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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PENNSYLVANIA PUBLIC UTILITY
COMMISSION

v.

PHILADELPHIA GAS WORKS

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Docket No. R-00016378

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Surrebuttal Testimony
ROBERT D. KNECHT

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FOLDER

On Behalf of the
Office of Small Business Advocate

DOCKETED

AUG 14 2001

Date Served: August 3, 2001

Date Submitted for the Record: _____

SURREBUTTAL TESTIMONY OF ROBERT D. KNECHT

1 **Q. Please state your name and briefly describe your qualifications.**

2 A. My name is Robert D. Knecht. I am a Principal and the Treasurer of Industrial
3 Economics, Incorporated (IEc), an economic consulting firm located at 2067
4 Massachusetts Avenue, Cambridge, MA 02140. I specialize in the economic analysis of
5 basic industries. As part of my consulting practice, I have prepared analyses and expert
6 testimony in the field of regulatory economics, focusing primarily on matters of cost
7 allocation, rate design and industry restructuring. I obtained a B.S. degree in Economics
8 from the Massachusetts Institute of Technology in 1978, and an M.S. degree in
9 Management from the Sloan School of Management at M.I.T. in 1982. I am appearing in
10 these proceedings on behalf of the Pennsylvania Office of the Small Business Advocate
11 (OSBA). My résumé and schedule of appearances in regulatory proceedings are attached
12 as Appendix A.

13 **Q. Please describe your assignment.**

14 A. The OSBA asked me to review the rebuttal testimony of Philadelphia Gas Works (PGW)
15 witness Craig White in this proceeding, as well as the Revised FY 2002 GCR Calculation
16 memo from Mr. White distributed to various parties on 16 July 2001. Specifically, the
17 OSBA asked me to evaluate PGW's proposed change in methodology for forecasting
18 natural gas market prices.

19 **Q. What is your understanding of PGW's methodology for developing a natural gas
20 commodity market price forecast prior to the 16 July 2001 update?**

21 A. My understanding is that PGW relied solely on the forecast of Standard & Poors DRI
22 (DRI). PGW's response to OCA-I-34 indicates that its filing was based on the March
23 2001 DRI forecast.

24 **Q. How does PGW forecast natural gas prices in its 16 July 2001 update?**

25 A. First, PGW incorporates the updated DRI forecast from July 2001, which contains a much
26 lower price forecast for natural gas prices than the March edition used in the filing.
27 However, Mr. White indicates that he has "supplemented" the DRI forecast with NYMEX

1 prices for the September 2001 to January 2002 period. It is not clear to me what
2 arithmetic form that supplementation took. For the February to August 2002 period, Mr.
3 White indicates that PGW relies solely on the DRI forecast. Mr. White's rationale for
4 supplementing the DRI forecast with NYMEX futures prices for the coming winter is that
5 the DRI forecast prices were significantly below the NYMEX futures prices. While it is
6 not stated in his rebuttal testimony, it is my understanding that Mr. White has concerns
7 regarding PGW's financial viability if actual gas prices significantly exceed the DRI
8 forecast levels in the near future. Finally, I note that Mr. White indicates that PGW is
9 considering another update to its gas price forecast as this case progresses, in light of his
10 conclusions regarding the volatility of the NYMEX natural gas futures market.

11 **Q. Do you have any objection to including NYMEX futures prices for wellhead gas**
12 **price forecasts in a GCR or 1307(f) proceeding?**

13 A. No. For the Pennsylvania gas cost proceedings in which I have been involved, all of the
14 utilities (NFG, PG Energy, Columbia Gas, and PPL Gas Utilities) base their gas price
15 forecasts solely or partly on NYMEX futures prices. Moreover, because the futures
16 prices reflect actual market prices at which a utility could theoretically "lock-in" all of its
17 gas supplies, NYMEX represents a very credible source for gas price forecasting.

18 **Q. Do you have any objection to PGW updating its GCR to reflect the best available**
19 **information regarding future market prices for gas?**

20 A. No. Use of the most recent and most accurate gas price forecasts will promote economic
21 efficiency, because the tariff prices for natural gas will better reflect the costs incurred by
22 PGW to supply that gas.

23 **Q. Do you have any objections to PGW's update?**

24 A. I am concerned about the lack of a consistent and publicly known approach to gas price
25 forecasting. As noted above, a utility should have the opportunity to update its GCR
26 forecast for the best available information. However, for such an update to be credible
27 and effective, the utility should follow a consistent and public methodology. Otherwise,
28 the utility might be tempted to change its methodology at will to suit its own purposes.
29 Also, without a consistent approach, the utility's ability to rapidly update its filings for

1 new forecast information may be constrained by complaints and litigation. For example,
2 it is my understanding that some utilities can update natural gas price forecasts in their
3 1307(f) compliance filings. However, if those utilities have the flexibility to modify the
4 methodology or the sources of the price forecasts at the time of the compliance filing, the
5 compliance filing process is likely to become contentious and inefficient.

6 **Q. Does PGW have any particular reason to try to "game" the gas price forecasting**
7 **methodology to its advantage?**

8 A. Possibly. In the R-00005654 proceeding, the parties reached a settlement in which up to
9 \$18 million dollars in GCR over-recovery through January 2002 could potentially be
10 reserved by PGW to prop up its ailing finances. PGW could potentially "game" its gas
11 price forecasting to increase its opportunity to achieve gas cost over-recoveries. By
12 selecting a high gas price forecast of its choice, PGW would achieve a higher GCR
13 charge, which increases the potential for gas cost over-recovery, which may be retained
14 by PGW. While I recognize that the settlement applies to most of the parties in this
15 proceeding (including the OSBA), I do not believe that the parties should reasonably have
16 anticipated that gas price forecast gamesmanship might contribute to potential gas cost
17 over-recovery.

18 **Q. What are your recommendations regarding a gas price forecasting methodology?**

19 A. Most importantly, I am not recommending that PGW set its gas cost rate at a level that
20 will provide insufficient revenues to recover the best estimate of future gas costs. If
21 anything, my review suggests that PGW should increase the weight given to NYMEX
22 futures prices in its forecasting, a method that will tend to increase the GCR.

23 My primary recommendation is that the Commission specify a methodology for
24 developing a gas price forecast, and that this methodology be consistently used for filings,
25 updates, and compliance filings. Any weighting or averaging approach used in that
26 methodology should be clearly communicated to all of the parties.

27 Second, I recommend that NYMEX futures prices be used in whole or in part as the basis
28 for the market price forecast of gas. As noted earlier, NYMEX prices represent actual
29 market prices at which gas costs can be hedged, and are used by many other utilities for

1 gas cost forecasting. Thus, a straight use of the NYMEX futures prices, or a simple
2 average of the DRJ and the NYMEX prices for all forecast months, would be reasonable
3 approaches.

4 Finally, I recommend that PGW be allowed to update its GCR rate in its compliance
5 filing in these proceedings, based on the specific formula for gas price forecasting
6 established by the Commission, and using the most recent forecasts available at that time.

7 **Q. Do you have any other comments regarding PGW's 16 July 2001 update?**

8 A. I note that PGW's "Statement of Reconciliation 2001-2002" in Sheet 9 of that update
9 assumes that the new GCR will go into effect in September 2001, for the purposes of
10 reconciling gas cost over/under-recovery. In light of the timing of this proceeding, it is
11 not clear to me that PGW will be able to put a lower GCR in place on 1 September.
12 Thus, to the extent that implementation of a new GCR will occur at a later date, PGW
13 should modify its reconciliation (in its compliance filing update) to reflect that later date.

14 **Q. Does this conclude your surrebuttal testimony?**

15 A. Yes, it does.

APPENDIX A

CURRICULUM VITAE AND

SCHEDULE OF APPEARANCES BEFORE REGULATORY BOARDS

FOR

ROBERT D. KNECHT

INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT Treasurer and Principal

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 eighteen 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. As Treasurer of IEc, Mr. Knecht is responsible for the firm's accounting, finance and tax planning functions. Mr. Knecht is also the administrator of the firm's retirement plan. 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 gas 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, industry economics, cost allocation methods and rate design issues.
- For the New Jersey Board of Public Utilities, Mr. Knecht audited the cost and rate unbundling, cost allocation and rate design aspects of the industry restructuring filing of an investor-owned electric utility.
- For the U.S. Department of Justice, Mr. Knecht participated in an evaluation of the economic damage claims of a large forest products concern, in a breach of contract lawsuit. Mr. Knecht's analysis included a review of the economic claims of the plaintiff, and an evaluation of settlement alternatives.
- For the Independent Power Producers Society of Alberta and the Senior Petroleum Producers Association, Mr. Knecht provides analysis and recommendations regarding electric industry restructuring strategies. Mr. Knecht also provided expert testimony with respect to industry restructuring, cost allocation, rate unbundling methodologies and rate design.
- For a major South American iron ore mining company, Mr. Knecht assembled and managed an international team of consultants to review and evaluate the company's strategic plan. Mr. Knecht oversaw the development of recommendations in the areas of markets, the resource base, development of the resource, processing operations and finance.

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.

INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT
Treasurer and Principal

Regulatory Economics

Mr. Knecht consults and provides expert testimony in the field of regulatory economics, focusing primarily on issues of industry restructuring, cost allocation and rate design. His clients include both utilities and the consumers, competitors, and regulators of public utilities. Representative assignments are listed below.

- For the Independent Power Producers Society of Alberta and the Senior Petroleum Producers Association, in a variety of regulatory proceedings, analysis and expert testimony regarding electric industry restructuring, market power mitigation, stranded cost determination, cost allocation, rate unbundling and tariff design for transmission and distribution utilities.
- Subcontractor on a team preparing an audit of the electric industry restructuring filing of the Atlantic City Electric Company, for the NJ Board of Public Utilities. Mr. Knecht was responsible for evaluation of the company's rate unbundling filing.
- For a major Manitoba industrial customer, analysis and expert testimony regarding proposed changes to customer contribution policies of Centra Gas Manitoba.
- For the Pennsylvania OSBA, evaluation of all aspects of the electric industry restructuring filings of Pennsylvania Power & Light and West Penn Power, focusing on impacts to customers in general and small businesses in particular.
- Analysis and expert testimony of cost allocation and rate design practices of the three major Ontario natural gas distribution utilities over several years, on behalf of the Ontario Energy Board staff and the Canadian Independent Gas Marketing Association.
- Cost allocation and rate design study and expert testimony for a small Ontario gas distribution utility.
- Analysis and litigation support regarding accounting, financial and capacity planning procedures of New Brunswick Power Corporation, and presentation of expert testimony on cost allocation and rate design, in a series of generic regulatory hearings, on behalf of a group of large industrial customers.

INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT
Treasurer and Principal

Regulatory Economics (continued)

- Economic analysis and modeling of U.S. Postal Service proposals for allocation of peak load labor and equipment costs in 1987 and 1990, for the American Newspaper Publishers Association.
- Evaluation of the cost allocation and cost recovery procedures of a domestic telecommunications firm providing aircraft to ground data communications.
- Assessment of alternative methodologies for defining the electric rate classes of Maritime Electric Corporation, for the Prince Edward Island Ministry of Energy and Forestry.
- Evaluation of the cost allocation and rate design procedures of the Nova Scotia Power Corporation, for a group of interruptible electricity consumers, and in a later proceeding, for a large industrial customer.
- Assessment of a proposed class-specific, risk-adjusted rate of return methodology for natural gas distribution utilities, for the staff of the Ontario Energy Board.
- Preparation of rebuttal analysis regarding management prudence in the construction of the River Bend Nuclear Generating Station, for Gulf States Utilities.

Economic Consulting

Mr. Knecht's practice includes the application of economics, finance and decision analysis theory to practical problems facing businesses, law firms and government. His assignments include industry and company planning, market forecasting, policy analysis and economic damage assessment. Representative assignments are listed below.

- For the US Department of Justice Civil Division, analysis of economic damages and participation in settlement negotiations associated with alleged breach of contract involving long-term timber supply contracts between the U.S. government and two large forest products companies in Southeast Alaska.

INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT
Treasurer and Principal

Economic Consulting (continued)

- For the Electric Power Research Institute, analysis and adaptation of models that compute the economic costs of environmental externalities associated with electric generating stations.
- Economic, market and cost analysis for a team of international consultants preparing a restructuring study of the Polish steel industry, in conjunction with the World Bank.
- Economic and policy analysis for a U.S. engineering firm preparing a strategic planning study for the state-owned steel company in Venezuela.
- For the U.S. Environmental Protection Agency, evaluation of the impact of Clean Air Act amendments on major industrial facilities that are closing or are threatened with closure.
- Econometric analysis of world steel consumption patterns for a major international iron ore producer.
- Litigation support services relating to the business planning activities of a major West Coast construction and fabrication concern, in a fraudulent conveyance lawsuit.
- Review and analysis of direct and rebuttal evidence regarding economic damages to recreational activities, for the U.S. Department of Justice.
- Decision analysis and calculation of economic damages in an ERISA discrimination lawsuit, for a major domestic manufacturing company.
- Financial, econometric and strategic planning analyses for an international engineering firm, engaged in the preparation of a strategic plan for the steel industry of Nigeria.
- Economic analysis and econometric modeling of import behavior in the domestic carbon steel and wire rope markets, for hearings before the U.S. International Trade Commission.
- Financial analysis and damage assessment for a major domestic law firm, in support of a major anti-trust suit involving the potential construction of a coal slurry pipeline.

INDUSTRIAL ECONOMICS, INCORPORATED

ROBERT D. KNECHT
Treasurer and Principal

Economic Consulting (continued)

- Economic analysis of imports of iron ore pellets into the U.S., for a major international iron ore producer.
- Construction of an economic model of domestic metallurgical coke demand, for the U.S. Environmental Protection Agency.
- Econometric analysis of energy demand, by energy type, region and sector, and management of a sectoral supply-demand model of energy production and use.

Management Consulting

Mr. Knecht has also provided management consulting services to various basic industrial clients, focusing primarily on planning and decision-making. Representative assignments are listed below.

- Competitive dynamics analysis of the world iron ore industry and preparation of strategic recommendations for a major South American mining company.
- Task leader in a management audit of a New Jersey natural gas local distribution company.
- Development of a strategic plan and various business plans for a domestic specialized producer of carbon and alloy steel bars.
- Economic analysis and financial modeling of labor and employee benefits costs for a large integrated steel producer. Preparation of recommendations for labor relations and bargaining strategies.
- Analysis for the restructuring of the marketing function of a large domestic manufacturing company, including market segmentation analysis, field interviews and competitor comparisons.
- Market survey and analysis of the domestic hot finished seamless steel tube markets, for a U.S. producer.
- Strategic and business plan development for a major Polish steel producer.

ROBERT D. KNECHT

SCHEDULE OF APPEARANCES BEFORE REGULATORY AUTHORITIES

Docket #	Regulator	Utility	Date of Testimony	Client	Topic of Testimony
R-00016179	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2001	Pennsylvania Office of the Small Business Advocate	Recovery of CAP costs; PGC treatment of pipeline credits
R-005277	Pennsylvania Public Utility Commission	PFG Gas Inc. and North Penn Gas Company	November 2000	Pennsylvania Office of the Small Business Advocate	Cost allocation, rate design.
R-3443-2000	Régie de l'Énergie, Québec	Société en commandite Gaz Métropolitain	November 2000	Industrial Gas Users Association	Tariff unbundling
990005	Alberta Energy and Utilities Board	ESBI Alberta Limited	November 2000	IPPSA	Location-based credits for transmission rates
R-005119	Pennsylvania Public Utility Commission	PG Energy (Southern Union)	July 2000	Pennsylvania Office of the Small Business Advocate	Cost allocation, rate design, weather normalization
R-994788	Pennsylvania Public Utility Commission	PFG Gas, Inc. and North Penn Gas Company	February 2000	Pennsylvania Office of the Small Business Advocate	Natural gas restructuring, retail access, tariff design
R-994785	Pennsylvania Public Utility Commission	National Fuel Gas Distribution Corp.	December 1999	Pennsylvania Office of the Small Business Advocate	Natural gas restructuring, retail access, tariff design
R-994783	Pennsylvania Public Utility Commission	PG Energy, Inc.	November 1999	Pennsylvania Office of the Small Business Advocate	Natural gas restructuring, retail access, tariff design
99005	Alberta Energy and Utilities Board	ESBI Alberta Limited (Transmission Administrator)	September 1999	IPPSA	Transmission tariff cost allocation, rate design, industry restructuring
RE95080	Alberta Energy and Utilities Board	Alberta Power Limited	December 1998	Independent Power Producers Society of Alberta and SPPA	Electric industry restructuring, rate unbundling, cost allocation and rate design.
RE95081	Alberta Energy and Utilities Board	TransAlta Utilities Corporation	November 1998	IPPSA and Senior Petroleum Producers Assn.	Industry restructuring, cost allocation, rate design.

ROBERT D. KNECHT

SCHEDULE OF APPEARANCES BEFORE REGULATORY AUTHORITIES

Docket #	Regulator	Utility	Date of Testimony	Client	Topic of Testimony
Expansion Feasibility Test	Public Utilities Board of Manitoba	Centra Gas Manitoba	August 1998	Simplot Canada Limited	Expansion feasibility and customer contribution methodology
R-984280	Pennsylvania Public Utility Commission	PG Energy, Inc.	August 1998	Pennsylvania Office of the Small Business Advocate	Cost allocation, revenue deficiency assignment, rate design
EO97070455	New Jersey Board of Public Utilities	Atlantic City Electric Company	February 1998	New Jersey Board of Public Utilities	Industry restructuring, audit of unbundled rates
R-973981	Pennsylvania Public Utility Commission	Allegheny Power (West Penn Power)	January 1998	Pennsylvania Office of the Small Business Advocate	Industry restructuring, cost unbundling, cost allocation, and rate design.
R-973954	Pennsylvania Public Utility Commission	Pennsylvania Power & Light	August 1997	Pennsylvania Office of the Small Business Advocate	Restructuring, stranded costs, market price forecasting, cost allocation, and rate design.
1996 Electric Utility Tariff Applications	Alberta Energy & Utilities Board	TransAlta Utilities Alberta Power Edmonton Power Grid Company of Alberta	October 1996	Independent Power Producers Society of Alberta (IPPSA)	Industry restructuring; transmission cost allocation and rate design.
R-963612	Pennsylvania Public Utility Commission	PG Energy, Inc.	October 1996	Pennsylvania Office of the Small Business Advocate	Cost allocation and rate design -- direct and rebuttal.
R-953444	Pennsylvania Public Utility Commission	Trigen-Philadelphia Energy Corp.	November 1995	Pennsylvania Office of the Small Business Advocate	Steam energy cost rate -- direct and rebuttal.
R-953406	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil Company	October 1995	Pennsylvania Office of the Small Business Advocate	Weather normalization, cost allocation and rate design.
R-953297	Pennsylvania Public Utility Commission	UGI Utilities, Inc. (Gas Division)	May 1995	Pennsylvania Office of the Small Business Advocate	Cost allocation and rate design -- direct and surrebuttal.

ROBERT D. KNECHT

SCHEDULE OF APPEARANCES BEFORE REGULATORY AUTHORITIES

Docket #	Regulator	Utility	Date of Testimony	Client	Topic of Testimony
R-943271	Pennsylvania Public Utility Commission	Pennsylvania Power & Light	April/May 1995	Pennsylvania Office of the Small Business Advocate	Cost allocation and rate design -- direct and rebuttal
EBRO 488	Ontario Energy Board	Natural Resource Gas Limited	November 1994	Natural Resource Gas Limited	Customer classification, cost allocation and rate design.
RE92071	Alberta Public Utilities Board	Alberta Power Limited	November 1994	Independent Power Producers Society of Alberta	Cost allocation and rate design for export transmission service.
R-942986	Pennsylvania Public Utility Commission	West Penn Power Company	August 1994	Pennsylvania Office of the Small Business Advocate	Cost allocation and rate design.
R-932862	Pennsylvania Public Utility Commission	UGI Utilities, Inc. (Electric Division)	March 1994	Pennsylvania Office of the Small Business Advocate	Cost allocation and rate design -- direct, rebuttal and surrebuttal.
EBRO 485, and Generic Direct Purchase Hearings	Ontario Energy Board	Consumers' Gas Company, Ltd.	August 1993, September 1993.	Canadian Independent Gas Marketing Association	Classification and allocation of marketing and administrative costs.
Hearings for Cost of Service and Rate Design	Nova Scotia Utility and Review Board	Nova Scotia Power, Inc.	May 1993	Bowater Mersey Paper Company, Ltd.	Classification of bulk power costs, rate design for interruptible service and other rate design issues.
Generic Hearing #4	Board of Commissioners of Public Utilities, Province of New Brunswick	New Brunswick Power Corporation	November 1991	Large Power Users Group	Review of cost allocation and rate design.
EBRO-470	Ontario Energy Board	Union Gas, Ltd.	February 1991	Ontario Energy Board Staff	Cost allocation and rate design; evaluation of load shifting study.
Rate Area Boundaries Hearings	Prince Edward Island Public Utilities Commission	Maritime Electric Co., Ltd.	February 1991	Prince Edward Island Department of Energy and Forestry	Customer classification by geographical area.

ROBERT D. KNECHT

SCHEDULE OF APPEARANCES BEFORE REGULATORY AUTHORITIES

Docket #	Regulator	Utility	Date of Testimony	Client	Topic of Testimony
EBRO-467	Ontario Energy Board	Centra Gas, Ltd.	January 1991	Ontario Energy Board Staff	Cost allocation and rate design for technology, cogen and bypass.
Arbitration Hearings	Arbitrator	ARINC, Inc.	July 1990	ARINC Inc.	Cost allocation and rate design for aircraft to ground data communications service.
EBRO-462	Ontario Energy Board	Union Gas, Ltd.	January 1990	Ontario Energy Board Staff	Seasonal cost allocation study, and allocation of costs to export markets.
NSPC-857	Nova Scotia Board of Commissioners of Public Utilities	Nova Scotia Power Corp.	February 1989	Interruptible industrial customers	Cost allocation and rate design of interruptible electric service.

May 2001

APPENDIX B

REFERENCED INTERROGATORY RESPONSES

(In Numerical Order)

OCA-I-34 (w/o attachment)

RESPONSE TO OFFICE OF CONSUMER ADVOCATE DISCOVERY REQUEST
REGARDING PGW'S ANNUAL GCR FILING (1307d)
DOCKET NO. R-00016378

Question OCA-Set 1-34: Please confirm that PGW's gas price forecasts are based on the March 2001 Standard & Poor's DRI forecast. If that is confirmed, please provide the monthly DRI forecasts (stated on a Henry Hub basis) which underlie the Company's forecast. Also please provide any subsequent DRI forecasts which the Company has received. The data sought would all be stated on a basis which could be compared to the NYMEX strip prices and other Henry Hub based forecasts.

Response Provided By: Craig White, Senior Vice President Marketing and Supply Services

Response: PGW's price forecasts are based on the March 2001 Standard & Poor's DRI forecast.

