



INDUSTRIAL ECONOMICS, INCORPORATED

## ROBERT D. KNECHT

Robert D. Knecht specializes in the practical application of economics, finance and management theory to issues facing public and private sector clients. Mr. Knecht has more than thirty years of consulting experience, focusing primarily on the energy, metals, and mining industries. He has consulted to industry, law firms, and government clients, both in the U.S. and internationally. He has participated in strategic and business planning studies, project evaluations, litigation and regulatory proceedings and policy analyses. His practice currently focuses primarily on utility regulation, and he has provided analysis and expert testimony in numerous U.S. and Canadian jurisdictions. Mr. Knecht also served as Treasurer of IEC from 1996 through 2010, and was responsible for the firm's accounting, finance and tax planning, as well as administration of the firm's retirement plans, during that period.

Mr. Knecht's consulting assignments include the following projects:

- For the Pennsylvania Office of Small Business Advocate, Mr. Knecht provides analysis and expert testimony in industry restructuring, base rates and purchased energy cost proceedings involving electric, steam and natural gas distribution utilities. Mr. Knecht has analyzed the economics and financial issues of electric industry restructuring, stranded cost determination, fair rate of return, claimed utility expenses, cost allocation methods and rate design issues.
- For industrial customers in Québec, Mr. Knecht has prepared economic analysis and expert testimony in regulatory proceedings regarding cost allocation, compliance with legislative requirements for cross-subsidization, and rate design.
- For the New Brunswick Public Intervenor, Mr. Knecht has prepared expert testimony regarding electric and gas utilities, on various regulatory issues, including revenue requirements, amortization methods, system expansion economics, cost allocation, and rate design.
- For independent power producers and industrial customers in Alberta, Mr. Knecht has provided analysis and expert testimony in a variety of electric industry proceedings, including industry restructuring, cost unbundling, stranded cost recovery, transmission rate design, cost allocation and rate design.
- As a participant on various international teams of experts, Mr. Knecht has prepared the economic and financial analysis for industry restructuring studies involving the steel and iron ore industries in Venezuela, Poland, and Nigeria.
- For the U.S. Department of Justice and for several private sector clients, Mr. Knecht has prepared analyses of economic damages in a variety of litigation matters, including ERISA discrimination, breach of contract, fraudulent conveyance, natural resource damages and anti-trust cases.
- Mr. Knecht participates in numerous projects with colleagues at IEC preparing economic and environmental analyses associated with energy and utility industries for the U.S. Environmental Protection Agency and other private and public entities.

Mr. Knecht holds a M.S. in Management from the Sloan School of Management at M.I.T., with concentrations in applied economics and finance. He also holds a B.S. in Economics from M.I.T. Prior to joining Industrial Economics as a principal in 1989, Mr. Knecht worked for seven years as an economic and management consultant at Marshall Bartlett, Incorporated. He also worked for two years as an economist in the Energy Group of Data Resources, Incorporated.

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## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2008 TO 2013

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
Matter No. 214	New Brunswick Energy & Utilities Board	Generic	November 2013	New Brunswick Public Intervenor	Maximum retail margins for motor fuel and residential heating oil.
Matter No. 171	New Brunswick Energy & Utilities Board	New Brunswick Power	September 2013	New Brunswick Public Intervenor	Amortization method for deferral costs associated with refurbishing Point Lepreau Generating Station
C-2013-2367475	Pennsylvania Public Utility Commission	PPL Electric Utilities	August 2013	Pennsylvania Office of Small Business Advocate	Forecasting and reconciliation of default service electric costs and revenues.
P-2011-2277868, I-2012-2320323	Pennsylvania Public Utility Commission	Generic	August 2013	Pennsylvania Office of Small Business Advocate	Ratemaking treatment for customers in overlapping NGDC service territories ("gas-on-gas").
P-2013-2356232	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Program design, cost recovery and rate design for alternative system expansion financing pilot program ("GET Gas")
R-2013-2355886	Pennsylvania Public Utility Commission	Peoples TWP LLC	July 2013	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2013-2361764, R-2013-2361763, R-2013-2361771	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas.
R-2013-2341604	Pennsylvania Public Utility Commission	Peoples TWP	March 2013	Pennsylvania Office of Small Business Advocate	Retainage rates, design day demand forecast, allocation of demand costs, recovery of other gas costs
R-2013-2341534	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2013	Pennsylvania Office of Small Business Advocate	Unaccounted for gas, retainage.
R-2012-2333993	Pennsylvania Public Utility Commission	Philadelphia Gas Works	February 2013	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, uncollectible cost unbundling

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R-2012-2321748	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	January 2013	Pennsylvania Office of Small Business Advocate	Cost of capital, cost allocation, revenue allocation, gas procurement cost unbundling, rate design
R-2012-2327529	Pennsylvania Public Utility Commission	Peoples TWP	December 2012	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, price to compare
R-2012-2314235 R-2012-2314224 R-2012-2314247	Pennsylvania Public Utility Commission	UGI Utilities Gas Division UGI Penn Natural Gas UGI Central Penn Gas	October 2012	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, reconciliation, migration rider
R-2012-2302074	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2012	Pennsylvania Office of Small Business Advocate	Default service procurement, rate design, reconciliation, working capital cost treatment.
Matter No. 178	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	July 2012	NB Public Intervenor	System expansion economic test, test year revenue requirement, cost allocation, rate design, treatment of stranded costs.
R-2012-2290597	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2012	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2012-2293303	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2012	Pennsylvania Office of Small Business Advocate	Treatment of pipeline credits
AUC ID #1633	Alberta Utilities Commission	Alberta Electric System Operator	April 2012	Powerex, Northpoint Energy Solutions, Cargill	Economic efficiency issues for allocation of constrained transmission capacity.
R-2012-2286447	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, reconciliation
R-2012-2281465	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, gas price procurement and hedging

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DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-2011-2273539	Pennsylvania Public Utility Commission	Peoples TWP	March 2012	Pennsylvania Office of Small Business Advocate	Design day demand methodology
P-2011-2273650 P-2011-2273668 P-2011-2273669 P-2011-2273670	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Penn Power, West Penn Power	February 2012	Pennsylvania Office of Small Business Advocate	Default service procurement, retail market enhancement, rate design.
R-2011-2264771	Pennsylvania Public Utility Commission	PPL Electric Utilities	January 2012	Pennsylvania Office of Small Business Advocate	TOU Rates
P-2011-2256365	Pennsylvania Public Utility Commission	PPL Electric Utilities	November 2011	Pennsylvania Office of Small Business Advocate	Default service reconciliation
Matter No. 132	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	October 2011	New Brunswick Public Intervenor	Revenue requirement, cost forecasting, system expansion economic test, regulatory deferral test, filing requirements.
R-2010-2161694 on Remand	Pennsylvania Public Utility Commission	PPL Electric Utilities	August 2011	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables
R-2011-2238943, R-2011-2238943, R-2011-2238949,	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division), UGI Central Penn Gas UGI Penn Natural Gas	July 2011	Pennsylvania Office of Small Business Advocate	Design day demand, mandatory capacity assignment, sharing mechanisms
C-2011-2245906, M-2011-2243137	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2011	Pennsylvania Office of Small Business Advocate	Reconciliation of default service costs and revenues
P-2011-2218683, P-2011-2224781	Pennsylvania Public Utility Commission	West Penn Power Company	April, May 2011	Pennsylvania Office of Small Business Advocate	Critical peak pricing, time-of-use pricing

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R-2010-2214415	Pennsylvania Public Utility Commission	UGI Central Penn Gas	April 2011	Pennsylvania Office of Small Business Advocate	Equity cost of capital, cost allocation, revenue allocation, non-residential rate design, EE&C cross-subsidies and cost recovery, natural gas vehicle subsidies
R-2010-2215623, R-2010-2201974	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	April 2011	Pennsylvania Office of Small Business Advocate	Cost of equity capital, cost allocation, revenue allocation, BTU adjustment mechanism, rate design, DSIC
NBEUB 2010-017	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	April 2011	New Brunswick Public Intervenor	Cost- and market-based ratemaking, transition mechanism
M-2010-2210316	Pennsylvania Public Utility Commission	UGI Utilities, Electric Division	March 2011	Pennsylvania Office of Small Business Advocate	Energy efficiency plan cost recovery, conservation development rider
A-2010-2213893, et al.	Pennsylvania Public Utility Commission	UGI Penn Natural Gas	February 2011	Pennsylvania Office of Small Business Advocate	Asset valuation, reasonableness of proposed affiliate transaction
M-2009-2123944	Pennsylvania Public Utility Commission	PECO	January 2011	Pennsylvania Office of Small Business Advocate	Dynamic pricing cost allocation and rate design
NBEUB 2010-007	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	December 2010	New Brunswick Public Intervenor	Allowable costs, O&M capitalization policy, expansion cost effectiveness, incentive mechanisms
R-3740-2010	Régie de l'énergie, Québec	Hydro Québec Distribution	December 2010	AQCIE/CIFQ	Pension cost reconciliation, cross-subsidies, rate design
P-2010-2158084	Pennsylvania Public Utility Commission	West Penn Power Company	November 2010	Pennsylvania Office of Small Business Advocate	Transmission service charge, reconciliation timing
P-2010-2194652	Pennsylvania Public Utility Commission	Pike County Light & Power	November 2010	Pennsylvania Office of Small Business Advocate	Electric default service procurement, customer education

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A-2010-2176520, A-2010-2176732	Pennsylvania Public Utility Commission	Allegheny Power/FirstEnergy Corporation	September 2010	Pennsylvania Office of Small Business Advocate	Implications of proposed merger for default service
App. No. 1605961, Proceeding ID 530	Alberta Utilities Commission	Alberta Electric System Operator	August 2010	BC Hydro	Transmission rate design
R-2010-2167797	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil Company	July 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables, rate of return
R-2010-2172933, R-2010-2172922, R-2010-2172928	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division), UGI Central Penn Gas UGI Penn Natural Gas	July 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, unaccounted-for gas, retainage
NBEUB 2010-002	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	June 2010	New Brunswick Public Intervenor	Cost allocation, rate design, deferral costs
R-2010-2161694	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables
R-2010-2161920	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, retainage rates, gas price forecasting
R-2009-2149262	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, rate of return
P-2009-2145498	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division)	April 2010	Pennsylvania Office of Small Business Advocate	Merchant function charge, purchase of receivables
R-2010-2157062	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs
NBEUB 2009-017	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	March 2010	New Brunswick Public Intervenor	Cost allocation, deferral costs

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R-2009-2139884	Pennsylvania Public Utility Commission	Philadelphia Gas Works	March 2010	Pennsylvania Office of Small Business Advocate	Revenue requirement, cost allocation, rate design, DSM program
R-2010-2150861	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs
R-2009-2145441	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil Company	March 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, unaccounted-for gas, retainage
P-2010-2099333	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	February 2010	Pennsylvania Office of Small Business Advocate	Purchase of receivables
R-3708-2009	Régie de l'énergie, Québec	Hydro Québec Distribution	November 2009	AQCIE/CIFQ	Post-patrimonial generation cost allocation, revenue allocation
M-2009-2123944, 2123948, 2123950, 2123951	Pennsylvania Public Utility Commission	PECO, Duquesne Light, Metropolitan Edison, Pennsylvania Electric, Penn Power, West Penn Power	October, November 2009	Pennsylvania Office of Small Business Advocate	Smart Meter Cost Allocation and Rate Design
NBEUB 2009-006	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	September 2009	New Brunswick Public Intervenor	Development Period Criteria
M-2009-2092222, 2121952, 2112956, 2093218, 2093217, 2093215	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Penn Power, West Penn Power, Duquesne Light, PPL Electric	August 2009	Pennsylvania Office of Small Business Advocate	Energy efficiency and conservation programs, cost allocation, rate design
1604944; ID# 184	Alberta Utilities Commission	ATCO Gas	July 2009	Rate 13 Group	Cost allocation, rate design
R-2009-2105904, 909, 911	Pennsylvania Public Utility Commission	UGI Penn Natural Gas, UGI Central Penn Gas, UGI Utilities Inc. Gas Division	July 2009	Pennsylvania Office of Small Business Advocate	Gas supply procurement hedging, unaccounted-for gas, revenue sharing mechanisms

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R-2009-2093219	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2009	Pennsylvania Office of Small Business Advocate	Revenue sharing mechanisms, retainage rate, gas procurement
R-2008-2079660	Pennsylvania Public Utility Commission	UGI Penn Natural Gas	May 2009	Pennsylvania Office of Small Business Advocate	Equity cost of capital, cost allocation, rate design
R-2008-2079675	Pennsylvania Public Utility Commission	UGI Central Penn Gas	May 2009	Pennsylvania Office of Small Business Advocate	Equity cost of capital, cost allocation, rate design
R-2008-2075250	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil	April 2009	Pennsylvania Office of Small Business Advocate	Retainage rates
R-2009-2088076	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2009	Pennsylvania Office of Small Business Advocate	Gas procurement
R-2009-2083181	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2009	Pennsylvania Office of Small Business Advocate	Retainage rates, gas procurement
P-2008-2060309	Pennsylvania Public Utility Commission	PPL Electric Utilities	December 2008	Pennsylvania Office of Small Business Advocate	Default electric supply procurement
R-2008-2073938	Pennsylvania Public Utility Commission	Philadelphia Gas Works	December 2008	Pennsylvania Office of Small Business Advocate	Revenue requirement, financial cash flows, cost allocation, rate design.
P-2008-2044561	Pennsylvania Public Utility Commission	Pike County Light & Power	October 2008	Pennsylvania Office of Small Business Advocate	Electric default service procurement
R-3673-2008	Régie de l'énergie, Québec	Hydro Québec Distribution	August 2008	AQCIE/CIFQ	Electric supply contract modifications.
1550487	Alberta Utilities Commission	ENMAX Power Corporation	July 2008	D410 Group	Formula-based (performance-based) ratemaking; ratepayer-supplied equity contributions.
R-2008-2039417 et al.	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division)	July 2008	Pennsylvania Office of Small Business Advocate	Design day demand forecast.



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R-2008-2039284	Pennsylvania Public Utility Commission	UGI Penn Natural Gas	July 2008	Pennsylvania Office of Small Business Advocate	Revenue sharing, gas supply costs.
R-2008-2039634	Pennsylvania Public Utility Commission	PPL Gas Utilities	July 2008	Pennsylvania Office of Small Business Advocate	Lost and unaccounted-for gas, gas supply costs.
A-2008-2034045	Pennsylvania Public Utility Commission	UGI Utilities, PPL Gas Utilities	June 2008	Pennsylvania Office of Small Business Advocate	Public benefits of proposed sale.
R-2008-2011621	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2008	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design.
R-2008-2028039	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2008	Pennsylvania Office of Small Business Advocate	Gas supply cost functionalization; cost reconciliation method, sharing mechanisms.
R-3648-2007	Régie de l'énergie, Québec	Hydro Québec Distribution	April 2008	AQCIE/CIFQ	Electric supply contract modifications.
R-2008-2021348	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2008	Pennsylvania Office of Small Business Advocate	Sharing mechanisms, gas supply contracts.
R-2008-2012502	Pennsylvania Public Utility Commission	National Fuel Gas Distribution Company	March 2008	Pennsylvania Office of Small Business Advocate	Transportation and sales customer rate design, design day forecasts.
R-2008-2013026	Pennsylvania Public Utility Commission	T.W. Phillips Gas and Oil Company	March 2008	Pennsylvania Office of Small Business Advocate	Rate design treatment of capacity release revenues.
P-00072342	Pennsylvania Public Utility Commission	West Penn Power d/b/a Allegheny Power	February 2008	Pennsylvania Office of Small Business Advocate	Default service electricity procurement, rate design, reconciliation.

*Note: Dates shown reflect submission date for direct testimony.*