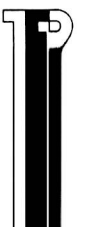
CUSTOMER CHOICE:

PURCHASING ENERGY IN A DEREGULATED MARKET

COMPLIED AND EDITED BY
ALBERT THUMANN, P.E., C.E.M

Published by
THE FAIRMONT PRESS, INC.
700 Indian Trail
Lilburn, GA 30047



Library of Congress Cataloging-in-Publication Data

Customer choice : purchasing energy in a deregulated market / compiled and edited by Albert Thumann.
p. cm.
Many of the chapters were originally presented at the World Energy Engineering Congress and conferences sponsored by the Association of Energy Engineers.
Includes bibliographical references and index.
ISBN 0-88173-307-5
1. Energy industries--Congresses. 2. Power resources--Purchasing--Congresses. 3. Electric utilities--Deregulation--Congresses. 4. Gas industry--Deregulation--Congresses. I. Thumann, Albert.
HD9502.A2C87 1998 333.79--dc21 98-41200
CIP

Customer choice : purchasing energy in a deregulated market / compiled and edited by Albert Thumann.

Published by The Fairmont Press, Inc.
700 Indian Trail
Lilburn, GA 30047

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

ISBN 0-88173-307-5 FP

ISBN 0-13-083820-9 PH

Distributed by Prentice Hall PTR
Prentice-Hall, Inc.
A Simon & Schuster Company
Upper Saddle River, NJ 07458

Prentice-Hall International (UK) Limited, London
Prentice-Hall of Australia Pty. Limited, Sydney
Prentice-Hall Canada Inc., Toronto
Prentice-Hall Hispanoamericana, S.A., Mexico
Prentice-Hall of India Private Limited, New Delhi
Prentice-Hall of Japan, Inc., Tokyo
Simon & Schuster Asia Pte. Ltd., Singapore
Editora Prentice-Hall do Brasil, Ltda., Rio de Janeiro

Customer Choice:

Purchasing Energy in a Deregulated Market

ACKNOWLEDGMENTS

The author wishes to express appreciation for the numerous contributors to this work. Many of the chapters were originally presented at the World Energy Engineering Congress and conferences sponsored by the Association of Energy Engineers. In addition, this reference includes papers contributed to *Strategic Planning for Energy and the Environment* and the *Cogeneration and Competitive Power Journal*, and *Energy Engineering Journal*.

Hopefully, by including these contributions in this source book, these works will gain wider exposure.

INTRODUCTION

The energy purchasing industry is rapidly changing as new state regulations go into effect. While developing this book it became apparent that there was no reference source addressing the myriad of questions energy users were facing in the energy procurement arena. Even though the material contained was current at the time of writing, the author advises the reader that regulation information is bound to change rapidly.

There is no question that there is great opportunity for individuals to learn how to buy and sell power in today's marketplace. Individuals who develop this expertise are sure to find career opportunities as deregulation takes hold.

Hopefully, this book will provide a source of information to get started.

TABLE OF CONTENTS

CHAPTER 1

THE ROLE OF THE ENERGY PROCUREMENT PROFESSIONAL

Energy delivered to industrial, commercial, institutional and residential customers costs $270 billion annually. In a deregulated marketplace new opportunities to purchase elec-electricity and gas have emerged.

As we enter the next millennium the energy procurement professional will play a vital role as either a buyer or seller of energy.

For companies to stay competitive in a deregulated world, an understanding is needed on how to buy electricity and gas under the new rules of the game. New businesses are emerging which provide new procurement services to companies. The energy procurement professional must analyze these options and determine the associated risks and savings.

The seller of energy needs to understand the needs of the customer and what options to offer. The stakes are high as this new industry evolves.

As with any new industry new companies are emerging. The energy procurement professional must understand the new companies and entities which are part of this industry. The following is a sampling of the terms associated with the energy procurement industry:

Aggregator: A company that combines end user loads into a group to achieve the best electric price from a power supplier.

Marketer: A company that purchases electricity and or gas from traditional utilities or other suppliers and then resells these services to end users. A marketer takes title to the power.

Power Pool: An independent organization which serves as a short-term spot market where electricity buyers and sellers conduct transactions. This independent organization integrates, coordinates and balances power and consumption by competitive bid.

Power Exchange: The power exchange is the name of a new entity in California that establishes competitive spot market prices for electricity through day and hour ahead auction of demand bids and generation.

Independent Power Producer: A company that generates power but does not have distribution or transmission facilities.

Independent System Operator (ISO): The ISO is a neutral operator who maintains the workings of the electric grid. The ISO controls the dispatch of flexible power plants to ensure that loads match resources available to the system.

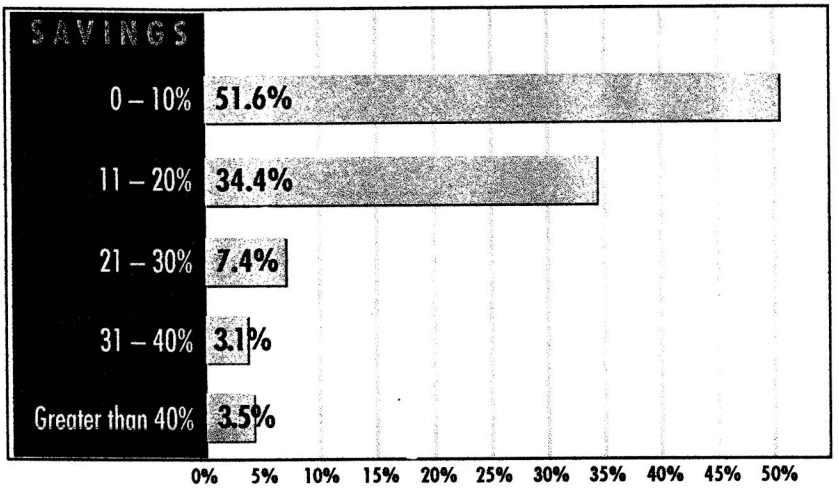
Broker: A company or individual who matches the electricity sellers with buyers. A broker does not take title to the power.

Exempt Wholesale Generator (EWG): EWG is an entity which sells power exclusively to other power producers in the wholesale market. EWGs were created under the Energy Policy Act of 1992.

In addition there are other players who have emerged in this new marketplace including unregulated utility subsidiaries, mega-wholesalers and energy service companies (ESCO's).

To gain a perspective on the dynamic forces shaping this industry and profession the Association of Energy Engineers has implemented a comprehensive 1998 survey of its members. Based on 911 responses the following results were found:

1. If you are an enduser, what is the estimated savings that you (and/or your company) are projecting which will be attributable to purchasing electricity and gas in a deregulated environment?



2. Customer choice of power suppliers will lead to:
   Lower electric rates in a marked way: 61.5%
   Higher peak rates: 41.1%
   Customer doing business with new power suppliers: 74.9%

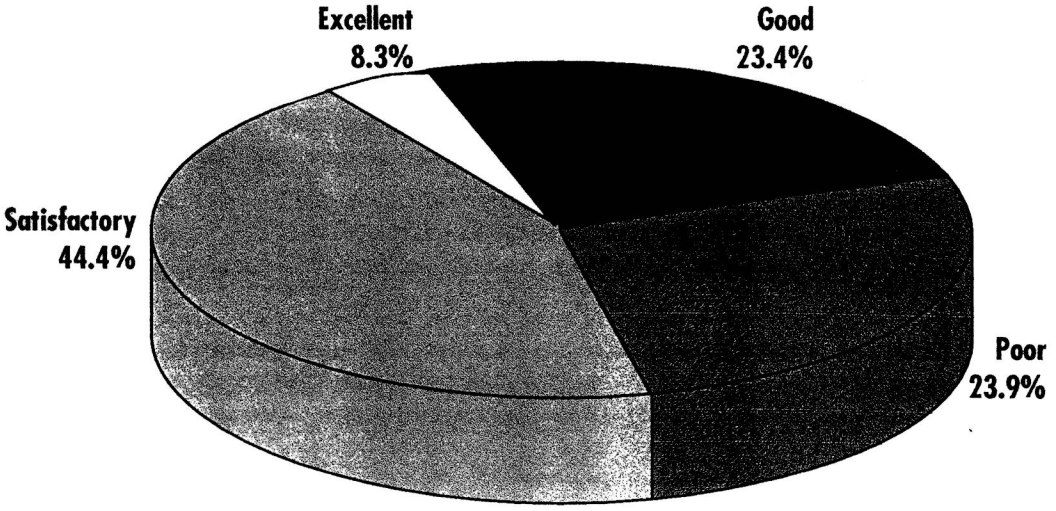
3. Would you use a power marketer or power broker to get the best energy price?
   Yes: 71.5%
   No: 28.5%

4. As a result of customer choice of power supplier, my company is delaying purchasing energy efficient equipment.
   Yes: 11.3%
   No: 88.7%

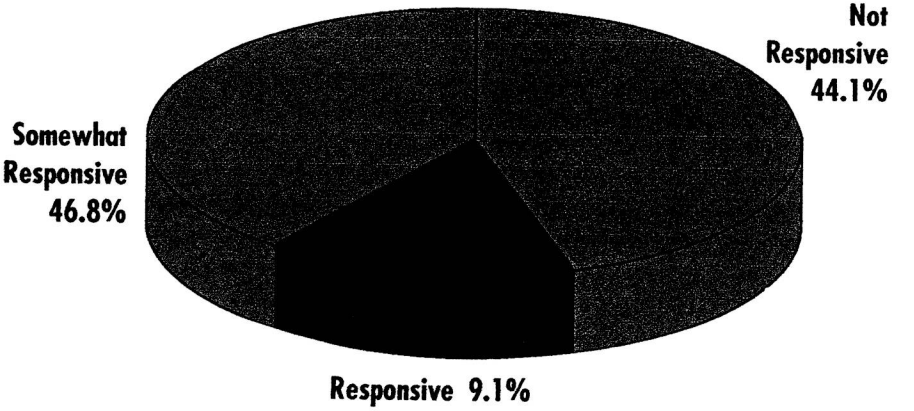
5. Real time pricing will encourage installing the following *(respondents were told to mark a 4 for the most important and on down to a 1 for the least important factor):*

	Least Important 1	2	3	Most Important 4
Gas cooling equipment	38.8%	26.9%	16.2%	18.1%
Thermal energy storage	32.2%	32.7%	20.3%	14.7%
Energy management systems	14.7%	15.3%	33.8%	36.2%
Metering	17.3%	15.1%	28.2%	39 4%

6. How do you rate your existing utility?



7. How do you rate your utility to customer service?



8. In selecting an energy service provider, indicate the most important programs to be provided (*respondents were told to mark a 9 for the most important and on down to a 1 for the least important factor*):

	Least Important								Most Important
	1	2	3	4	5	6	7	8	9
Purchasing electricity	7.8%	2.2%	2.4%	2.5%	2.9%	6.3%	8.3%	12.2%	55.4%
Purchasing gas	8.4%	7.7%	4.6%	3.6%	9.2%	9.1%	11.8%	28.4%	17.3%
Project financing	11.4%	10.3%	11.1%	9.7%	14.7%	13.5%	14.0%	8.0%	7.4%
Performance contracting	8.2%	9.1%	9.8%	9.9%	15.6%	13.7%	11.5%	10.4%	11.8%
Facility outsourcing	16.3%	14.5%	15.7%	12.1%	14.2%	9.3%	9.2%	5.3%	3.4%
Improving power quality	5.2%	7.4%	8.9%	12.6%	14.6%	12.0%	18.2%	12.8%	8.4%
Upgrading HVAC & lighting systems	6.2%	5.2%	9.4%	9.8%	14.1%	11.5%	19.6%	12.8%	11.5%
Providing cogeneration alternatives	17.7%	15.7%	11.0%	11.8%	14.1%	9.1%	9.0%	5.2%	6.4%
Integrating billing for all for energy, telecommunications and security	23.7%	10.4%	9.3%	8.1%	11.0%	8.6%	10.4%	8.4%	10.0%

9. How do you select an energy provider (*respondents were told to mark a 6 for the most important and on down to a 1 for the least important factor*)?

	Least Important 1	2	3	4	5	Most Important 6
Name recognition	28.4%	21.5%	14.3%	15.1%	12.1%	8.6%
Price of energy	5.6%	2.9%	6.5%	12.8%	23.2%	49.0%
Energy services offered	4.5%	8.1%	14.7%	20.7%	27.2%	24.9%
Location of provider	24.6%	20.6%	17.8%	15.3%	12.4%	9.3%
Perception of "value"	8.7%	12.6%	15.7%	19.5%	22.5%	21.0%
Customer service	2.7%	6.2%	15.1%	22.1%	27.8%	26.2%

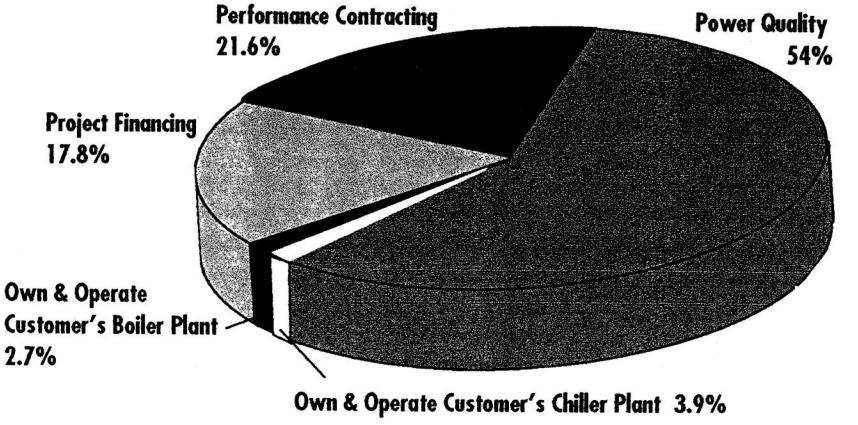
10. Will utility mergers improve or hurt the energy industry?
Improve: 64%
Hurt: 36%

11. Are you presently involved in energy buying decisions?
Yes: 57.5%
No: 42.5%

12. Do you see your role expanding to include energy buying decisions?
Yes: 64.9%
No: 35.1%

13. Will lack of new generating facilities and decommission of nuclear power plants lead to power shortages in your area?
Yes: 31.4%
No: 68.6%

14. Which services do you believe utilities or their affiliates should provide?



15. Utilities have made their customers aware of how restructuring will impact their customers.
    Agree: 32.2%
    Disagree: 67.8%

CERTIFIED ENERGY PROCUREMENT (CEP) PROGRAM

With the goal of raising the professional standards in the fields involved with the purchasing, selling, and marketing of electricity and natural gas, the Association of Energy Engineers (AEE) has established the Certified Energy Procurement Program for professional certification. Since 1981, AEE has certified more than 4,000 professionals within the energy industry. AEE's certification programs are recognized by governmental agencies, including the U.S. Department of Energy and the U.S. Agency for International Development, as well as by utilities, end users, and energy service companies.

When professionals earn the right to put the initials "CEP" behind their name, they are distinguishing themselves among those involved professionally in today's restructured energy marketplace. They have demonstrated high levels of experience, competence, and specialized knowledge within their field.

Requirements to Sit for the CEP Exam

Each applicant for CEP professional certification must attend AEE's three-day "Fundamentals of Buying & Selling Energy" training program and complete and pass a 4-hour written exam, as well as meet the following criteria.

The candidate must have:

1. A 4-year degree from an accredited university or college, in science, engineering, architecture, business, law, finance, or related field, or be a registered Professional Engineer (P.E.) or Registered Architect (R.A.). In addition, the applicant must have at least three years of experience in energy or building facility management, or real estate, or procurement, or brokering;

or

2. A 2-year technical degree or a 4-year non-technical degree, with five years experience in energy or building or facility management, or real estate, or procurement, or brokering;

or

3. Ten years of experience in energy or building or facility management, or real estate, or procurement, or brokering;

or

4. The current status of Certified Energy Manager (CEM).

Format of the CEP Exam

The four-hour CEP exam is given in conjunction with the Fundamentals of Buying & Selling Energy 3-day training program. The examination questions are based on concepts and experiences basic to purchasing, selling, and marketing electricity and natural gas. The exam is open book, and the questions are a mixture of multiple choice and true or false.

THE FUNDAMENTS OF BUYING & SELLING ENERGY PREPARATORY COURSE

In order to help professionals prepare for the CEP examination the Association of Energy Engineers has developed the following course. For course dates and details on the CEP program visit AEE's web site at www.**acecenter.org** or FAX at (770)-446-3969 or call (770)-447-5083.

This comprehensive 3-day instructional program has been designed to provide the specific training and background information needed by professionals preparing to sit for the Certified Energy Procurement (CEP) Professional examination. As energy restructuring continues to unfold nationwide, there are an increasing number of individuals who have developed specialized expertise, both on the purchasing side and on the selling side of the marketplace, as well as a growing need for this kind of special knowledge. AEE's new CEP professional certification provides a defined standard against which this expertise may be established and demonstrated.

The program covers the full spectrum of topics essential to the energy procurement process, covering both electricity and natural gas, from both a purchasing/procurement and a selling/marketing perspective. You'll learn the best approaches for defining corporate energy goals, assessing energy use parameters, evaluating energy provider options, comparing competitive proposals, and integrating the benefits of competitive energy procurement into an overall energy management program. On the selling side, the program will examine proven strategies for building a customer base, answering RFPs, and establishing overall sound business practices that will build your market share and status as a player in the marketplace. The growing field of energy trading will also be explored, covering futures, options and derivatives, hedging, and effective risk management.