of U.S. and Canadian commercial banks, evaluated financing and tariff restructuring for a major U.S. interstate pipeline company.

For a major Canadian pipeline company, prepared a study of possible changes in rate design and capacity planning with decontrol of the Canadian gas market. Also researched pipeline capacity allocation problems and their relationship to rate design.

Conducted several assignments in business strategy development for gas distribution companies: market segmentation, cost allocation, structuring tariffs and service contracts, *etc.*

Evaluated several U.S. pipeline companies for possible acquisition by investor groups.

Participated in evaluation of the economic viability of gas-fired cogeneration projects for equity investors and banks. Evaluations included the impact of possible regulatory change.

Natural Gas Supply Strategy

For two municipal electric power systems, directed an evaluation of capacity availability on a pipeline-system segment serving a large number of gas-fired electricity-generating facilities. The results of that evaluation were used to develop alternative approaches to gas-supply contracting for a generating facility owned by the cities.

For Kansas Pipeline Operating Company, evaluated certain gas supply contracts entered into by Western Resources' KPL Gas Service Company, and Southern Union's Missouri Gas Energy. Presented testimony to the Kansas Corporation Commission, and to the Missouri Public Service Commission.

Performed gas supply evaluations as part of a general work process improvement study for a power-supply cooperative in the southeast U. S.

For a steam utility in Pennsylvania, solicited offers for gas supply, and helped evaluate the responses.

For the Potomac Electric Power Company, assisted in the development of comprehensive policies and procedures for fuels procurement. Responsible for gas acquisition policies and procedures.

Directed development of a gas supply strategy for a power-supply cooperative's first combustion

turbines. (Coop's generation previously all coal-fired.)

For Delmarva Power & Light Company, assisted an internal review of gas supply planning for electric power generation.

Served as gas supply consultant to two major Midwestern gas distributors. In that capacity, directed development of long-term supply plans, short-term contracting strategies, and peak-load management plans. Also provided staff support to teams formed to negotiate with producers regarding long-term gas supply contracts, and with pipelines regarding conditions of service. Directed quantitative analysis of particular supply decisions, and did documentation projects.

For an investment banking group, explored the influence of the Midland Cogeneration Project's gas supply contracts on the Project's economic viability.

For the Interstate Natural Gas Association of America (trade association of gas pipeline companies), participated in a comparative study of supply contracting practices for gas, coal, and fuel oil. Developed recommendations for gas supply contracting.

For the Wisconsin Distributors Group, directed an analysis of gas supply alternatives for the State of Wisconsin. Directed a similar study of gas supply alternatives for the municipal Gas Department of the City of Charlottesville, Virginia.

Natural Gas Marketing Strategy

Assisted a production-area storage developer in identifying prospective users of a proposed gas storage facility, and in marketing interests in the project.

For National Fuel Gas Supply Corporation, analyzed potential markets for gas storage and pipeline capacity in particular sectors and particular geographic areas. Also recommended opportunities in electric utility industry restructuring for consideration by NFGS management.

For an offshore supplier of LNG, participated in an evaluation of North America as a potential market for its gas.

For the municipal Gas Department of the City of Charlottesville, Virginia, directed a rate design study. Also recommended modifications to customer service agreements.

For the Canadian Petroleum Association and the Independent Petroleum Association of Canada, participated in an analysis of regional markets for Canadian gas in the U.S.

For various U.S. and Canadian gas producers, evaluated particular regional and sectoral gas markets in the U.S. Also developed strategies for market penetration.

For U.S. and Canadian producers and pipeline companies, directed analyses of alternative gas transportation systems. Also for U.S. gas distribution companies.

For U.S. and Canadian gas pipelines and marketers, participated in preparation of a multi-client

study of the market for residual fuel oil. Also developed strategies for gas sellers to use in competing with residual oil.

Prior Experience

As a geologist for Mobil Oil Corporation, conducted oil and gas exploration activities in Libya and Indonesia.

Education

M.S., Geology and Geophysics, The Massachusetts Institute of Technology

B.S., Earth Sciences and Chemical Physics (double major), The Massachusetts Institute of Technology

Publications and Conference Presentations

Presented a paper entitled "The Alaska Gas Pipeline: Déjà Vu All Over Again" to the Deutsche Banc Alex. Brown 2001 Global Energy Perspectives Conference. February 2001.

Presented a paper entitled "Regulatory Perspectives on Performance-Based Rate-Making" to a meeting of the Rates and Strategic Issues Committee, American Gas Association. April 2000.

Presented a paper entitled "Capital Budgeting for the New Millenium" at the Conference on Gas Company Productivity and Management, sponsored by the Institute of Gas Technology. November 1999.

Presented a paper entitled "Can the Conflict Between Maintenance/Replacement Projects and Expansion/Upgrade Projects Be Mitigated by Using a Different Approach to Capital Budgeting?" at the Conference on Gas Company Management Under Limited Budgets, sponsored by the Institute of Gas Technology. October 1998.

Presented a paper entitled "Skills for Effective Competition" at the IGT Technical Business Forum on Enhancing Corporate Performance, sponsored by the Institute of Gas Technology. September 1997.

Panelist on Contract Abandonment at a public seminar entitled "Natural Gas: The Regulatory Crisis Now," sponsored by *The Energy Daily*. July 1987.

Presented a paper on the natural gas pipeline industry to *The Energy Week* Conference, held annually by The First National Bank of Chicago. April 1987.

Presented a paper entitled "New Approaches to Gas Supply Strategies" at a symposium entitled The Outlook for Gas Distributors in the New Market Place, sponsored by the Institute of Gas Technology. November 1986.

Presented a paper entitled "Diversification Issues in the Natural Gas Industry" to the Williamsburg Conference on the Institute of Public Utilities. December 1984. Later published in *The Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation*, edited by Patrick C. Mann and Harry M. Trebing (MSU Public Utilities Papers, 1985).

Presented a paper entitled "International Competition in the California Gas Market" at the Annual North American Conference of the International Association of Energy Economists. November 1984.

Presented a paper on the Alaska Natural Gas Transportation System entitled "The Intersection of 'Public' and 'Private': Studies in Energy Decision Making" to a panel at the Annual Meeting of the American Political Science Association. August 1984.

YAVUZ ARIK

Mr. Arik has over seventeen years of experience in the area of computer technology, including quantitative modeling, energy economics, and information systems. He has extensive experience in the area of natural gas resource optimization modeling, demand forecasting, and load research.

Mr. Arik has led the development of the following information system models for various clients:

- **Gas supply optimization:** Resource Optimizing Gas Model (ROGM), a comprehensive gas optimization model to provide in-depth analysis for integrated least cost planning, demand-side management program evaluation, rate cases, marginal cost analysis, strategic resource planning, cost-of-service studies and unbundling studies. Clients are currently using ROGM over the Internet. Some of the studies based on this model have been filed with public service commissions. This model is used to analyze tradeoffs between reserve requirements, cost of gas supply, and resource acquisition and utilization for gas distribution companies by formulating the optimal usage mix of available resources.
- **Forecasting for gas and electric utilities:** Developed a comprehensive gas and electric demand-forecasting model for an energy services company. The system uses load research data for customer groups along with weather data and monthly historical demand data to develop Monte Carlo simulations of system demand and demand variability by weather and other factors. This model can be used in tandem with ROGM to develop short-term and long-term supply planning and portfolio analysis.
- **Line extension evaluation:** Utilities often consider extending their service to new development areas, and the economic evaluation of such extensions can be performed using this model.
- **Tariff document management:** Regulated utilities must prepare their tariffs and submit these documents for approval within the company and subsequently with their public service commission. This system provides a uniform document editing and review system to ensure ease of review and uniformity of submitted tariffs.
- **Case management:** This system allows its users to manage all information exchanged with a public service commission. This model is especially valuable to utilities to 1) keep a consistent archive of information related to cases, 2) to allow easy retrieval of information relevant to a particular topic to ensure consistency of responses provided, and 3) to manage

responses to the public service commission within the company by routing, enforcing proper legal and management review and ensure accuracy in timely responses and content provided.

- **Clinical trial management:** The Clinical Trial Management System (CTMS) allows clinical trial sites for pharmaceuticals to coordinate clinical study patients and data, ensuring strict adherence to trial protocols, budgeting, employing audit trails and security in data management in terms of data privacy, encryption and archiving.
- **Grants management:** Created a grants database system for the National Institute on Drug Abuse (NIDA) to track funding and post-award research. Originally started as a branch project, the database has been upgraded for division-wide access, and is currently being upgraded for web-enabled access.
- **Automated survey system:** Created an automated telephone survey system to conduct and manage surveys for a project with the National Institute of Child Health and Human Development (NICHD).

PROFESSIONAL EXPERIENCE

Over the past years, Mr. Arik has worked on numerous engagements involving regulatory change management, load forecasting, supply and demand side planning, management audits, costing and rate design analysis, and mergers and acquisitions. Representative clients are provided for each of these areas in the subsections below.

Regulatory Change Management. Mr. Arik has assisted both electric and natural gas utilities as they prepare to operate in a restructured industry. This work has involved the development of unbundled cost of service studies (i.e. separation of transmission, distribution and energy costs); the development of strategies that will allow companies to prosper in a restructured industry; retail access program development, implementation, and evaluation; and the development of innovative ratemaking approaches to accompany changes in the regulatory structure. Representative clients for whom he has performed such work include:

- BOTAS
- Kansas Corporation Commission
- Electric Cooperatives' Association
- Central Louisiana Electric Company
- Washington Gas
- Kansas Gas Service.

Load Forecasting. Mr. Arik has prepared load forecasting studies for electric and natural gas utilities, including end-use models. These studies involve Monte Carlo simulations and time-series analysis to model probabilistic distributions of various scenarios. This work has also included the development of elasticity of demand measures that have been

used for attrition adjustments and revenue requirement reconciliation. Representative clients for whom he has performed such work include:

- Washington Gas Energy Services
- Central Louisiana Electric Company
- Kansas Gas Service
- Washington Gas.

Supply Side Planning. Mr. Arik has worked on several supply-side planning projects, involving the evaluation of short-term and long-term gas supply and resource plans using ROGM. These plans have included load forecasting, calculation of avoided costs, strategic resource acquisition, supply related contract evaluation, determination of optimal sizes and types of capacity to install, determination of production costs including and excluding the resource, and an assessment of system reliability changes as a result of different resource additions.

Management Audits. Mr. Arik has been involved in a number of management audits. Consistent with his other experience, the focus of his efforts has been in the areas of load forecasting, demand- and supply-side planning, and integrated resource planning. Demand-side planning involves the forecasting of future demands; the design, development, implementation, and evaluation of demand side management programs; the determination of future supply side costs; and the integration of cost effective demand side management programs into an Integrated Least Cost Resource Plan. Representative commission/utility clients working under the Liberty Consulting Group are as follows:

- Kentucky Public Service Commission/Louisville Gas & Electric
- Kentucky Public Service Commission/Columbia Gas of Kentucky-NiSource
- Kentucky Public Service Commission/Delta Natural Gas Company
- Kentucky Public Service Commission/ULHP-Cinergy
- Kentucky Public Service Commission/Western Kentucky Gas-Atmos
- Public Utilities Commission of Ohio/Vectren Energy Delivery of Ohio
- Public Utilities Commission of Ohio/Cincinnati Gas and Electric Company
- New Jersey Board of Public Utilities/South Jersey Gas Company
- New Jersey Board of Public Utilities/New Jersey Natural Gas Company.

Mergers and Acquisitions. Mr. Arik has been involved in a number of merger and acquisition studies throughout his career. Many of these were conducted as confidential studies and cannot be listed. Those in which his involvement was publicly known are:

- ONEOK, Inc./Southwest Gas Corporation
- Western Resources.

Costing and Rate Design Analysis. Mr. Arik has used ROGM to conduct marginal cost, cost of service, gas supply and resource planning studies for utility clients. Various studies have been used for filings with public service commissions and for integrated resource planning. Mr. Arik has performed specific costing and rate design studies for the following companies:

- Western Resources
- Kansas Gas Service Company
- Central Louisiana Electric Company
- Washington Gas Light Company.

EDUCATION

After graduating from Galatasaray Lycee in Istanbul, Turkey, Mr. Arik earned a B.S. degree in Industrial Engineering from Bogazici University in Istanbul, Turkey and an M.A. in Economics from Georgetown University. Mr. Arik is fluent in Turkish and French.

**New Hampshire Public Utilities Commission
Docket No. DG 07-101
Testimony of John B. Adger, Jr./Yavuz Arik
Attachment JBA-2**

JOHN B. ADGER, JR.

Appearances as a Witness in State/Provincial Regulatory Proceedings

New Hampshire Public Utilities Commission

EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England, Docket Nos. DG 04-133/DG 04-175

EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England, Docket Nos. DG 04-152

Nova Scotia Utility and Review Board

In the Matter of the Public Utilities Act, and In the Matter of a Hearing to Determine Whether or Not it is Appropriate to Adopt a Fuel Adjustment Mechanism (FAM) for Nova Scotia Power, Inc., NSUARB P-887

In the Matter of an Application by Nova Scotia Power Incorporated, and A Hearing for Approval of Certain Revisions to Its Rates, Charges and Regulations, NSUARB P-882

In the Matter of the Public Utilities Act and In the Matter of an Application by Nova Scotia Power Inc. for Approval of Certain Revisions to Its Rates, Charges and Regulations, NSUARB P-881

Railroad Commission of Texas

Statement of Intent to Change the City Gate Rate of TXU Lone Star Pipeline Established in GUD No. 8664, Gas Utilities Docket No. 8976

Public Service Commission of the State of Missouri

Missouri Gas Energy, Case No. GR-96-450

State Corporation Commission of the State of Kansas

Western Resources, Docket No. 97-WSRG-312-PGA

Public Service Commission of the State of Wyoming

K N Energy, Inc., Docket No. 30004-GT-95-37

**New Hampshire Public Utility Commission
Docket No. DG 07-101
Testimony of John B. Adger, Jr./Yavuz Arik
Attachment YA-2**

YAVUZ ARIK

Appearances as a Witness in State/Provincial Regulatory Proceedings

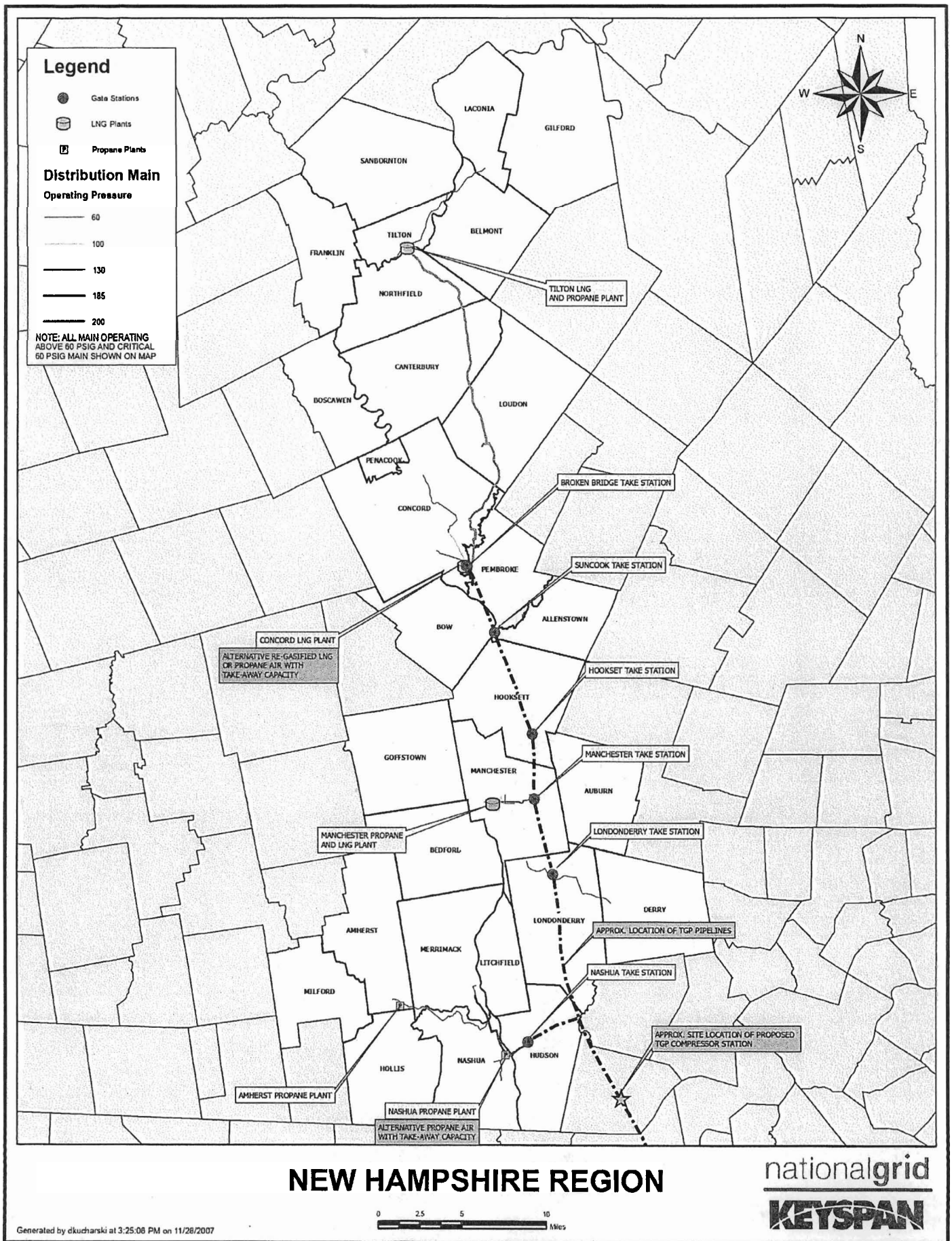
New Hampshire Public Utility Commission

EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England, Docket Nos. DG 04-133/DG 04-175

EnergyNorth Natural Gas, Inc. d/b/a KeySpan Energy Delivery New England, Docket No. DG 04-152

Public Utilities Commission of Ohio

Vectren Energy Delivery, Case No. 02-220-GA-GCR



STAFF 3-11 a. (YANKEE GAS LNG/CONCORD LNG SUPPLY ALTERNATIVE)

<u>ITEM</u>	<u>YANKEE GAS (\$ in M)</u>	<u>LNG (\$ in M)</u>	<u>LNG w/ Liquefaction (\$ in M)</u>
<u>Capital Costs (Permitting, Engineering, Materials & Construction)</u>			
MATERIAL AND INSTALLATION, INCLUDING SITE WORK, FOR STORAGE TANK, LIQUEFACTION, VAPORIZATION AND OTHER PLANT COMPONENTS			
CB & I Construction Cost	\$81.41		
Site enabling Work	\$2.07		
Tank Hydrotest Water	\$0.03		
Electric Feed	\$0.15		
Startup & non-recurring costs	\$1.70		
YG Site Work for LNG Plant	\$1.16		
LNG Storage Tank	\$0.00	\$23.80	\$23.80
Send Out LNG Pump Systems	\$0.00	\$1.24	\$1.24
LNG Vaporization Systems	\$0.00	\$0.90	\$0.90
LNG Bolloff Systems	\$0.00	\$0.81	\$0.81
LNG Trucking Stations	\$0.00	\$1.56	\$1.56
Liquefaction at Concord LNG Facility	\$0.00	\$0.00	\$14.00
INDIRECT COSTS			
Preconstruction Engineering	\$2.03		
Construction Services & Owner's Eng Services	\$4.03		
Preliminary Engineering Report	\$0.07		
Legal Services	\$0.93		
Construction Phase Property Tax	\$0.26		
AFUDC	\$8.97		
Builders Risk Insurance	\$0.52		
Quality Assurance & Records Management	\$1.03		
Permitting, Engineering, Design and Construction Management		\$9.34	\$9.34
Total Direct Cost	\$104.36	\$37.65	\$51.65
OVERHEAD			
	\$3.94	\$9.03	\$12.39
GRAND TOTAL (Capital)	\$108.30	\$46.68	\$64.04
NORMALIZED COST			
Based on 1.2 BCF Storage	\$90.25/mmbtu		
Based on 0.3 BCF Storage		\$155.6/mmbtu	\$213.46/mmbtu

Exhibit 3
+ 191.7

Exhibit 5

Revenue Requirement Analysis for LNG Plant With Liquifaction Capability

		Old figures
Int. Investment	\$55,590,000	\$54,144,500
Book Life	40	40
Property Tax Rate	1.75%	1.92%
Inflation Rate	2.50%	2.00%
O&M Expense Factor	2.20%	3.00%
Tax Rate	41.01%	41.01%

Year	Rate Base (BoY)	Rate Base (EoY)	Rate Base (Avg)	Return on Debt	Return on Preferred	Return on Equity	Tax Depreciation	Book Depreciation	Deferred Tax	Taxable Income	Inc Tax Payable	Property Tax	Annual O&M	Annual Rev Req	PV Factor	PV Rev Req	Levelized Charge	PV Levelized Chg
1	\$55,590,000	\$53,915,264	\$54,752,632	\$1,598,829	\$0	\$2,511,881	\$2,084,625	\$1,389,750	\$284,986	\$3,563,453	\$1,461,461	\$972,825	\$1,222,980	\$9,157,726	0.940644	\$8,614,157.50	\$6,504,220	\$6,118,153
2	\$53,915,264	\$51,449,409	\$52,682,337	\$1,538,375	\$0	\$2,416,902	\$4,013,598	\$1,389,750	\$1,076,106	\$1,473,465	\$604,305	\$948,504	\$1,253,555	\$8,151,391	0.884811	\$7,212,436.23	\$6,504,220	\$5,755,002
3	\$51,449,409	\$49,106,667	\$50,278,038	\$1,468,167	\$0	\$2,306,601	\$3,713,412	\$1,389,750	\$952,992	\$1,586,659	\$650,728	\$924,184	\$1,284,893	\$8,024,323	0.832291	\$6,678,575.26	\$6,504,220	\$5,413,407
4	\$49,106,667	\$46,877,919	\$47,992,293	\$1,401,421	\$0	\$2,201,738	\$3,435,462	\$1,389,750	\$838,998	\$1,686,837	\$691,814	\$899,863	\$1,317,016	\$7,901,602	0.782899	\$6,186,082.97	\$6,504,220	\$5,092,087
5	\$46,877,919	\$44,756,326	\$45,817,123	\$1,337,904	\$0	\$2,101,948	\$3,174,189	\$1,389,750	\$731,843	\$1,778,939	\$729,587	\$875,543	\$1,349,941	\$7,784,672	0.736462	\$5,732,790.12	\$6,504,220	\$4,789,839
6	\$44,756,326	\$42,732,768	\$43,744,547	\$1,277,383	\$0	\$2,006,864	\$2,935,152	\$1,389,750	\$633,808	\$1,856,784	\$761,513	\$851,222	\$1,383,690	\$7,670,422	0.692709	\$5,313,370.35	\$6,504,220	\$4,505,532
7	\$42,732,768	\$40,798,126	\$41,765,447	\$1,219,591	\$0	\$1,916,069	\$2,718,351	\$1,389,750	\$544,892	\$1,919,662	\$787,301	\$826,901	\$1,418,282	\$7,557,895	0.651592	\$4,924,666.54	\$6,504,220	\$4,238,100
8	\$40,798,126	\$38,947,839	\$39,872,982	\$1,164,329	\$0	\$1,829,249	\$2,512,668	\$1,389,750	\$460,537	\$1,978,161	\$811,293	\$802,581	\$1,453,739	\$7,450,941	0.612916	\$4,566,802.57	\$6,504,220	\$3,986,542
9	\$38,947,839	\$37,111,232	\$38,029,535	\$1,110,499	\$0	\$1,744,677	\$2,479,314	\$1,389,750	\$446,857	\$1,868,143	\$766,172	\$778,260	\$1,490,082	\$7,279,440	0.576536	\$4,196,857.84	\$6,504,220	\$3,749,915
10	\$37,111,232	\$35,274,624	\$36,192,928	\$1,056,868	\$0	\$1,660,419	\$2,479,314	\$1,389,750	\$446,857	\$1,725,302	\$707,590	\$753,939	\$1,527,334	\$7,095,901	0.542315	\$3,848,211.63	\$6,504,220	\$3,527,334
11	\$35,274,624	\$33,438,017	\$34,356,320	\$1,003,238	\$0	\$1,576,161	\$2,479,314	\$1,389,750	\$446,857	\$1,582,462	\$649,007	\$729,619	\$1,565,518	\$6,913,293	0.510125	\$3,526,642.97	\$6,504,220	\$3,317,965
12	\$33,438,017	\$31,601,409	\$32,519,713	\$949,607	\$0	\$1,491,904	\$2,479,314	\$1,389,750	\$446,857	\$1,439,622	\$590,425	\$705,298	\$1,604,656	\$6,731,639	0.479846	\$3,230,148.71	\$6,504,220	\$3,121,023
13	\$31,601,409	\$29,764,802	\$30,683,105	\$895,976	\$0	\$1,407,646	\$2,479,314	\$1,389,750	\$446,857	\$1,296,782	\$531,843	\$680,978	\$1,644,772	\$6,550,964	0.451364	\$2,956,868.73	\$6,504,220	\$2,935,770
14	\$29,764,802	\$27,928,194	\$28,846,498	\$842,345	\$0	\$1,323,388	\$2,479,314	\$1,389,750	\$446,857	\$1,153,942	\$473,260	\$656,657	\$1,685,891	\$6,371,292	0.424573	\$2,705,075.97	\$6,504,220	\$2,761,514
15	\$27,928,194	\$26,091,587	\$27,009,891	\$788,715	\$0	\$1,239,130	\$2,479,314	\$1,389,750	\$446,857	\$1,011,101	\$414,678	\$632,336	\$1,728,039	\$6,192,648	0.399372	\$2,473,167.19	\$6,504,220	\$2,597,600
16	\$26,091,587	\$24,254,979	\$25,173,283	\$735,084	\$0	\$1,154,872	\$2,479,314	\$1,389,750	\$446,857	\$868,261	\$356,096	\$608,016	\$1,771,240	\$6,015,057	0.375666	\$2,259,654.29	\$6,504,220	\$2,443,416
17	\$24,254,979	\$22,418,372	\$23,336,676	\$681,453	\$0	\$1,070,614	\$2,479,314	\$1,389,750	\$446,857	\$725,421	\$297,513	\$583,695	\$1,815,521	\$5,838,547	0.353368	\$2,063,156.32	\$6,504,220	\$2,298,384
18	\$22,418,372	\$20,581,765	\$21,500,068	\$627,823	\$0	\$986,356	\$2,479,314	\$1,389,750	\$446,857	\$582,581	\$238,931	\$559,374	\$1,860,909	\$5,663,143	0.332393	\$1,882,391.97	\$6,504,220	\$2,161,960
19	\$20,581,765	\$18,745,157	\$19,663,461	\$574,192	\$0	\$902,099	\$2,479,314	\$1,389,750	\$446,857	\$439,741	\$180,349	\$535,054	\$1,907,431	\$5,488,874	0.312664	\$1,716,172.55	\$6,504,220	\$2,033,634
20	\$18,745,157	\$16,908,550	\$17,826,853	\$520,561	\$0	\$817,841	\$2,479,314	\$1,389,750	\$446,857	\$296,901	\$121,766	\$510,733	\$1,955,117	\$5,315,769	0.294105	\$1,563,395.55	\$6,504,220	\$1,912,925
21	\$16,908,550	\$15,580,357	\$16,244,453	\$474,354	\$0	\$745,245	\$1,239,657	\$1,389,750	(\$61,557)	\$1,413,488	\$579,707	\$486,413	\$2,003,995	\$5,679,463	0.276648	\$1,571,213.59	\$6,504,220	\$1,799,381
22	\$15,580,357	\$14,760,578	\$15,170,467	\$442,992	\$0	\$695,974	\$0	\$1,389,750	(\$569,971)	\$2,569,617	\$1,053,864	\$462,092	\$2,054,095	\$6,098,767	0.260227	\$1,587,066.54	\$6,504,220	\$1,692,576
23	\$14,760,578	\$13,940,799	\$14,350,688	\$419,054	\$0	\$658,365	\$0	\$1,389,750	(\$569,971)	\$2,505,860	\$1,027,716	\$437,771	\$2,105,447	\$6,038,103	0.244781	\$1,478,014.69	\$6,504,220	\$1,592,111
24	\$13,940,799	\$13,121,020	\$13,530,910	\$395,116	\$0	\$620,756	\$0	\$1,389,750	(\$569,971)	\$2,442,102	\$1,001,567	\$413,451	\$2,158,084	\$5,978,723	0.230252	\$1,376,612.77	\$6,504,220	\$1,497,609
25	\$13,121,020	\$12,301,241	\$12,711,131	\$371,177	\$0	\$583,147	\$0	\$1,389,750	(\$569,971)	\$2,378,345	\$975,419	\$389,130	\$2,212,036	\$5,920,659	0.216855	\$1,282,326.24	\$6,504,220	\$1,408,717
26	\$12,301,241	\$11,481,463	\$11,891,352	\$347,239	\$0	\$545,538	\$0	\$1,389,750	(\$569,971)	\$2,314,587	\$949,270	\$364,809	\$2,267,337	\$5,863,943	0.203729	\$1,194,657.46	\$6,504,220	\$1,325,101
27	\$11,481,463	\$10,661,684	\$11,071,573	\$323,301	\$0	\$507,929	\$0	\$1,389,750	(\$569,971)	\$2,250,830	\$923,122	\$340,489	\$2,324,020	\$5,808,610	0.191637	\$1,113,143.15	\$6,504,220	\$1,246,448
28	\$10,661,684	\$9,841,905	\$10,251,795	\$299,362	\$0	\$470,321	\$0	\$1,389,750	(\$569,971)	\$2,187,072	\$896,973	\$316,168	\$2,382,120	\$5,754,694	0.180262	\$1,037,352.09	\$6,504,220	\$1,172,463
29	\$9,841,905	\$9,022,126	\$9,432,016	\$275,424	\$0	\$432,712	\$0	\$1,389,750	(\$569,971)	\$2,123,315	\$870,825	\$291,848	\$2,441,673	\$5,702,231	0.169562	\$966,882.88	\$6,504,220	\$1,102,870
30	\$9,022,126	\$8,202,348	\$8,612,237	\$251,486	\$0	\$395,103	\$0	\$1,389,750	(\$569,971)	\$2,059,558	\$844,676	\$267,527	\$2,502,715	\$5,651,257	0.159498	\$901,361.95	\$6,504,220	\$1,037,408
31	\$8,202,348	\$7,382,569	\$7,792,458	\$227,547	\$0	\$357,494	\$0	\$1,389,750	(\$569,971)	\$1,995,800	\$818,528	\$243,206	\$2,565,283	\$5,601,808	0.150003	\$840,441.64	\$6,504,220	\$975,831
32	\$7,382,569	\$6,562,790	\$6,972,679	\$203,609	\$0	\$319,885	\$0	\$1,389,750	(\$569,971)	\$1,932,043	\$792,379	\$218,866	\$2,629,415	\$5,553,924	0.141125	\$783,798.43	\$6,504,220	\$917,909
33	\$6,562,790	\$5,743,011	\$6,152,901	\$179,671	\$0	\$282,276	\$0	\$1,389,750	(\$569,971)	\$1,868,285	\$766,231	\$194,565	\$2,695,151	\$5,507,643	0.132748	\$731,131.31	\$6,504,220	\$863,425
34	\$5,743,011	\$4,923,232	\$5,333,122	\$155,732	\$0	\$244,667	\$0	\$1,389,750	(\$569,971)	\$1,804,528	\$740,082	\$170,244	\$2,762,529	\$5,463,005	0.124869	\$682,160.18	\$6,504,220	\$812,176
35	\$4,923,232	\$4,103,454	\$4,513,343	\$131,794	\$0	\$207,058	\$0	\$1,389,750	(\$569,971)	\$1,740,770	\$713,933	\$145,924	\$2,831,593	\$5,420,052	0.117457	\$636,624.50	\$6,504,220	\$763,968
36	\$4,103,454	\$3,283,675	\$3,693,564	\$107,856	\$0	\$169,449	\$0	\$1,389,750	(\$569,971)	\$1,677,013	\$687,785	\$121,603	\$2,902,382	\$5,378,825	0.110485	\$594,281.88	\$6,504,220	\$718,622
37	\$3,283,675	\$2,463,896	\$2,873,786	\$83,917	\$0	\$131,840	\$0	\$1,389,750	(\$569,971)	\$1,613,256	\$661,636	\$97,283	\$2,974,942	\$5,339,369	0.103927	\$554,906.85	\$6,504,220	\$675,967
38	\$2,463,896	\$1,644,117	\$2,054,007	\$59,979	\$0	\$94,231	\$0	\$1,389,750	(\$569,971)	\$1,549,498	\$635,488	\$72,962	\$3,049,316	\$5,301,726	0.097759	\$518,289.70	\$6,504,220	\$635,844
39	\$1,644,117	\$824,339	\$1,234,228	\$36,041	\$0	\$56,623	\$0	\$1,389,750	(\$569,971)	\$1,485,741	\$609,339	\$48,641	\$3,125,548	\$5,265,942	0.091956	\$484,235.42	\$6,504,220	\$598,103
40	\$824,339	\$4,560	\$414,449	\$12,102	\$0	\$19,014	\$0	\$1,389,750	(\$569,971)	\$1,421,983	\$583,191	\$24,321	\$3,203,687	\$5,232,065	0.086498	\$452,562.64	\$6,504,220	\$562,601
				\$25,590,112	\$0	\$40,203,987	\$55,578,882	\$55,590,000	(\$4,560)		\$27,957,364	\$19,942,913	\$82,431,975	\$251,716,350		\$94,159,256	\$6,504,220	\$94,159,232
													32.75%					

Exhibit 6

Revenue Requirement Analysis for Concord Lateral
Inflation Rate 0.50%

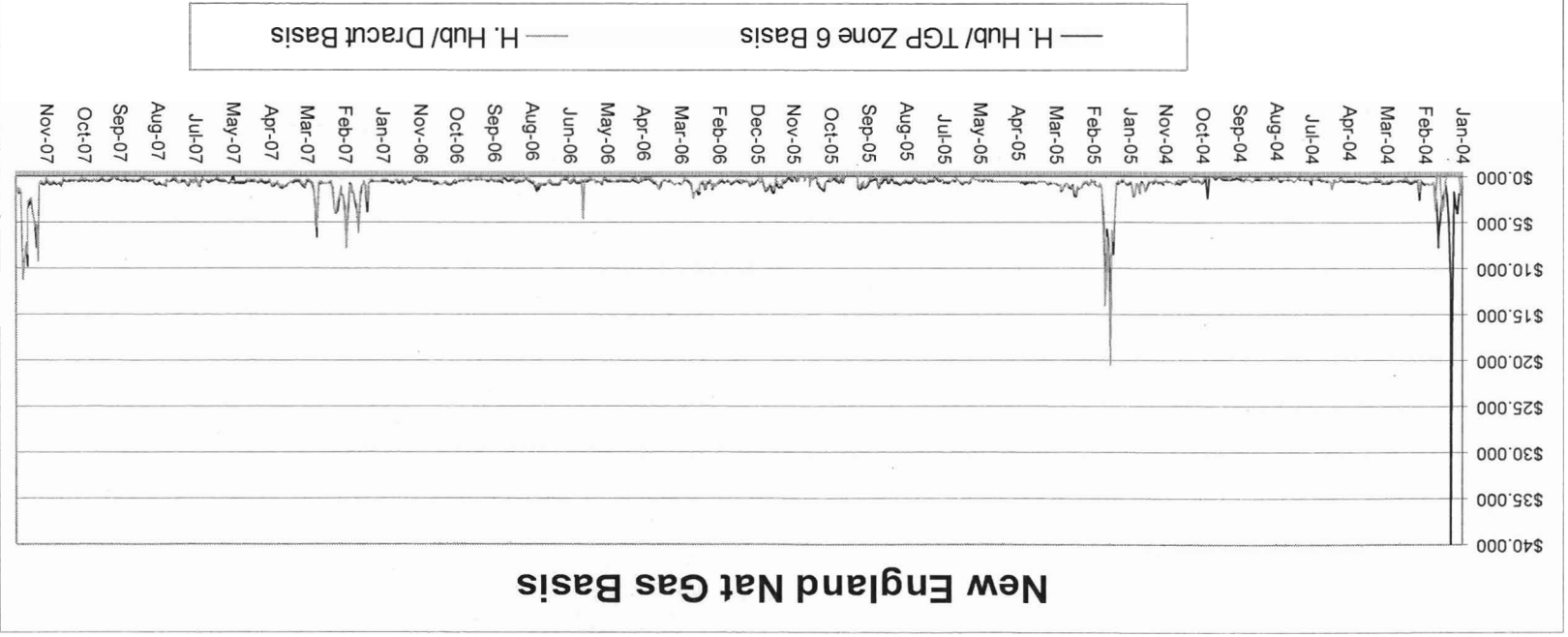
	Annual Rev Req	PV Factor	PV Rev Req	Incremental Commodity Cost	PV Commodity Cost	Levelized Charge	PV Levelized Chg
1	\$4,396,053	0.940644	\$4,135,120	\$294,491	\$277,011	\$3,697,980	\$3,478,481
2	\$4,396,128	0.884811	\$3,889,740	\$565,339	\$500,218	\$3,697,980	\$3,272,012
3	\$4,396,202	0.832291	\$3,658,921	\$568,166	\$472,880	\$3,697,980	\$3,077,797
4	\$4,396,277	0.782890	\$3,441,800	\$571,007	\$447,035	\$3,697,980	\$2,895,110
5	\$4,396,353	0.736420	\$3,237,563	\$573,862	\$422,603	\$3,697,980	\$2,723,267
6	\$4,396,428	0.692709	\$3,045,446	\$576,731	\$399,507	\$3,697,980	\$2,561,624
7	\$4,396,504	0.651592	\$2,864,729	\$579,615	\$377,672	\$3,697,980	\$2,409,575
8	\$4,396,581	0.612916	\$2,694,736	\$582,513	\$357,031	\$3,697,980	\$2,266,552
9	\$4,396,658	0.576536	\$2,534,831	\$585,425	\$337,519	\$3,697,980	\$2,132,018
10	\$4,396,735	0.542315	\$2,384,414	\$588,352	\$319,072	\$3,697,980	\$2,005,469
11	\$4,396,813	0.510125	\$2,242,924	\$591,294	\$301,634	\$3,697,980	\$1,886,432
12	\$4,396,891	0.479846	\$2,109,830	\$594,251	\$285,149	\$3,697,980	\$1,774,460
13	\$4,396,969	0.451364	\$1,984,633	\$597,222	\$269,564	\$3,697,980	\$1,669,135
14	\$4,397,048	0.424573	\$1,866,866	\$600,208	\$254,832	\$3,697,980	\$1,570,061
15	\$4,397,127	0.399372	\$1,756,088	\$603,209	\$240,905	\$3,697,980	\$1,476,868
16	\$4,397,207	0.375666	\$1,651,883	\$606,225	\$227,738	\$3,697,980	\$1,389,206
17	\$4,397,287	0.353368	\$1,553,861	\$609,256	\$215,292	\$3,697,980	\$1,306,748
18	\$4,397,368	0.332393	\$1,461,656	\$612,302	\$203,525	\$3,697,980	\$1,229,185
19	\$4,397,448	0.312664	\$1,374,923	\$615,364	\$192,402	\$3,697,980	\$1,156,225
20	\$4,397,530	0.294105	\$1,293,337	\$618,441	\$181,887	\$3,697,980	\$1,087,595
21	\$1,273,341	0.276648	\$352,267	\$621,533	\$171,946	\$3,697,980	\$1,023,040
22	\$1,279,707	0.260227	\$333,015	\$624,641	\$162,549	\$3,697,980	\$962,316
23	\$1,286,106	0.244781	\$314,815	\$627,764	\$153,665	\$3,697,980	\$905,196
24	\$1,292,536	0.230252	\$297,609	\$630,903	\$145,267	\$3,697,980	\$851,467
25	\$1,298,999	0.216585	\$281,344	\$634,057	\$137,327	\$3,697,980	\$800,927
26	\$1,305,494	0.203729	\$265,967	\$637,228	\$129,822	\$3,697,980	\$753,387
27	\$1,312,021	0.191637	\$251,432	\$640,414	\$122,727	\$3,697,980	\$708,669
28	\$1,318,582	0.180262	\$237,690	\$643,616	\$116,019	\$3,697,980	\$666,605
29	\$1,325,174	0.169562	\$224,699	\$646,834	\$109,679	\$3,697,980	\$627,038
30	\$1,331,800	0.159498	\$212,419	\$650,068	\$103,684	\$3,697,980	\$589,819
31	\$1,338,459	0.150030	\$200,810	\$653,318	\$98,018	\$3,697,980	\$554,810
32	\$1,345,152	0.141125	\$189,835	\$656,585	\$92,661	\$3,697,980	\$521,878
33	\$1,351,877	0.132748	\$179,460	\$659,868	\$87,596	\$3,697,980	\$490,901
34	\$1,358,637	0.124869	\$169,652	\$663,167	\$82,809	\$3,697,980	\$461,763
35	\$1,365,430	0.117457	\$160,380	\$666,483	\$78,283	\$3,697,980	\$434,355
36	\$1,372,257	0.110485	\$151,614	\$669,815	\$74,005	\$3,697,980	\$408,573
37	\$1,379,118	0.103927	\$143,328	\$673,164	\$69,960	\$3,697,980	\$384,322
38	\$1,386,014	0.097759	\$135,495	\$676,530	\$66,137	\$3,697,980	\$361,510
39	\$1,392,944	0.091956	\$128,090	\$679,913	\$62,522	\$3,697,980	\$340,052
40	\$1,399,909	0.086498	\$121,089	\$683,313	\$59,105	\$3,697,980	\$319,868
Total	\$114,649,166		\$53,534,308		\$8,407,257	\$3,697,980	\$53,534,314
			Total PV Cost		\$61,941,564		
			Differential		\$32,217,692		

Exhibit 7**NYMEX Henry Hub
Natural Gas Prices**

<i>Month</i>	<i>Last</i>
November-09	8.781
December-09	9.106
January-10	9.326
February-10	9.332
March-10	9.087
April-10	8.257
May-10	8.239
June-10	8.296
July-10	8.36
August-10	8.407
September-10	8.422
October-10	8.477
November-11	8.65
December-11	8.935
January-12	9.15
February-12	9.15
March-12	8.89
April-12	8.06
May-12	8.037
June-12	8.097
July-12	8.162
August-12	8.202
September-12	8.217
October-12	8.272

**WTI Index
Crude Oil Prices**

<i>Month</i>	<i>Last</i>
November-09	89.89
December-09	89.61
January-10	89.42
February-10	89.26
March-10	89.12
April-10	88.99
May-10	88.86
June-10	88.76
July-10	88.68
August-10	88.62
September-10	88.57
October-10	88.53
November-11	88.27
December-11	88.26
January-12	88.27
February-12	88.28
March-12	88.29
April-12	88.30
May-12	88.31
June-12	88.32
July-12	88.33
August-12	88.34
September-12	88.35
October-12	88.36



8 + 9.4 x 3