

Copyright © 2004, 2005 Eileen M. Smith, M.Arch.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, except for the inclusion of brief quotations in a review without prior permission in writing from the publishers.

While every effort has been made to ensure the reliability of the information presented in this publication, Ethos of Commerce Publishers, Ltd. neither guarantees the accuracy of the data contained herein nor assumes any responsibility for errors and omissions or discrepancies. Errors brought to the attention of the publisher and verified to the satisfaction of the publisher will be corrected in future editions.

*Library of Congress-in-Publication Data*

**ElectriCity. BEYOND THE CURVE OF DEREGULATION :  
featuring Neighborhood Energy Watch Solution Groups and  
the Ethos of Commerce, Volume I  
written and compiled by Eileen M. Smith, M.Arch.**

Includes footnotes, bibliography, a list of figures, a glossary and an index.  
ISBN 0-9741412-9-1  
Library of Congress Control Number: 2004098882

**Call Numbers**

Dewey Decimal : 690 Smith 2004  
Library Call Number : NA 2542 .S92 2004

---

---

**Author :** Eileen M. Smith, M.Arch.

**Publisher:** Ethos of Commerce Publishers, Ltd.      Midwest Division  
3535 East Coast Highway #216                      Post Office Box 2  
Corona del Mar, CA 92625                      Lawrence, KS 66044

URL: [www.geotocities.com/EthosOfCommerce](http://www.geotocities.com/EthosOfCommerce)  
E-mail: [ethosofcommerce@yahoo.com](mailto:ethosofcommerce@yahoo.com)

**This book was printed in the United States of America**

CD Earth Day 2005 Release April 23, 2005  
CD Insert and Photographs printed by Lawrence Printing and Design  
CD Imprint by Brad Roszell, Brendon Glad and Chris Ordal [homeTowncollaborations.com](http://homeTowncollaborations.com)

## Solar Energy Soliloquy -Amid

[Entered in the Laguna Beach, California Library Poetry Contest April 2001]

The wires hung  
Nearly limp  
Across the  
Balcony of Time  
Imposing upon the  
Porched entrance to an  
Upstairs backdoor  
Balboa Island  
Suffering Saints  
Society  
Writing Room.

I pulled my camera  
From my pocket  
To aim and click  
At the black buzzing  
Begging intruders  
That danced like  
Noisy snakes  
Eloquently  
Armed by  
Utility  
Lawyers and ALJs.

An affliction  
I'd managed to  
Survive -sort of  
Through three  
Grueling years of  
California PUC  
Rulemaking  
Dominated by  
Oily consensus  
Left of good sense.  
*Market Power*  
Rebelling against  
It's own shadow of

Utilit(y)arian  
Competition  
While energy cartel  
Multinational  
Conglomerates  
Escape  
Accountability  
An Enron of a  
*Hundred and One  
Billion*  
Washington faces  
And ~~A~~ million  
Investors  
Melt into  
Faceless  
No one  
No where  
No way  
Trailing  
Screaming  
Blue flashes of  
Runaway delusions  
A billioneous  
Aftertaste  
Of gaseous things  
To come by . . .

Why was I there?  
*-amid*  
Greedy eyes  
Glued to the  
Stock Ticker  
[First recorded  
Invention of  
Thomas A. Edison  
*Emphasis added*]

## Solar Energy Soliloquy -Amid

[Entered in the Laguna Beach, California Library Poetry Contest April 2001]

To witness?  
More than to defend  
The defenseless sins  
Of two-way consumers  
Investing in their  
Un-owned demise  
Unable to evolve the  
Opportunity of  
Two-way  
Meters for  
Self-generation  
Offering  
This generation  
Less polluting  
Freedom.

There!  
Upon contracts  
Enron, Amoco and  
British Petroleum  
Sit like big cats  
After a kill  
Gloating over  
Hidden *price-fixed*  
Photovoltaic treasures  
College computers,  
The cars, the media  
And various other  
As-sorted avenues of  
Productivity,  
Communication, and  
Support  
They attempted to  
Strip from me  
The last nine years.

Claiming  
Competitive  
Conformity with  
Cheshire assuredness  
Glancing nervously  
For anyone who  
might, Disagree,  
*Almost* convinced  
They controlled every  
Avenue to stop  
Their souls  
Pouring  
Confession  
They swelled  
Like ticks on flesh  
. . . from bills of  
Venerable  
Ratepayers.

Slowly, I  
Raised my  
Point-bald pen  
That came by it,  
*Naturally . . .*  
Rather than by  
Cancer  
And, I thrust  
*My Aching Shoulder*  
[Injured by  
Enron State  
Police -forced abuse  
Closing E-mail, routes]  
Into bloated  
Bureaucratic  
Word ticks

## Solar Energy Soliloquy -Amid

[Entered in the Laguna Beach, California Library Poetry Contest April 2001]

Upon page  
After page  
Of hollow  
Proceedings  
Until dictatorships  
Mesmerized by the  
E-Motion  
Lay helpless  
Mere pools  
Reflecting  
Memories and  
Paraphernalia of  
A great era now  
*Powerless*  
Under the weight of  
Recently felled  
Poles and wires  
Surrounding  
Stilled  
Nuclear and  
Coal power plants  
Void of continuity,  
Radioactivity.

The soot of  
Polluting flames  
And blame,  
Now harmless  
Their counters  
Of parts  
Sit on  
Fault lines  
As they await  
A TURN to  
Courtly  
Confession

Again and  
Again  
Ream after  
Ream  
They  
Curtly  
Melt  
Away on  
Nostalgic  
45s of  
*Wichita Linemen.*

And on the  
Third play  
ElectriCity®  
Arose from this  
Manufactured dread  
To sit with Clients  
Basking in the Sun  
Comforted by Silence  
Beyond transformers  
And hummer lines  
Gazing out  
Silicon windows  
At a wireless  
Pollution-free  
Bountiful horizon  
Our Invincible  
Fragile Earth  
Witnessing  
Anew  
In an  
Era of  
Humane  
Civilization.

---

Copyright © April 2001 Eileen M. Smith, M.Arch. All Rights Reserved Page 3

Founder & CEO Since 1992 SOLAR DEVELOPMENT COOPERATIVE  
3535 East Coast Highway #216 Corona del Mar, CA 92625 949-862-5826 Ext. 1  
[www.geocities.com/Eureka/1905](http://www.geocities.com/Eureka/1905) and [www.geocities.com/PVBLUEIN2002](http://www.geocities.com/PVBLUEIN2002)

# ELECTRICITY<sup>®</sup>

---

# ELECTRICITY<sup>®</sup>

---

Dedicated

*. . . to you*

*. . . to sand candles*

*. . . to the 300 million American  
electricity consumers and*

*. . . to the global electricity market!*

Special thanks to my Mother whose  
tolerance, persistence and friendship  
made this book possible . . .

## ACKNOWLEDGMENTS

---

The author wishes to thank and recognize all the people who supported her business the last twelve years and allowed the information compiled in this book to evolve and blossom before me at various energy conferences and energy agency proceedings around the world. It was your assistance, sharing of knowledge, generosity, enthusiasm and tolerance that allowed this book and related information for electricity consumers to emerge. Although, I cannot begin to individually thank everyone for the assistance I have been provided, I want to express special thanks to my family from youngsters to elders who have been extremely tolerant and supportive even when they didn't quite understand what I was doing. I want to thank Larry Snyder, Doug Overby, Sally Turner's family, Ed from Laguna Beach, Don and Sue Lambert, Denise at Flex, Chris and Mitch Dickerson, Dennis Dahlin, AIA at WPM, Inc., Greg Sharp, AIA at Southern California Edison, Bob Danielson at Active Solar, The Irvine Company, Patricia J. Bradley, Bill Yerkes, Les Nichols and Raylene at Monkey Business. Al the taxi driver. Thank you to Maria in the Writing Center, Fullerton College and Morningside Presbyterian Church, Saddleback Community College, my friends at Golden West College and the University of California at Irvine. Special thanks to my *alma mater* the University of Kansas and especially Anchutz Science Library and Budig Computing Center, Ecumenical Christian Ministries, Reverend Thad Holcombe, "T", Natalie Lowther, Doug Underwood, Father Joseph, Rick Clock, the KU Swing Club, Rick Winfrey, and the KU Osher Institute. Thank you to Downtown Lawrence Merchants with special thanks to Liberty Hall. Thank you to Jean and Dave at the Social Services Thrift Store, to James and Nancy Dunn. Special thanks to Sam Fields, Sunshine, Bubba and Taz for keeping me from the elements after everyone else had given up. A special thanks to Vic Prodbielski Director of facilities maintenance at Georgetown University and his staff. Thank you to Lt. Col. Richard T. Headrick. Thank you to Kevin Ridlin, Susan and the Victoria Clark family for their special kindness, the tent and sleeping bag. Thank to Rob, Craig and Dave at Bear's Den and to the Appalachian Trails Conference Center and especially John Fletcher. Thank you to the Stonebergers with special thanks to their daughters for putting up with me. Special thanks to the Merry Mount Riding Academy. Thank you to Gettysberg Hospital with special thanks to Sherry. Thank you to the many people around the world who helped me including the International Guest House, Mr. Porter at the American Power Conference, the Egyptian Solar Energy Society and their associates, Hermann Scheer the German Parliamentarian and many others. I extend my heartfelt appreciation to Channel 6 News in Lawrence, Kansas for putting *Pretty Polly* the solar array at Georgetown University in the news December 2003. Thanks to CNN for interviewing me in Egypt 1996. Thanks to Josh at Design|Build Business Magazine for publishing my article *Residential Photovoltaics* December 2003 and to Charlotte Nichols, the Hoya News Writer who bravely wrote on March 20, 2000 article to clarify the 30,000 SF solar BIPV Intercultural Center roof at Georgetown University actually does work. Thank you to Yolanda at *Leesburg, Today!* and to the *Equiery* for announcing the Journey by Horseback for Peace and Photovoltaics. Thank you the people in the energy industry and in architecture for evolving this new window of opportunity that is the basis of the ElectricCity® vision. Special thanks to the *many* people who provided rides, food, accommodation and assistance. My special thanks to Yahoo and Geocities who allowed my small business to persist along side giants. Thank you to those who helped me through the many challenges I faced. I deeply appreciate all the assistance provided to me.

Eileen M. Smith, M.Arch.

# ELECTRICITY®

## VOLUME I

			Footnotes
Epigraph	Solar Energy Soliloquy <i>–Amid</i>	iii	1
Dedication	<i>. . . to you . . . to sand candles</i>	vii	
Table of Contents		ix	
Forward	The Ethos Of Commerce	xi	
INTRODUCTION	What is Building-Integrated Photovoltaics?	1	2 to 20
SECTION I	THE HISTORY OF PHOTOVOLTAIC ELECTRICITY	11	
Chapter 1	œ to 1970 Magnetism, Electricity & The Photovoltaic Effect	13	21 to 96
Chapter 2	1971 to 1984 The Solarex Corporation ▶ Terrestrial PV	37	97 to 117 118 to 133
Chapter 3	1984 to 1991 Why Don't We Use More Solar Electricity?	49	
SECTION II	THE SOLAR DEVELOPMENT COOPERATIVE	75	134 to 135
Chapter 4	1992 ECO TECHÉ for Kansas City Union Station	77	
Chapter 5	1993 Advent of the Headrick Solar-Voltaic Dome™	89	136
Chapter 6	1994 Georgetown University Intercultural Center	101	137 to 138 139 to 143
Chapter 7	1995 Dedicated to Dr. Joseph Lindmayer	127	
Chapter 8	1996 100 Headrick Solar-Voltaic Dome™ by 2000 Φ	145	144 to 155 156 to 159
Chapter 9	☀ Three-World-Powers PV Competition US+EC+Japan	171	
Chapter 10	1997 American Power Conference~Sherman Antitrust Act	191	160 to 161
	É Orange County Solar Winter Gala ~ Jimmy Stewart		
SECTION III	CONSUMER EDUCATION~COMMERCE~REGULATION	213	162 to 169
Chapter 11	1998 Prelude to a Rulemaking on the Role of UDC in DG	215	
	Δ BI-PV PEP USA ~ American Power Conference <sup>2</sup>		
Chapter 12	π Millennium Dome™ BI-PV Manufacturing Museum	275	170 to 171
Chapter 13	1999 CPUC~CEC~CEOB Rulemaking R.98-12-015	289	172 to 174
Chapter 14	2000 Quasi-Legislative Rulemaking R.99-10-025 ◀Least cost?	385	175 to 190
Chapter 15	§ Intervener Hardship Compensation▶\$100 to \$350 Hour	491	191 to 208
Chapter 16	9 11 Green Team Proposal for Energy Crisis 2000▶Silicon	579	209 to 210
Chapter 17	Σ California State PV Consultant Report 1978◀1996	577	211 to 212
Chapter 18	Ø Protest ▶ Rule 21 Decision◀ No Long-Term Contracts	595	
Chapter 19	01~04 OCTA▶THRASHER▶IRS▶SLAPP◀9 11 01 ◀BEATON◀Gas	647	213 to 226
SECTION IV	BEYOND THE CURVE OF DEREGULATION	751	
Chapter 20	Neighborhood Energy Watch Solution Groups [N.E.W.S.]	753	227 to 238
Chapter 21	Journey by Horseback for Peace & Photovoltaics [BI-PV]	787	239 to 267
EPILOGUE	Ω THE S.T.O.M.P. ACT 2004 for Solar Technologies of Mass Protection	829	
List of Original Documents and Figures		849	
Index and Bibliography			

# ELECTRICITY<sup>®</sup>

---

# ELECTRICITY<sup>®</sup>

---

## The Ethos Of Commerce

For those seeking the culprit to blame for the condition of the energy industry and the alleged failure of Assembly Bill 1890 with Senate Bill 90 bills popularly referred to as *deregulation* of the California energy industry, read no further. Simply, put this book down, proceed to the nearest mirror and smile. Fragmented consumers have historically made easy targets for entertainment to those legislated and employed to manage the electricity industry in consort with utility monopolies, oil cartel partners and their investors. The goal herein is to share with you events and documents to prepare you as consumers to become officially involved as a consequential influence in the transformation of electricity commerce. This book is about administrative law and how United States consumers can now constructively reclaim and remold democracy in electricity commerce via energy agency proceedings, the Internet and e-mail.

Although structured around alleged public hearings, until recently, the decision-making process evolving energy commerce has been prohibitively costly demanding an average of \$1,000 expenditure to file and serve one official document in energy agency proceedings. Today, it costs less than \$50 to file an original and copies with a Public Utilities Commission docket office in a proceeding. Historically, proceedings have been unconstitutionally expensive and inaccessible to consumers. This oppressive condition was clearly demonstrated in the Erin Brockovich Story ca 1960 to 1980 released as a motion picture in 2000. Semiconductor communications and electricity technology will play a vital role in life of the 21<sup>st</sup> Century. Today, groups of consumers may monitor energy agency proceedings on the Internet and officially serve comments and testimony via e-mail. Consumers working together in Neighborhood Energy Watch Solution Groups or N.E.W.S. Groups can achieve official consumer consensus in energy agency decisions and thereby achieve legal standing. Consumer-led majority opinions allow important community issues previously suppressed to democratically influence energy industry transformation. This book reveals important matters to clarify for consumers the importance of their awareness and participation in energy agency decisions. For the best results, read portions of this book on a regular basis and discuss it with friends and neighbors.

# ELECTRICITY®

---

In the Introduction you will learn about the three kinds of solar electricity with a summary description of how photovoltaic (PV) arrays generate electricity from the *light of the sun*. The intro explains the four ways to install solar systems with the most practical being *building-integrated photovoltaics* (BI-PV). The vision of ElectriCity is the city of the near future featuring buildings that generate the electricity they use. Section I reviews the history of magnetism, electricity and BI-PV.

In Section II join me in 1992 as I found the Solar Development Cooperative to assure timely mainstream deployment of quality *building-integrated photovoltaics* (BI-PV) supported by a reliable service industry in the United States and global marketplace. At that time, I had a limited understanding of the electricity industry. I was driven by the belief that there is a need to perpetuate aesthetic quality solar electric building materials in the mainstream market. This book reveals the strong interest in solar energy I found at conferences around the world and the sadly dysfunctional and increasingly brutal essence of the persona of *traditional energy commerce* suppressing mainstream BI-PV deployment from the mainstream market for twenty years. Via over 300 original documents, photographs and narrative you will travel with me to energy conferences from San Antonio, Texas to Nice, France, Cairo, Egypt, Miyazaki, Japan and back to Chicago, Illinois for the *American Power Conference*. You will find out how a World War II pilot made history for the second time with his design and patent of the most efficient solar array in existence, today, the *Headrick Solar-Voltaic Dome™ Power Station*.

In Chapter 6 I share my shock and amazement as we discover the 30,000 SF taxpayer-funded *building-integrated photovoltaic* (BI-PV) solar demonstration installed on the Intercultural Center roof at Georgetown University in 1984. This solar array generates \$57,000 of *pollution-free fuel-free* renewable BI-PV electricity a year from the light of the sun. Wonder with me how most of the people in this building who are global policy experts do not know this large blue roof generates electricity. Why is it called *Pretty Polly*? The GTU ICC houses the oldest Foreign Service training center in the United States. GTU is President Clinton's alma mater. Read Charlotte Nichol's news report as the brave student who wrote the March 20, 2000 article for the Hoya News at Georgetown U revealing that the solar roof has

# ELECTRICITY<sup>®</sup>

---

generated substantial electricity since it was installed in 1984 refuting fraudulent claims in campus tours that it did not work.

In Section III of *ElectriCity* you will find hard-earned first person excerpts from the heart of the heated California energy agency rulemaking into the role of the utility distribution company (UDC) in distributed or self-generation technology (DG) from 1998 to 2004. The documents reveal how mass consumer intervention in energy agency proceedings could bring a new balance to the vacuum of energy commerce that has increasingly eroded American democracy in every sector over the past century. The dysfunction and increasing tyranny of fossil fuel and utility domination have become an issue of grave concern around the world which is now more challenging than the many environmental challenges it has evolved. Original documents show why it is virtually impossible to transform energy agency decisions from within the administrative process without mass consumer intervention to redirect the tremendous *vacuum of energy commerce*. Consumers may begin to understand first-hand why and how they can intervene in energy agency proceedings to re-build democratic freedoms that have been lost. The inadaptable condition of energy commerce has dramatically delayed the timely evolution of *renewable demand-site product-driven fuel-free renewable BI-PV* electricity into the mainstream market. Chapter 16 reveals SDC's 9|11|00 Green Team Proposal that sought to reduce the impact of *peak* shortages due to air conditioning demand during energy crisis 2000. Our plan sought to infuse failing Silicon Valley manufacturers with the task of mass production of silicon photovoltaic semiconductors to free California from future energy crisis in a year.

Explore with me in Section IV how our nation and the global energy market will evolve beyond the curve of deregulation which caused Energy Crisis 2000 in California and numerous related problems. In Chapter 20 we explore the need for Neighborhood Energy Watch Solution Groups or N.E.W.S. Groups. In addition to general guidelines for industry transformation a format for developing your own local N.E.W.S. Group is provided. It provides a prelude to *ElectriCity Volume II A Workbook for Consumer Empowerment in Energy Agency Proceedings*. Volume II of *ElectriCity* will provide a comprehensive summary of the United States energy agencies and related procedural information for consumers.

# ELECTRICITY®

---

Chapter 21 restates the case of solar electricity via BI-PV as America's choice for the 21<sup>st</sup> Century. Compare this book with the *Handbook of Photovoltaic Science and Engineering; Status, Trends, Challenges and the Bright Future of Solar Electricity from Photovoltaics*, in which they explore the *Six Myths of Photovoltaics*. It sells for \$296. [amazon.com] Obviously their market is not the mainstream consumer at that price. We explore the reasons *America's choice* today for electricity in the 21<sup>st</sup> Century is demand-site solar energy using *Building-Integrated Photovoltaics* [BI-PV]. Join us on the Journey by Horseback (and foot) for Peace and Photovoltaics as we celebrate the 30<sup>th</sup> Anniversary of the founding of the terrestrial photovoltaic industry in 1974 by Dr. Joseph Lindmayer and Dr. Peter Varadi. We also celebrate the 20<sup>th</sup> Anniversary of the 30,000 SF BI-PV Array on the Georgetown University Intercultural Center in Washington, DC. The historic Journey began on Easter Sunday 4|11|04 at the taxpayer funded solar array at Georgetown University to a groundbreaking ceremony at Ground Zero on the 4<sup>th</sup> of July five hundred miles later with an evening firework celebration on the New York Harbor hosted by the Statue of Liberty. We congratulate California Governor Arnold Schwarzenegger on the introduction of his *Solar Roofs Initiative* [SRI] Fall 2004 to install One Million Solar Roofs in California by 2017.

The Epilogue discusses Energy Bill 2004 passed June 16<sup>th</sup> after removing the *Renewable Portfolio Standard* [RPS] which mandated only 10% renewable electricity by 2010. Now there is no renewable electricity mandate, but \$200 million a year to 2012 has been legislated for alleged *clean coal*. May 3, 2004 I wrote THE S.T.O.M.P. ACT for Solar Technologies of Mass Protection to have the RPS reinstated per administrative hearings. [www.geocities.com/VOTESOLAR2004](http://www.geocities.com/VOTESOLAR2004)

An imbalance creating *unchecked privilege, denial* and deceit brought the collapse of Enron as the reverberations of genocide and inhumane brutality in global energy commerce were used to justify the destruction of the New York World Trade Center and brutal wars in Afghanistan and Iraq. The massive *vacuum of energy commerce* has no loyalties. It will be as faithful to renewable demand-site non-polluting product-driven solar BI-PV as it now is to remote-site fossil fuels. Become a citizen of 21<sup>st</sup> Century democracy. Evolve consumer authority in energy agency decisions to make a real and immediate difference. Lead the way, today to *demand-site product-driven fuel-free pollution-free* BI-PV commerce! Eileen M. Smith, M.Arch.